

APPENDIX H

2018 Sediment Core Logs

APPENDIX H

2018 SEDIMENT CORE LOGS



1205 West Bay Drive NW
Olympia, WA 98502
(360) 705-3534

Log of Boring: CO1

Project Name: Former Snopac Site
Project Number: CF1774
Logged by: J. Sund
Date: 2/6/18 + 2/7/18

Page 1 of 1

SAMPLE INFORMATION

Sample ID	Time	Sample Type	% Recovery	SPT	Sheen	Depth (Feet)	Symbol	Soil Description (USCS group name, minor components, color, moisture, additional descriptions)
						-1.0		0-7.0 SILT, v. dk gray (7.5 YR 3/1), 50 ft, wet w/ gravel (subrounded) woody debris, worms present, v. lt. sheen, organic sulfur odor, low-med plasticity.
						-2.0		
						-3.0		24.2 asphalt debris ~ 2.0-3.0" diam. SHT low-med ϕ 2/6/18
2/6 2/7		CU1-SD-3-5 CU1-PN-3-5	1000 1060			-4.0		
						-5.0		7.0-8.2 SILT w/ gravel + woody debris wood up to 4" length. SILT is black (10 YR 2/1), v. wet, soft gravel subang to subround
2/6 2/7		CU1-GTM-5-8 CU1-GTS-5-8	1051 1027			-6.0		
						-7.0		8.2-11 SILT layers of brown (7.5 YR 4/2) and v. dk gray (7.5 YR 3/1) med. plasticity, soft.
						-8.0		
						-9.0		11-12.0 gravelly sandy SILT v. dk gray (7.5 YR 3/1) gravel angular to subang. to subround upto 2". lt. sheen.
2/6 2/7		CU1-GTB-10-13 CU1-GTB-10-13	1044 1050			-10.0		
						-11.0		12-15 SAND (f.m) v. dk grayish brown (10 YR 3/2)
						-12.0		
						-13.0		
						-14.0		

Notes

2/6 CORE 1 DTML = 24' 2/7 CORE 2 DTML = 29'
 0-5 2/6/18 3-5' - no rec'd v. 2/3/18 TD = 15.0' bml 2/6
 5-10 5/5 5-8' 2/7/18 TD = 13.0' bml 2/7
 10-15 4/5 10-13 2-3.0

Drilling Contractor: HOLT SERVICES

Equipment: SONIC RIG

Sampling Equipment: Split Spoon and Shelby Tube

Start/End Time: 1416-1510 2/6 728-1000 2/7

Latitude: 47.55637505N 47.5563846

Longitude: -122.33996741W -122.33995828

2/6/18

CORE 1

CORE 2
5-8 + 10-13

Location Sketch

47.55635517

-122.33997506

CORE 2
3-5'



1205 West Bay Drive NW
Olympia, WA 98502
(360) 705-3534

Log of Boring: CO2

Project Name: Former Snopac Site
Project Number: CF1774
Logged by: J. Sund
Date: 2/6/18 + 2/8/18

SAMPLE INFORMATION

Sample ID	Time	Sample Type	% Recovery	SPT	Sheen	Depth (Feet)	Symbol	Soil Description (USCS group name, minor components, color, moisture, additional descriptions)
						-1.0		0-2 → NO recovery, horizontal v. soft. not retained in core when pull out of water column
						-2.0		
						-3.0		
TECPakquet						-4.0		2-5.9 SILT, v. dk gray (7.5 YR 3/1) wet, v. soft to soft. shells + woody debris, red chips gravel up to 24, subrounded sl. sulfur odor. v. lt to lt sheen.
CO2-SO-3-5	1025					-4.0		
CO2-OW-3-5	1150					-4.0		
						-5.0		
						-6.0		
CO2-GTD-3-8	1045					-7.0		5.9-8.1 Sandy GRAVEL w/ some SILT dk gray (7.5 YR 3/1) to v. dk grayish brown (10 YR 3/2) gravel subang to subrounded sl. odor + mod. sheen.
CO2-GTS-3-8	1240					-7.0		
						-8.0		
						-9.0		
						-10.0		
						-11.0		8.1-8.4 SILT, dk gray (10 YR 4/1) soft, mod plasticity, some woody debris, no odor.
						-12.0		8.4-9.1 SILT, ^{US 2/0/13} dk gray + woody debris dk gray (10 YR 4/1) soft, sulfur odor in woody debris.
CO2-TTB-10-13	1111					-12.0		
						-13.0		9.1-11.8 SILT, as above in 8.1-8.4 tr. subround gravel, cobble frag. → 11.0'
						-14.0		11.8-13.2 SAND, (f-m) v dk grayish brn (10 YR 3/2) no odor.
						-14.0		13-13.2 SILT layer, gray (10 YR 4/1)

Notes

DTML 0909 - 31' 9" CORE 1
1000 31' 7" 0-5
1130 - 29' 8" 5-10
10-10-13

CORE 2
0-5
5-10
10-10-13

TD = 14.0' bml.
ON 2/8 - attempted 10-13' Shelby w/ no success - abundant woody debris

Drilling Contractor: HOLT SERVICES

Equipment: SONIC RIG

Sampling Equipment: Split Spoon and Shelby Tube

Start/End Time: 0909-1400

Latitude: 47.55622411 47.55623293

Longitude: -122.33990326 -122.33989446

CORE 1

CORE 2

CORE 2

3-5, 5-8'

10-13 - sample discarded

Location Sketch

47.55623758
-122.33994072



1205 West Bay Drive NW
Olympia, WA 98502
(360) 705-3534

Log of Boring: CO3

Project Name: Former Snopac Site
Project Number: CF1774
Logged by: J. Sund
Date: 2/7/18

SAMPLE INFORMATION

Sample ID	Time	Sample Type	% Recovery	SPT	Sheen	Depth (Feet)	Symbol
						-1.0	
↑ Turbatquot ↓			1.9 3.0			-2.0	
CO3-40-35	1110					-3.0	
CO3-PW-3-5	1314	PW				-4.0	
↑						-5.0	
CO3-GTS-3-8	1201		5.0			-6.0	
CO3-GTS-3-8	310		2.3			-7.0	
↓						-8.0	
						-9.0	
↑						-10.0	
CO3-GTS-10-13	1221					-11.0	
CO3-GTS-10-13			42			-12.0	
						-13.0	
						-14.0	

Soil Description
(USCS group name, minor components, color, moisture, additional descriptions)

0-1.5 - no recovery. mat. v. soft, lost when pull core through water column.

1.5-3.6 SILT, v. dk gray (10YR 3/1) soft wet w/ tr. fine sand and woody debris @ 3.0' no odor, no sheen.

3.6-12.6 silty SAND. sand is v. fine dk gray (10YR 4/1) wet, stiff no odor.

12.6-14.0 SAND (f-m), v. dk grayish brown (10YR 3/2), wet, soft, no odor.

TD=14.0 bml

2/8
-no sample collected @ 10-13' bml for getch shells, sand went retain in Shelby & drops out.

2/8
-re occupied CO3 area for 10-13' used split spoon w/ 6" liners & core catcher to obtain sand samples for getch. split spoon was 24".

Notes

CORE 1

0-5 2.2/5.0 - poor rec. wood @ 5.0. -rej.
0-5 3.5/5 - DTML = 250'
5-10 4/5 - slough in top 1.9'

CORE 2

0-5
5-10 2.15/3.0
10-13 2/2 →

Drilling Contractor: HOLT SERVICES

Equipment: SONIC RIG

Sampling Equipment: Split Spoon and Shelby Tube

Start/End Time: 1020-1430

Latitude: 47.55202661 47.55201027 47.55201533

Longitude: 122.33964129 122.33968118 122.33968658

CORE 1

CORE 1

CORE 2

0-5'

5-8' +
10-13'
3-5'

10-13'

Location Sketch

APPENDIX I

Applicable Record of Decision Excerpts

APPENDIX C

APPLICABLE ROD EXCERPTS

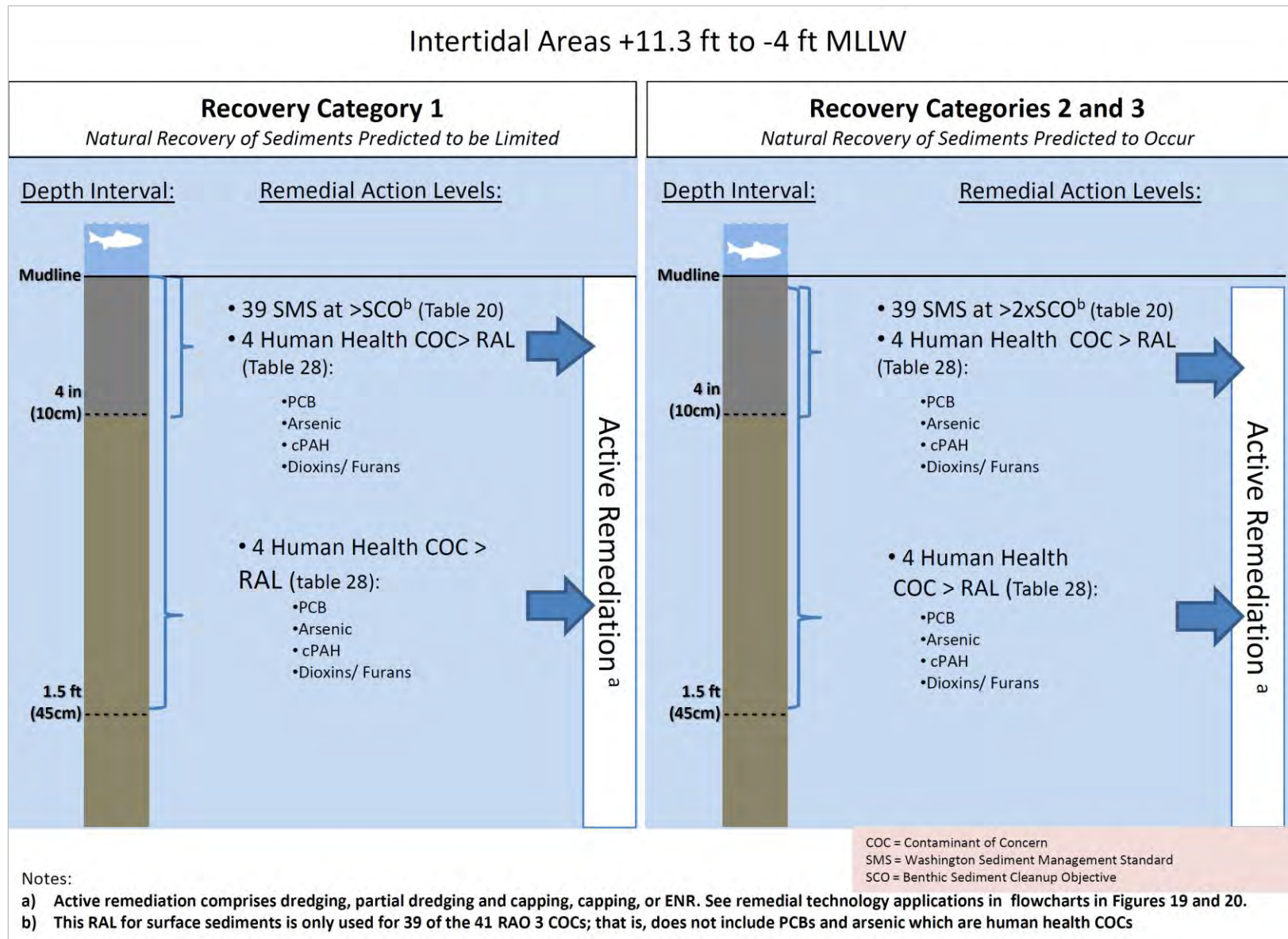


Figure 22. Intertidal Areas - Remedial Action Levels Application

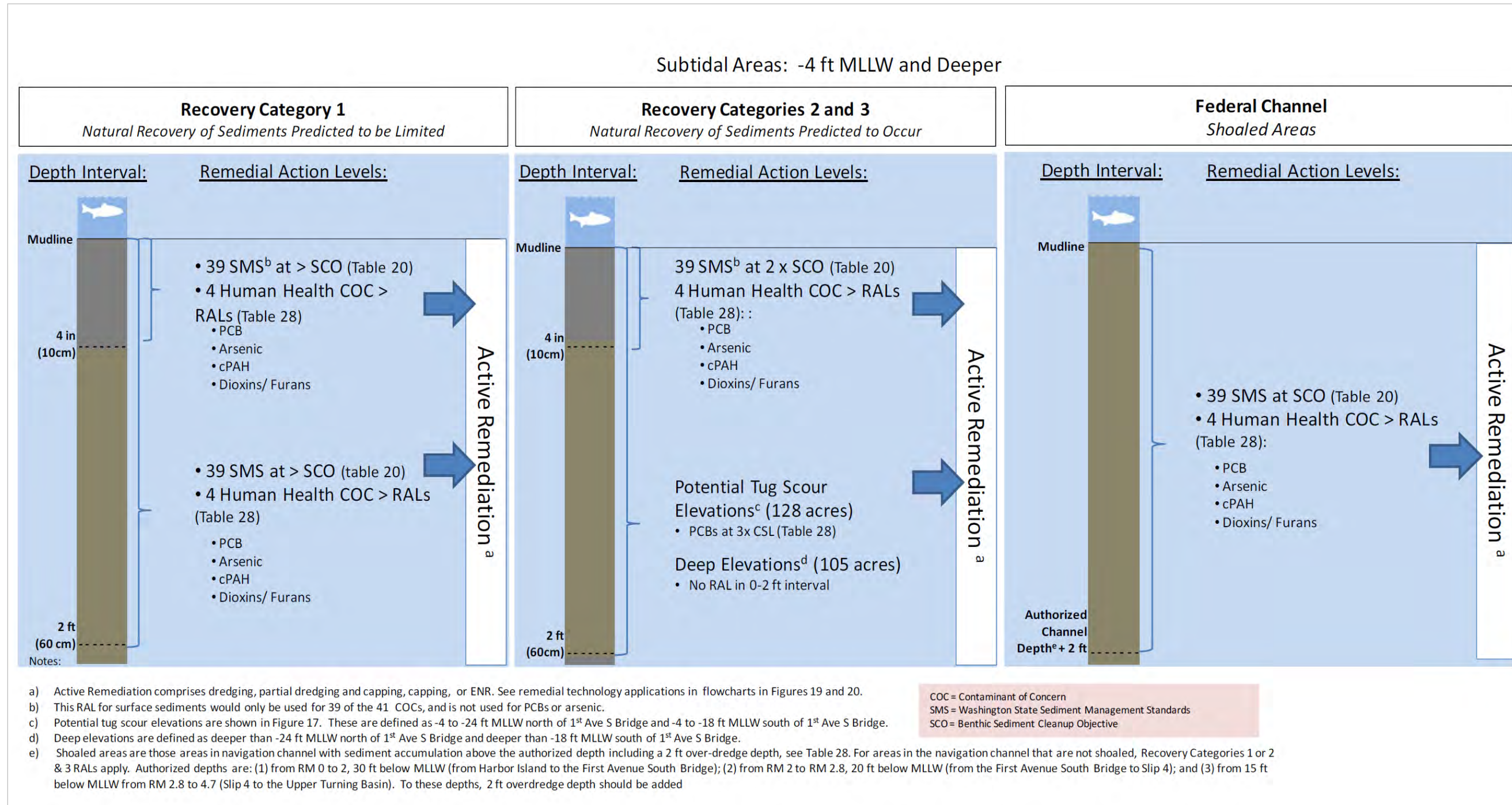


Figure 23. Subtidal Areas – Remedial Action Levels Application

13.2.1 Application of Cleanup Technologies

The RALs listed in Figure 22 and Figure 23 (above) and Table 27 and Table 28 (page 125) will be applied in intertidal and subtidal areas in Recovery Category Areas 1, 2, and 3 to identify areas for active remediation, as described and in Figures 19 and 20. Recovery Category areas are shown in Figure 12. Figure 17 shows Recovery Category 1, and potential scour areas in Recovery Categories 2 and 3. All of this information will be used to determine the appropriate compliance depth for application of RALs and technology to be applied at a particular location, as described in this section.

Table 27. Selected Remedy RAO 3 RALs

SMS Contaminant of Concern for RAO 3	RAL for Recovery Category 1 Areas ^a (Benthic SCO)	RAL for Recovery Category 2 & 3 Areas (2 x Benthic SCO) ^b
Metals (mg/kg dw)		
Arsenic	57	n/a
Cadmium	5.1	10.2
Chromium	260	520
Copper	390	780
Lead	450	900
Mercury	0.41	0.82
Silver	6.1	12.2
Zinc	410	820
PAHs (mg/kg OC)		
2-Methylnaphthalene	38	76
Acenaphthene	16	32
Anthracene	220	440
Benzo(a)anthracene	110	220
Benzo(a)pyrene	99	198
Benzo(g,h,i)perylene	31	62
Total benzofluoranthenes	230	4650
Chrysene	110	220
Dibenzo(a,h)anthracene	12	24
Dibenzofuran	15	30
Fluoranthene	160	320
Fluorene	23	46
Indeno(1,2,3-cd)pyrene	34	68
Naphthalene	99	198
Phenanthrene	100	200
Pyrene	1,000	2,000
Total HPAHs	960	1,920
Total LPAHs	370	740

SMS Contaminant of Concern for RAO 3	RAL for Recovery Category 1 Areas ^a (Benthic SCO)	RAL for Recovery Category 2 & 3 Areas (2 x Benthic SCO) ^b
Phthalates (mg/kg OC)		
Bis(2-ethylhexyl)phthalate	47	94
Butyl benzyl phthalate	4.9	9.8
Dimethyl phthalate	53	106
Chlorobenzenes (mg/kg OC)		
1,2,4-Trichlorobenzene	0.81	1.62
1,2-Dichlorobenzene	2.3	4.6
1,4-Dichlorobenzene	3.1	6.2
Hexachlorobenzene	0.38	0.76
Other SVOCs and COCs, (µg/kg dw except as shown)		
2,4-Dimethylphenol	29	58
4-Methylphenol	670	1,340
Benzoic acid	650	1,300
Benzyl alcohol	57	114
n-Nitrosodiphenylamine, mg/kg OC	11	22
Pentachlorophenol	360	720
Phenol	420	840
PCBs (mg/kg OC)		
Total PCBs	12	n/a

Notes:

General:

- PCBs and arsenic are also human health COCs (see Table 28 for RALs for human health COCs), and RALs for the the human health category take precedence over RAO 3 RALs. The surface sediment (10 cm) Recovery Category 1 RALs for PCBs and arsenic are the same for human health and benthic invertebrates, but the 2 X SCO Recovery Category 2 and 3 criteria are not applicable to PCBs and arsenic. Figure 22 and Figure 23 list all RALs for human health COCs.
- Table 23 describes Recovery Categories and Figure 12 shows Recovery Category areas.
 - a. The RAL applies to the 10 cm and 45 cm depth intervals for intertidal areas and to the 10 cm and 60 cm depth intervals for subtidal areas. See Figure 22 and Figure 23 .
 - b. For Recovery Category 2 and 3 areas, the RAL applies to the 10 cm depth interval. See Figure 22 and Figure 23.

8.2.1 Cleanup Levels

Table 19 lists sediment cleanup levels for RAOs 1, 2, and 4, and Table 20 lists sediment cleanup levels for RAO 3. Sediment cleanup levels for contaminants for RAO 3 are point-based and applicable to any sample location; for the other RAOs, cleanup levels are applied to a specific area (see Table 19). Benthic cleanup levels are based on the benthic SCO in the SMS (WAC 173-204-562). For RAO 3, the SCO numerical chemical criteria can be overridden by the SCO biological criteria (see text box "What are the Sediment Management Standards?" on page 26) unless they are co-located with exceedances of remedial action levels (RALs) associated with human health COCs, which are also point-based. Exceedances of RALs for human health COCs cannot be overridden by toxicity testing.

Table 19. Cleanup Levels for PCBs, Arsenic, cPAHs, and Dioxins/Furans in Sediment for Human Health and Ecological COCs (RAOs 1, 2 and 4)

COC	Cleanup Levels				Application Area and Depth		
	RAO 1: Human Seafood Consumption	RAO 2: Human Direct Contact	RAO 4: Ecological (River Otter)	Basis for Cleanup Levels ^a	Spatial Scale of Application ^b	Spatial Compliance Measure ^e	Compliance Depth ^b
PCBs (µg/kg dw)	2	1,300	128	background (RAO 1) RBTC (RAO 2) RBTC (RAO 4)	LDW-wide	UCL95	0 – 10 cm
	NA	500	NA	RBTC	All Clamming Areas ^c	UCL95	0 – 45 cm
	NA	1,700	NA	RBTC	Individual Beaches ^d	UCL95	0 – 45 cm
Arsenic (mg/kg dw)	NA	7	NA	background	LDW-wide	UCL95	0 – 10 cm
	NA	7	NA	background	All Clamming Areas ^c	UCL95	0 – 45 cm
	NA	7	NA	background	Individual Beaches ^d	UCL95	0 – 45 cm
cPAH (µg TEQ/kg dw)	NA	380	NA	RBTC	LDW-wide	UCL95	0 – 10 cm
	NA	150	NA	RBTC	All Clamming Areas ^c	UCL95	0 – 45 cm
	NA	90	NA	RBTC	Individual Beaches ^d	UCL95	0 – 45 cm
Dioxins/Furans (ng TEQ/kg dw)	2	37	NA	background (RAO 1) RBTC (RAO 2)	LDW-wide	UCL95	0 – 10 cm
	NA	13	NA	RBTC	All Clamming Areas ^c	UCL95	0 – 45 cm
	NA	28	NA	RBTC	Individual Beaches ^d	UCL95	0 – 45 cm

NOTE: where there are multiple cleanup levels for a cleanup area, the lowest cleanup level is shown in bold.

- Background – see Table 3 and Section 5.3.4.1; RBTC – Risk-based threshold concentration (based on 1 in 1,000,000 excess cancer risk or HQ of 1)
- In intertidal areas including beaches used for recreation and clamming, human-health direct contact cleanup levels (for PCBs, arsenic, cPAHs, and dioxins/furans) must be met in the top 45 cm because in intertidal areas exposure to sediments at depth is more likely through digging or other disturbances. Human health cleanup levels for RAO 1 (seafood consumption) and ecological cleanup levels must be met in surface sediments (top 10 cm). In subtidal areas, cleanup levels for all COCs must be met in surface sediments (top 10 cm).
- Clamming areas are identified in Figure 6.
- Beach play areas are identified in Figure 6.
- The UCL 95 is the upper confidence limit on the mean. The determination of compliance with RAOs 1, 2 and 4 cleanup levels will be made by one of two methods: 1) comparison of the UCL 95 of LDW data with the RBTC or background-based cleanup level, or 2) for background-based cleanup levels, a statistical comparison of the distribution of LDW data to the OSV BOLD study background dataset (USACE et al. 2009) may be used. In either case, testing will use an alpha level of 0.05 and a beta level of 0.10. For details, see ProUCL technical manual (EPA 2013b) or most current version). For either method, a sufficient number of samples must be collected to assure statistical power for the test.

Table 20. Sediment Cleanup Levels for Ecological (Benthic Invertebrate) COCs for RAO 3^a

Benthic COC	Cleanup Level for RAO 3 ^a	Benthic COC	Cleanup Level for RAO 3 ^a
Metals, (mg/kg dw)^c		OC-normalized Organic Compounds (continued) (mg/kg OC)	
Arsenic	57	Total PCBs	12
Cadmium	5.1	Benzo(g,h,i)perylene	31
Chromium	260	Chrysene	110
Copper	390	Dibenz(a,h)anthracene	12
Lead	450	Indeno(1,2,3-cd)pyrene	34
Mercury	0.41	Fluoranthene	160
Silver	6.1	Fluorene	23
Zinc	410	Naphthalene	99
Dry Weight Basis Organic Compounds, (µg/kg dw)		Phenanthrene	100
4-methylphenol	670	Pyrene	1,000
2,4-dimethylphenol	29	HPAH	960
Benzoic acid	650	LPAH	370
Benzyl alcohol	57	Bis(2-ethylhexyl)phthalate	47
Pentachlorophenol	360	Butyl benzyl phthalate	4.9
Phenol	420	Dimethyl phthalate	53
		1,2-dichlorobenzene	2.3
OC-normalized Organic Compounds, (mg/kg OC)^b		1,4-dichlorobenzene	3.1
Acenaphthene	16	1,2,4-trichlorobenzene	0.81
Anthracene	220	2-methylnaphthalene	38
Benzo(a)pyrene	99	Dibenzofuran	15
Benz(a)anthracene	110	Hexachlorobenzene	0.38
Total benzofluoranthenes	230	n-Nitrosodiphenylamine	11

a. Cleanup Levels for RAO 3 are based on the benthic SCO chemical criteria in the SMS (WAC 173-204-562). Benthic SCO biological criteria (WAC 173-204-562, Table IV) may be used to override benthic SCO chemical criteria where human health-based RALs are not also exceeded.

b. PCBs and arsenic are also human health COCs; see Table 19.

No sediment cleanup levels were identified for arsenic or cPAHs for the human health seafood consumption pathway (RAO 1). Seafood consumption excess cancer risks for these two COCs were largely attributable to eating clams. However, data collected during the RI/FS showed little relationship between concentrations of arsenic or cPAH in sediment and their concentrations in clam tissue. EPA will define the sediment cleanup footprint based on other cleanup levels, then use the clam target tissue levels (Section 8.2.3) to measure reduction in arsenic and cPAH concentrations in clams. Research will be conducted during the remedial design phase to study the relationships between sediment concentrations for arsenic and cPAHs and concentrations in clam tissue and methods to reduce concentrations of these contaminants in clams. If EPA determines, based on these studies, that additional remedial action is needed to reduce clam tissue arsenic and cPAH concentrations for the purpose of achieving RAO 1, EPA will document and select those actions in a future decision document.

Table 22. Remedial Alternatives and Associated Remedial Technologies, Remedial Action Levels, and Actively Remediated Acres

Remedial Alternatives and Technologies ^a	Remedial Action Levels ^a					Actively Remediated Area (Acres)
	PCBs (mg/kg OC) ^b	Arsenic (mg/kg dw)	cPAHs (µg TEQ/kg dw)	Dioxins/ Furans (ng TEQ/kg dw)	Benthic SMS (41 Contaminants) ^b	
Alternative 1 No Further Action after removal or capping of Early Action Areas	n/a	n/a	n/a	n/a	n/a	29 acres
Alternative 2 (2R) – dredge emphasis with upland disposal/MNR Alternative 2 with CAD (2R-CAD) – dredge emphasis with contained aquatic disposal/MNR	65 to 110 (LDW-wide); 10-yr post-construction target: 65 ^c	93	5,500	50	CSL to 3 × CSL 10-yr post-construction target: CSL	32 acres
Alternative 3 removal (3R) – dredge emphasis with upland disposal/MNR Alternative 3 combined technologies (3C) – ENR/ in situ / cap/ MNR where appropriate, otherwise dredge with upland disposal	65 (LDW-wide)	93 (LDW-wide) 28 (intertidal)	3,800 (LDW-wide) 900 (intertidal)	35 (LDW-wide) 28 (intertidal)	CSL (biological or chemical)	58 acres
Alternative 4 removal (4R) – dredge emphasis with upland disposal/MNR Alternative 4 combined technologies (4C) – ENR/ in situ / cap/ MNR where appropriate, otherwise dredge with upland disposal	12 to 35 (LDW-wide) 10-yr post-const. target: 12 ^c	57 (LDW-wide) 28 (intertidal)	1,000 (LDW-wide) 900 (intertidal)	25 (site-wide) 28 (intertidal)	SCO to CSL 10-yr post-const. target: SCO	107 acres
Alternative 5 removal (5R) – dredge emphasis with upland disposal Alternative 5 removal with treatment (5R-T) – dredge with soil washing treatment and disposal/re-use Alternative 5 combined technologies (5C) – ENR/ in situ / cap where appropriate, otherwise dredge with upland disposal	12 (LDW-wide)	57 (LDW-wide) 28 (intertidal)	1,000 (LDW-wide) 900 (intertidal)	25 (LDW-wide) 28 (intertidal)	SCO (biological or chemical)	157 acres
Alternative 6 removal (6R) – dredge emphasis with upland disposal Alternative 6 combined technologies (6C) – ENR/ in situ / cap where appropriate, otherwise dredge with upland disposal	5 (LDW-wide)	15 (LDW-wide) 28 (intertidal)	1,000 (LDW-wide) 900 (intertidal)	15 (LDW-wide) 28 (intertidal)	SCO (biological or chemical)	302 acres
Selected Remedy (5C Plus) – ENR/ in situ / cap where appropriate; otherwise, dredge with upland disposal^e	12 (LDW-wide) 65 (intertidal) 195 (subtidal subsurface)	57 (LDW-wide) 28 (intertidal)	1,000 (LDW-wide) 900 (intertidal)	25 (LDW-wide) 28 (intertidal)	2 X SCO chemical criteria^d with 10-year post-construction target to meet SCO	177 acres

- a. Areas where remedial action levels (RALs) are applied are as follows: LDW-wide RALs, in the upper 10 cm of sediment throughout the LDW and in the upper 60 cm in potential scour areas (i.e., Recovery Category 1 areas). In intertidal areas, intertidal RALs are applied in the upper 45 cm of sediment (above -4 ft MLLW). Alternative 5C Plus added an intertidal PCB RAL of 65 mg/kg OC in the top 45 cm in intertidal areas, and added a subtidal PCB RAL of 195 mg/kg OC for the top 60 cm in areas of potential vessel scour within Recovery Category 2 and 3 areas. These additional potential vessel scour areas comprise: north of the 1st Avenue South bridge (located at approximately RM 2) in water depths from -4 to -24 ft MLLW, and south of the 1st Avenue S bridge, in water depths from -4 to -18 ft MLLW.
- b. See Table 15 for SCO and CSL values. PCB RALs are normalized to organic carbon (OC) for consistency with the SMS, and because the organic content of sediments affects the bioavailability and toxicity of PCBs. The terms SCO and CSL in this table mean the benthic SCO and CSL; SCO is equivalent to the term "SQS" used in the RI/FS and Proposed Plan. Lower human health-based RALs for PCBs and arsenic in this table take precedence over benthic SCO or CSL values.
- c. The RALs for SMS contaminants (except arsenic) are a range for Alternatives 2 and 4. The upper RALs are used where conditions for recovery are predicted to be more favorable (Recovery Category 3 areas); the lower RALs are used where conditions for recovery are predicted to be limited or less certain (Recovery Category 1 or 2 areas), or where the BCM does not predict recovery to the 10-yr post-construction target concentration.
- d. The Alternative 5C Plus RAL of "2 X SQS not to exceed CSL" in the Proposed Plan is modified in the Selected Remedy to "2 X benthic SCO", see Section 12.
- e. The Selected Remedy includes additional requirements to address contaminated shoals in the navigation channel, see Sections 12 and 13.

Table 23. Criteria for Assigning Recovery Categories^a

Criteria	Recovery Categories		
	Category 1 Recovery Presumed to be Limited	Category 2 Recovery Less Certain	Category 3 Predicted to Recover
Physical Criteria			
Physical Conditions	Vessel scour	Observed vessel scour	No observed vessel scour
	Berthing areas	Berthing areas with vessel scour	Berthing areas without vessel scour Not in a berthing area
Sediment Transport Model	STM-predicted 100-year high-flow scour (depth in cm)	> 10 cm	< 10 cm
	STM-derived net sedimentation using average flow conditions	Net scour	Net sedimentation
Rules for applying criteria	If an area is in Category 1 for any one criterion, that area is designated Category 1	If conditions in an area meet a mixture of Category 2 and 3 criteria, that area is designated Category 2	An area is designated Category 3 only if it meets all Category 3 criteria
Empirical Contaminant Trend Criteria – used on a case-by-case basis to adjust recovery categories that would have been assigned based on physical criteria			
Empirical Contaminant Trend Criteria	Resampled surface sediment locations	Increasing PCBs or increasing concentrations of other detected COCs that exceed the SCO (> 50% increase)	Equilibrium and mixed (increases and decreases) results (for COCs that exceed the SCO)
	Sediment cores (top 2 sample intervals in upper 60 cm)			Decreasing concentrations (> 50% decrease) or mixed results (decreases and equilibrium)

a. Recovery categories were not assigned to the Early Action Areas, for which remediation should be complete by the time of the remedial actions addressed in this ROD. At the time of the remedial design, EPA will consider assignment of categories to these areas based upon the logic in this table; this information will inform long term monitoring decisions.

Table 28. Remedial Action Levels, ENR Upper Limits, and Areas and Depths of Application

			Intertidal Sediments (+11.3 ft MLLW to -4 ft MLLW)				Subtidal Sediments (-4 ft MLLW and Deeper)				
			Recovery Category 1 RALs, ENR ULs, and Application Depths		Recovery Category 2 and 3 RALs, ENR ULs, and Application Depths		Recovery Category 1 RALs, ENR ULs, and Application Depths		Recovery Category 2 and 3 RALs, ENR ULs, and Application Depths		Shoaled Areas ^b in Federal Navigation Channel
Risk Driver COC	Units	Action Levels	Top 10 cm (4 in)	Top 45 cm (1.5 ft)	Top 10 cm (4 in)	Top 45 cm (1.5 ft)	Top 10 cm (4 in)	Top 60 cm (2 ft)	Top 10 cm (4 in)	Top 60 cm (2 ft) ^c	Top to Authorized Navigation Depth Plus 2 ft
Human Health Based RALs											
PCBs (Total)	mg/kg OC	RAL	12	12	12	65	12	12	12	195	12
		UL ^a for ENR	--	--	36	97	--	--	36	195	--
Arsenic (Total)	mg/kg dw	RAL	57	28	57	28	57	57	57	--	57
		UL ^a for ENR	--	--	171	42	--	--	171	--	--
cPAH	µg TEQ/kg dw	RAL	1000	900	1000	900	1000	1000	1000	--	1000
		UL ^a for ENR	--	--	3000	1350	--	--	3000	--	--
Dioxins/Furans	ng TEQ/kg dw	RAL	25	28	25	28	25	25	25	--	25
		UL ^a for ENR	--	--	75	42	--	--	75	--	--
Benthic Protection RALs											
39 SMS COCs ^d	Contaminant-specific	RAL	Benthic SCO	Benthic SCO	2x Benthic SCO	--	Benthic SCO	Benthic SCO	2x Benthic SCO	--	Benthic SCO
		UL ^a for ENR	--	--	3x RAL	--	--	--	3x RAL	--	--

- a. The ENR Upper Limit (UL) is the highest concentration that would allow for application of ENR in the areas described. For areas with no ENR limit listed, ENR is not a currently designated technology (see Section 13.2.1.2 for further discussion).
- b. Shoaled areas are those areas in federal navigation channel with sediment accumulation above the authorized depth including a 2 ft over-dredge depth that USACE uses to maintain the channel for navigation purposes. The authorized channel depths are (1) from RM 0 to 2 (from Harbor Island to the First Avenue South Bridge), 30 ft below MLLW; (2) from RM 2 to RM 2.8 (from the First Avenue South Bridge to Slip 4), 20 ft below MLLW; and (3) from RM 2.8 to 4.7 (Slip 4 to the Upper Turning Basin), 15 ft below MLLW. For shoaled areas, the compliance intervals will be determined during Remedial Design; these are typically 2-4 ft core intervals. For areas in the channel that are not shoaled, Recovery Categories 1 or 2 & 3 RALs apply as indicated in the other subtidal columns.
- c. Applied only in potential vessel scour areas. These are defined as subtidal areas (i.e., below -4 ft MLLW) that are above -24 ft MLLW north of the 1st Ave South Bridge, and above -18 ft MLLW south of the 1st Ave South Bridge (see Figure 17).
- d. There are 41 SMS COCs, but total PCBs and arsenic ENR ULs are based upon human health based RALs only (see Table 20).

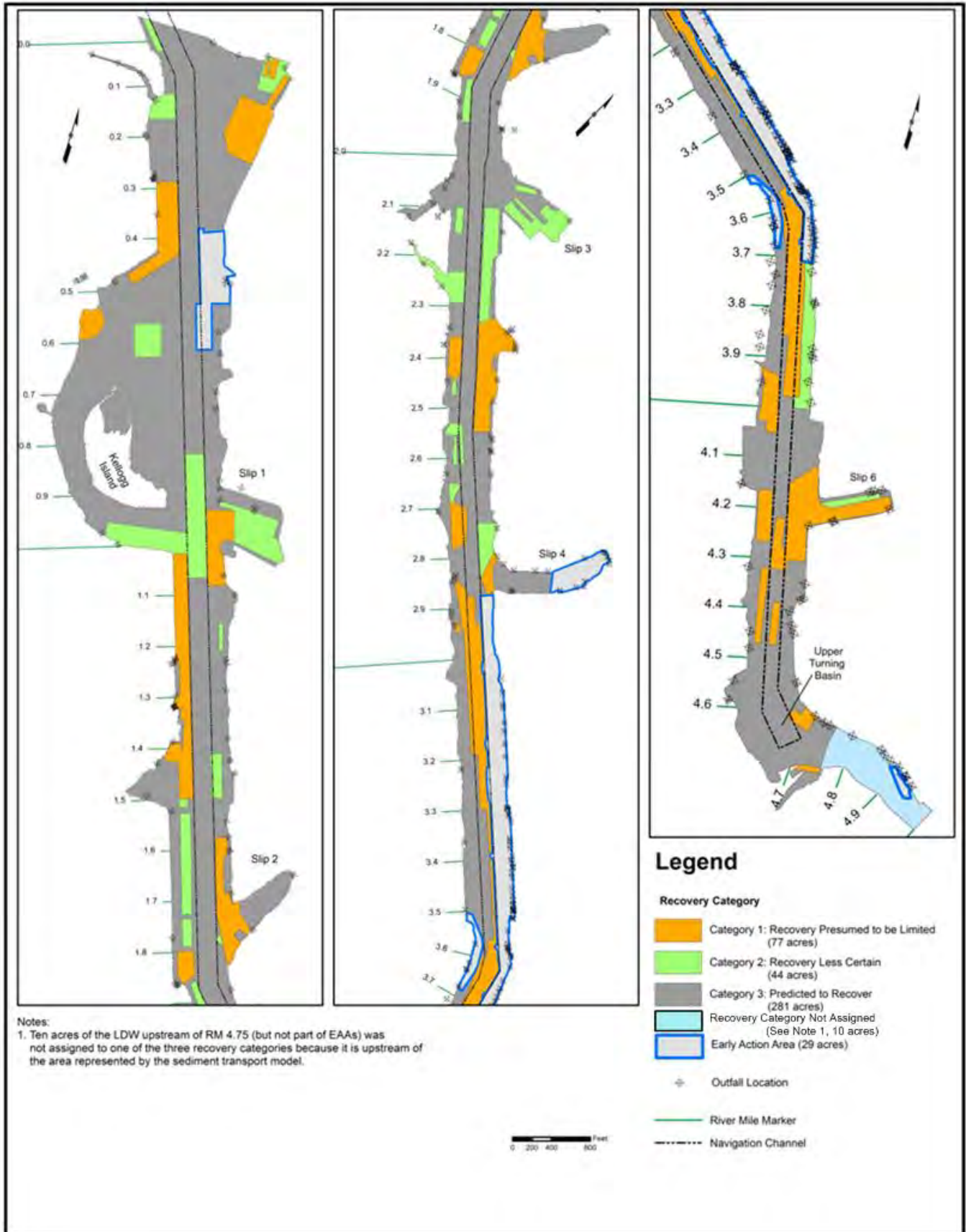
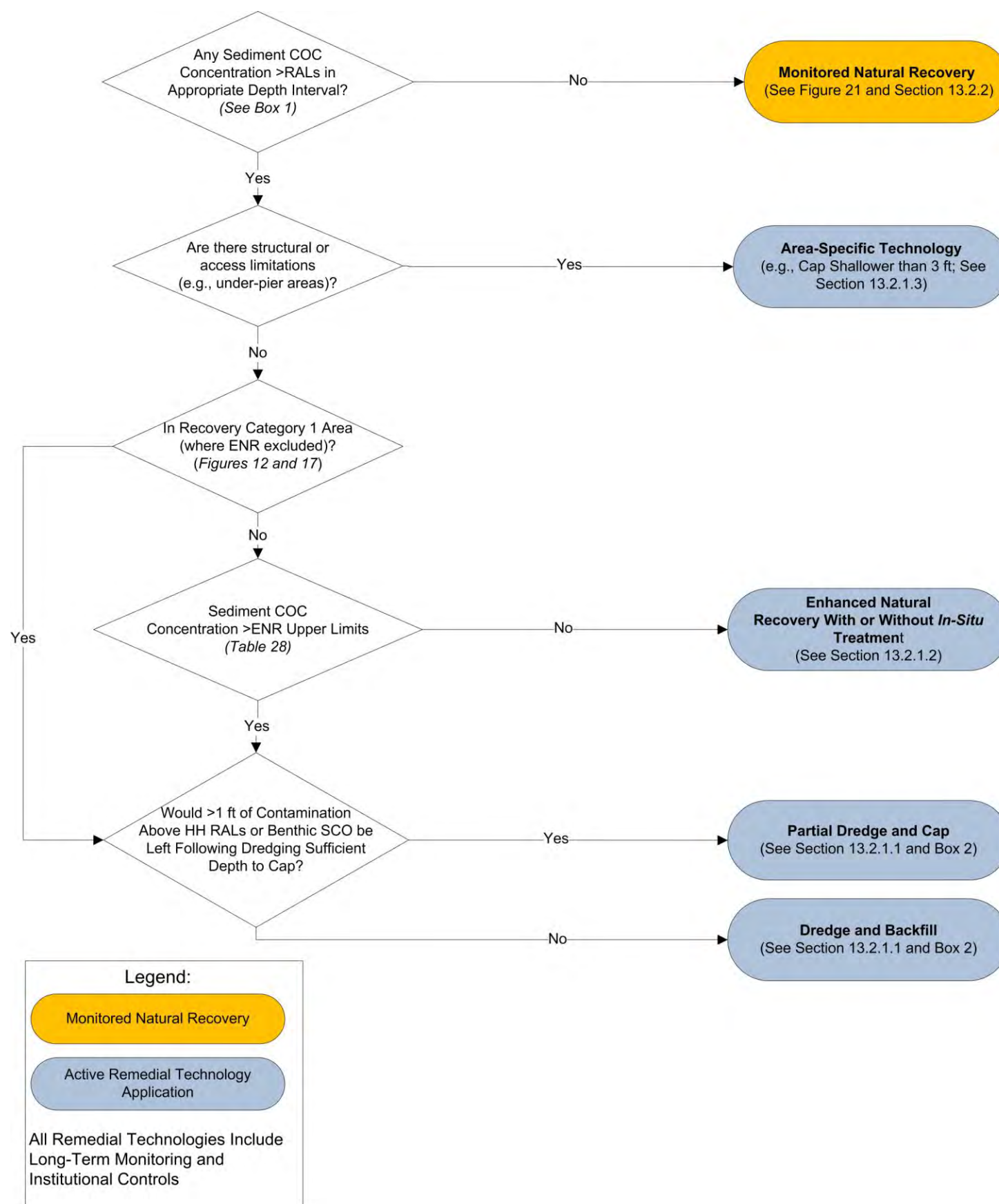


Figure 12. Recovery Category Areas



Figure 18. Selected Remedy



Box 1. Intertidal Sediments (+11.3 ft MLLW to -4 ft MLLW)						
Remedial Action Levels (RALs) and Depth Interval to Which They Apply						
Contaminant	Units	Recovery Category 1 Areas		Recovery Category 2 and 3 Areas		Risk Reduction Associated with RALs
		4 in (10 cm) depth interval	1.5 ft (45 cm) depth interval	4 in (10 cm) depth interval	1.5 ft (45 cm) depth interval	
PCBs (Total)	mg/kg-OC	12	12	12	65	Human Health ^{a,b,c,e}
cPAH	µg TEQ/kg-dw	1000	900	1000	900	
Dioxins/Furans	ng TEQ/kg-dw	25	28	25	28	
Arsenic (Total)	mg/kg-dw	57	28	57	28	
39 SMS COCs	Varies by COC	SCO (see Table 27)	--	2xSCO (see Table 27)	--	Ecological ^{d,e}

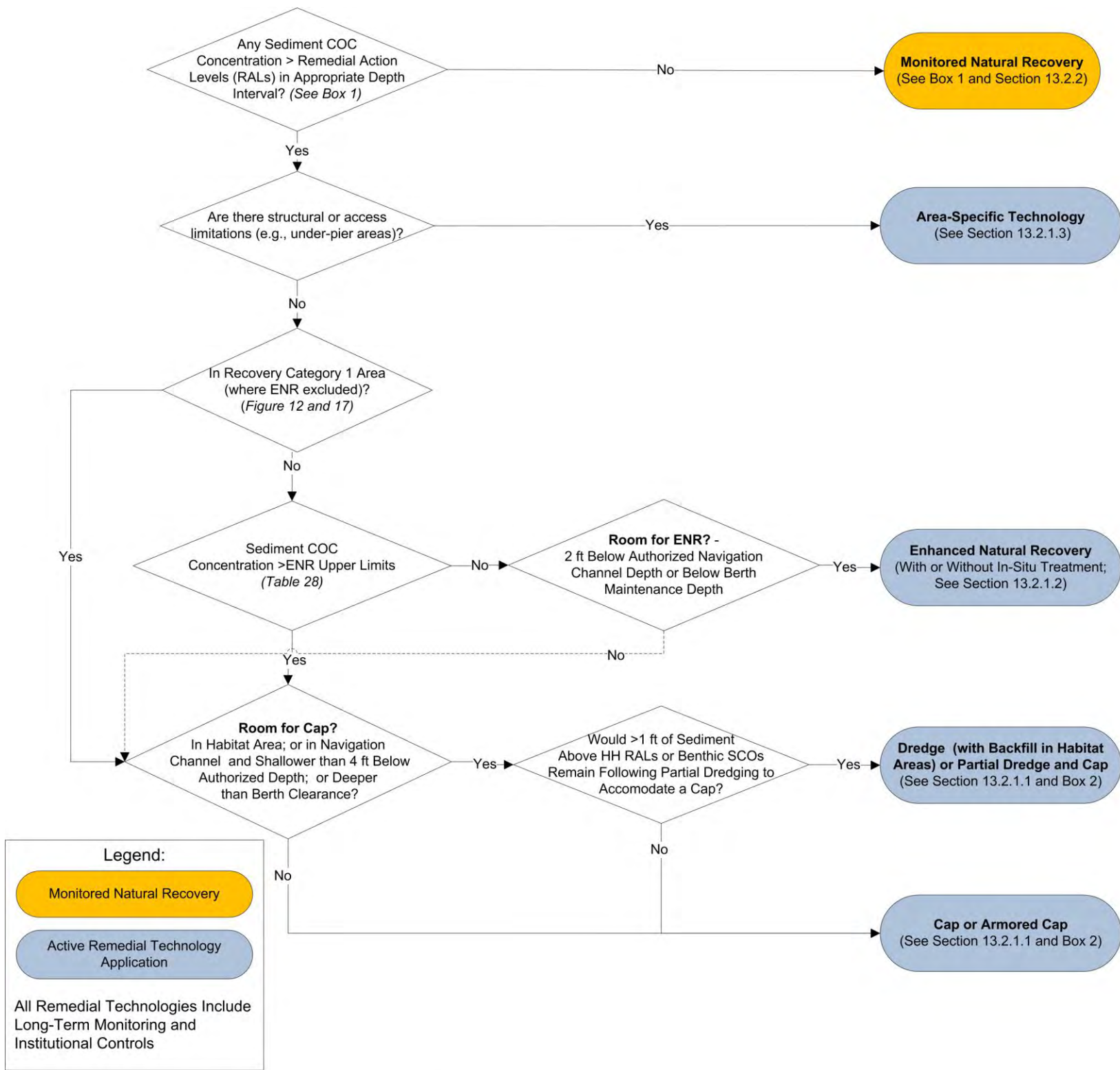
Notes:

- The average concentrations in depth interval (e.g., vertically composited samples) are compared to RALs.
- Human Health RALs and RAO 3 RALs must be met immediately following construction.

^a RAO 1 - Human health seafood consumption
^b RAO 2 - Human health direct contact includes beach play, clamming, and netfishing
^c RAO 4 - Ecological protection for river otter (addressed by meeting human health PCB RAL)
^d RAO 3 - Ecological protection of benthic community
^e There are 41 SMS COCs, but PCB and arsenic are principally RAO 1 COCs. SMS also lists toxicity test-out criteria using bioassays. Test-out is not allowed for PCBs or arsenic.

Box 2. Habitat Areas
Elevations of intertidal habitat areas are assumed to be unaffected by addition of 6-9" of suitable materials (i.e., ENR)
Cap, dredge and backfill, or partial dredge and cap to pre-construction grade; finish with suitable habitat layer
in clam habitat areas (Figure 6), caps will generally include 4 ft of suitable clean material including a minimum 45 cm clam habitat layer

Figure 19. Intertidal Areas – Remedial Technology Applications



Box 1. Subtidal Sediments (-4 ft MLLW and Deeper)							
Remedial Action Levels (RALs) and Depth Interval for Application of RAL							
Contaminant	Units	Recovery Category 1 Areas		Recovery Category 2 and 3 Areas		Shoaled Areas of the Federal Channel	Risk Reduction Associated with RALs
		4 in (10 cm) depth interval	2 ft (60 cm) depth interval	4 in (10 cm) depth interval	2 ft (60 cm) depth interval-applied only at potential tug scour areas; See Footnote 2 and Figure 16		
PCBs (Total)	mg/kg-OC	12	12	12	195	12	Human Health ^{a,b,c}
cPAH	µg TEQ/kg-dw	1000	1000	1000	--	1000	
Dioxins/Furans	ng TEQ/kg-dw	25	25	25	--	25	
Arsenic (Total)	mg/kg-dw	57	57	57	--	57	
39 SMS COCs	Varies by COC	SCO (see Table 27)	SCO	2xSCO (see Table 27)	--	SCO (see Table 27)	Ecological ^{d,e}

Notes

- The average concentrations in depth interval (e.g., vertically composited samples) are compared to RALs.
- Potential Tug Scour Areas are Subtidal Elevations Potentially Susceptible to Propellor Wash (North of the 1st Avenue South bridge located at approximately RM 2 in Water Depths from -4 to -24 ft MLLW, and South of the 1st Avenue S Bridge, in Water Depths from -4 to -18 ft MLLW).
- Shoaled areas are those areas in federal navigation channel with sediment accumulation above the authorized depth including a 2 ft over-dredge depth; see Table 28. For areas in the navigation channel that are not shoaled, Recovery Categories 1 or 2 & 3 RALs apply. Authorized depths are: (1) from RM 0 to 2, 30 ft below MLLW (from Harbor Island to the First Avenue South Bridge); (2) from RM 2 to RM 2.8, 20 ft below MLLW (from the First Avenue South Bridge to Slip 4); and (3) from 15 ft below MLLW from RM 2.8 to 4.7 (Slip 4 to the Upper Turning Basin).
- Human Health RALs and RAO 3 PRGs (Benthic SCOs) Must Be Met Immediately Following Construction.

^a RAO 1 - Human health seafood consumption
^b RAO 2 - Human health direct contact includes beach play, clamming, and netfishing
^c RAO 4 - Ecological protection for river otter (addressed by meeting human health PCB RAL)
^d RAO 3 - Ecological protection of benthic community
^e There are 41 SMS COCs, but PCB and arsenic are principally RAO 1 COCs. SMS Also lists toxicity test-out criteria using bioassays. Test-out is not allowed for PCBs or arsenic.
^f Depth intervals to determine compliance will be determined during Remedial Design; typically, 2-3 ft core intervals are used.
^g Caps were assumed to be 3 ft for cost estimating purposes; cap thicknesses will be evaluated by EPA during Remedial Design in accordance with EPA and USACE (1998)

Box 2. Habitat Areas (see Section 13.2.1.1)
 Elevations of intertidal habitat areas are assumed to be unaffected by addition of 6-9" materials (i.e., ENR)
 Cap, dredge and backfill, or partial dredge and cap to pre-construction grade; finish with suitable habitat layer.

Figure 20. Subtidal Areas – Remedial Technology Application

APPENDIX J

2018 Sediment Laboratory Analytical Data

APPENDIX B

2018 LABORATORY ANALYTICAL DATA — 2018 RI/FS DATA



ALS Environmental
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www.alsglobal.com

April 11, 2018

Analytical Report for Service Request No: K1801267

Glenn Esler
Integral Consulting, Incorporated
319 SW Washington Street, Suite
1150
Portland, OR 97204

RE: Former Snopac Site RI/FS

Dear Glenn,

Enclosed is the revised report for the sample(s) submitted to our laboratory March 06, 2018
For your reference, these analyses have been assigned our service request number **K1801267**.

This report is created to include all analyses except for the TCLP analyses which
has its own report dated March 09, 2018.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program.
The test results meet requirements of the current NELAP standards, where applicable, and except as
noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes,
refer to the certifications section at www.alsglobal.com. All results are intended to be considered in
their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of
less than the complete report. Results apply only to the items submitted to the laboratory for analysis
and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via
email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

General Chemistry

Metals

Polychlorinated Biphenyls (PCBs)

Polynuclear Aromatic Hydrocarbons

Raw Data

Total Solids

General Chemistry

Metals

Polychlorinated Biphenyls (PCBs)

Polynuclear Aromatic Hydrocarbons

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment and Water

Service Request: K1801267
Date Received: 02/08/2018 - 03/08/2018

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt:

Thirteen sediment samples and two water samples were received for analysis at ALS Environmental on 02/08/2018. The samples were received in good condition and consistent with the accompanying chain of custody form. As instructed, the discreet sediment samples: CO2-PW-3-5, CO1-PW-3-5 and CO3-PW-3-5 pore-water were extracted and created samples: CO2-PW-3-5 (W), CO1-PW-3-5 (W) and CO3-PW-3-5 (W) at the laboratory. No porewater was obtained following the centrifugation of sample CO2-PW-3-5. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Semivolatiles by GC/MS:

Method 8270D, 02/27/18: Samples CO2-SD-3-5, CO3-SD-3-5, and CO1-SD-3-5 required dilution due to the presence of elevated levels of several target analytes. The reporting limits are adjusted to reflect the dilution.

The detection limits were elevated for samples CO2-SD-3-5, CO3-SD-3-5, and CO1-SD-3-5 due to less than optimal sample mass extracted for analysis. The samples contained low percent solids which prevented extraction of the sample mass necessary to achieve target detection limits.

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with the sample batch containing samples EQB-SD-01 and EQB-PW-01. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

The detection limits were elevated for all analytes in samples CO1-PW-3-5 (W) and CO3-PW-3-5 (W) due to less than optimal sample volume extracted for analysis. Very limited sample volume was received for extraction.

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with the sample batch containing samples CO1-PW-3-5 (W) and CO3-PW-3-5 (W). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

The results reported for Fluorene in sample CO1-PW-3-5 (W) may contain a slight bias. The chromatogram indicated the presence of non-target background components. The matrix interference may have resulted in a slight high bias in the affected sample. The results were flagged with "X" to indicate the issue.

Sample CO3-PW-3-5 (W) required a dilution due to the presence of elevated levels of Acenaphthene, Fluoranthene, and Pyrene. The reporting limits were adjusted to reflect the dilution.

Method 8270D, 2/19/18: The following analyte was flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS070219F008.D: Pyridine. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Semivolatile GC:

Method 8082A: The recovery of Decachlorobiphenyl in samples CO1-PW-3-5 (W), EQB-SD-01, CO3-PW-3-5 (W) and EQB-PW-01 was outside the control limits listed in the results summary. The limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure. No further corrective action was taken.

Method 8082A, : The lower control criterion was exceeded for Aroclor 1016 and Aroclor 1260 in Laboratory Control Sample (LCS) KWG1800932-1/2. The error associated with elevated recovery indicated a low bias. Since insufficient sample remained for the porewater samples, re-extractions could not be performed. No target compounds were detected in the equipment blanks. No corrective action was appropriate.

Approved by Noel D. O'Quinn

Date 04/11/2018



Metals:

Method 6010C: The matrix spike recovery of Sodium for sample CO3-SD-3-5 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

Method 6020: The matrix spike recovery of Beryllium for sample CO3-PW-3-5 (W) was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential high bias in this matrix. No further corrective action was appropriate.

General Chemistry:

Method 9060, 03/08/2018: The matrix spike recovery of Dissolved Organic Carbon for sample CO3-PW-3-5 (W) was outside control criteria because of suspected matrix interference. As a result of the interference, the results for this analyte contained a potential low bias. No further corrective action was taken.

Approved by *Noel D. O'Connell*

Date 04/11/2018



Chain of Custody

ALS Environmental—Kelso Laboratory
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Project: Former SWOPL Site R1/E5

Samplers: JSUND, SWD0216

Integral Contact: Glenn Estler
 Phone: 503 943 3617
 Ship to: Lab Name: ALS
 Address: 1317 S 13th Ave
Kelso, WA 98626
 Contact: Mark Harris
 Phone: 360 577 7222

ANALYSES REQUESTED	
PAHs SW 846 50700 SIM	PCBs SW 846 30524
Metals, TOC (SD) DOC (water)	Water Content ASTM 2216
Specific Gravity ASTM D157-Axno. 1111	Atterberg ASTM Limits
TCLP SVOC/ metals	Pure water Extraction
Porewater Analysis	Extra Container
Archive	



Sample No.	Tag #	Date	Time	Matrix	PAHs SW 846 50700 SIM	PCBs SW 846 30524	Metals, TOC (SD) DOC (water)	Water Content ASTM 2216	Specific Gravity ASTM D157-Axno. 1111	Atterberg ASTM Limits	TCLP SVOC/ metals	Pure water Extraction	Porewater Analysis	Extra Container	Archive	Comments
C02-S0-3-5	-	2/6/18	1025	SD	X	X	X									
C02-GTB-5-8	-	2/6/18	1045					X	X	X						
C02-GTB-10-13	-	2/6/18	1111					X	X	X						
EQB-SD-01	-	2/7/18	0800	W	X	X	X									
C02-PW-3-5	-	2/6/18	1150	SD								X	X			Do not use top part of core.
C01-PW-3-5	-	2/7/18	1000	SD								X	X			Use all volume
C03-SD-3-5	-	2/7/18	1118	SD	X	X	X									
TCLP-0-3	-	2/7/18	1105	SD							X					
C03-GTB-5-8	-	2/7/18	1204	SD				X	X	X						
C03-GTB-10-13	-	2/7/18	1221	SD				X	X	X						
C01-SD-3-5	-	2/6/18	1441	SD	X	X	X									
C01-GTB-5-8	-	2/6/18	1451	SD				X	X	X						
C01-GTB-10-13	-	2/6/18	1504	SD				X	X	X						
C03-PW-3-5	-	2/7/18	1314	SD								X	X			Use all volume
EQB-PN-01	-	2/8/18	0715	W	X	X	X									
C01-GTB-10-13	-	2/6/18	1504	SD	X	X	X									

Analysis Turn Time: Normal Rush Rush Results Needed By:

Matrix Code: GW - Groundwater
 SL - Soil SW - Surface water
 SD - Sediment Other:

Shipped by: Dropped off at lab Shipping Tracking No.

Condition of Samples Upon Receipt: Custody Seal Intact?

Relinquished by: [Signature] Date/Time: 2/8/18 1454 Received by: [Signature] Date/Time: 2/8/18 1455

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

Special Instructions:
 * Metals - SW 846 6010C / 6020A / 7471B (SED)
 SW 846 6010C / 6020A / 7470A (W)
 TOC - SW 846 9060 DOC - SW 846 9060
 TCLP SVOC: SW 846 1311 / 82700
 Metals: SW 846 1311 / 6010C
 Porewater Analysis: PCB, PAH, Metals, DOC



PC MH

Cooler Receipt and Preservation Form

Client Integral Service Request K18 01267
 Received: 2/8/18 Opened: 2/8/18 By: BR Unloaded: 2/8/18 By: BR

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
13.1	13.0	—	—	0.0	328	<u>NA</u>		<u>NA</u>
0.4	0.2	—	—	-0.2	373			
1.0	1.2	—	—	+0.2	389			

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: Client did not provide bottle for DOC (water)
only received bottles for 3092, 3270, & metals. Lab will need to filter
from unpreserved bottles for DOC if enough volume.



Total Solids

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1317 South 13th Avenue, Kelso, WA 98626
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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: 160.3 Modified
Prep Method: None

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO2-SD-3-5	K1801267-001	63.6	-	-	1	02/13/18 17:35	
CO2-GTB-5-8	K1801267-002	59.9	-	-	1	02/13/18 17:35	
CO2-GTB-10-13	K1801267-003	75.5	-	-	1	02/13/18 17:35	
CO3-SD-3-5	K1801267-009	75.9	-	-	1	02/13/18 17:35	
CO3-GTB-5-8	K1801267-011	72.9	-	-	1	02/13/18 17:35	
CO3-GTB-10-13	K1801267-012	70.1	-	-	1	02/13/18 17:35	
CO1-SD-3-5	K1801267-013	67.6	-	-	1	02/13/18 17:35	
CO1-GTB-5-8	K1801267-014	76.9	-	-	1	02/13/18 17:35	
CO1-GTB-10-13	K1801267-015	75.5	-	-	1	02/13/18 17:35	

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/18
Date Received: 02/08/18
Date Analyzed: 02/13/18

Replicate Sample Summary

Inorganic Parameters

Sample Name: CO2-SD-3-5
Lab Code: K1801267-001

Units: Percent
Basis: As Received

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1801267-001DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Solids, Total	160.3 Modified	-	63.6	64.4	64.0	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



General Chemistry

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: 9060
Prep Method: Method

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: Percent
Basis: Dry, per Method

Carbon, Total Organic (TOC)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
CO2-SD-3-5	K1801267-001	4.15	0.10	0.02	1	03/05/18 14:38	3/5/18	
CO3-SD-3-5	K1801267-009	0.76	0.10	0.02	1	03/05/18 14:38	3/5/18	
CO1-SD-3-5	K1801267-013	2.37	0.10	0.02	1	03/05/18 14:38	3/5/18	
Method Blank	K1801267-MB1	ND U	0.10	0.02	1	03/05/18 14:38	3/5/18	

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: NA
Date Received: NA

Analysis Method: 9060
Prep Method: Method

Units: Percent
Basis: Dry, per Method

Replicate Sample Summary
Carbon, Total Organic (TOC)

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1800961-001DUP	0.10	0.02	0.49	0.49	0.490	<1	20	03/05/18
Batch QC	K1800961-011DUP	0.10	0.02	0.30	0.31	0.305	3	20	03/05/18

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: N/A
Date Received: N/A
Date Analyzed: 03/5/18
Date Extracted: 03/5/18

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name: Batch QC
Lab Code: K1800961-001
Analysis Method: 9060
Prep Method: Method

Units: Percent
Basis: Dry, per Method

Analyte Name	Sample Result	Matrix Spike K1800961-001MS			Duplicate Matrix Spike K1800961-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Carbon, Total Organic (TOC)	0.49	2.86	2.42	98	2.83	2.41	97	70-122	1	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 03/05/18
Date Extracted: 03/05/18

Lab Control Sample Summary
Carbon, Total Organic (TOC)

Analysis Method: 9060
Prep Method: Method

Units: Percent
Basis: Dry, per Method
Analysis Lot: 582500

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1801267-LCS1	0.59	0.60	98	72-122

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Continuing Calibration Verification (CCV) Summary

Carbon, Total Organic (TOC)

Analysis Method: 9060

Units: Percent

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	582500	KQ1803250-01	03/05/18 14:38	12.0	11.6	97	85-115
CCV2	582500	KQ1803250-02	03/05/18 14:38	12.0	11.6	97	85-115
CCV3	582500	KQ1803250-03	03/05/18 14:38	12.0	11.5	96	85-115
CCV4	582500	KQ1803250-04	03/05/18 14:38	12.0	11.7	98	85-115

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request:K1801267

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic (TOC)

Analysis Method: 9060

Units:Percent

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	582500	KQ1803250-05	03/05/18 14:38	0.10	0.02	ND	U
CCB2	582500	KQ1803250-06	03/05/18 14:38	0.10	0.02	ND	U
CCB3	582500	KQ1803250-07	03/05/18 14:38	0.10	0.02	ND	U
CCB4	582500	KQ1803250-08	03/05/18 14:38	0.10	0.02	ND	U

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Analysis Method: 9060
Prep Method: None

Service Request: K1801267
Date Collected: 03/06/18 - 03/07/18
Date Received: 03/06/18 - 03/08/18
Units: mg/L
Basis: NA

Carbon, Dissolved Organic (DOC)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO1-PW-3-5 (W)	K1801267-008	5.47	0.50	0.07	1	03/08/18 21:30	
CO3-PW-3-5 (W)	K1801267-017	7.85	0.50	0.07	1	03/08/18 22:33	
Method Blank	K1801267-MB2	ND U	0.50	0.07	1	03/08/18 09:52	

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 3/6/18
Date Received: 3/6/18
Date Analyzed: 3/ 8/18

**Replicate Sample Summary
 General Chemistry Parameters**

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008
Analytical Method: 9060

Units: mg/L
Basis: NA

Analyte Name	MRL	MDL	Sample Result	Duplicate Sample Result	Triplicate Sample Result	Quadruplicate Sample Result	Average	RSD	RSD Limi
Carbon, Dissolved Organic (DOC)	0.50	0.07	5.47	5.35	5.57	5.55	5.46	2	20

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 3/7/18
Date Received: 3/8/18
Date Analyzed: 3/ 8/18

**Replicate Sample Summary
 General Chemistry Parameters**

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017
Analytical Method: 9060

Units: mg/L
Basis: NA

Analyte Name	MRL	MDL	Sample Result	Duplicate Sample Result	Triplicate Sample Result	Quadruplicate Sample Result	Average	RSD	RSD Limi
Carbon, Dissolved Organic (DOC)	0.50	0.07	7.85	7.88	7.83	7.55	7.86	2	20

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/18
Date Received: 03/08/18
Date Analyzed: 03/9/18
Date Extracted: NA

Matrix Spike Summary
Carbon, Dissolved Organic (DOC)

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017
Analysis Method: 9060
Prep Method: None

Units: mg/L
Basis: NA

Matrix Spike
K1801267-017MS

<u>Analyte Name</u>	<u>Sample Result</u>	<u>Result</u>	<u>Spike Amount</u>	<u>% Rec</u>	<u>% Rec Limits</u>
Carbon, Dissolved Organic (DOC)	7.85	22.4	25.0	58 *	83-117

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 03/08/18
Date Extracted: NA

Lab Control Sample Summary
Carbon, Dissolved Organic (DOC)

Analysis Method: 9060
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 582868

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1801267-LCS2	24.3	24.0	101	83-117

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Continuing Calibration Verification (CCV) Summary

Carbon, Dissolved Organic (DOC)

Analysis Method: 9060

Units: mg/L

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	582868	KQ1802987-19	03/09/18 01:29	25.0	25.3	101	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request:K1801267

Continuing Calibration Blank (CCB) Summary
Carbon, Dissolved Organic (DOC)

Analysis Method: 9060

Units:mg/L

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	582868	KQ1802987-20	03/09/18 01:45	0.50	0.07	0.19	J

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: ASTM D2216
Prep Method: None

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: Percent
Basis: As Received

Water

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO2-GTB-5-8	K1801267-002	67.0	-	-	1	02/14/18 09:40	
CO2-GTB-10-13	K1801267-003	32.4	-	-	1	02/14/18 09:40	
CO3-GTB-5-8	K1801267-011	37.3	-	-	1	02/14/18 09:40	
CO3-GTB-10-13	K1801267-012	42.6	-	-	1	02/14/18 09:40	
CO1-GTB-5-8	K1801267-014	30.1	-	-	1	02/14/18 09:40	
CO1-GTB-10-13	K1801267-015	32.6	-	-	1	02/14/18 09:40	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: ASTM D4318
Prep Method: None

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: Percent
Basis: Air Dried

Liquid Limit

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO2-GTB-5-8	K1801267-002	54.0	1.0	-	1	02/21/18 14:39	
CO2-GTB-10-13	K1801267-003	ND U	1.0	-	1	02/21/18 14:39	
CO3-GTB-5-8	K1801267-011	ND U	1.0	-	1	02/21/18 14:39	
CO3-GTB-10-13	K1801267-012	23.2	1.0	-	1	02/21/18 14:39	
CO1-GTB-5-8	K1801267-014	51.7	1.0	-	1	02/21/18 14:39	
CO1-GTB-10-13	K1801267-015	20.3	1.0	-	1	02/21/18 14:39	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: ASTM D4318
Prep Method: None

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: Percent
Basis: Air Dried

Plastic Limit

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO2-GTB-5-8	K1801267-002	35.0	1.0	-	1	02/21/18 14:39	
CO2-GTB-10-13	K1801267-003	ND U	1.0	-	1	02/21/18 14:39	
CO3-GTB-5-8	K1801267-011	ND U	1.0	-	1	02/21/18 14:39	
CO3-GTB-10-13	K1801267-012	ND U	1.0	-	1	02/21/18 14:39	
CO1-GTB-5-8	K1801267-014	33.5	1.0	-	1	02/21/18 14:39	
CO1-GTB-10-13	K1801267-015	ND U	1.0	-	1	02/21/18 14:39	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: ASTM D4318
Prep Method: None

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: Percent
Basis: Air Dried

Plasticity Index

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO2-GTB-5-8	K1801267-002	18.9	1.0	-	1	02/21/18 14:39	
CO2-GTB-10-13	K1801267-003	ND U	1.0	-	1	02/21/18 14:39	
CO3-GTB-5-8	K1801267-011	ND U	1.0	-	1	02/21/18 14:39	
CO3-GTB-10-13	K1801267-012	ND U	1.0	-	1	02/21/18 14:39	
CO1-GTB-5-8	K1801267-014	18.2	1.0	-	1	02/21/18 14:39	
CO1-GTB-10-13	K1801267-015	ND U	1.0	-	1	02/21/18 14:39	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Analysis Method: ASTM D854
Prep Method: None

Service Request: K1801267
Date Collected: 02/06/18 - 02/07/18
Date Received: 02/8/18
Units: NONE
Basis: As Received

Specific Gravity

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
CO2-GTB-5-8	K1801267-002	1.99	-	-	1	03/22/18 11:14	
CO2-GTB-10-13	K1801267-003	2.06	-	-	1	03/22/18 11:14	
CO3-GTB-5-8	K1801267-011	2.03	-	-	1	03/22/18 11:14	
CO3-GTB-10-13	K1801267-012	1.96	-	-	1	03/22/18 11:14	
CO1-GTB-5-8	K1801267-014	2.10	-	-	1	03/22/18 11:14	
CO1-GTB-10-13	K1801267-015	2.11	-	-	1	03/22/18 11:14	

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/18
Date Received: 02/08/18
Date Analyzed: 03/22/18

Replicate Sample Summary
General Chemistry Parameters

Sample Name: CO1-GTB-10-13
Lab Code: K1801267-015

Units: NONE
Basis: As Received

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>MRL</u>	<u>MDL</u>	<u>Sample Result</u>	<u>Duplicate Sample K1801267-015DUP Result</u>	<u>Average</u>	<u>RPD</u>	<u>RPD Limit</u>
Specific Gravity	ASTM D854	-	-	2.11	2.15	2.10	<1	20

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Metals

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ALS Group USA, Corp.
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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: CO2-SD-3-5
Lab Code: K1801267-001

Service Request: K1801267
Date Collected: 02/06/18 10:25
Date Received: 02/08/18 14:55

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	32.8	mg/Kg	0.37	0.03	5	02/20/18 11:51	02/16/18	
Barium	6020A	130	mg/Kg	0.037	0.015	5	02/20/18 11:51	02/16/18	
Beryllium	6020A	0.331	mg/Kg	0.015	0.004	5	02/20/18 11:51	02/16/18	
Cadmium	6020A	15.9	mg/Kg	0.015	0.005	5	02/20/18 11:51	02/16/18	
Calcium	6010C	7000	mg/Kg	3.0	0.7	2	02/21/18 15:49	02/16/18	
Chromium	6020A	40.7	mg/Kg	0.15	0.04	5	02/20/18 11:51	02/16/18	
Cobalt	6020A	9.36	mg/Kg	0.015	0.004	5	02/20/18 11:51	02/16/18	
Copper	6020A	155	mg/Kg	0.074	0.030	5	02/20/18 11:51	02/16/18	
Iron	6010C	32900	mg/Kg	3.0	1.5	2	02/21/18 15:49	02/16/18	
Lead	6020A	406	mg/Kg	0.037	0.015	5	02/20/18 11:51	02/16/18	
Magnesium	6010C	7730	mg/Kg	1.5	0.1	2	02/21/18 15:49	02/16/18	
Manganese	6020A	246	mg/Kg	0.37	0.01	5	02/20/18 11:51	02/16/18	
Mercury	7471B	0.603	mg/Kg	0.013	0.001	1	02/21/18 15:34	02/21/18	
Molybdenum	6020A	5.46	mg/Kg	0.037	0.015	5	02/20/18 11:51	02/16/18	
Nickel	6020A	40.8	mg/Kg	0.15	0.02	5	02/20/18 11:51	02/16/18	
Potassium	6010C	2070	mg/Kg	30	7	2	02/21/18 15:49	02/16/18	
Selenium	6020A	0.46 J	mg/Kg	0.74	0.05	5	02/20/18 11:51	02/16/18	
Silver	6020A	1.90	mg/Kg	0.015	0.003	5	02/20/18 11:51	02/16/18	
Sodium	6010C	7920	mg/Kg	30	3	2	02/21/18 15:49	02/16/18	
Thallium	6020A	0.133	mg/Kg	0.015	0.001	5	02/20/18 11:51	02/16/18	
Tin	6010C	11.9	mg/Kg	3.0	0.4	2	02/21/18 15:49	02/16/18	
Vanadium	6020A	69.7	mg/Kg	0.15	0.01	5	02/20/18 11:51	02/16/18	
Zinc	6010C	3870	mg/Kg	37	7	100	02/21/18 16:29	02/16/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: EQB-SD-01
Lab Code: K1801267-004

Service Request: K1801267
Date Collected: 02/07/18 08:00
Date Received: 02/08/18 14:55
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020	ND U	ug/L	0.50	0.08	1	02/26/18 17:31	02/20/18	
Barium	6020	0.14	ug/L	0.10	0.02	1	02/26/18 17:31	02/20/18	
Beryllium	6020	ND U	ug/L	0.020	0.002	1	02/26/18 17:31	02/20/18	
Cadmium	6020	ND U	ug/L	0.020	0.009	1	02/26/18 17:31	02/20/18	
Calcium	6010C	10 J	ug/L	21	0.9	1	02/21/18 15:12	02/20/18	
Chromium	6020	0.12 J	ug/L	0.20	0.03	1	02/26/18 17:31	02/20/18	
Cobalt	6020	ND U	ug/L	0.020	0.005	1	02/26/18 17:31	02/20/18	
Copper	6020	0.04 J	ug/L	0.10	0.02	1	02/26/18 17:31	02/20/18	
Iron	6010C	19 J	ug/L	21	3	1	02/21/18 15:12	02/20/18	
Lead	6020	0.063	ug/L	0.020	0.007	1	02/26/18 17:31	02/20/18	
Magnesium	6010C	1.2 J	ug/L	5.3	0.3	1	02/21/18 15:12	02/20/18	
Manganese	6020	0.21	ug/L	0.20	0.006	1	02/26/18 17:31	02/20/18	
Mercury	7470A	ND U	ug/L	0.20	0.02	1	02/22/18 15:22	02/22/18	
Molybdenum	6020	ND U	ug/L	0.050	0.006	1	02/26/18 17:31	02/20/18	
Nickel	6020	ND U	ug/L	0.20	0.04	1	02/26/18 17:31	02/20/18	
Potassium	6010C	ND U	ug/L	210	60	1	02/21/18 15:12	02/20/18	
Selenium	6020	ND U	ug/L	1.0	0.2	1	02/26/18 17:31	02/20/18	
Silver	6020	ND U	ug/L	0.020	0.002	1	02/26/18 17:31	02/20/18	
Sodium	6010C	ND U	ug/L	210	20	1	02/21/18 15:12	02/20/18	
Thallium	6020	ND U	ug/L	0.020	0.008	1	02/26/18 17:31	02/20/18	
Tin	6010C	ND U	ug/L	21	3	1	02/21/18 15:12	02/20/18	
Vanadium	6020	0.14 J	ug/L	0.40	0.04	1	02/26/18 17:31	02/20/18	
Zinc	6020	0.5 J	ug/L	2.0	0.08	1	02/26/18 17:31	02/20/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/06/18
Date Received: 03/06/18 14:55

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020	91	ug/L	10	2	20	03/15/18 08:07	03/13/18	
Barium	6020	89.6	ug/L	1.0	0.4	20	03/15/18 08:07	03/13/18	
Beryllium	6020	ND U	ug/L	0.40	0.10	20	03/15/18 08:07	03/13/18	
Cadmium	6020	0.18 J	ug/L	0.40	0.12	20	03/15/18 08:07	03/13/18	
Calcium	6010C	245000	ug/L	21	0.6	1	03/14/18 11:56	03/13/18	
Chromium	6020	2.3 J	ug/L	4.0	0.6	20	03/15/18 08:07	03/13/18	
Cobalt	6020	0.51	ug/L	0.40	0.16	20	03/15/18 08:07	03/13/18	
Copper	6020	5.5	ug/L	4.0	0.8	20	03/15/18 08:07	03/13/18	
Iron	6010C	1430	ug/L	21	3	1	03/14/18 11:56	03/13/18	
Lead	6020	10.7	ug/L	0.40	0.08	20	03/15/18 08:07	03/13/18	
Magnesium	6010C	680000	ug/L	530	20	100	03/14/18 12:15	03/13/18	
Manganese	6020	352	ug/L	4.0	0.8	20	03/15/18 08:07	03/13/18	
Mercury	7470A	ND U	ug/L	0.20	0.02	1	03/20/18 10:44	03/19/18	
Molybdenum	6020	226	ug/L	1.0	0.6	20	03/15/18 08:07	03/13/18	
Nickel	6020	4.5	ug/L	4.0	0.8	20	03/15/18 08:07	03/13/18	
Potassium	6010C	323000	ug/L	210	50	1	03/14/18 11:56	03/13/18	
Selenium	6020	ND U	ug/L	20	4	20	03/15/18 08:07	03/13/18	
Silver	6020	ND U	ug/L	0.40	0.16	20	03/15/18 08:07	03/13/18	
Sodium	6010C	7730000	ug/L	42000	2000	100	03/14/18 12:15	03/13/18	
Thallium	6020	0.18 J	ug/L	0.40	0.16	20	03/15/18 08:07	03/13/18	
Tin	6010C	ND U	ug/L	21	2	1	03/14/18 11:56	03/13/18	
Vanadium	6020	9.9	ug/L	4.0	0.6	20	03/15/18 08:07	03/13/18	
Zinc	6020	14 J	ug/L	40	4	20	03/15/18 08:07	03/13/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: CO3-SD-3-5
Lab Code: K1801267-009

Service Request: K1801267
Date Collected: 02/07/18 11:18
Date Received: 02/08/18 14:55

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	7.02	mg/Kg	0.28	0.02	5	02/20/18 11:35	02/16/18	
Barium	6020A	58.0	mg/Kg	0.028	0.011	5	02/20/18 11:35	02/16/18	
Beryllium	6020A	0.172	mg/Kg	0.011	0.003	5	02/20/18 11:35	02/16/18	
Cadmium	6020A	9.21	mg/Kg	0.011	0.004	5	02/20/18 11:35	02/16/18	
Calcium	6010C	5270	mg/Kg	2.2	0.5	2	02/21/18 15:24	02/16/18	
Chromium	6020A	12.0	mg/Kg	0.11	0.03	5	02/20/18 11:35	02/16/18	
Cobalt	6020A	4.78	mg/Kg	0.011	0.003	5	02/20/18 11:35	02/16/18	
Copper	6020A	53.8	mg/Kg	0.056	0.022	5	02/20/18 11:35	02/16/18	
Iron	6010C	15000	mg/Kg	2.2	1.1	2	02/21/18 15:24	02/16/18	
Lead	6020A	71.1	mg/Kg	0.028	0.011	5	02/20/18 11:35	02/16/18	
Magnesium	6010C	2550	mg/Kg	1.1	0.1	2	02/21/18 15:24	02/16/18	
Manganese	6020A	112	mg/Kg	0.28	0.01	5	02/20/18 11:35	02/16/18	
Mercury	7471B	0.125	mg/Kg	0.0095	0.0010	1	02/21/18 15:35	02/21/18	
Molybdenum	6020A	1.36	mg/Kg	0.028	0.011	5	02/20/18 11:35	02/16/18	
Nickel	6020A	9.20	mg/Kg	0.11	0.02	5	02/20/18 11:35	02/16/18	
Potassium	6010C	854	mg/Kg	22	5	2	02/21/18 15:24	02/16/18	
Selenium	6020A	0.21 J	mg/Kg	0.56	0.04	5	02/20/18 11:35	02/16/18	
Silver	6020A	0.603	mg/Kg	0.011	0.002	5	02/20/18 11:35	02/16/18	
Sodium	6010C	1420	mg/Kg	22	2	2	02/21/18 15:24	02/16/18	
Thallium	6020A	0.074	mg/Kg	0.011	0.001	5	02/20/18 11:35	02/16/18	
Tin	6010C	1.1 J	mg/Kg	2.2	0.3	2	02/21/18 15:24	02/16/18	
Vanadium	6020A	39.2	mg/Kg	0.11	0.01	5	02/20/18 11:35	02/16/18	
Zinc	6010C	2040	mg/Kg	28	6	100	02/21/18 16:17	02/16/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: CO1-SD-3-5
Lab Code: K1801267-013

Service Request: K1801267
Date Collected: 02/06/18 14:41
Date Received: 02/08/18 14:55

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	10.7	mg/Kg	0.32	0.03	5	02/20/18 11:54	02/16/18	
Barium	6020A	69.9	mg/Kg	0.032	0.013	5	02/20/18 11:54	02/16/18	
Beryllium	6020A	0.291	mg/Kg	0.013	0.003	5	02/20/18 11:54	02/16/18	
Cadmium	6020A	0.768	mg/Kg	0.013	0.005	5	02/20/18 11:54	02/16/18	
Calcium	6010C	5610	mg/Kg	2.6	0.6	2	02/21/18 15:51	02/16/18	
Chromium	6020A	34.1	mg/Kg	0.13	0.04	5	02/20/18 11:54	02/16/18	
Cobalt	6020A	6.84	mg/Kg	0.013	0.004	5	02/20/18 11:54	02/16/18	
Copper	6020A	78.6	mg/Kg	0.065	0.026	5	02/20/18 11:54	02/16/18	
Iron	6010C	23200	mg/Kg	2.6	1.3	2	02/21/18 15:51	02/16/18	
Lead	6020A	70.8	mg/Kg	0.032	0.013	5	02/20/18 11:54	02/16/18	
Magnesium	6010C	5780	mg/Kg	1.3	0.1	2	02/21/18 15:51	02/16/18	
Manganese	6020A	172	mg/Kg	0.32	0.01	5	02/20/18 11:54	02/16/18	
Mercury	7471B	0.417	mg/Kg	0.013	0.001	1	02/21/18 15:40	02/21/18	
Molybdenum	6020A	1.43	mg/Kg	0.032	0.013	5	02/20/18 11:54	02/16/18	
Nickel	6020A	19.0	mg/Kg	0.13	0.02	5	02/20/18 11:54	02/16/18	
Potassium	6010C	1850	mg/Kg	26	6	2	02/21/18 15:51	02/16/18	
Selenium	6020A	0.29 J	mg/Kg	0.65	0.05	5	02/20/18 11:54	02/16/18	
Silver	6020A	0.835	mg/Kg	0.013	0.003	5	02/20/18 11:54	02/16/18	
Sodium	6010C	6400	mg/Kg	26	3	2	02/21/18 15:51	02/16/18	
Thallium	6020A	0.091	mg/Kg	0.013	0.001	5	02/20/18 11:54	02/16/18	
Tin	6010C	7.5	mg/Kg	2.6	0.3	2	02/21/18 15:51	02/16/18	
Vanadium	6020A	51.1	mg/Kg	0.13	0.01	5	02/20/18 11:54	02/16/18	
Zinc	6010C	146	mg/Kg	0.65	0.13	2	02/21/18 15:51	02/16/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/18
Date Received: 03/08/18 14:55

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020	343	ug/L	5.0	0.9	10	03/15/18 08:09	03/13/18	
Barium	6020	62.7	ug/L	0.50	0.20	10	03/15/18 08:09	03/13/18	
Beryllium	6020	ND U	ug/L	0.20	0.05	10	03/15/18 08:09	03/13/18	
Cadmium	6020	0.16 J	ug/L	0.20	0.06	10	03/15/18 08:09	03/13/18	
Calcium	6010C	126000	ug/L	21	0.6	1	03/14/18 12:10	03/13/18	
Chromium	6020	1.9 J	ug/L	2.0	0.3	10	03/15/18 08:09	03/13/18	
Cobalt	6020	0.65	ug/L	0.20	0.08	10	03/15/18 08:09	03/13/18	
Copper	6020	5.2	ug/L	2.0	0.4	10	03/15/18 08:09	03/13/18	
Iron	6010C	754	ug/L	21	3	1	03/14/18 12:10	03/13/18	
Lead	6020	6.33	ug/L	0.20	0.04	10	03/15/18 08:09	03/13/18	
Magnesium	6010C	313000	ug/L	5.3	0.2	1	03/14/18 12:10	03/13/18	
Manganese	6020	138	ug/L	2.0	0.4	10	03/15/18 08:09	03/13/18	
Mercury	7470A	ND U	ug/L	0.20	0.02	1	03/20/18 10:45	03/19/18	
Molybdenum	6020	674	ug/L	0.50	0.30	10	03/15/18 08:09	03/13/18	
Nickel	6020	3.0	ug/L	2.0	0.4	10	03/15/18 08:09	03/13/18	
Potassium	6010C	181000	ug/L	210	50	1	03/14/18 12:10	03/13/18	
Selenium	6020	ND U	ug/L	10	2	10	03/15/18 08:09	03/13/18	
Silver	6020	ND U	ug/L	0.20	0.08	10	03/15/18 08:09	03/13/18	
Sodium	6010C	3800000	ug/L	42000	2000	100	03/14/18 12:36	03/13/18	
Thallium	6020	ND U	ug/L	0.20	0.08	10	03/15/18 08:09	03/13/18	
Tin	6010C	2 J	ug/L	21	2	1	03/14/18 12:10	03/13/18	
Vanadium	6020	6.1	ug/L	2.0	0.3	10	03/15/18 08:09	03/13/18	
Zinc	6020	12 J	ug/L	20	2	10	03/15/18 08:09	03/13/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 02/08/18
Date Received: 02/08/18 14:55

Sample Name: EQB-PW-01
Lab Code: K1801267-018

Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020	ND U	ug/L	0.50	0.08	1	02/26/18 17:39	02/20/18	
Barium	6020	1.09	ug/L	0.10	0.02	1	02/26/18 17:39	02/20/18	
Beryllium	6020	ND U	ug/L	0.020	0.002	1	02/26/18 17:39	02/20/18	
Cadmium	6020	ND U	ug/L	0.020	0.009	1	02/26/18 17:39	02/20/18	
Calcium	6010C	18 J	ug/L	21	0.9	1	02/21/18 15:17	02/20/18	
Chromium	6020	0.06 J	ug/L	0.20	0.03	1	02/26/18 17:39	02/20/18	
Cobalt	6020	ND U	ug/L	0.020	0.005	1	02/26/18 17:39	02/20/18	
Copper	6020	0.02 J	ug/L	0.10	0.02	1	02/26/18 17:39	02/20/18	
Iron	6010C	14 J	ug/L	21	3	1	02/21/18 15:17	02/20/18	
Lead	6020	0.017 J	ug/L	0.020	0.007	1	02/26/18 17:39	02/20/18	
Magnesium	6010C	ND U	ug/L	5.3	0.3	1	02/21/18 15:17	02/20/18	
Manganese	6020	0.07 J	ug/L	0.20	0.006	1	02/26/18 17:39	02/20/18	
Mercury	7470A	ND U	ug/L	0.20	0.02	1	02/22/18 15:27	02/22/18	
Molybdenum	6020	ND U	ug/L	0.050	0.006	1	02/26/18 17:39	02/20/18	
Nickel	6020	ND U	ug/L	0.20	0.04	1	02/26/18 17:39	02/20/18	
Potassium	6010C	ND U	ug/L	210	60	1	02/21/18 15:17	02/20/18	
Selenium	6020	ND U	ug/L	1.0	0.2	1	02/26/18 17:39	02/20/18	
Silver	6020	ND U	ug/L	0.020	0.002	1	02/26/18 17:39	02/20/18	
Sodium	6010C	ND U	ug/L	210	20	1	02/21/18 15:17	02/20/18	
Thallium	6020	ND U	ug/L	0.020	0.008	1	02/26/18 17:39	02/20/18	
Tin	6010C	ND U	ug/L	21	3	1	02/21/18 15:17	02/20/18	
Vanadium	6020	0.12 J	ug/L	0.40	0.04	1	02/26/18 17:39	02/20/18	
Zinc	6020	17.4	ug/L	2.0	0.08	1	02/26/18 17:39	02/20/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: Method Blank
Lab Code: KQ1801937-03

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND U	mg/Kg	0.5	0.04	5	02/20/18 11:29	02/16/18	
Barium	6020A	ND U	mg/Kg	0.05	0.020	5	02/20/18 11:29	02/16/18	
Beryllium	6020A	ND U	mg/Kg	0.020	0.005	5	02/20/18 11:29	02/16/18	
Cadmium	6020A	ND U	mg/Kg	0.020	0.007	5	02/20/18 11:29	02/16/18	
Calcium	6010C	ND U	mg/Kg	4	0.9	2	02/21/18 15:20	02/16/18	
Chromium	6020A	0.14 J	mg/Kg	0.20	0.06	5	02/20/18 11:29	02/16/18	
Cobalt	6020A	ND U	mg/Kg	0.020	0.006	5	02/20/18 11:29	02/16/18	
Copper	6020A	ND U	mg/Kg	0.10	0.04	5	02/20/18 11:29	02/16/18	
Iron	6010C	ND U	mg/Kg	4	2.0	2	02/21/18 15:20	02/16/18	
Lead	6020A	ND U	mg/Kg	0.05	0.020	5	02/20/18 11:29	02/16/18	
Magnesium	6010C	ND U	mg/Kg	2	0.2	2	02/21/18 15:20	02/16/18	
Manganese	6020A	ND U	mg/Kg	0.5	0.02	5	02/20/18 11:29	02/16/18	
Molybdenum	6020A	ND U	mg/Kg	0.05	0.020	5	02/20/18 11:29	02/16/18	
Nickel	6020A	ND U	mg/Kg	0.20	0.03	5	02/20/18 11:29	02/16/18	
Potassium	6010C	ND U	mg/Kg	40	9	2	02/21/18 15:20	02/16/18	
Selenium	6020A	ND U	mg/Kg	1.0	0.07	5	02/20/18 11:29	02/16/18	
Silver	6020A	ND U	mg/Kg	0.020	0.004	5	02/20/18 11:29	02/16/18	
Sodium	6010C	ND U	mg/Kg	40	4	2	02/21/18 15:20	02/16/18	
Thallium	6020A	ND U	mg/Kg	0.020	0.002	5	02/20/18 11:29	02/16/18	
Tin	6010C	ND U	mg/Kg	4	0.5	2	02/21/18 15:20	02/16/18	
Vanadium	6020A	ND U	mg/Kg	0.20	0.02	5	02/20/18 11:29	02/16/18	
Zinc	6010C	ND U	mg/Kg	1.0	0.2	2	02/21/18 15:20	02/16/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ1802193-02

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	6010C	6 J	ug/L	21	0.9	1	02/21/18 14:38	02/20/18	
Iron	6010C	17 J	ug/L	21	3	1	02/21/18 14:38	02/20/18	
Magnesium	6010C	4.4 J	ug/L	5.3	0.3	1	02/21/18 14:38	02/20/18	
Potassium	6010C	ND U	ug/L	210	60	1	02/21/18 14:38	02/20/18	
Sodium	6010C	ND U	ug/L	210	20	1	02/21/18 14:38	02/20/18	
Tin	6010C	ND U	ug/L	21	3	1	02/21/18 14:38	02/20/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ1803087-02

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	6010C	6 J	ug/L	21	0.6	1	03/14/18 11:35	03/13/18	
Iron	6010C	ND U	ug/L	21	3	1	03/14/18 11:35	03/13/18	
Magnesium	6010C	2.5 J	ug/L	5.3	0.2	1	03/14/18 11:35	03/13/18	
Potassium	6010C	ND U	ug/L	210	50	1	03/14/18 11:35	03/13/18	
Sodium	6010C	ND U	ug/L	210	20	1	03/14/18 11:35	03/13/18	
Tin	6010C	ND U	ug/L	21	2	1	03/14/18 11:35	03/13/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ1802192-01

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020	ND U	ug/L	0.50	0.08	1	02/26/18 16:52	02/20/18	
Barium	6020	ND U	ug/L	0.10	0.02	1	02/26/18 16:52	02/20/18	
Beryllium	6020	ND U	ug/L	0.020	0.002	1	02/26/18 16:52	02/20/18	
Cadmium	6020	ND U	ug/L	0.020	0.009	1	02/26/18 16:52	02/20/18	
Chromium	6020	0.03 J	ug/L	0.20	0.03	1	02/26/18 16:52	02/20/18	
Cobalt	6020	ND U	ug/L	0.020	0.005	1	02/26/18 16:52	02/20/18	
Copper	6020	ND U	ug/L	0.10	0.02	1	02/26/18 16:52	02/20/18	
Lead	6020	ND U	ug/L	0.020	0.007	1	02/26/18 16:52	02/20/18	
Manganese	6020	0.10 J	ug/L	0.20	0.006	1	02/26/18 16:52	02/20/18	
Molybdenum	6020	ND U	ug/L	0.050	0.006	1	02/26/18 16:52	02/20/18	
Nickel	6020	ND U	ug/L	0.20	0.04	1	02/26/18 16:52	02/20/18	
Selenium	6020	ND U	ug/L	1.0	0.2	1	02/26/18 16:52	02/20/18	
Silver	6020	ND U	ug/L	0.020	0.002	1	02/26/18 16:52	02/20/18	
Thallium	6020	ND U	ug/L	0.020	0.008	1	02/26/18 16:52	02/20/18	
Vanadium	6020	0.08 J	ug/L	0.40	0.04	1	02/26/18 16:52	02/20/18	
Zinc	6020	0.2 J	ug/L	2.0	0.08	1	02/26/18 16:52	02/20/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ1803090-01

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020	ND U	ug/L	0.50	0.09	1	03/15/18 08:02	03/13/18	
Barium	6020	ND U	ug/L	0.050	0.020	1	03/15/18 08:02	03/13/18	
Beryllium	6020	ND U	ug/L	0.020	0.005	1	03/15/18 08:02	03/13/18	
Cadmium	6020	ND U	ug/L	0.020	0.006	1	03/15/18 08:02	03/13/18	
Chromium	6020	ND U	ug/L	0.20	0.03	1	03/15/18 08:02	03/13/18	
Cobalt	6020	ND U	ug/L	0.020	0.008	1	03/15/18 08:02	03/13/18	
Copper	6020	ND U	ug/L	0.20	0.04	1	03/15/18 08:02	03/13/18	
Lead	6020	0.009 J	ug/L	0.020	0.004	1	03/15/18 08:02	03/13/18	
Manganese	6020	ND U	ug/L	0.20	0.04	1	03/15/18 08:02	03/13/18	
Molybdenum	6020	ND U	ug/L	0.050	0.030	1	03/15/18 08:02	03/13/18	
Nickel	6020	ND U	ug/L	0.20	0.04	1	03/15/18 08:02	03/13/18	
Selenium	6020	ND U	ug/L	1.0	0.2	1	03/15/18 08:02	03/13/18	
Silver	6020	ND U	ug/L	0.020	0.008	1	03/15/18 08:02	03/13/18	
Thallium	6020	ND U	ug/L	0.020	0.008	1	03/15/18 08:02	03/13/18	
Vanadium	6020	ND U	ug/L	0.20	0.03	1	03/15/18 08:02	03/13/18	
Zinc	6020	ND U	ug/L	2.0	0.2	1	03/15/18 08:02	03/13/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ1802022-02

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.02	1	02/22/18 15:08	02/22/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: KQ1803003-01

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.02	1	03/20/18 10:40	03/19/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: Method Blank
Lab Code: KQ1801822-05

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7471B	ND U	mg/Kg	0.02	0.002	1	02/21/18 14:53	02/21/18	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/18
Date Received: 02/08/18
Date Analyzed: 02/20/18 - 02/21/18

Replicate Sample Summary

Total Metals

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009

Units: mg/Kg
Basis: Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
					Sample KQ1801937-01 Result			
Arsenic	6020A	0.27	0.02	7.02	7.60	7.31	8	20
Barium	6020A	0.027	0.011	58.0	59.2	58.6	2	20
Beryllium	6020A	0.011	0.003	0.172	0.158	0.165	9	20
Cadmium	6020A	0.011	0.004	9.21	10.2	9.71	10	20
Calcium	6010C	2.1	0.5	5270	5340	5310	1	20
Chromium	6020A	0.11	0.03	12.0	14.4	13.2	19	20
Cobalt	6020A	0.011	0.003	4.78	4.37	4.58	9	20
Copper	6020A	0.054	0.021	53.8	52.0	52.9	3	20
Iron	6010C	2.1	1.1	15000	15000	15000	<1	20
Lead	6020A	0.027	0.011	71.1	86.2	78.7	19	20
Magnesium	6010C	1.1	0.1	2550	2490	2520	3	20
Manganese	6020A	0.27	0.01	112	107	110	4	20
Molybdenum	6020A	0.027	0.011	1.36	1.63	1.50	19	20
Nickel	6020A	0.11	0.02	9.20	8.96	9.08	3	20
Potassium	6010C	21	5	854	789	822	8	20
Selenium	6020A	0.54	0.04	0.21 J	0.21 J	0.21	<1	20
Silver	6020A	0.011	0.002	0.603	0.692	0.648	14	20
Sodium	6010C	21	2	1420	1430	1430	<1	20
Thallium	6020A	0.011	0.001	0.074	0.064	0.069	15	20
Tin	6010C	2.1	0.3	1.1 J	1.2 J	1.2	12	20
Vanadium	6020A	0.11	0.01	39.2	37.8	38.5	3	20
Zinc	6010C	27	5	2040	2300	2170	12	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/06/18
Date Received: 03/06/18
Date Analyzed: 03/14/18

Replicate Sample Summary

Total Metals

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008

Units: ug/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
					Sample KQ1803087-03 Result			
Calcium	6010C	21	0.6	245000	241000	243000	2	20
Iron	6010C	21	3	1430	1410	1420	1	20
Magnesium	6010C	525	20	680000	673000	677000	1	20
Potassium	6010C	210	50	323000	328000	326000	2	20
Sodium	6010C	42000	2000	7730000	7460000	7600000	4	20
Tin	6010C	21	2	ND U	ND U	ND	-	20

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/18
Date Received: 03/08/18
Date Analyzed: 03/15/18

Replicate Sample Summary

Total Metals

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017

Units: ug/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
					Sample KQ1803090-03 Result			
Arsenic	6020	5.00	0.9	343	330	337	4	20
Barium	6020	0.500	0.20	62.7	58.6	60.7	7	20
Beryllium	6020	0.200	0.05	ND U	ND U	ND	-	20
Cadmium	6020	0.200	0.06	0.16 J	0.14 J	0.15	13	20
Chromium	6020	2.00	0.3	1.9 J	1.7 J	1.8	11	20
Cobalt	6020	0.200	0.08	0.65	0.64	0.65	2	20
Copper	6020	2.00	0.4	5.2	6.9	6.1	28 #	20
Lead	6020	0.200	0.04	6.33	6.11	6.22	4	20
Manganese	6020	2.00	0.4	138	138	138	<1	20
Molybdenum	6020	0.500	0.30	674	635	655	6	20
Nickel	6020	2.00	0.4	3.0	3.2	3.1	6	20
Selenium	6020	10.0	2	ND U	ND U	ND	-	20
Silver	6020	0.200	0.08	ND U	0.09 J	NC	NC	20
Thallium	6020	0.200	0.08	ND U	ND U	ND	-	20
Vanadium	6020	2.00	0.3	6.1	5.8	6.0	5	20
Zinc	6020	20.0	2	12 J	13 J	13	8	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Storm Water

Service Request: K1801267
Date Collected: NA
Date Received: NA
Date Analyzed: 03/20/18

Replicate Sample Summary

Total Metals

Sample Name: Batch QC
Lab Code: K1801988-001

Units: ug/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
					KQ1803003-03 Result			
Mercury	7470A	0.20	0.02	ND U	ND U	ND	-	20

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/18
Date Received: 02/08/18
Date Analyzed: 02/21/18

Replicate Sample Summary

Total Metals

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009

Units: mg/Kg
Basis: Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate	Average	RPD	RPD Limit
					Sample KQ1801822-09 Result			
Mercury	7471B	0.011	0.001	0.125	0.130	0.128	4	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/18
Date Received: 02/08/18
Date Analyzed: 02/20/18 - 02/21/18

Matrix Spike Summary
Total Metals

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ1801937-02

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	7.02	61.2	54.4	100	75-125
Barium	6020A	58.0	181	109	113	75-125
Beryllium	6020A	0.172	5.89	5.44	105	75-125
Cadmium	6020A	9.21	15.0	5.44	107	75-125
Calcium	6010C	5270	6790	544	280 #	75-125
Chromium	6020A	12.0	34.3	21.7	102	75-125
Cobalt	6020A	4.78	59.4	54.4	100	75-125
Copper	6020A	53.8	74.8	27.3	77	75-125
Iron	6010C	15000	14900	109	-23 #	75-125
Lead	6020A	71.1	120	54.4	89	75-125
Magnesium	6010C	2550	3130	544	106 #	75-125
Manganese	6020A	112	170	54.4	106	75-125
Molybdenum	6020A	1.36	56.5	54.4	101	75-125
Nickel	6020A	9.20	64.2	54.4	101	75-125
Potassium	6010C	854	1330	544	87	75-125
Selenium	6020A	0.21 J	54.7	54.4	100	75-125
Silver	6020A	0.603	5.85	5.44	96	75-125
Sodium	6010C	1420	2250	544	152 N	75-125
Thallium	6020A	0.074	11.0	10.9	100	75-125
Tin	6010C	1.1 J	11.6	10.9	96	75-125
Vanadium	6020A	39.2	97.2	54.4	107	75-125
Zinc	6010C	2040	2150	54	195 #	75-125

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/06/18
Date Received: 03/06/18
Date Analyzed: 03/14/18
Date Extracted: 03/13/18

Matrix Spike Summary
Total Metals

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008
Analysis Method: 6010C
Prep Method: EPA CLP-METALS ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ1803087-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Calcium	245000	248000	10000	25 #	75-125
Iron	1430	2290	1000	86	75-125
Magnesium	680000	675000	10000	-53 #	75-125
Potassium	323000	343000	10000	197 #	75-125
Sodium	7730000	7250000	10000	-4798 #	75-125
Tin	ND U	8940	10000	89	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/18
Date Received: 03/08/18
Date Analyzed: 03/15/18
Date Extracted: 03/13/18

Matrix Spike Summary
Total Metals

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017
Analysis Method: 6020
Prep Method: EPA CLP-METALS ILM04.0

Units: ug/L
Basis: NA

Matrix Spike
KQ1803090-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	343	373	50.0	60 #	75-125
Barium	62.7	154	100	91	75-125
Beryllium	ND U	3.29	2.50	132 N	75-125
Cadmium	0.16 J	23.2	25.0	92	75-125
Chromium	1.9 J	12.1	10.0	102	75-125
Cobalt	0.65	23.9	25.0	93	75-125
Copper	5.2	20.3	12.5	121	75-125
Lead	6.33	49.8	50.0	87	75-125
Manganese	138	155	25.0	69 #	75-125
Molybdenum	674	652	20.0	-110 #	75-125
Nickel	3.0	25.1	25.0	88	75-125
Selenium	ND U	45	50	90	75-125
Silver	ND U	10.3	12.5	82	75-125
Thallium	ND U	44.8	50.0	90	75-125
Vanadium	6.1	31.3	25.0	101	75-125
Zinc	12 J	32	25	80	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Storm Water

Service Request: K1801267
Date Collected: N/A
Date Received: N/A
Date Analyzed: 03/20/18
Date Extracted: 03/19/18

Matrix Spike Summary
Total Metals

Sample Name: Batch QC
Lab Code: K1801988-001
Analysis Method: 7470A
Prep Method: Method

Units: ug/L
Basis: NA

Matrix Spike
KQ1803003-04

<u>Analyte Name</u>	<u>Sample Result</u>	<u>Result</u>	<u>Spike Amount</u>	<u>% Rec</u>	<u>% Rec Limits</u>
Mercury	ND U	5.20	5.00	104	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/18
Date Received: 02/08/18
Date Analyzed: 02/21/18
Date Extracted: 02/21/18

Matrix Spike Summary
Total Metals

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009
Analysis Method: 7471B
Prep Method: Method

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ1801822-10

<u>Analyte Name</u>	<u>Sample Result</u>	<u>Result</u>	<u>Spike Amount</u>	<u>% Rec</u>	<u>% Rec Limits</u>
Mercury	0.125	0.403	0.269	103	80-120

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/21/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ1801937-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Calcium	6010C	6610	6610	100	74-126
Iron	6010C	13600	14400	94	36-164
Magnesium	6010C	2450	2640	93	64-136
Potassium	6010C	2350	2550	92	61-139
Sodium	6010C	2680	2480	108	65-173
Tin	6010C	101	102	99	57-143
Zinc	6010C	184	191	97	70-130

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/20/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ1801937-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	94.6	98.5	96	69-145
Barium	6020A	303	308	98	74-126
Beryllium	6020A	66.9	66.0	101	74-126
Cadmium	6020A	150	146	103	73-127
Chromium	6020A	177	182	97	71-130
Cobalt	6020A	163	162	101	74-125
Copper	6020A	104	106	98	75-125
Lead	6020A	122	130	94	72-127
Manganese	6020A	382	410	93	76-124
Molybdenum	6020A	169	164	103	71-129
Nickel	6020A	153	149	103	73-127
Selenium	6020A	152	154	99	68-132
Silver	6020A	39.3	40.9	96	66-134
Thallium	6020A	183	175	105	69-131
Vanadium	6020A	93.3	96.7	96	65-135

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 03/14/18

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1803087-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Calcium	6010C	11400	12500	91	80-120
Iron	6010C	2240	2500	90	80-120
Magnesium	6010C	11500	12500	92	80-120
Potassium	6010C	11800	12500	94	80-120
Sodium	6010C	11800	12500	94	80-120
Tin	6010C	9100	10000	91	80-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 03/15/18

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1803090-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020	49.8	50.0	100	80-120
Barium	6020	106	100	106	80-120
Beryllium	6020	2.67	2.50	107	80-120
Cadmium	6020	25.6	25.0	103	80-120
Chromium	6020	10.6	10.0	106	80-120
Cobalt	6020	26.1	25.0	104	80-120
Copper	6020	12.9	12.5	103	80-120
Lead	6020	51.1	50.0	102	80-120
Manganese	6020	25.7	25.0	103	80-120
Molybdenum	6020	22.3	20.0	111	80-120
Nickel	6020	26.1	25.0	104	80-120
Selenium	6020	50.3	50.0	101	80-120
Silver	6020	12.8	12.5	102	80-120
Thallium	6020	50.9	50.0	102	80-120
Vanadium	6020	25.8	25.0	103	80-120
Zinc	6020	25.5	25.0	102	80-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 02/22/18

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1802022-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7470A	4.50	5.00	90	80-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 03/20/18

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1803003-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7470A	5.14	5.00	103	80-120

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/21/18

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ1801822-06

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7471B	7.38	7.10	104	51-149

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 02/21/18

Duplicate Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1802193-03

Duplicate Lab Control Sample
KQ1802193-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Calcium	6010C	12000	12500	96	12800	12500	102	80-120	6	30
Iron	6010C	2400	2500	96	2530	2500	101	80-120	5	30
Magnesium	6010C	11400	12500	91	11800	12500	94	80-120	3	30
Potassium	6010C	11500	12500	92	12000	12500	96	80-120	4	30
Sodium	6010C	11500	12500	92	12000	12500	96	80-120	4	30
Tin	6010C	8970	10000	90	9280	10000	93	80-120	3	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Analyzed: 02/26/18

Duplicate Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1802192-02

Duplicate Lab Control Sample
KQ1802192-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Arsenic	6020	51.0	50.0	102	51.7	50.0	103	80-120	1	20
Barium	6020	106	100	106	109	100	109	80-120	3	20
Beryllium	6020	2.70	2.50	108	2.82	2.50	113	80-120	4	20
Cadmium	6020	25.8	25.0	103	26.2	25.0	105	80-120	2	20
Chromium	6020	10.0	10.0	100	10.5	10.0	105	80-120	5	20
Cobalt	6020	24.8	25.0	99	26.5	25.0	106	80-120	7	20
Copper	6020	12.3	12.5	98	12.9	12.5	103	80-120	5	20
Lead	6020	49.6	50.0	99	51.8	50.0	104	80-120	4	20
Manganese	6020	25.6	25.0	102	27.7	25.0	111	80-120	8	20
Molybdenum	6020	21.7	20.0	108	22.1	20.0	110	80-120	2	20
Nickel	6020	24.8	25.0	99	26.4	25.0	106	80-120	6	20
Selenium	6020	52.4	50.0	105	53.2	50.0	106	80-120	2	20
Silver	6020	12.7	12.5	101	13.0	12.5	104	80-120	2	20
Thallium	6020	50.4	50.0	101	52.0	50.0	104	80-120	3	20
Vanadium	6020	25.2	25.0	101	25.9	25.0	104	80-120	3	20
Zinc	6020	25.2	25.0	101	26.6	25.0	106	80-120	5	20

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request:K1801267

Metals

Prep Method: EPA 3050B
Analytical Method: 6010C/6020A

Extraction Lot: 308347
Extraction Date: 02/16/18 09:00

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
CO2-SD-3-5	K1801267-001	2/6/18	2/8/18	2.118 g	100 mL	
CO3-SD-3-5	K1801267-009	2/7/18	2/8/18	2.357 g	100 mL	
CO1-SD-3-5	K1801267-013	2/6/18	2/8/18	2.287 g	100 mL	
Duplicate	KQ1801937-01DUP	2/7/18	2/8/18	2.462 g	100 mL	
Matrix Spike	KQ1801937-02MS	2/7/18	2/8/18	2.421 g	100 mL	
Method Blank	KQ1801937-03MB	NA	NA	1.0000 g	100 mL	
Lab Control Sample	KQ1801937-04LCS	NA	NA	1.0400 g	100 mL	
CO2-SD-3-5	K1801267-001	2/6/18	2/8/18	2.118 g	100 mL	
CO3-SD-3-5	K1801267-009	2/7/18	2/8/18	2.357 g	100 mL	
CO1-SD-3-5	K1801267-013	2/6/18	2/8/18	2.287 g	100 mL	
Duplicate	KQ1801937-01DUP	2/7/18	2/8/18	2.462 g	100 mL	
Matrix Spike	KQ1801937-02MS	2/7/18	2/8/18	2.421 g	100 mL	
Method Blank	KQ1801937-03MB	NA	NA	1.0000 g	100 mL	
Lab Control Sample	KQ1801937-04LCS	NA	NA	1.0400 g	100 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267

Metals

Prep Method: EPA CLP-METALS ILM04.0
Analytical Method: 6010C

Extraction Lot: 308627
Extraction Date: 02/20/18 12:32

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
EQB-SD-01	K1801267-004	2/7/18	2/8/18	10 mL	10.5 mL	
EQB-PW-01	K1801267-018	2/8/18	2/8/18	10 mL	10.5 mL	
Method Blank	KQ1802193-02MB	NA	NA	10 mL	10.5 mL	
Lab Control Sample	KQ1802193-03LCS	NA	NA	10 mL	11.2 mL	
Duplicate Lab Control Sample	KQ1802193-04DLCS	NA	NA	10 mL	11.2 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267

Metals

Prep Method: EPA CLP-METALS ILM04.0
Analytical Method: 6010C

Extraction Lot: 309728
Extraction Date: 03/13/18 17:05

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
CO1-PW-3-5 (W)	K1801267-008	3/6/18	3/6/18	10 mL	10.5 mL	
CO3-PW-3-5 (W)	K1801267-017	3/7/18	3/8/18	10 mL	10.5 mL	
Lab Control Sample	KQ1803087-01LCS	NA	NA	10 mL	10.9 mL	
Method Blank	KQ1803087-02MB	NA	NA	10 mL	10.5 mL	
Duplicate	KQ1803087-03DUP	3/6/18	3/6/18	10 mL	10.5 mL	
Matrix Spike	KQ1803087-04MS	3/6/18	3/6/18	10 mL	11.1 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267

Metals

Prep Method: EPA 3010A
Analytical Method: 6010C

Extraction Lot: 308359
Extraction Date: 02/14/18 12:48

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
TCLP-0-3	K1801267-010	2/7/18	2/8/18	25 mL	25 mL	
Lab Control Sample	KQ1801951-01LCS	NA	NA	25 mL	25 mL	
Method Blank	KQ1801951-02MB	NA	NA	25 mL	25 mL	
Duplicate	KQ1801951-03DUP	2/7/18	2/8/18	25 mL	25 mL	
Matrix Spike	KQ1801951-04MS	2/7/18	2/8/18	25 mL	25 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267

Metals

Prep Method: EPA CLP-METALS ILM04.0
Analytical Method: 6020

Extraction Lot: 308626
Extraction Date: 02/20/18 12:32

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
EQB-SD-01	K1801267-004	2/7/18	2/8/18	10 mL	10 mL	
EQB-PW-01	K1801267-018	2/8/18	2/8/18	10 mL	10 mL	
Method Blank	KQ1802192-01MB	NA	NA	10 mL	10 mL	
Lab Control Sample	KQ1802192-02LCS	NA	NA	10 mL	10.3 mL	
Duplicate Lab Control Sample	KQ1802192-03DLCS	NA	NA	10 mL	10.3 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267

Metals

Prep Method: EPA CLP-METALS ILM04.0
Analytical Method: 6020

Extraction Lot: 309729
Extraction Date: 03/13/18 17:05

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
CO1-PW-3-5 (W)	K1801267-008	3/6/18	3/6/18	10 mL	10 mL	
CO3-PW-3-5 (W)	K1801267-017	3/7/18	3/8/18	10 mL	10 mL	
Method Blank	KQ1803090-01MB	NA	NA	10 mL	10 mL	
Lab Control Sample	KQ1803090-02LCS	NA	NA	10 mL	10.3 mL	
Duplicate	KQ1803090-03DUP	3/7/18	3/8/18	10 mL	10 mL	
Matrix Spike	KQ1803090-04MS	3/7/18	3/8/18	10 mL	10.3 mL	

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dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request:K1801267

Metals

Prep Method: Method
Analytical Method: 7470A

Extraction Lot: 308435
Extraction Date: 02/22/18 12:30

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
EQB-SD-01	K1801267-004	2/7/18	2/8/18	10 mL	10 mL	
EQB-PW-01	K1801267-018	2/8/18	2/8/18	10 mL	10 mL	
Lab Control Sample	KQ1802022-01LCS	NA	NA	10 mL	10 mL	
Method Blank	KQ1802022-02MB	NA	NA	10 mL	10 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request:K1801267

Metals

Prep Method: Method
Analytical Method: 7470A

Extraction Lot: 309598
Extraction Date: 03/19/18 10:30

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
CO1-PW-3-5 (W)	K1801267-008	3/6/18	3/6/18	10 mL	10 mL	
CO3-PW-3-5 (W)	K1801267-017	3/7/18	3/8/18	10 mL	10 mL	
Method Blank	KQ1803003-01MB	NA	NA	10 mL	10 mL	
Lab Control Sample	KQ1803003-02LCS	NA	NA	10 mL	10 mL	
Batch QC	KQ1803003-03DUP	NA	NA	10 mL	10 mL	
Batch QC	KQ1803003-04MS	NA	NA	10 mL	10 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request:K1801267

Metals

Prep Method: Method
Analytical Method: 7470A

Extraction Lot: 308409
Extraction Date: 02/15/18 13:00

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
TCLP-0-3	K1801267-010	2/7/18	2/8/18	20 mL	20 mL	
Method Blank	KQ1801999-01MB	NA	NA	20 mL	20 mL	
Lab Control Sample	KQ1801999-02LCS	NA	NA	20 mL	20 mL	
Duplicate	KQ1801999-03DUP	2/7/18	2/8/18	20 mL	20 mL	
Matrix Spike	KQ1801999-04MS	2/7/18	2/8/18	20 mL	20 mL	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request:K1801267

Metals

Prep Method: Method
Analytical Method: 7471B

Extraction Lot: 308198
Extraction Date: 02/21/18 11:15

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
CO2-SD-3-5	K1801267-001	2/6/18	2/8/18	1.182 g	50 mL	
CO3-SD-3-5	K1801267-009	2/7/18	2/8/18	1.381 g	50 mL	
CO1-SD-3-5	K1801267-013	2/6/18	2/8/18	1.119 g	50 mL	
Method Blank	KQ1801822-05MB	NA	NA	0.500 g	50 mL	
Lab Control Sample	KQ1801822-06LCS	NA	NA	0.250 g	50 mL	
Duplicate	KQ1801822-09DUP	2/7/18	2/8/18	1.219 g	50 mL	
Matrix Spike	KQ1801822-10MS	2/7/18	2/8/18	1.227 g	50 mL	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/19/18 15:06	Mercury	7470A	580986	5.0	5.0	100	90-110
CCV 02/19/18 15:19	Mercury	7470A	580986	5.0	5.0	99	90-110
ICV 02/19/18 15:01	Mercury	7470A	580986	5.1	5.0	103	90-110
CCVA 02/20/18 11:34	Cadmium	6010C	580921	247	250	99	90-110
	Chromium	6010C	580921	244	250	98	90-110
	Lead	6010C	580921	250	250	100	90-110
	Selenium	6010C	580921	258	250	103	90-110
	Silver	6010C	580921	256	250	103	90-110
CCVA 02/20/18 12:11	Cadmium	6010C	580921	253	250	101	90-110
	Chromium	6010C	580921	248	250	99	90-110
	Lead	6010C	580921	256	250	102	90-110
	Selenium	6010C	580921	261	250	104	90-110
	Silver	6010C	580921	261	250	104	90-110
CCVA 02/20/18 13:05	Cadmium	6010C	580921	243	250	97	90-110
	Chromium	6010C	580921	235	250	94	90-110
	Lead	6010C	580921	244	250	98	90-110
	Selenium	6010C	580921	272	250	109	90-110
	Silver	6010C	580921	264	250	106	90-110
CCVA 02/20/18 10:04	Cadmium	6010C	580921	249	250	100	90-110
	Chromium	6010C	580921	244	250	98	90-110
	Lead	6010C	580921	249	250	100	90-110
	Selenium	6010C	580921	252	250	101	90-110
	Silver	6010C	580921	252	250	101	90-110
CCVB 02/20/18 11:31	Arsenic	6010C	580921	1030	1000	103	90-110
	Barium	6010C	580921	9930	10000	99	90-110
CCVB 02/20/18 12:08	Arsenic	6010C	580921	1030	1000	103	90-110
	Barium	6010C	580921	10300	10000	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCVB 02/20/18 12:41	Arsenic	6010C	580921	1100	1000	110	90-110
	Barium	6010C	580921	10500	10000	105	90-110
CCVB 02/20/18 10:01	Arsenic	6010C	580921	1020	1000	102	90-110
	Barium	6010C	580921	10100	10000	101	90-110
ICV 02/20/18 09:46	Arsenic	6010C	580921	2540	2500	102	90-110
	Barium	6010C	580921	5120	5000	102	90-110
	Cadmium	6010C	580921	1210	1250	97	90-110
	Chromium	6010C	580921	491	500	98	90-110
	Lead	6010C	580921	2420	2500	97	90-110
	Selenium	6010C	580921	2420	2500	97	90-110
	Silver	6010C	580921	595	625	95	90-110
CCV 02/20/18 09:36	Arsenic	6020A	580895	25.0	25.0	100	90-110
	Barium	6020A	580895	24.8	25.0	99	90-110
	Beryllium	6020A	580895	24.6	25.0	98	90-110
	Cadmium	6020A	580895	24.7	25.0	99	90-110
	Chromium	6020A	580895	25.2	25.0	101	90-110
	Cobalt	6020A	580895	25.3	25.0	101	90-110
	Copper	6020A	580895	25.3	25.0	101	90-110
	Lead	6020A	580895	25.4	25.0	102	90-110
	Manganese	6020A	580895	24.5	25.0	98	90-110
	Molybdenum	6020A	580895	12.6	12.5	100	90-110
	Nickel	6020A	580895	25.0	25.0	100	90-110
	Selenium	6020A	580895	25.1	25.0	101	90-110
	Silver	6020A	580895	12.4	12.5	99	90-110
	Thallium	6020A	580895	25.1	25.0	100	90-110
	Vanadium	6020A	580895	25.2	25.0	101	90-110
CCV 02/20/18 10:24	Arsenic	6020A	580895	25.0	25.0	100	90-110
	Barium	6020A	580895	24.1	25.0	96	90-110
	Beryllium	6020A	580895	24.4	25.0	98	90-110
	Cadmium	6020A	580895	24.4	25.0	98	90-110
	Chromium	6020A	580895	25.0	25.0	100	90-110
	Cobalt	6020A	580895	24.9	25.0	99	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/20/18 10:24	Copper	6020A	580895	25.5	25.0	102	90-110
	Lead	6020A	580895	24.6	25.0	98	90-110
	Manganese	6020A	580895	24.1	25.0	96	90-110
	Molybdenum	6020A	580895	12.3	12.5	98	90-110
	Nickel	6020A	580895	25.2	25.0	101	90-110
	Selenium	6020A	580895	24.9	25.0	100	90-110
	Silver	6020A	580895	12.2	12.5	97	90-110
	Thallium	6020A	580895	24.6	25.0	98	90-110
	Vanadium	6020A	580895	24.8	25.0	99	90-110
CCV 02/20/18 10:45	Arsenic	6020A	580895	24.6	25.0	98	90-110
	Barium	6020A	580895	24.3	25.0	97	90-110
	Beryllium	6020A	580895	25.1	25.0	101	90-110
	Cadmium	6020A	580895	24.3	25.0	97	90-110
	Chromium	6020A	580895	25.1	25.0	100	90-110
	Cobalt	6020A	580895	25.0	25.0	100	90-110
	Copper	6020A	580895	25.3	25.0	101	90-110
	Lead	6020A	580895	24.7	25.0	99	90-110
	Manganese	6020A	580895	24.6	25.0	98	90-110
	Molybdenum	6020A	580895	12.1	12.5	97	90-110
	Nickel	6020A	580895	25.2	25.0	101	90-110
	Selenium	6020A	580895	24.7	25.0	99	90-110
	Silver	6020A	580895	12.1	12.5	97	90-110
	Thallium	6020A	580895	24.8	25.0	99	90-110
	Vanadium	6020A	580895	25.1	25.0	100	90-110
CCV 02/20/18 11:19	Arsenic	6020A	580895	24.7	25.0	99	90-110
	Barium	6020A	580895	23.9	25.0	96	90-110
	Beryllium	6020A	580895	24.7	25.0	99	90-110
	Cadmium	6020A	580895	24.1	25.0	96	90-110
	Chromium	6020A	580895	25.1	25.0	100	90-110
	Cobalt	6020A	580895	24.9	25.0	100	90-110
	Copper	6020A	580895	25.2	25.0	101	90-110
	Lead	6020A	580895	24.6	25.0	98	90-110
	Manganese	6020A	580895	24.1	25.0	96	90-110
	Molybdenum	6020A	580895	12.2	12.5	98	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/20/18 11:19	Nickel	6020A	580895	25.2	25.0	101	90-110
	Selenium	6020A	580895	24.4	25.0	98	90-110
	Silver	6020A	580895	12.2	12.5	97	90-110
	Thallium	6020A	580895	24.5	25.0	98	90-110
	Vanadium	6020A	580895	25.2	25.0	101	90-110
CCV 02/20/18 12:00	Arsenic	6020A	580895	24.0	25.0	96	90-110
	Barium	6020A	580895	24.3	25.0	97	90-110
	Beryllium	6020A	580895	25.1	25.0	100	90-110
	Cadmium	6020A	580895	24.2	25.0	97	90-110
	Chromium	6020A	580895	24.1	25.0	96	90-110
	Cobalt	6020A	580895	24.3	25.0	97	90-110
	Copper	6020A	580895	24.7	25.0	99	90-110
	Lead	6020A	580895	24.2	25.0	97	90-110
	Manganese	6020A	580895	23.8	25.0	95	90-110
	Molybdenum	6020A	580895	12.1	12.5	97	90-110
	Nickel	6020A	580895	24.4	25.0	98	90-110
	Selenium	6020A	580895	23.8	25.0	95	90-110
	Silver	6020A	580895	12.2	12.5	97	90-110
	Thallium	6020A	580895	24.2	25.0	97	90-110
	Vanadium	6020A	580895	24.1	25.0	96	90-110
ICV 02/20/18 09:33	Arsenic	6020A	580895	25.4	25.0	101	90-110
	Barium	6020A	580895	99.2	100	99	90-110
	Beryllium	6020A	580895	2.58	2.50	103	90-110
	Cadmium	6020A	580895	12.6	12.5	101	90-110
	Chromium	6020A	580895	10.2	10.0	102	90-110
	Cobalt	6020A	580895	25.5	25.0	102	90-110
	Copper	6020A	580895	13.1	12.5	105	90-110
	Lead	6020A	580895	25.5	25.0	102	90-110
	Manganese	6020A	580895	24.7	25.0	99	90-110
	Molybdenum	6020A	580895	25.3	25.0	101	90-110
	Nickel	6020A	580895	25.7	25.0	103	90-110
	Selenium	6020A	580895	24.8	25.0	99	90-110
	Silver	6020A	580895	12.2	12.5	98	90-110
	Thallium	6020A	580895	25.3	25.0	101	90-110

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 02/20/18 09:33	Vanadium	6020A	580895	25.5	25.0	102	90-110
CCVA 02/21/18 13:07	Calcium	6010C	581112	527	500	105	90-110
	Magnesium	6010C	581112	264	250	106	90-110
	Tin	6010C	581112	256	250	102	90-110
	Zinc	6010C	581112	254	250	102	90-110
CCVA 02/21/18 13:37	Calcium	6010C	581112	536	500	107	90-110
	Magnesium	6010C	581112	265	250	106	90-110
	Tin	6010C	581112	259	250	104	90-110
	Zinc	6010C	581112	258	250	103	90-110
CCVA 02/21/18 14:51	Calcium	6010C	581112	516	500	103	90-110
	Magnesium	6010C	581112	263	250	105	90-110
	Tin	6010C	581112	255	250	102	90-110
	Zinc	6010C	581112	254	250	102	90-110
CCVA 02/21/18 15:32	Calcium	6010C	581112	508	500	102	90-110
	Magnesium	6010C	581112	262	250	105	90-110
	Tin	6010C	581112	258	250	103	90-110
	Zinc	6010C	581112	260	250	104	90-110
CCVA 02/21/18 16:09	Calcium	6010C	581112	514	500	103	90-110
	Magnesium	6010C	581112	261	250	104	90-110
	Tin	6010C	581112	258	250	103	90-110
	Zinc	6010C	581112	261	250	104	90-110
CCVA 02/21/18 16:37	Calcium	6010C	581112	523	500	105	90-110
	Magnesium	6010C	581112	258	250	103	90-110
	Tin	6010C	581112	254	250	102	90-110
	Zinc	6010C	581112	255	250	102	90-110
CCVA 02/21/18 12:17	Calcium	6010C	581112	532	500	106	90-110
	Magnesium	6010C	581112	267	250	107	90-110
	Tin	6010C	581112	263	250	105	90-110
	Zinc	6010C	581112	262	250	105	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCVB 02/21/18 13:05	Calcium	6010C	581112	10600	10000	106	90-110
	Iron	6010C	581112	10600	10000	106	90-110
	Magnesium	6010C	581112	10600	10000	106	90-110
	Magnesium	6010C	581112	10000	10000	100	90-110
	Potassium	6010C	581112	9830	10000	98	90-110
	Sodium	6010C	581112	9840	10000	98	90-110
CCVB 02/21/18 13:34	Calcium	6010C	581112	10400	10000	104	90-110
	Iron	6010C	581112	10400	10000	104	90-110
	Magnesium	6010C	581112	10400	10000	104	90-110
	Magnesium	6010C	581112	10100	10000	101	90-110
	Potassium	6010C	581112	10000	10000	100	90-110
	Sodium	6010C	581112	9970	10000	100	90-110
CCVB 02/21/18 14:48	Calcium	6010C	581112	10200	10000	102	90-110
	Iron	6010C	581112	10100	10000	101	90-110
	Magnesium	6010C	581112	10200	10000	102	90-110
	Magnesium	6010C	581112	9940	10000	99	90-110
	Potassium	6010C	581112	9690	10000	97	90-110
	Sodium	6010C	581112	9690	10000	97	90-110
CCVB 02/21/18 15:30	Calcium	6010C	581112	10400	10000	104	90-110
	Iron	6010C	581112	10500	10000	105	90-110
	Magnesium	6010C	581112	10600	10000	106	90-110
	Magnesium	6010C	581112	10300	10000	103	90-110
	Potassium	6010C	581112	10400	10000	104	90-110
	Sodium	6010C	581112	10400	10000	104	90-110
CCVB 02/21/18 16:06	Calcium	6010C	581112	10600	10000	106	90-110
	Iron	6010C	581112	10500	10000	105	90-110
	Magnesium	6010C	581112	10600	10000	106	90-110
	Magnesium	6010C	581112	9960	10000	100	90-110
	Potassium	6010C	581112	10000	10000	100	90-110
	Sodium	6010C	581112	9970	10000	100	90-110
CCVB 02/21/18 16:34	Calcium	6010C	581112	10500	10000	105	90-110

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Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCVB 02/21/18 16:34	Iron	6010C	581112	10400	10000	104	90-110
	Magnesium	6010C	581112	10400	10000	104	90-110
	Magnesium	6010C	581112	10000	10000	100	90-110
	Potassium	6010C	581112	9960	10000	100	90-110
	Sodium	6010C	581112	9850	10000	99	90-110
CCVB 02/21/18 12:14	Calcium	6010C	581112	10600	10000	106	90-110
	Iron	6010C	581112	10500	10000	105	90-110
	Magnesium	6010C	581112	10500	10000	105	90-110
	Magnesium	6010C	581112	10200	10000	102	90-110
	Potassium	6010C	581112	10200	10000	102	90-110
	Sodium	6010C	581112	10000	10000	100	90-110
ICV 02/21/18 11:57	Calcium	6010C	581112	13200	12500	106	90-110
	Iron	6010C	581112	2650	2500	106	90-110
	Magnesium	6010C	581112	13300	12500	106	90-110
	Magnesium	6010C	581112	12500	12500	100	90-110
	Potassium	6010C	581112	12700	12500	102	90-110
	Sodium	6010C	581112	12900	12500	103	90-110
	Zinc	6010C	581112	1270	1250	102	90-110
ICVB 02/21/18 11:55	Calcium	6010C	581112	5020	5000	100	90-110
	Magnesium	6010C	581112	5090	5000	102	90-110
	Tin	6010C	581112	5000	5000	100	90-110
CCV 02/21/18 14:50	Mercury	7471B	581176	5.01	5.00	100	90-110
CCV 02/21/18 15:10	Mercury	7471B	581176	5.12	5.00	102	90-110
CCV 02/21/18 15:29	Mercury	7471B	581176	5.17	5.00	103	90-110
CCV 02/21/18 15:49	Mercury	7471B	581176	5.17	5.00	103	90-110
ICV 02/21/18 14:45	Mercury	7471B	581176	4.91	5.00	98	90-110
CCV 02/22/18 15:04	Mercury	7470A	581405	5.03	5.00	101	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/22/18 15:24	Mercury	7470A	581405	4.97	5.00	99	90-110
CCV 02/22/18 15:43	Mercury	7470A	581405	4.96	5.00	99	90-110
ICV 02/22/18 15:00	Mercury	7470A	581405	5.01	5.00	100	90-110
CCV 02/26/18 13:14	Arsenic	6020	581650	25.6	25.0	102	90-110
	Barium	6020	581650	25.6	25.0	102	90-110
	Beryllium	6020	581650	25.0	25.0	100	90-110
	Cadmium	6020	581650	25.1	25.0	100	90-110
	Chromium	6020	581650	24.8	25.0	99	90-110
	Cobalt	6020	581650	25.0	25.0	100	90-110
	Copper	6020	581650	25.0	25.0	100	90-110
	Lead	6020	581650	24.7	25.0	99	90-110
	Manganese	6020	581650	25.3	25.0	101	90-110
	Molybdenum	6020	581650	12.6	12.5	101	90-110
	Molybdenum	6020	581650	12.6	12.5	101	90-110
	Nickel	6020	581650	25.1	25.0	101	90-110
	Selenium	6020	581650	25.6	25.0	103	90-110
	Silver	6020	581650	12.7	12.5	102	90-110
	Thallium	6020	581650	25.0	25.0	100	90-110
	Vanadium	6020	581650	24.3	25.0	97	90-110
	Zinc	6020	581650	25.0	25.0	100	90-110
CCV 02/26/18 14:25	Arsenic	6020	581650	25.3	25.0	101	90-110
	Barium	6020	581650	25.1	25.0	100	90-110
	Beryllium	6020	581650	25.5	25.0	102	90-110
	Cadmium	6020	581650	24.9	25.0	100	90-110
	Chromium	6020	581650	24.7	25.0	99	90-110
	Cobalt	6020	581650	24.7	25.0	99	90-110
	Copper	6020	581650	24.5	25.0	98	90-110
	Lead	6020	581650	24.9	25.0	99	90-110
	Manganese	6020	581650	25.3	25.0	101	90-110
	Molybdenum	6020	581650	12.4	12.5	99	90-110
	Molybdenum	6020	581650	12.4	12.5	99	90-110
	Nickel	6020	581650	24.7	25.0	99	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/26/18 14:25	Selenium	6020	581650	24.3	25.0	97	90-110
	Silver	6020	581650	12.4	12.5	99	90-110
	Thallium	6020	581650	24.9	25.0	99	90-110
	Vanadium	6020	581650	24.3	25.0	97	90-110
	Zinc	6020	581650	24.8	25.0	99	90-110
CCV 02/26/18 15:11	Arsenic	6020	581650	25.1	25.0	100	90-110
	Barium	6020	581650	24.7	25.0	99	90-110
	Beryllium	6020	581650	26.8	25.0	107	90-110
	Cadmium	6020	581650	24.8	25.0	99	90-110
	Chromium	6020	581650	24.8	25.0	99	90-110
	Cobalt	6020	581650	25.0	25.0	100	90-110
	Copper	6020	581650	24.3	25.0	97	90-110
	Lead	6020	581650	24.9	25.0	100	90-110
	Manganese	6020	581650	26.8	25.0	107	90-110
	Molybdenum	6020	581650	12.1	12.5	97	90-110
	Molybdenum	6020	581650	12.1	12.5	97	90-110
	Nickel	6020	581650	24.5	25.0	98	90-110
	Selenium	6020	581650	26.9	25.0	107	90-110
	Silver	6020	581650	12.3	12.5	99	90-110
	Thallium	6020	581650	25.1	25.0	100	90-110
	Vanadium	6020	581650	24.4	25.0	98	90-110
	Zinc	6020	581650	24.3	25.0	97	90-110
CCV 02/26/18 16:21	Arsenic	6020	581650	24.7	25.0	99	90-110
	Barium	6020	581650	24.8	25.0	99	90-110
	Beryllium	6020	581650	26.0	25.0	104	90-110
	Cadmium	6020	581650	24.6	25.0	98	90-110
	Chromium	6020	581650	24.7	25.0	99	90-110
	Cobalt	6020	581650	24.9	25.0	100	90-110
	Copper	6020	581650	24.5	25.0	98	90-110
	Lead	6020	581650	25.0	25.0	100	90-110
	Manganese	6020	581650	25.7	25.0	103	90-110
	Molybdenum	6020	581650	12.2	12.5	98	90-110
	Molybdenum	6020	581650	12.2	12.5	98	90-110
	Nickel	6020	581650	25.1	25.0	100	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/26/18 16:21	Selenium	6020	581650	25.6	25.0	102	90-110
	Silver	6020	581650	12.4	12.5	99	90-110
	Thallium	6020	581650	25.1	25.0	100	90-110
	Vanadium	6020	581650	24.3	25.0	97	90-110
	Zinc	6020	581650	24.5	25.0	98	90-110
CCV 02/26/18 17:07	Arsenic	6020	581650	24.8	25.0	99	90-110
	Barium	6020	581650	25.6	25.0	103	90-110
	Beryllium	6020	581650	26.1	25.0	104	90-110
	Cadmium	6020	581650	25.2	25.0	101	90-110
	Chromium	6020	581650	24.6	25.0	99	90-110
	Cobalt	6020	581650	25.1	25.0	100	90-110
	Copper	6020	581650	24.4	25.0	97	90-110
	Lead	6020	581650	25.1	25.0	100	90-110
	Manganese	6020	581650	25.1	25.0	100	90-110
	Molybdenum	6020	581650	12.4	12.5	99	90-110
	Molybdenum	6020	581650	12.4	12.5	99	90-110
	Nickel	6020	581650	24.5	25.0	98	90-110
	Selenium	6020	581650	26.3	25.0	105	90-110
	Silver	6020	581650	12.6	12.5	101	90-110
	Thallium	6020	581650	25.0	25.0	100	90-110
	Vanadium	6020	581650	24.3	25.0	97	90-110
	Zinc	6020	581650	25.0	25.0	100	90-110
CCV 02/26/18 18:10	Arsenic	6020	581650	24.8	25.0	99	90-110
	Barium	6020	581650	25.4	25.0	102	90-110
	Beryllium	6020	581650	26.2	25.0	105	90-110
	Cadmium	6020	581650	24.6	25.0	98	90-110
	Chromium	6020	581650	24.7	25.0	99	90-110
	Cobalt	6020	581650	25.1	25.0	100	90-110
	Copper	6020	581650	24.7	25.0	99	90-110
	Lead	6020	581650	25.0	25.0	100	90-110
	Manganese	6020	581650	25.6	25.0	102	90-110
	Molybdenum	6020	581650	12.2	12.5	97	90-110
	Molybdenum	6020	581650	12.2	12.5	97	90-110
	Nickel	6020	581650	25.0	25.0	100	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 02/26/18 18:10	Selenium	6020	581650	25.5	25.0	102	90-110
	Silver	6020	581650	12.5	12.5	100	90-110
	Thallium	6020	581650	25.3	25.0	101	90-110
	Vanadium	6020	581650	24.3	25.0	97	90-110
	Zinc	6020	581650	25.3	25.0	101	90-110
CCV 02/26/18 18:33	Arsenic	6020	581650	24.7	25.0	99	90-110
	Barium	6020	581650	25.2	25.0	101	90-110
	Beryllium	6020	581650	26.1	25.0	104	90-110
	Cadmium	6020	581650	24.8	25.0	99	90-110
	Chromium	6020	581650	24.8	25.0	99	90-110
	Cobalt	6020	581650	25.1	25.0	100	90-110
	Copper	6020	581650	24.4	25.0	98	90-110
	Lead	6020	581650	24.7	25.0	99	90-110
	Manganese	6020	581650	25.3	25.0	101	90-110
	Molybdenum	6020	581650	12.3	12.5	98	90-110
	Molybdenum	6020	581650	12.3	12.5	98	90-110
	Nickel	6020	581650	24.8	25.0	99	90-110
	Selenium	6020	581650	25.2	25.0	101	90-110
	Silver	6020	581650	12.4	12.5	99	90-110
	Thallium	6020	581650	24.7	25.0	99	90-110
	Vanadium	6020	581650	24.4	25.0	98	90-110
	Zinc	6020	581650	24.3	25.0	97	90-110
ICV 02/26/18 13:10	Arsenic	6020	581650	25.7	25.0	103	90-110
	Barium	6020	581650	103	100	103	90-110
	Beryllium	6020	581650	2.74	2.50	109	90-110
	Cadmium	6020	581650	12.7	12.5	102	90-110
	Chromium	6020	581650	10.1	10.0	101	90-110
	Cobalt	6020	581650	25.5	25.0	102	90-110
	Copper	6020	581650	12.6	12.5	100	90-110
	Lead	6020	581650	24.9	25.0	100	90-110
	Manganese	6020	581650	25.5	25.0	102	90-110
	Molybdenum	6020	581650	25.6	25.0	103	90-110
	Molybdenum	6020	581650	25.6	25.0	103	90-110
	Nickel	6020	581650	25.5	25.0	102	90-110

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 02/26/18 13:10	Selenium	6020	581650	26.6	25.0	106	90-110
	Silver	6020	581650	12.6	12.5	101	90-110
	Thallium	6020	581650	24.9	25.0	99	90-110
	Vanadium	6020	581650	24.9	25.0	100	90-110
	Zinc	6020	581650	26.1	25.0	104	90-110
CCVA 03/14/18 11:42	Calcium	6010C	583591	489	500	98	90-110
	Magnesium	6010C	583591	246	250	98	90-110
	Tin	6010C	583591	248	250	99	90-110
CCVA 03/14/18 12:27	Calcium	6010C	583591	503	500	101	90-110
	Magnesium	6010C	583591	242	250	97	90-110
	Tin	6010C	583591	255	250	102	90-110
CCVA 03/14/18 13:03	Calcium	6010C	583591	507	500	101	90-110
	Magnesium	6010C	583591	242	250	97	90-110
	Tin	6010C	583591	255	250	102	90-110
CCVA 03/14/18 10:34	Calcium	6010C	583591	496	500	99	90-110
	Magnesium	6010C	583591	249	250	100	90-110
	Tin	6010C	583591	252	250	101	90-110
CCVB 03/14/18 11:40	Calcium	6010C	583591	10200	10000	102	90-110
	Iron	6010C	583591	10000	10000	100	90-110
	Magnesium	6010C	583591	10400	10000	104	90-110
	Magnesium	6010C	583591	10300	10000	103	90-110
	Potassium	6010C	583591	10200	10000	102	90-110
	Sodium	6010C	583591	10200	10000	102	90-110
CCVB 03/14/18 12:24	Calcium	6010C	583591	9810	10000	98	90-110
	Iron	6010C	583591	9480	10000	95	90-110
	Magnesium	6010C	583591	9910	10000	99	90-110
	Magnesium	6010C	583591	9970	10000	100	90-110
	Potassium	6010C	583591	10700	10000	107	90-110
	Sodium	6010C	583591	10900	10000	109	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCVB 03/14/18 13:00	Calcium	6010C	583591	9900	10000	99	90-110
	Iron	6010C	583591	9560	10000	96	90-110
	Magnesium	6010C	583591	10000	10000	100	90-110
	Magnesium	6010C	583591	10100	10000	101	90-110
	Potassium	6010C	583591	11000	10000	110	90-110
	Sodium	6010C	583591	10900	10000	109	90-110
CCVB 03/14/18 10:31	Calcium	6010C	583591	10000	10000	100	90-110
	Iron	6010C	583591	10100	10000	101	90-110
	Magnesium	6010C	583591	10400	10000	104	90-110
	Magnesium	6010C	583591	10100	10000	101	90-110
	Potassium	6010C	583591	10000	10000	100	90-110
	Sodium	6010C	583591	10100	10000	101	90-110
ICV 03/14/18 10:16	Calcium	6010C	583591	12700	12500	101	90-110
	Iron	6010C	583591	2540	2500	102	90-110
	Magnesium	6010C	583591	12800	12500	102	90-110
	Magnesium	6010C	583591	12300	12500	98	90-110
	Potassium	6010C	583591	12500	12500	100	90-110
	Sodium	6010C	583591	12500	12500	100	90-110
ICVB 03/14/18 10:13	Calcium	6010C	583591	5030	5000	101	90-110
	Magnesium	6010C	583591	5020	5000	100	90-110
	Tin	6010C	583591	4980	5000	100	90-110
CCV 03/15/18 07:33	Arsenic	6020	583685	25.1	25.0	100	90-110
	Barium	6020	583685	25.1	25.0	100	90-110
	Beryllium	6020	583685	25.8	25.0	103	90-110
	Cadmium	6020	583685	25.0	25.0	100	90-110
	Chromium	6020	583685	24.8	25.0	99	90-110
	Cobalt	6020	583685	25.2	25.0	101	90-110
	Copper	6020	583685	24.8	25.0	99	90-110
	Lead	6020	583685	24.9	25.0	100	90-110
	Manganese	6020	583685	24.9	25.0	100	90-110
	Molybdenum	6020	583685	12.8	12.5	102	90-110
	Nickel	6020	583685	24.7	25.0	99	90-110

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 03/15/18 07:33	Selenium	6020	583685	24.5	25.0	98	90-110
	Silver	6020	583685	12.3	12.5	98	90-110
	Thallium	6020	583685	25.0	25.0	100	90-110
	Vanadium	6020	583685	24.9	25.0	99	90-110
	Zinc	6020	583685	24.9	25.0	99	90-110
CCV 03/15/18 08:29	Arsenic	6020	583685	24.1	25.0	96	90-110
	Barium	6020	583685	24.5	25.0	98	90-110
	Beryllium	6020	583685	25.4	25.0	102	90-110
	Cadmium	6020	583685	23.9	25.0	96	90-110
	Chromium	6020	583685	24.1	25.0	96	90-110
	Cobalt	6020	583685	24.5	25.0	98	90-110
	Copper	6020	583685	24.3	25.0	97	90-110
	Lead	6020	583685	23.8	25.0	95	90-110
	Manganese	6020	583685	24.8	25.0	99	90-110
	Molybdenum	6020	583685	11.8	12.5	94	90-110
	Nickel	6020	583685	24.5	25.0	98	90-110
	Selenium	6020	583685	24.6	25.0	98	90-110
	Silver	6020	583685	11.6	12.5	93	90-110
	Thallium	6020	583685	24.3	25.0	97	90-110
	Vanadium	6020	583685	24.2	25.0	97	90-110
	Zinc	6020	583685	24.0	25.0	96	90-110
CCV 03/15/18 09:03	Arsenic	6020	583685	24.8	25.0	99	90-110
	Barium	6020	583685	25.0	25.0	100	90-110
	Beryllium	6020	583685	25.4	25.0	102	90-110
	Cadmium	6020	583685	24.8	25.0	99	90-110
	Chromium	6020	583685	24.7	25.0	99	90-110
	Cobalt	6020	583685	25.5	25.0	102	90-110
	Copper	6020	583685	24.9	25.0	100	90-110
	Lead	6020	583685	24.8	25.0	99	90-110
	Manganese	6020	583685	25.7	25.0	103	90-110
	Molybdenum	6020	583685	12.4	12.5	99	90-110
	Nickel	6020	583685	25.3	25.0	101	90-110
	Selenium	6020	583685	24.6	25.0	98	90-110
	Silver	6020	583685	12.3	12.5	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 03/15/18 09:03	Thallium	6020	583685	25.3	25.0	101	90-110
	Vanadium	6020	583685	24.9	25.0	99	90-110
	Zinc	6020	583685	24.2	25.0	97	90-110
ICV 03/15/18 07:31	Arsenic	6020	583685	26.2	25.0	105	90-110
	Barium	6020	583685	103	100	103	90-110
	Beryllium	6020	583685	2.67	2.50	107	90-110
	Cadmium	6020	583685	12.9	12.5	103	90-110
	Chromium	6020	583685	10.7	10.0	107	90-110
	Cobalt	6020	583685	26.8	25.0	107	90-110
	Copper	6020	583685	13.2	12.5	106	90-110
	Lead	6020	583685	26.6	25.0	107	90-110
	Manganese	6020	583685	27.1	25.0	108	90-110
	Molybdenum	6020	583685	26.3	25.0	105	90-110
	Nickel	6020	583685	26.6	25.0	106	90-110
	Selenium	6020	583685	26.1	25.0	104	90-110
	Silver	6020	583685	12.6	12.5	101	90-110
	Thallium	6020	583685	26.6	25.0	106	90-110
	Vanadium	6020	583685	26.6	25.0	107	90-110
	Zinc	6020	583685	26.1	25.0	104	90-110
CCV 03/20/18 09:30	Mercury	7470A	584203	4.88	5.00	98	90-110
CCV 03/20/18 09:50	Mercury	7470A	584203	4.91	5.00	98	90-110
CCV 03/20/18 10:09	Mercury	7470A	584203	4.95	5.00	99	90-110
CCV 03/20/18 10:28	Mercury	7470A	584203	4.94	5.00	99	90-110
CCV 03/20/18 10:50	Mercury	7470A	584203	4.92	5.00	98	90-110
CCV 03/20/18 11:09	Mercury	7470A	584203	4.89	5.00	98	90-110
ICV 03/20/18 09:25	Mercury	7470A	584203	5.39	5.00	108	90-110

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/19/18 15:08	Mercury	7470A	580986	0.1	U
CCB 02/19/18 15:21	Mercury	7470A	580986	0.1	U
ICB 02/19/18 15:03	Mercury	7470A	580986	0.1	U
CCB 02/20/18 10:06	Arsenic	6010C	580921	4	U
	Barium	6010C	580921	100	U
	Cadmium	6010C	580921	0.2	U
	Chromium	6010C	580921	2	U
	Lead	6010C	580921	3	U
	Selenium	6010C	580921	4	U
	Silver	6010C	580921	0.8	U
CCB 02/20/18 11:36	Arsenic	6010C	580921	4	U
	Barium	6010C	580921	100	U
	Cadmium	6010C	580921	0.2	U
	Chromium	6010C	580921	2	U
	Lead	6010C	580921	3	U
	Selenium	6010C	580921	4	U
	Silver	6010C	580921	0.8	U
CCB 02/20/18 12:13	Arsenic	6010C	580921	4	U
	Barium	6010C	580921	100	U
	Cadmium	6010C	580921	0.2	U
	Chromium	6010C	580921	2	U
	Lead	6010C	580921	3	U
	Selenium	6010C	580921	4	U
	Silver	6010C	580921	0.8	U
CCB 02/20/18 13:07	Arsenic	6010C	580921	4	U
	Barium	6010C	580921	100	U
	Cadmium	6010C	580921	0.2	U
	Chromium	6010C	580921	2	U
	Lead	6010C	580921	3	U
	Selenium	6010C	580921	4	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/20/18 13:07	Silver	6010C	580921	0.8	U
ICB 02/20/18 09:48	Arsenic	6010C	580921	4	U
	Barium	6010C	580921	100	U
	Cadmium	6010C	580921	0.2	U
	Chromium	6010C	580921	2	U
	Lead	6010C	580921	3	U
	Selenium	6010C	580921	4	U
	Silver	6010C	580921	0.8	U
CCB 02/20/18 09:42	Arsenic	6020A	580895	0.08	U
	Barium	6020A	580895	0.04	U
	Beryllium	6020A	580895	0.010	U
	Cadmium	6020A	580895	0.014	U
	Chromium	6020A	580895	0.12	U
	Cobalt	6020A	580895	0.012	U
	Copper	6020A	580895	0.08	U
	Lead	6020A	580895	0.04	U
	Manganese	6020A	580895	0.04	U
	Molybdenum	6020A	580895	0.04	U
	Nickel	6020A	580895	0.06	U
	Selenium	6020A	580895	0.1	U
	Silver	6020A	580895	0.008	U
	Thallium	6020A	580895	0.004	U
	Vanadium	6020A	580895	0.04	U
CCB 02/20/18 10:27	Arsenic	6020A	580895	0.08	U
	Barium	6020A	580895	0.04	U
	Beryllium	6020A	580895	0.010	U
	Cadmium	6020A	580895	0.014	U
	Chromium	6020A	580895	0.12	U
	Cobalt	6020A	580895	0.012	U
	Copper	6020A	580895	0.08	U
	Lead	6020A	580895	0.04	U
	Manganese	6020A	580895	0.04	U
	Molybdenum	6020A	580895	0.04	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/20/18 10:27	Nickel	6020A	580895	0.06	U
	Selenium	6020A	580895	0.1	U
	Silver	6020A	580895	0.008	U
	Thallium	6020A	580895	0.007	J
	Vanadium	6020A	580895	0.04	U
CCB 02/20/18 10:48	Arsenic	6020A	580895	0.08	U
	Barium	6020A	580895	0.04	U
	Beryllium	6020A	580895	0.010	U
	Cadmium	6020A	580895	0.014	U
	Chromium	6020A	580895	0.12	U
	Cobalt	6020A	580895	0.012	U
	Copper	6020A	580895	0.08	U
	Lead	6020A	580895	0.04	U
	Manganese	6020A	580895	0.04	U
	Molybdenum	6020A	580895	0.04	U
	Nickel	6020A	580895	0.06	U
	Selenium	6020A	580895	0.1	U
	Silver	6020A	580895	0.008	U
	Thallium	6020A	580895	0.007	J
	Vanadium	6020A	580895	0.04	U
CCB 02/20/18 11:22	Arsenic	6020A	580895	0.08	U
	Barium	6020A	580895	0.04	U
	Beryllium	6020A	580895	0.010	U
	Cadmium	6020A	580895	0.014	U
	Chromium	6020A	580895	0.12	U
	Cobalt	6020A	580895	0.012	U
	Copper	6020A	580895	0.08	U
	Lead	6020A	580895	0.04	U
	Manganese	6020A	580895	0.04	U
	Molybdenum	6020A	580895	0.04	U
	Nickel	6020A	580895	0.06	U
	Selenium	6020A	580895	0.1	U
	Silver	6020A	580895	0.008	U
	Thallium	6020A	580895	0.011	J

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Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/20/18 11:22	Vanadium	6020A	580895	0.04	U
CCB 02/20/18 12:12	Arsenic	6020A	580895	0.08	U
	Barium	6020A	580895	0.04	U
	Beryllium	6020A	580895	0.010	U
	Cadmium	6020A	580895	0.014	U
	Chromium	6020A	580895	0.12	U
	Cobalt	6020A	580895	0.012	U
	Copper	6020A	580895	0.08	U
	Lead	6020A	580895	0.04	U
	Manganese	6020A	580895	0.04	U
	Molybdenum	6020A	580895	0.04	U
	Nickel	6020A	580895	0.06	U
	Selenium	6020A	580895	0.1	U
	Silver	6020A	580895	0.008	U
	Thallium	6020A	580895	0.004	U
	Vanadium	6020A	580895	0.04	U
ICB 02/20/18 09:39	Arsenic	6020A	580895	0.08	U
	Barium	6020A	580895	0.04	U
	Beryllium	6020A	580895	0.010	U
	Cadmium	6020A	580895	0.014	U
	Chromium	6020A	580895	0.12	U
	Cobalt	6020A	580895	0.012	U
	Copper	6020A	580895	0.08	U
	Lead	6020A	580895	0.04	U
	Manganese	6020A	580895	0.04	U
	Molybdenum	6020A	580895	0.04	U
	Nickel	6020A	580895	0.06	U
	Selenium	6020A	580895	0.1	U
	Silver	6020A	580895	0.008	U
	Thallium	6020A	580895	0.010	J
	Vanadium	6020A	580895	0.04	U
CCB 02/21/18 12:19	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/21/18 12:19	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	50	U
	Sodium	6010C	581112	20	U
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
CCB 02/21/18 13:09	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	50	U
	Sodium	6010C	581112	-23.0	J
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
CCB 02/21/18 13:39	Calcium	6010C	581112	6	J
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	60	J
	Sodium	6010C	581112	20	U
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
CCB 02/21/18 14:53	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	70	J
	Sodium	6010C	581112	20	U
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
CCB 02/21/18 15:39	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	50	U
	Sodium	6010C	581112	-21.0	J
	Tin	6010C	581112	3	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/21/18 15:39	Zinc	6010C	581112	1.0	U
CCB 02/21/18 16:12	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	70	J
	Sodium	6010C	581112	30	J
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
CCB 02/21/18 16:39	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	60	J
	Sodium	6010C	581112	20	U
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
ICB 02/21/18 12:00	Calcium	6010C	581112	5	U
	Iron	6010C	581112	10	U
	Magnesium	6010C	581112	1	U
	Potassium	6010C	581112	50	U
	Sodium	6010C	581112	-26.5	J
	Tin	6010C	581112	3	U
	Zinc	6010C	581112	1.0	U
CCB 02/21/18 14:52	Mercury	7471B	581176	-0.0560	J
CCB 02/21/18 15:11	Mercury	7471B	581176	-0.0220	J
CCB 02/21/18 15:31	Mercury	7471B	581176	-0.0290	J
CCB 02/21/18 15:51	Mercury	7471B	581176	-0.0210	J
ICB 02/21/18 14:47	Mercury	7471B	581176	-0.0410	J

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Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/22/18 15:06	Mercury	7470A	581405	-0.0200	J
CCB 02/22/18 15:25	Mercury	7470A	581405	-0.0250	J
CCB 02/22/18 15:45	Mercury	7470A	581405	-0.0290	J
ICB 02/22/18 15:01	Mercury	7470A	581405	-0.0220	J
CCB 02/26/18 13:21	Arsenic	6020	581650	0.08	U
	Barium	6020	581650	0.020	U
	Beryllium	6020	581650	0.002	U
	Cadmium	6020	581650	0.009	U
	Chromium	6020	581650	0.03	U
	Cobalt	6020	581650	0.005	U
	Copper	6020	581650	0.02	U
	Lead	6020	581650	0.007	U
	Manganese	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U
	Nickel	6020	581650	0.04	U
	Selenium	6020	581650	0.2	U
	Silver	6020	581650	0.002	U
	Thallium	6020	581650	0.008	U
	Vanadium	6020	581650	0.04	U
	Zinc	6020	581650	0.08	U
CCB 02/26/18 14:29	Arsenic	6020	581650	0.08	U
	Barium	6020	581650	0.020	U
	Beryllium	6020	581650	0.002	U
	Cadmium	6020	581650	0.009	U
	Chromium	6020	581650	0.03	U
	Cobalt	6020	581650	0.005	U
	Copper	6020	581650	0.02	U
	Lead	6020	581650	0.007	U
	Manganese	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/26/18 14:29	Molybdenum	6020	581650	0.014	J
	Nickel	6020	581650	0.04	U
	Selenium	6020	581650	0.2	U
	Silver	6020	581650	0.002	U
	Thallium	6020	581650	0.008	U
	Vanadium	6020	581650	0.04	U
	Zinc	6020	581650	0.08	U
CCB 02/26/18 15:15	Arsenic	6020	581650	0.08	U
	Barium	6020	581650	0.020	U
	Beryllium	6020	581650	0.002	U
	Cadmium	6020	581650	0.009	U
	Chromium	6020	581650	0.03	U
	Cobalt	6020	581650	0.005	U
	Copper	6020	581650	0.02	U
	Lead	6020	581650	0.007	U
	Manganese	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	J
	Nickel	6020	581650	0.04	U
	Selenium	6020	581650	0.2	U
	Silver	6020	581650	0.002	U
	Thallium	6020	581650	0.008	U
	Vanadium	6020	581650	0.04	U
	Zinc	6020	581650	0.08	U
CCB 02/26/18 16:25	Arsenic	6020	581650	0.08	U
	Barium	6020	581650	0.02	U
	Beryllium	6020	581650	0.002	U
	Cadmium	6020	581650	0.009	U
	Chromium	6020	581650	0.03	U
	Cobalt	6020	581650	0.005	U
	Copper	6020	581650	0.02	U
	Lead	6020	581650	0.007	U
	Manganese	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 02/26/18 16:25	Molybdenum	6020	581650	0.006	U
	Nickel	6020	581650	0.04	U
	Selenium	6020	581650	0.2	U
	Silver	6020	581650	0.002	U
	Thallium	6020	581650	0.008	U
	Vanadium	6020	581650	0.04	U
	Zinc	6020	581650	0.08	U
CCB 02/26/18 17:11	Arsenic	6020	581650	0.08	U
	Barium	6020	581650	0.02	U
	Beryllium	6020	581650	0.002	U
	Cadmium	6020	581650	0.009	U
	Chromium	6020	581650	0.03	U
	Cobalt	6020	581650	0.005	U
	Copper	6020	581650	0.02	U
	Lead	6020	581650	0.007	U
	Manganese	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U
	Molybdenum	6020	581650	0.007	J
	Nickel	6020	581650	0.04	U
	Selenium	6020	581650	0.2	U
	Silver	6020	581650	0.002	U
	Thallium	6020	581650	0.008	U
	Vanadium	6020	581650	0.04	U
	Zinc	6020	581650	0.08	U
CCB 02/26/18 18:14	Arsenic	6020	581650	0.08	U
	Barium	6020	581650	0.02	U
	Beryllium	6020	581650	0.002	U
	Cadmium	6020	581650	0.009	U
	Chromium	6020	581650	0.03	U
	Cobalt	6020	581650	0.005	U
	Copper	6020	581650	0.02	U
	Lead	6020	581650	0.007	U
	Manganese	6020	581650	0.006	U
	Molybdenum	6020	581650	0.006	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte	Method	Analysis Batch:	Result	C
CCB 02/26/18 18:14				
Molybdenum	6020	581650	0.009	J
Nickel	6020	581650	0.04	U
Selenium	6020	581650	0.2	U
Silver	6020	581650	0.002	U
Thallium	6020	581650	0.008	U
Vanadium	6020	581650	0.04	U
Zinc	6020	581650	0.08	U
CCB 02/26/18 18:37				
Arsenic	6020	581650	0.08	U
Barium	6020	581650	0.02	U
Beryllium	6020	581650	0.002	U
Cadmium	6020	581650	0.009	U
Chromium	6020	581650	0.03	U
Cobalt	6020	581650	0.005	U
Copper	6020	581650	0.02	U
Lead	6020	581650	0.007	U
Manganese	6020	581650	0.006	U
Molybdenum	6020	581650	0.006	U
Molybdenum	6020	581650	0.006	U
Nickel	6020	581650	0.04	U
Selenium	6020	581650	0.2	U
Silver	6020	581650	0.002	U
Thallium	6020	581650	0.008	U
Vanadium	6020	581650	0.04	U
Zinc	6020	581650	0.08	U
ICB 02/26/18 13:18				
Arsenic	6020	581650	0.08	U
Barium	6020	581650	0.020	U
Beryllium	6020	581650	0.002	U
Cadmium	6020	581650	0.009	U
Chromium	6020	581650	0.03	U
Cobalt	6020	581650	0.005	U
Copper	6020	581650	0.02	U
Lead	6020	581650	0.007	U
Manganese	6020	581650	0.006	U
Molybdenum	6020	581650	0.006	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
ICB 02/26/18 13:18	Molybdenum	6020	581650	0.008	J
	Nickel	6020	581650	0.04	U
	Selenium	6020	581650	0.2	U
	Silver	6020	581650	0.002	U
	Thallium	6020	581650	0.008	U
	Vanadium	6020	581650	0.04	U
	Zinc	6020	581650	0.08	U
CCB 03/14/18 10:36	Calcium	6010C	583591	0.6	U
	Iron	6010C	583591	7	J
	Magnesium	6010C	583591	0.2	U
	Potassium	6010C	583591	50	U
	Sodium	6010C	583591	20	U
	Tin	6010C	583591	2	U
CCB 03/14/18 11:45	Calcium	6010C	583591	0.6	U
	Iron	6010C	583591	5	J
	Magnesium	6010C	583591	0.2	U
	Potassium	6010C	583591	50	U
	Sodium	6010C	583591	20	U
	Tin	6010C	583591	2	U
CCB 03/14/18 12:33	Calcium	6010C	583591	0.6	U
	Iron	6010C	583591	10	J
	Magnesium	6010C	583591	0.4	J
	Potassium	6010C	583591	50	U
	Sodium	6010C	583591	170	J
	Tin	6010C	583591	2	U
CCB 03/14/18 13:05	Calcium	6010C	583591	0.6	U
	Iron	6010C	583591	7	J
	Magnesium	6010C	583591	0.2	U
	Potassium	6010C	583591	50	U
	Sodium	6010C	583591	90	J
	Tin	6010C	583591	2	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
ICB 03/14/18 10:19	Calcium	6010C	583591	0.6	U
	Iron	6010C	583591	10	J
	Magnesium	6010C	583591	0.2	U
	Potassium	6010C	583591	50	U
	Sodium	6010C	583591	20	U
	Tin	6010C	583591	2	U
CCB 03/15/18 07:38	Arsenic	6020	583685	0.09	U
	Barium	6020	583685	0.020	U
	Beryllium	6020	583685	0.005	U
	Cadmium	6020	583685	0.006	U
	Chromium	6020	583685	0.03	U
	Cobalt	6020	583685	0.008	U
	Copper	6020	583685	0.04	U
	Lead	6020	583685	0.004	U
	Manganese	6020	583685	0.04	U
	Molybdenum	6020	583685	0.030	U
	Nickel	6020	583685	0.04	U
	Selenium	6020	583685	0.2	U
	Silver	6020	583685	0.008	U
	Thallium	6020	583685	0.008	U
	Vanadium	6020	583685	0.03	U
	Zinc	6020	583685	0.2	U
CCB 03/15/18 08:31	Arsenic	6020	583685	0.09	U
	Barium	6020	583685	0.020	U
	Beryllium	6020	583685	0.005	U
	Cadmium	6020	583685	0.006	U
	Chromium	6020	583685	0.03	U
	Cobalt	6020	583685	0.008	U
	Copper	6020	583685	0.15	J
	Lead	6020	583685	0.008	J
	Manganese	6020	583685	0.04	U
	Molybdenum	6020	583685	0.030	U
	Nickel	6020	583685	0.04	U
	Selenium	6020	583685	0.2	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
CCB 03/15/18 08:31	Silver	6020	583685	0.008	U
	Thallium	6020	583685	0.008	U
	Vanadium	6020	583685	0.03	U
	Zinc	6020	583685	0.2	U
CCB 03/15/18 09:05	Arsenic	6020	583685	0.09	U
	Barium	6020	583685	0.020	U
	Beryllium	6020	583685	0.005	U
	Cadmium	6020	583685	0.006	U
	Chromium	6020	583685	0.03	U
	Cobalt	6020	583685	0.008	U
	Copper	6020	583685	0.04	J
	Lead	6020	583685	0.004	U
	Manganese	6020	583685	0.04	U
	Molybdenum	6020	583685	0.030	U
	Nickel	6020	583685	0.04	U
	Selenium	6020	583685	0.2	U
	Silver	6020	583685	0.008	U
	Thallium	6020	583685	0.008	U
	Vanadium	6020	583685	0.03	U
	Zinc	6020	583685	0.2	U
ICB 03/15/18 07:36	Arsenic	6020	583685	0.09	U
	Barium	6020	583685	0.020	U
	Beryllium	6020	583685	0.005	U
	Cadmium	6020	583685	0.006	U
	Chromium	6020	583685	0.03	U
	Cobalt	6020	583685	0.008	U
	Copper	6020	583685	0.04	U
	Lead	6020	583685	0.004	U
	Manganese	6020	583685	0.04	U
	Molybdenum	6020	583685	0.030	U
	Nickel	6020	583685	0.04	U
	Selenium	6020	583685	0.2	U
	Silver	6020	583685	0.008	U
	Thallium	6020	583685	0.008	U

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	C
ICB 03/15/18 07:36	Vanadium	6020	583685	0.03	U
	Zinc	6020	583685	0.2	U
CCB 03/20/18 09:32	Mercury	7470A	584203	0.02	U
CCB 03/20/18 09:51	Mercury	7470A	584203	0.02	U
CCB 03/20/18 10:11	Mercury	7470A	584203	0.02	U
CCB 03/20/18 10:30	Mercury	7470A	584203	0.02	U
CCB 03/20/18 10:52	Mercury	7470A	584203	0.02	U
CCB 03/20/18 11:11	Mercury	7470A	584203	0.02	U
ICB 03/20/18 09:27	Mercury	7470A	584203	0.02	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV	Mercury	7470A	580986	0.19	0.2	93	50-199	02/19/18 15:05
LLCCV	Arsenic	6010C	580921	9.2	10.0	92	70-130	02/20/18 11:38
	Cadmium	6010C	580921	1.0	1.0	100	70-130	02/20/18 11:38
	Chromium	6010C	580921	4.2	4.0	105	70-130	02/20/18 11:38
	Lead	6010C	580921	11.7	10.0	117	70-130	02/20/18 11:38
	Selenium	6010C	580921	19.8	20.0	99	70-130	02/20/18 11:38
	Silver	6010C	580921	4.4	4.0	110	70-130	02/20/18 11:38
LLCCV	Arsenic	6010C	580921	9.7	10.0	97	70-130	02/20/18 13:13
	Cadmium	6010C	580921	1.0	1.0	100	70-130	02/20/18 13:13
	Chromium	6010C	580921	4.4	4.0	110	70-130	02/20/18 13:13
	Lead	6010C	580921	10.9	10.0	109	70-130	02/20/18 13:13
	Selenium	6010C	580921	22.1	20.0	111	70-130	02/20/18 13:13
	Silver	6010C	580921	4.2	4.0	105	70-130	02/20/18 13:13
LLCCV	Barium	6010C	580921	213	200	107	70-130	02/20/18 11:41
LLCCV	Barium	6010C	580921	207	200	104	70-130	02/20/18 13:15
LLICV	Arsenic	6010C	580921	10.4	10.0	104	70-130	02/20/18 09:51
	Cadmium	6010C	580921	1.1	1.0	110	70-130	02/20/18 09:51
	Chromium	6010C	580921	4.7	4.0	118	70-130	02/20/18 09:51
	Lead	6010C	580921	10.3	10.0	103	70-130	02/20/18 09:51
	Selenium	6010C	580921	20.8	20.0	104	70-130	02/20/18 09:51
	Silver	6010C	580921	4.3	4.0	108	70-130	02/20/18 09:51
LLICV	Barium	6010C	580921	210	200	105	70-130	02/20/18 09:58
LLCCVS	Arsenic	6020A	580895	1.0	1.0	100	70-130	02/20/18 10:51
	Barium	6020A	580895	0.12	0.1	124	70-130	02/20/18 10:51
	Beryllium	6020A	580895	0.046	0.04	116	70-130	02/20/18 10:51
	Cadmium	6020A	580895	0.043	0.04	108	70-130	02/20/18 10:51
	Chromium	6020A	580895	0.41	0.4	102	70-130	02/20/18 10:51
	Cobalt	6020A	580895	0.040	0.04	99	70-130	02/20/18 10:51
	Copper	6020A	580895	0.19	0.2	94	70-130	02/20/18 10:51

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLCCVS								
	Lead	6020A	580895	0.10	0.1	100	70-130	02/20/18 10:51
	Manganese	6020A	580895	0.085	0.1	85	70-130	02/20/18 10:51
	Molybdenum	6020A	580895	0.097	0.1	97	70-130	02/20/18 10:51
	Nickel	6020A	580895	0.39	0.4	97	70-130	02/20/18 10:51
	Selenium	6020A	580895	2.0	2.0	99	70-130	02/20/18 10:51
	Silver	6020A	580895	0.037	0.04	93	70-130	02/20/18 10:51
	Thallium	6020A	580895	0.037	0.04	93	70-130	02/20/18 10:51
	Vanadium	6020A	580895	0.38	0.4	96	70-130	02/20/18 10:51
LLCCVS								
	Arsenic	6020A	580895	1.0	1.0	100	70-130	02/20/18 12:15
	Barium	6020A	580895	0.11	0.1	110	70-130	02/20/18 12:15
	Beryllium	6020A	580895	0.043	0.04	107	70-130	02/20/18 12:15
	Cadmium	6020A	580895	0.038	0.04	96	70-130	02/20/18 12:15
	Chromium	6020A	580895	0.38	0.4	95	70-130	02/20/18 12:15
	Cobalt	6020A	580895	0.040	0.04	100	70-130	02/20/18 12:15
	Copper	6020A	580895	0.16	0.2	82	70-130	02/20/18 12:15
	Lead	6020A	580895	0.13	0.1	128	70-130	02/20/18 12:15
	Molybdenum	6020A	580895	0.093	0.1	93	70-130	02/20/18 12:15
	Nickel	6020A	580895	0.40	0.4	100	70-130	02/20/18 12:15
	Selenium	6020A	580895	2.0	2.0	99	70-130	02/20/18 12:15
	Silver	6020A	580895	0.037	0.04	92	70-130	02/20/18 12:15
	Thallium	6020A	580895	0.033	0.04	84	70-130	02/20/18 12:15
	Vanadium	6020A	580895	0.38	0.4	94	70-130	02/20/18 12:15
LLCCVS								
	Manganese	6020A	580895	0.95	1.0	95	70-130	02/20/18 12:21
LLICVS								
	Arsenic	6020A	580895	0.99	1.0	99	70-130	02/20/18 09:45
	Barium	6020A	580895	0.10	0.1	101	70-130	02/20/18 09:45
	Beryllium	6020A	580895	0.041	0.04	103	70-130	02/20/18 09:45
	Cadmium	6020A	580895	0.037	0.04	93	70-130	02/20/18 09:45
	Chromium	6020A	580895	0.38	0.4	94	70-130	02/20/18 09:45
	Cobalt	6020A	580895	0.043	0.04	108	70-130	02/20/18 09:45
	Copper	6020A	580895	0.18	0.2	89	70-130	02/20/18 09:45
	Lead	6020A	580895	0.11	0.1	107	70-130	02/20/18 09:45
	Manganese	6020A	580895	0.083	0.1	83	70-130	02/20/18 09:45
	Molybdenum	6020A	580895	0.10	0.1	103	70-130	02/20/18 09:45

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICVS								
	Nickel	6020A	580895	0.40	0.4	99	70-130	02/20/18 09:45
	Selenium	6020A	580895	2.0	2.0	98	70-130	02/20/18 09:45
	Silver	6020A	580895	0.041	0.04	103	70-130	02/20/18 09:45
	Thallium	6020A	580895	0.039	0.04	96	70-130	02/20/18 09:45
	Vanadium	6020A	580895	0.38	0.4	95	70-130	02/20/18 09:45
LLCCV								
	Calcium	6010C	581112	24.5	20.0	123	70-130	02/21/18 13:44
	Iron	6010C	581112	25.5	20.0	128	70-130	02/21/18 13:44
	Magnesium	6010C	581112	4.8	5.0	96	70-130	02/21/18 13:44
	Potassium	6010C	581112	237	200	118	70-130	02/21/18 13:44
	Sodium	6010C	581112	189	200	95	70-130	02/21/18 13:44
	Tin	6010C	581112	21.1	20.0	106	70-130	02/21/18 13:44
	Zinc	6010C	581112	4.1	4.0	103	70-130	02/21/18 13:44
LLCCV								
	Calcium	6010C	581112	21.9	20.0	110	70-130	02/21/18 14:56
	Iron	6010C	581112	24.1	20.0	121	70-130	02/21/18 14:56
	Magnesium	6010C	581112	6.0	5.0	120	70-130	02/21/18 14:56
	Potassium	6010C	581112	250	200	125	70-130	02/21/18 14:56
	Sodium	6010C	581112	205	200	103	70-130	02/21/18 14:56
	Tin	6010C	581112	22.1	20.0	111	70-130	02/21/18 14:56
	Zinc	6010C	581112	4.0	4.0	100	70-130	02/21/18 14:56
LLCCV								
	Calcium	6010C	581112	19.7	20.0	99	70-130	02/21/18 16:44
	Iron	6010C	581112	18.1	20.0	91	70-130	02/21/18 16:44
	Magnesium	6010C	581112	3.8	5.0	76	70-130	02/21/18 16:44
	Potassium	6010C	581112	249	200	124	70-130	02/21/18 16:44
	Sodium	6010C	581112	203	200	101	70-130	02/21/18 16:44
	Tin	6010C	581112	20.9	20.0	105	70-130	02/21/18 16:44
	Zinc	6010C	581112	4.2	4.0	105	70-130	02/21/18 16:44
LLICV								
	Calcium	6010C	581112	19.7	20.0	99	70-130	02/21/18 12:02
	Iron	6010C	581112	17.5	20.0	88	70-130	02/21/18 12:02
	Magnesium	6010C	581112	4.6	5.0	92	70-130	02/21/18 12:02
	Potassium	6010C	581112	184	200	92	70-130	02/21/18 12:02
	Sodium	6010C	581112	192	200	96	70-130	02/21/18 12:02
	Tin	6010C	581112	19.5	20.0	98	70-130	02/21/18 12:02

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV	Zinc	6010C	581112	3.8	4.0	95	70-130	02/21/18 12:02
LLICV	Mercury	7471B	581176	0.17	0.2	86	50-150	02/21/18 14:49
LLICV	Mercury	7470A	581405	0.20	0.2	102	50-150	02/22/18 15:03
LLCCV	Arsenic	6020	581650	0.52	0.5	104	70-130	02/26/18 15:19
	Barium	6020	581650	0.048	0.05	96	70-130	02/26/18 15:19
	Beryllium	6020	581650	0.020	0.02	102	70-130	02/26/18 15:19
	Cadmium	6020	581650	0.018	0.02	91	70-130	02/26/18 15:19
	Chromium	6020	581650	0.19	0.2	97	70-130	02/26/18 15:19
	Cobalt	6020	581650	0.019	0.02	96	70-130	02/26/18 15:19
	Copper	6020	581650	0.094	0.1	94	70-130	02/26/18 15:19
	Lead	6020	581650	0.019	0.02	93	70-130	02/26/18 15:19
	Manganese	6020	581650	0.22	0.2	109	70-130	02/26/18 15:19
	Molybdenum	6020	581650	0.10	0.1	102	70-130	02/26/18 15:19
	Molybdenum	6020	581650	0.10	0.1	102	70-130	02/26/18 15:19
	Nickel	6020	581650	0.19	0.2	97	70-130	02/26/18 15:19
	Selenium	6020	581650	1.0	1.0	104	70-130	02/26/18 15:19
	Silver	6020	581650	0.022	0.02	112	70-130	02/26/18 15:19
	Thallium	6020	581650	0.019	0.02	95	70-130	02/26/18 15:19
	Zinc	6020	581650	1.9	2.0	95	70-130	02/26/18 15:19
LLCCV	Arsenic	6020	581650	0.50	0.5	100	70-130	02/26/18 17:15
	Beryllium	6020	581650	0.022	0.02	109	70-130	02/26/18 17:15
	Cadmium	6020	581650	0.019	0.02	94	70-130	02/26/18 17:15
	Chromium	6020	581650	0.20	0.2	102	70-130	02/26/18 17:15
	Cobalt	6020	581650	0.020	0.02	98	70-130	02/26/18 17:15
	Copper	6020	581650	0.10	0.1	104	70-130	02/26/18 17:15
	Lead	6020	581650	0.022	0.02	108	70-130	02/26/18 17:15
	Manganese	6020	581650	0.22	0.2	108	70-130	02/26/18 17:15
	Molybdenum	6020	581650	0.10	0.1	100	70-130	02/26/18 17:15
	Molybdenum	6020	581650	0.10	0.1	100	70-130	02/26/18 17:15
	Nickel	6020	581650	0.19	0.2	94	70-130	02/26/18 17:15
	Selenium	6020	581650	0.98	1.0	98	70-130	02/26/18 17:15
	Silver	6020	581650	0.022	0.02	112	70-130	02/26/18 17:15

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLCCV	Thallium	6020	581650	0.026	0.02	128	70-130	02/26/18 17:15
	Zinc	6020	581650	1.9	2.0	94	70-130	02/26/18 17:15
LLCCV	Arsenic	6020	581650	0.48	0.5	97	70-130	02/26/18 18:41
	Beryllium	6020	581650	0.019	0.02	97	70-130	02/26/18 18:41
	Cadmium	6020	581650	0.019	0.02	94	70-130	02/26/18 18:41
	Chromium	6020	581650	0.20	0.2	101	70-130	02/26/18 18:41
	Cobalt	6020	581650	0.015	0.02	75	70-130	02/26/18 18:41
	Copper	6020	581650	0.093	0.1	93	70-130	02/26/18 18:41
	Lead	6020	581650	0.018	0.02	90	70-130	02/26/18 18:41
	Manganese	6020	581650	0.20	0.2	100	70-130	02/26/18 18:41
	Molybdenum	6020	581650	0.098	0.1	98	70-130	02/26/18 18:41
	Molybdenum	6020	581650	0.098	0.1	98	70-130	02/26/18 18:41
	Nickel	6020	581650	0.19	0.2	94	70-130	02/26/18 18:41
	Selenium	6020	581650	1.0	1.0	105	70-130	02/26/18 18:41
	Silver	6020	581650	0.019	0.02	94	70-130	02/26/18 18:41
	Thallium	6020	581650	0.020	0.02	100	70-130	02/26/18 18:41
	Zinc	6020	581650	2.0	2.0	100	70-130	02/26/18 18:41
LLCCV	Vanadium	6020	581650	0.44	0.4	110	70-130	02/26/18 15:33
LLCCV	Barium	6020	581650	0.096	0.1	96	70-130	02/26/18 17:28
	Vanadium	6020	581650	0.49	0.4	123	70-130	02/26/18 17:28
LLCCV	Barium	6020	581650	0.12	0.1	123	70-130	02/26/18 18:45
	Vanadium	6020	581650	0.50	0.4	125	70-130	02/26/18 18:45
LLICV	Arsenic	6020	581650	0.51	0.5	101	20-199	02/26/18 13:25
	Arsenic	6020	581650	0.51	0.5	101	50-199	02/26/18 13:25
	Barium	6020	581650	0.047	0.05	94	20-199	02/26/18 13:25
	Barium	6020	581650	0.047	0.05	94	50-199	02/26/18 13:25
	Beryllium	6020	581650	0.020	0.02	101	20-199	02/26/18 13:25
	Beryllium	6020	581650	0.020	0.02	101	50-199	02/26/18 13:25
	Cadmium	6020	581650	0.022	0.02	108	20-199	02/26/18 13:25
	Cadmium	6020	581650	0.022	0.02	108	50-199	02/26/18 13:25
	Chromium	6020	581650	0.20	0.2	98	20-199	02/26/18 13:25

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV								
	Chromium	6020	581650	0.20	0.2	98	50-199	02/26/18 13:25
	Cobalt	6020	581650	0.021	0.02	107	20-199	02/26/18 13:25
	Cobalt	6020	581650	0.021	0.02	107	50-199	02/26/18 13:25
	Copper	6020	581650	0.10	0.1	103	20-199	02/26/18 13:25
	Copper	6020	581650	0.10	0.1	103	50-199	02/26/18 13:25
	Lead	6020	581650	0.019	0.02	93	20-199	02/26/18 13:25
	Lead	6020	581650	0.019	0.02	93	50-199	02/26/18 13:25
	Manganese	6020	581650	0.20	0.2	101	20-199	02/26/18 13:25
	Manganese	6020	581650	0.20	0.2	101	50-199	02/26/18 13:25
	Molybdenum	6020	581650	0.10	0.1	100	20-199	02/26/18 13:25
	Molybdenum	6020	581650	0.10	0.1	100	50-199	02/26/18 13:25
	Nickel	6020	581650	0.21	0.2	104	20-199	02/26/18 13:25
	Nickel	6020	581650	0.21	0.2	104	50-199	02/26/18 13:25
	Selenium	6020	581650	1.0	1.0	101	20-199	02/26/18 13:25
	Selenium	6020	581650	1.0	1.0	101	50-199	02/26/18 13:25
	Silver	6020	581650	0.020	0.02	98	20-199	02/26/18 13:25
	Silver	6020	581650	0.020	0.02	98	50-199	02/26/18 13:25
	Thallium	6020	581650	0.021	0.02	104	20-199	02/26/18 13:25
	Thallium	6020	581650	0.021	0.02	104	50-199	02/26/18 13:25
	Vanadium	6020	581650	0.20	0.2	98	20-199	02/26/18 13:25
	Vanadium	6020	581650	0.20	0.2	98	50-199	02/26/18 13:25
	Zinc	6020	581650	1.9	2.0	97	20-199	02/26/18 13:25
	Zinc	6020	581650	1.9	2.0	97	50-199	02/26/18 13:25
LLCCV								
	Calcium	6010C	583591	19.8	20.0	99	70-130	03/14/18 11:47
	Iron	6010C	583591	17.8	20.0	89	70-130	03/14/18 11:47
	Magnesium	6010C	583591	4.7	5.0	94	70-130	03/14/18 11:47
	Potassium	6010C	583591	219	200	110	70-130	03/14/18 11:47
	Sodium	6010C	583591	197	200	98	70-130	03/14/18 11:47
	Tin	6010C	583591	20.4	20.0	102	70-130	03/14/18 11:47
LLCCV								
	Calcium	6010C	583591	20.6	20.0	103	70-130	03/14/18 13:13
	Iron	6010C	583591	25.5	20.0	128	70-130	03/14/18 13:13
	Magnesium	6010C	583591	4.9	5.0	98	70-130	03/14/18 13:13
	Potassium	6010C	583591	235	200	118	70-130	03/14/18 13:13
	Tin	6010C	583591	21.5	20.0	108	70-130	03/14/18 13:13

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLCCV	Sodium	6010C	583591	511	400	128	70-130	03/14/18 13:16
LLICV	Calcium	6010C	583591	19.6	20.0	98	70-130	03/14/18 10:26
	Iron	6010C	583591	16.9	20.0	85	70-130	03/14/18 10:26
	Magnesium	6010C	583591	4.9	5.0	98	70-130	03/14/18 10:26
	Potassium	6010C	583591	203	200	102	70-130	03/14/18 10:26
	Sodium	6010C	583591	199	200	99	70-130	03/14/18 10:26
	Tin	6010C	583591	20.7	20.0	104	70-130	03/14/18 10:26
LLCCV	Arsenic	6020	583685	0.53	0.5	105	70-130	03/15/18 09:08
	Barium	6020	583685	0.054	0.05	108	70-130	03/15/18 09:08
	Beryllium	6020	583685	0.018	0.02	90	70-130	03/15/18 09:08
	Cadmium	6020	583685	0.019	0.02	96	70-130	03/15/18 09:08
	Chromium	6020	583685	0.19	0.2	96	70-130	03/15/18 09:08
	Cobalt	6020	583685	0.016	0.02	80	70-130	03/15/18 09:08
	Lead	6020	583685	0.020	0.02	98	70-130	03/15/18 09:08
	Manganese	6020	583685	0.25	0.2	125	70-130	03/15/18 09:08
	Molybdenum	6020	583685	0.10	0.1	102	70-130	03/15/18 09:08
	Nickel	6020	583685	0.19	0.2	97	70-130	03/15/18 09:08
	Selenium	6020	583685	0.97	1.0	97	70-130	03/15/18 09:08
	Silver	6020	583685	0.020	0.02	102	70-130	03/15/18 09:08
	Thallium	6020	583685	0.020	0.02	98	70-130	03/15/18 09:08
	Vanadium	6020	583685	0.22	0.2	112	70-130	03/15/18 09:08
	Zinc	6020	583685	2.2	2.0	108	70-130	03/15/18 09:08
LLCCV	Copper	6020	583685	0.22	0.2	111	70-130	03/15/18 09:11
LLICV	Arsenic	6020	583685	0.47	0.5	93	50-199	03/15/18 07:43
	Barium	6020	583685	0.063	0.05	125	50-199	03/15/18 07:43
	Beryllium	6020	583685	0.018	0.02	91	50-199	03/15/18 07:43
	Cadmium	6020	583685	0.019	0.02	96	50-199	03/15/18 07:43
	Chromium	6020	583685	0.21	0.2	107	50-199	03/15/18 07:43
	Cobalt	6020	583685	0.017	0.02	84	50-199	03/15/18 07:43
	Copper	6020	583685	0.086	0.1	86	50-199	03/15/18 07:43
	Lead	6020	583685	0.017	0.02	86	50-199	03/15/18 07:43
	Manganese	6020	583685	0.21	0.2	107	50-199	03/15/18 07:43

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV								
	Molybdenum	6020	583685	0.099	0.1	99	50-199	03/15/18 07:43
	Nickel	6020	583685	0.20	0.2	102	50-199	03/15/18 07:43
	Selenium	6020	583685	0.95	1.0	95	50-199	03/15/18 07:43
	Silver	6020	583685	0.021	0.02	103	50-199	03/15/18 07:43
	Thallium	6020	583685	0.020	0.02	99	50-199	03/15/18 07:43
	Vanadium	6020	583685	0.18	0.2	88	50-199	03/15/18 07:43
	Zinc	6020	583685	2.0	2.0	98	50-199	03/15/18 07:43
LLICV								
	Mercury	7470A	584203	0.18	0.2	92	50-150	03/20/18 09:29

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6010C	580921	7	-	-	-	02/20/18 10:08
Barium	6010C	580921	100	-	-	-	02/20/18 10:08
Cadmium	6010C	580921	-1.60	-	-	-	02/20/18 10:08
Chromium	6010C	580921	-3.50	-	-	-	02/20/18 10:08
Lead	6010C	580921	3	-	-	-	02/20/18 10:08
Selenium	6010C	580921	5	-	-	-	02/20/18 10:08
Silver	6010C	580921	0.8	-	-	-	02/20/18 10:08

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6010C	580921	5	-	-	-	02/20/18 10:11
Barium	6010C	580921	510	500	102	80-120	02/20/18 10:11
Cadmium	6010C	580921	894	1000	89	80-120	02/20/18 10:11
Chromium	6010C	580921	469	500	94	80-120	02/20/18 10:11
Lead	6010C	580921	866	1000	87	80-120	02/20/18 10:11
Selenium	6010C	580921	6	-	-	-	02/20/18 10:11
Silver	6010C	580921	845	1000	85	80-120	02/20/18 10:11

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020A	580895	0.08	-	-	-	02/20/18 09:48
Barium	6020A	580895	0.95	-	-	-	02/20/18 09:48
Beryllium	6020A	580895	0.010	-	-	-	02/20/18 09:48
Cadmium	6020A	580895	0.014	-	-	-	02/20/18 09:48
Chromium	6020A	580895	0.67	-	-	-	02/20/18 09:48
Cobalt	6020A	580895	0.631	-	-	-	02/20/18 09:48
Copper	6020A	580895	0.61	-	-	-	02/20/18 09:48
Lead	6020A	580895	0.04	-	-	-	02/20/18 09:48
Manganese	6020A	580895	0.79	-	-	-	02/20/18 09:48
Molybdenum	6020A	580895	55.3	-	-	-	02/20/18 09:48
Nickel	6020A	580895	0.52	-	-	-	02/20/18 09:48
Selenium	6020A	580895	0.1	-	-	-	02/20/18 09:48
Silver	6020A	580895	0.008	-	-	-	02/20/18 09:48
Thallium	6020A	580895	0.004	-	-	-	02/20/18 09:48
Vanadium	6020A	580895	0.04	-	-	-	02/20/18 09:48

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QA/QC Report

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Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	
						Limits	Analysis Date
Arsenic	6020A	580895	24.8	25.0	99	80-120	02/20/18 09:51
Barium	6020A	580895	0.95	-	-	-	02/20/18 09:51
Beryllium	6020A	580895	0.010	-	-	-	02/20/18 09:51
Cadmium	6020A	580895	24.3	25.0	97	80-120	02/20/18 09:51
Chromium	6020A	580895	50.1	50.0	100	80-120	02/20/18 09:51
Cobalt	6020A	580895	48.8	50.0	98	80-120	02/20/18 09:51
Copper	6020A	580895	48.0	50.0	96	80-120	02/20/18 09:51
Lead	6020A	580895	0.04	-	-	-	02/20/18 09:51
Manganese	6020A	580895	48.7	50.0	97	80-120	02/20/18 09:51
Molybdenum	6020A	580895	52.8	-	-	-	02/20/18 09:51
Nickel	6020A	580895	48.3	50.0	97	80-120	02/20/18 09:51
Selenium	6020A	580895	24.3	25.0	97	80-120	02/20/18 09:51
Silver	6020A	580895	11.8	12.5	94	80-120	02/20/18 09:51
Thallium	6020A	580895	0.004	-	-	-	02/20/18 09:51
Vanadium	6020A	580895	51.5	50.0	103	80-120	02/20/18 09:51

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Calcium	6010C	581112	525000	-	-	-	02/21/18 12:22
Iron	6010C	581112	207000	-	-	-	02/21/18 12:22
Potassium	6010C	581112	50	-	-	-	02/21/18 12:22
Sodium	6010C	581112	20	-	-	-	02/21/18 12:22
Tin	6010C	581112	3	-	-	-	02/21/18 12:22
Zinc	6010C	581112	1.0	-	-	-	02/21/18 12:22

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	
						Limits	Analysis Date
Calcium	6010C	581112	496000	-	-	-	02/21/18 12:25
Iron	6010C	581112	193000	-	-	-	02/21/18 12:25
Magnesium	6010C	581112	523000	-	-	-	02/21/18 12:25
Potassium	6010C	581112	50	-	-	-	02/21/18 12:25
Sodium	6010C	581112	20	-	-	-	02/21/18 12:25
Tin	6010C	581112	3	-	-	-	02/21/18 12:25
Zinc	6010C	581112	891	1000	89	80-120	02/21/18 12:25

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020	581650	0.08	-	-	80-120	02/26/18 13:29
Barium	6020	581650	1.07	-	-	80-120	02/26/18 13:29
Beryllium	6020	581650	0.002	-	-	80-120	02/26/18 13:29
Cadmium	6020	581650	0.033	-	-	80-120	02/26/18 13:29
Chromium	6020	581650	0.64	-	-	80-120	02/26/18 13:29
Cobalt	6020	581650	0.641	-	-	80-120	02/26/18 13:29
Copper	6020	581650	0.58	-	-	80-120	02/26/18 13:29
Lead	6020	581650	0.071	-	-	80-120	02/26/18 13:29
Manganese	6020	581650	0.88	-	-	80-120	02/26/18 13:29
Molybdenum	6020	581650	58.0	-	-	80-120	02/26/18 13:29
Nickel	6020	581650	0.47	-	-	80-120	02/26/18 13:29
Selenium	6020	581650	0.3	-	-	80-120	02/26/18 13:29
Silver	6020	581650	0.012	-	-	80-120	02/26/18 13:29
Thallium	6020	581650	0.008	-	-	80-120	02/26/18 13:29
Vanadium	6020	581650	0.04	-	-	80-120	02/26/18 13:29
Zinc	6020	581650	0.4	-	-	80-120	02/26/18 13:29

ALS Group USA, Corp.
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QA/QC Report

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Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020	581650	25.1	25.0	100	80-120	02/26/18 13:33
Barium	6020	581650	1.06	-	-	80-120	02/26/18 13:33
Beryllium	6020	581650	0.002	-	-	80-120	02/26/18 13:33
Cadmium	6020	581650	24.4	25.0	98	80-120	02/26/18 13:33
Chromium	6020	581650	53.8	50.0	108	80-120	02/26/18 13:33
Cobalt	6020	581650	53.1	50.0	106	80-120	02/26/18 13:33
Copper	6020	581650	48.1	50.0	96	80-120	02/26/18 13:33
Lead	6020	581650	0.071	-	-	80-120	02/26/18 13:33
Manganese	6020	581650	50.8	50.0	102	80-120	02/26/18 13:33
Molybdenum	6020	581650	57.8	-	-	80-120	02/26/18 13:33
Nickel	6020	581650	51.1	50.0	102	80-120	02/26/18 13:33
Selenium	6020	581650	24.7	25.0	99	80-120	02/26/18 13:33
Silver	6020	581650	12.3	12.5	98	80-120	02/26/18 13:33
Thallium	6020	581650	0.008	-	-	80-120	02/26/18 13:33
Vanadium	6020	581650	55.0	50.0	110	80-120	02/26/18 13:33
Zinc	6020	581650	23.1	25.0	93	80-120	02/26/18 13:33

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Iron	6010C	583591	193000	-	-	-	03/14/18 10:38
Potassium	6010C	583591	50	-	-	-	03/14/18 10:38
Sodium	6010C	583591	20	-	-	-	03/14/18 10:38
Tin	6010C	583591	3	-	-	-	03/14/18 10:38

ALS Group USA, Corp.
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QA/QC Report

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Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Iron	6010C	583591	185000	-	-	-	03/14/18 10:41
Potassium	6010C	583591	50	-	-	-	03/14/18 10:41
Sodium	6010C	583591	20	-	-	-	03/14/18 10:41
Tin	6010C	583591	3	-	-	-	03/14/18 10:41

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020	583685	0.09	-	-	80-120	03/15/18 07:46
Barium	6020	583685	0.935	-	-	80-120	03/15/18 07:46
Beryllium	6020	583685	0.005	-	-	80-120	03/15/18 07:46
Cadmium	6020	583685	0.022	-	-	80-120	03/15/18 07:46
Chromium	6020	583685	0.61	-	-	80-120	03/15/18 07:46
Cobalt	6020	583685	0.630	-	-	80-120	03/15/18 07:46
Copper	6020	583685	0.67	-	-	80-120	03/15/18 07:46
Lead	6020	583685	0.086	-	-	80-120	03/15/18 07:46
Manganese	6020	583685	0.94	-	-	80-120	03/15/18 07:46
Molybdenum	6020	583685	53.1	-	-	80-120	03/15/18 07:46
Nickel	6020	583685	0.54	-	-	80-120	03/15/18 07:46
Selenium	6020	583685	0.2	-	-	80-120	03/15/18 07:46
Silver	6020	583685	0.008	-	-	80-120	03/15/18 07:46
Thallium	6020	583685	0.008	-	-	80-120	03/15/18 07:46
Vanadium	6020	583685	0.03	-	-	80-120	03/15/18 07:46
Zinc	6020	583685	0.6	-	-	80-120	03/15/18 07:46

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QA/QC Report

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Project: Former Snopac Site RI/FS

Service Request: K1801267

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020	583685	25.4	25.0	102	80-120	03/15/18 07:56
Barium	6020	583685	1.01	-	-	80-120	03/15/18 07:56
Beryllium	6020	583685	0.005	-	-	80-120	03/15/18 07:56
Cadmium	6020	583685	25.2	25.0	101	80-120	03/15/18 07:56
Chromium	6020	583685	49.6	50.0	99	80-120	03/15/18 07:56
Cobalt	6020	583685	49.9	50.0	100	80-120	03/15/18 07:56
Copper	6020	583685	47.0	50.0	94	80-120	03/15/18 07:56
Lead	6020	583685	0.087	-	-	80-120	03/15/18 07:56
Manganese	6020	583685	51.6	50.0	103	80-120	03/15/18 07:56
Molybdenum	6020	583685	54.5	-	-	80-120	03/15/18 07:56
Nickel	6020	583685	48.9	50.0	98	80-120	03/15/18 07:56
Selenium	6020	583685	23.7	25.0	95	80-120	03/15/18 07:56
Silver	6020	583685	12.1	12.5	97	80-120	03/15/18 07:56
Thallium	6020	583685	0.008	-	-	80-120	03/15/18 07:56
Vanadium	6020	583685	51.3	50.0	103	80-120	03/15/18 07:56
Zinc	6020	583685	24.8	25.0	99	80-120	03/15/18 07:56

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1801267-010A	Mercury	7470A	580986	1.0 U	4.7	5.0	94	85-115	02/19/18 15:18
K1801267-010A	Arsenic	6010C	580921	0.02 J	5330	5000	106	80-120	02/20/18 12:34
	Barium	6010C	580921	0.5 U	10500	10000	105	80-120	02/20/18 12:34
	Cadmium	6010C	580921	0.001 U	975	1000	98	80-120	02/20/18 12:34
	Chromium	6010C	580921	0.01 U	5050	5000	101	80-120	02/20/18 12:34
	Lead	6010C	580921	0.02 U	4740	5000	95	80-120	02/20/18 12:34
	Selenium	6010C	580921	0.02 U	980	1000	98	80-120	02/20/18 12:34
	Silver	6010C	580921	0.004 U	938	1000	94	80-120	02/20/18 12:34
K1801267-009A	Arsenic	6020A	580895	25.1	72.2	50.0	94	80-120	02/20/18 11:44
	Barium	6020A	580895	208	250	50.0	84	80-120	02/20/18 11:44
	Beryllium	6020A	580895	0.62	51.9	50.0	103	80-120	02/20/18 11:44
	Cadmium	6020A	580895	32.9	78.6	50.0	91	80-120	02/20/18 11:44
	Chromium	6020A	580895	42.9	89.4	50.0	93	80-120	02/20/18 11:44
	Cobalt	6020A	580895	17.1	64.2	50.0	94	80-120	02/20/18 11:44
	Copper	6020A	580895	192	233	50.0	81	80-120	02/20/18 11:44
	Molybdenum	6020A	580895	4.85	53.4	50.0	97	80-120	02/20/18 11:44
	Nickel	6020A	580895	32.9	80.0	50.0	94	80-120	02/20/18 11:44
	Selenium	6020A	580895	0.8 J	50	50	98	80-120	02/20/18 11:44
	Silver	6020A	580895	2.16	11.2	10.0	90	80-120	02/20/18 11:44
	Thallium	6020A	580895	0.27	46.4	50.0	92	80-120	02/20/18 11:44
	Vanadium	6020A	580895	140	185	50.0	89	80-120	02/20/18 11:44
K1801267-009A	Calcium	6010C	581112	47100	58500	12500	91	80-120	02/21/18 15:44
	Magnesium	6010C	581112	22800	34600	12500	95	80-120	02/21/18 15:44
	Potassium	6010C	581112	7640	19600	12500	96	80-120	02/21/18 15:44
	Sodium	6010C	581112	12700	24700	12500	96	80-120	02/21/18 15:44
	Tin	6010C	581112	10 J	4660	5000	93	80-120	02/21/18 15:44
	Zinc	6010C	581112	360	2860	2500	100	80-120	02/21/18 16:24
K1801265-009A	Mercury	7471B	581176	1.60	6.33	5.00	95	80-120	02/21/18 15:18
K1801267-008A	Iron	6010C	583591	1360	3620	2500	90	80-120	03/14/18 12:07
	Tin	6010C	583591	2 U	4470	5000	89	80-120	03/14/18 12:07

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K1801267-017A									
	Arsenic	6020	583685	34.3	84.3	50.0	100	80-120	03/15/18 08:17
	Barium	6020	583685	6.27	56.9	50.0	101	80-120	03/15/18 08:17
	Beryllium	6020	583685	0.05 U	52.0	50.0	104	80-120	03/15/18 08:17
	Cadmium	6020	583685	0.06 U	46.6	50.0	93	80-120	03/15/18 08:17
	Chromium	6020	583685	0.3 U	49.7	50.0	99	80-120	03/15/18 08:17
	Cobalt	6020	583685	0.08 U	48.0	50.0	96	80-120	03/15/18 08:17
	Copper	6020	583685	0.5 J	45.8	50.0	91	80-120	03/15/18 08:17
	Lead	6020	583685	0.63	46.2	50.0	91	80-120	03/15/18 08:17
	Manganese	6020	583685	13.8	64.6	50.0	102	80-120	03/15/18 08:17
	Molybdenum	6020	583685	67.4	117	50.0	100	80-120	03/15/18 08:17
	Nickel	6020	583685	0.4 U	46.9	50.0	93	80-120	03/15/18 08:17
	Selenium	6020	583685	2 U	46	50	92	80-120	03/15/18 08:17
	Silver	6020	583685	0.08 U	8.52	10.0	85	80-120	03/15/18 08:17
	Thallium	6020	583685	0.08 U	45.8	50.0	92	80-120	03/15/18 08:17
	Vanadium	6020	583685	0.6 J	53.0	50.0	105	80-120	03/15/18 08:17
	Zinc	6020	583685	2 U	47	50	91	80-120	03/15/18 08:17
K1801988-001A									
	Mercury	7470A	584203	0.02 U	5.26	5.00	105	80-120	03/20/18 10:55

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp.
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QA/QC Report

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Service Request: K1801267

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1801267-010SDL								
	Arsenic	6010C	580921	90	70 U	16	10	02/20/18 12:26
	Barium	6010C	580921	60	60 U	4	10	02/20/18 12:26
	Cadmium	6010C	580921	0.001 U	3 U	-267	10	02/20/18 12:26
	Chromium	6010C	580921	1	10 U	1150	10	02/20/18 12:26
	Lead	6010C	580921	5	-17.5 U	489	10	02/20/18 12:26
	Selenium	6010C	580921	6	0.00 U	100	10	02/20/18 12:26
	Silver	6010C	580921	0.004 U	-5.00 U	-400	10	02/20/18 12:26
K1801267-009SDL								
	Arsenic	6020A	580895	125	128	2	10	02/20/18 11:41
	Barium	6020A	580895	1040	1050	1	10	02/20/18 11:41
	Beryllium	6020A	580895	3.1	3.1	0	10	02/20/18 11:41
	Cadmium	6020A	580895	165	165	0	10	02/20/18 11:41
	Chromium	6020A	580895	215	221	3	10	02/20/18 11:41
	Cobalt	6020A	580895	85.6	88.6	4	10	02/20/18 11:41
	Copper	6020A	580895	962	1010	5	10	02/20/18 11:41
	Molybdenum	6020A	580895	24.3	24.6	1	10	02/20/18 11:41
	Nickel	6020A	580895	165	178	8	10	02/20/18 11:41
	Selenium	6020A	580895	4	4 U	2	10	02/20/18 11:41
	Silver	6020A	580895	10.8	11.4	5	10	02/20/18 11:41
	Thallium	6020A	580895	1.3	1.2	6	10	02/20/18 11:41
	Vanadium	6020A	580895	701	709	1	10	02/20/18 11:41
K1801267-004SDL								
	Calcium	6010C	581112	9 J	40 J	285	10	02/21/18 15:15
	Iron	6010C	581112	20	-3.50 U	120	10	02/21/18 15:15
	Magnesium	6010C	581112	1 J	-3.00 J	373	10	02/21/18 15:15
	Potassium	6010C	581112	60 U	200 U	485	10	02/21/18 15:15
	Sodium	6010C	581112	20 U	-74.5 U	-421	10	02/21/18 15:15
	Tin	6010C	581112	3 U	-1.00 U	350	10	02/21/18 15:15
K1801267-009SDL								
	Calcium	6010C	581112	94200	98600	5	10	02/21/18 15:42
	Iron	6010C	581112	268000	276000	3	10	02/21/18 15:42
	Magnesium	6010C	581112	45600	48300	6	10	02/21/18 15:42
	Potassium	6010C	581112	15300	16400	8	10	02/21/18 15:42
	Sodium	6010C	581112	25400	26200	3	10	02/21/18 15:42
	Tin	6010C	581112	20	20 U	10	10	02/21/18 15:42
	Zinc	6010C	581112	36500	37400	2	10	02/21/18 16:22

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Service Request: K1801267

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dilution Result	% Diff	% Diff. Limit	Analysis Date
K1801265-009SDL	Mercury	7471B	581176	1.6	1.6	2	10	02/21/18 15:13
K1801267-004SDL	Arsenic	6020	581650	0.08 U	0.1 U	605	10	02/26/18 17:35
	Barium	6020	581650	0.14	0.12 J	15	10	02/26/18 17:35
	Beryllium	6020	581650	0.002 U	-0.00459 U	-1097	10	02/26/18 17:35
	Cadmium	6020	581650	0.009 U	0.006 U	-1218	10	02/26/18 17:35
	Chromium	6020	581650	0.1 J	0.1 U	11	10	02/26/18 17:35
	Cobalt	6020	581650	0.005 U	0.002 U	45	10	02/26/18 17:35
	Copper	6020	581650	0.04 J	0.07 U	85	10	02/26/18 17:35
	Lead	6020	581650	0.06	0.06 J	3	10	02/26/18 17:35
	Manganese	6020	581650	0.2	0.2 J	15	10	02/26/18 17:35
	Molybdenum	6020	581650	0.006 U	-0.0127 U	508	10	02/26/18 17:35
	Nickel	6020	581650	0.04 U	0.03 U	23	10	02/26/18 17:35
	Selenium	6020	581650	0.2 U	0.02 U	157	10	02/26/18 17:35
	Silver	6020	581650	0.002 U	0.003 U	31	10	02/26/18 17:35
	Thallium	6020	581650	0.008 U	0.0006 U	80	10	02/26/18 17:35
	Vanadium	6020	581650	0.1 J	0.6 J	357	10	02/26/18 17:35
	Zinc	6020	581650	0.5 J	0.7 J	38	10	02/26/18 17:35
K1801267-008SDL	Calcium	6010C	583591	233000	233000	0	10	03/14/18 11:59
	Iron	6010C	583591	1360	1420	5	10	03/14/18 11:59
	Potassium	6010C	583591	308000	311000	1	10	03/14/18 11:59
	Tin	6010C	583591	2 U	4 U	-600	10	03/14/18 11:59
	Magnesium	6010C	583591	648000	652000	1	10	03/14/18 12:17
	Sodium	6010C	583591	7360000	7290000	1	10	03/14/18 12:17
K1801267-017SDL	Arsenic	6020	583685	343	342	0	10	03/15/18 08:14
	Barium	6020	583685	62.7	59.5	5	10	03/15/18 08:14
	Beryllium	6020	583685	0.05 U	-0.0400 U	464	10	03/15/18 08:14
	Cadmium	6020	583685	0.2	0.2 U	31	10	03/15/18 08:14
	Chromium	6020	583685	2	2 J	17	10	03/15/18 08:14
	Cobalt	6020	583685	0.6	0.6 J	4	10	03/15/18 08:14
	Copper	6020	583685	5	15	183	10	03/15/18 08:14
	Lead	6020	583685	6.3	7.2	14	10	03/15/18 08:14
	Manganese	6020	583685	138	141	2	10	03/15/18 08:14
	Molybdenum	6020	583685	674	658	2	10	03/15/18 08:14

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ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Serial Dillution Result	% Diff	% Diff. Limit	Analysis Date
K1801267-017SDL	Nickel	6020	583685	3	3 J	14	10	03/15/18 08:14
	Selenium	6020	583685	2 U	-0.170 U	145	10	03/15/18 08:14
	Silver	6020	583685	0.08 U	0.05 U	6	10	03/15/18 08:14
	Thallium	6020	583685	0.08 U	-0.00500 U	122	10	03/15/18 08:14
	Vanadium	6020	583685	6	8 J	26	10	03/15/18 08:14
	Zinc	6020	583685	10 J	10 J	17	10	03/15/18 08:14

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Detection Limits

Matrix: Sediment

Analyte	Wavelength (nm)	Units	MRL	MDL	Method
Mercury	253	ug/L	0.2	0.02	7471B
Mercury	253	ug/L	0.2	0.02	7470A
Mercury	253	ug/L	0.2	0.02	7470A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Detection Limits

Matrix: Sediment

Analyte	Mass	Units	MRL	MDL	Method
Arsenic	75	ug/L	1	0.08	6020A
Barium	137	ug/L	0.1	0.04	6020A
Beryllium	9	ug/L	0.04	0.01	6020A
Cadmium	111	ug/L	0.04	0.014	6020A
Chromium	52	ug/L	0.4	0.12	6020A
Cobalt	59	ug/L	0.04	0.012	6020A
Copper	65	ug/L	0.2	0.08	6020A
Lead	208	ug/L	0.1	0.04	6020A
Manganese	55	ug/L	1	0.04	6020A
Molybdenum	95	ug/L	0.1	0.04	6020A
Nickel	60	ug/L	0.4	0.06	6020A
Selenium	78	ug/L	2	0.14	6020A
Silver	107	ug/L	0.04	0.008	6020A
Thallium	205	ug/L	0.04	0.004	6020A
Vanadium	51	ug/L	0.4	0.04	6020A
Arsenic	75	ug/L	1	0.08	6020
Barium	137	ug/L	0.1	0.04	6020
Beryllium	9	ug/L	0.04	0.01	6020
Cadmium	111	ug/L	0.04	0.014	6020
Chromium	52	ug/L	0.4	0.12	6020
Cobalt	59	ug/L	0.04	0.012	6020
Copper	65	ug/L	0.2	0.08	6020
Lead	208	ug/L	0.1	0.04	6020
Manganese	55	ug/L	1	0.04	6020
Molybdenum	95	ug/L	0.1	0.04	6020
Nickel	60	ug/L	0.4	0.06	6020
Selenium	78	ug/L	2	0.14	6020
Silver	107	ug/L	0.04	0.008	6020
Thallium	205	ug/L	0.04	0.004	6020
Vanadium	51	ug/L	0.4	0.04	6020
Zinc	66	ug/L	2	0.2	6020

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Detection Limits

Matrix: Sediment

Analyte	Wavelength (nm)	Units	MRL	MDL	Method
Calcium	3158	ug/L	20	4.5	6010C
Iron	2599	ug/L	20	10	6010C
Magnesium	2852	ug/L	10	1	6010C
Potassium	7664	ug/L	200	45	6010C
Sodium	5895	ug/L	200	20	6010C
Tin	1899	ug/L	20	2.5	6010C
Zinc	2062	ug/L	5	1	6010C
Arsenic	1890	ug/L	10	4	6010C
Barium	4554	ug/L	200	100	6010C
Cadmium	2265	ug/L	10	0.2	6010C
Chromium	2677	ug/L	10	2	6010C
Lead	2203	ug/L	10	3	6010C
Selenium	1960	ug/L	20	4	6010C
Silver	3280	ug/L	10	0.8	6010C
Calcium	3158	ug/L	20	4.5	6010C
Iron	2599	ug/L	20	10	6010C
Magnesium	2852	ug/L	10	1	6010C
Potassium	7664	ug/L	200	45	6010C
Sodium	5895	ug/L	200	20	6010C
Tin	1899	ug/L	20	2.5	6010C

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Detection Limits

Matrix: Water

Analyte	Mass	Units	MRL	MDL	Method
Arsenic	75	ug/L	0.500	0.08	6020
Barium	137	ug/L	0.1	0.02	6020
Beryllium	9	ug/L	0.0200	0.002	6020
Cadmium	111	ug/L	0.0200	0.009	6020
Chromium	52	ug/L	0.200	0.03	6020
Cobalt	59	ug/L	0.0200	0.005	6020
Copper	65	ug/L	0.100	0.02	6020
Lead	208	ug/L	0.0200	0.007	6020
Manganese	55	ug/L	0.2	0.006	6020
Molybdenum	98	ug/L	0.0500	0.006	6020
Nickel	60	ug/L	0.200	0.04	6020
Selenium	78	ug/L	1.00	0.2	6020
Silver	107	ug/L	0.0200	0.002	6020
Thallium	205	ug/L	0.0200	0.008	6020
Vanadium	51	ug/L	0.4	0.04	6020
Zinc	66	ug/L	2	0.08	6020

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Detection Limits

Matrix: Water

Analyte	Wavelength (nm)	Units	MRL	MDL	Method
Calcium	3158	ug/L	20	0.6	6010C
Iron	2599	ug/L	20	3	6010C
Magnesium	2795	ug/L	5	0.2	6010C
Potassium	7664	ug/L	200	50	6010C
Sodium	5895	ug/L	400	20	6010C
Tin	1899	ug/L	20	2	6010C

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Arsenic 75	3000	6020A
Barium 137	3000	6020
Barium 138	3000	6020A
Beryllium 9	3000	6020A
Cadmium 111	3000	6020A
Chromium 52	3000	6020A
Cobalt 59	3000	6020A
Copper 65	3000	6020A
Lead 208	3000	6020A
Manganese 55	3000	6020A
Molybdenum 95	3000	6020A
Nickel 60	3000	6020A
Selenium 78	3000	6020A
Silver 107	225	6020A
Thallium 205	3000	6020A
Vanadium 51	3000	6020A
Zinc 66	3000	6020

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP Linear Range (Quarterly)

Instrument: K-ICP-AES-03

Analyte	Concentration (ug/L)	Method
Arsenic 1890	90000	6010C
Barium 4554	45000	6010C
Cadmium 2265	23500	6010C
Calcium 3158	900000	6010C
Calcium 3933	8000	6010C
Chromium 2677	45000	6010C
Iron 2599	360000	6010C
Lead 2203	22500	6010C
Magnesium 2790	540000	6010C
Magnesium 2795	8000	6010C
Magnesium 2852	90000	6010C
Potassium 7664	900000	6010C
Selenium 1960	45000	6010C
Silver 3280	1800	6010C
Sodium 5895	900000	6010C
Tin 1899	22500	6010C
Zinc 2062	18000	6010C

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-04

Analyte	Concentration (ug/L)	Method
Arsenic 75	3000	6020
Barium 137	3000	6020
Beryllium 9	900	6020
Cadmium 111	3000	6020
Chromium 52	3000	6020
Cobalt 59	3000	6020
Copper 65	3000	6020
Lead 208	3000	6020
Manganese 55	3000	6020
Molybdenum 98	3000	6020
Nickel 60	3000	6020
Selenium 78	3000	6020
Silver 107	900	6020
Thallium 205	3000	6020
Vanadium 51	3000	6020
Zinc 66	3000	6020

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP Linear Range (Quarterly)

Instrument: K-ICP-AES-04

Analyte	Concentration (ug/L)	Method
Calcium 3158	450000	6010C
Calcium 3933	8000	6010C
Iron 2599	360000	6010C
Magnesium 2790	450000	6010C
Magnesium 2795	8000	6010C
Magnesium 2852	90000	6010C
Potassium 7664	450000	6010C
Sodium 5895	450000	6010C
Tin 1899	90000	6010C

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-MS-05

Analytical BatchID: 580895

Sample	Dilution Factor	Date/Time	A	B	B	C	C	C	C	P	M	M	N	S	A	T	V
			s	a	e	d	r	o	u	b	n	o	i	e	g	l	
ZZZZZZ	1	02/20/18 09:26															
ZZZZZZ	1	02/20/18 09:29															
ICV	1	02/20/18 09:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV	1	02/20/18 09:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB	1	02/20/18 09:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/20/18 09:42	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLICVS	1	02/20/18 09:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA	1	02/20/18 09:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB	1	02/20/18 09:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	5	02/20/18 09:54															
ZZZZZZ	20	02/20/18 09:57															
ZZZZZZ	5	02/20/18 10:00															
ZZZZZZ	5	02/20/18 10:03															
ZZZZZZ	25	02/20/18 10:06															
ZZZZZZ	5	02/20/18 10:09															
ZZZZZZ	5	02/20/18 10:12															
ZZZZZZ	5	02/20/18 10:15															
ZZZZZZ	5	02/20/18 10:18															
ZZZZZZ	5	02/20/18 10:21															
CCV	1	02/20/18 10:24	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/20/18 10:27	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	5	02/20/18 10:30															
ZZZZZZ	5	02/20/18 10:33															
ZZZZZZ	5	02/20/18 10:36															
ZZZZZZ	5	02/20/18 10:39															
ZZZZZZ	5	02/20/18 10:42															
CCV	1	02/20/18 10:45	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/20/18 10:48	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLCCVS	1	02/20/18 10:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	5	02/20/18 10:54															
ZZZZZZ	20	02/20/18 10:57															
ZZZZZZ	5	02/20/18 11:00															
ZZZZZZ	5	02/20/18 11:03															
ZZZZZZ	25	02/20/18 11:06															
ZZZZZZ	5	02/20/18 11:09															
ZZZZZZ	5	02/20/18 11:12															
ZZZZZZ	5	02/20/18 11:16															

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-MS-05

Analytical BatchID: 580895

Sample	Dilution Factor	Date/Time	A	B	B	C	C	C	C	P	M	M	N	S	A	T	V
			s	a	e	d	r	o	u	b	n	o	i	e	g	l	
CCV	1	02/20/18 11:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/20/18 11:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
KQ1801937-03MB	5	02/20/18 11:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
KQ1801937-04LCS1	20	02/20/18 11:32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-009	5	02/20/18 11:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-009DUP	5	02/20/18 11:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-009SDL	25	02/20/18 11:41	X	X	X	X	X	X			X	X	X	X	X	X	X
K1801267-009PS	5	02/20/18 11:44	X	X	X	X	X	X			X	X	X	X	X	X	X
K1801267-009MS	5	02/20/18 11:47	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-001	5	02/20/18 11:51	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-013	5	02/20/18 11:54	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/20/18 11:57															
CCV	1	02/20/18 12:00	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/20/18 12:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLCCVS	1	02/20/18 12:15	X	X	X	X	X	X	X		X	X	X	X	X	X	X
ZZZZZZ	1	02/20/18 12:18															
LLCCVS 1.0 ppb	1	02/20/18 12:21								X							
ZZZZZZ	10	02/20/18 12:24															
ZZZZZZ	10	02/20/18 12:27															
ZZZZZZ	10	02/20/18 12:32															
ZZZZZZ	10	02/20/18 12:35															
ZZZZZZ	10	02/20/18 12:37															
ZZZZZZ	10	02/20/18 12:41															
ZZZZZZ	10	02/20/18 12:44															
ZZZZZZ	10	02/20/18 12:47															
ZZZZZZ	10	02/20/18 12:53															
ZZZZZZ	10	02/20/18 12:56															
ZZZZZZ	1	02/20/18 12:59															
ZZZZZZ	1	02/20/18 13:02															
ZZZZZZ	1	02/20/18 13:05															
ZZZZZZ	1	02/20/18 13:08															
ZZZZZZ	1	02/20/18 13:11															
ZZZZZZ	1	02/20/18 13:14															
ZZZZZZ	1	02/20/18 13:17															
ZZZZZZ	5	02/20/18 13:20															
ZZZZZZ	20	02/20/18 13:23															
ZZZZZZ	5	02/20/18 13:26															

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-03

Analytical BatchID: 580921

Sample	Dilution Factor	Date/Time	A	B	C	C	P	S	A
			s	a	d	r	b	e	g
ZZZZZZ	1	02/20/18 09:36							
ZZZZZZ	1	02/20/18 09:38							
ZZZZZZ	1	02/20/18 09:41							
ZZZZZZ	1	02/20/18 09:43							
ICV	1	02/20/18 09:46	X	X	X	X	X	X	X
ICB	1	02/20/18 09:48	X	X	X	X	X	X	X
LLICV	1	02/20/18 09:51	X		X	X	X	X	X
ZZZZZZ	1	02/20/18 09:53							
ZZZZZZ	0.5	02/20/18 09:55							
LLICV-TCLP	1	02/20/18 09:58		X					
CCVB1	1	02/20/18 10:01	X	X					
CCVA1	1	02/20/18 10:04			X	X	X	X	X
CCB	1	02/20/18 10:06	X	X	X	X	X	X	X
ICSA	1	02/20/18 10:08	X	X	X	X	X	X	X
ICSAB	1	02/20/18 10:11	X	X	X	X	X	X	X
ZZZZZZ	1	02/20/18 10:21							
ZZZZZZ	1	02/20/18 10:56							
ZZZZZZ	1	02/20/18 10:59							
ZZZZZZ	1	02/20/18 11:01							
ZZZZZZ	1	02/20/18 11:04							
ZZZZZZ	1	02/20/18 11:06							
ZZZZZZ	1	02/20/18 11:08							
ZZZZZZ	5	02/20/18 11:11							
ZZZZZZ	5	02/20/18 11:13							
ZZZZZZ	5	02/20/18 11:16							
ZZZZZZ	5	02/20/18 11:18							
ZZZZZZ	1	02/20/18 11:20							
CCVB	1	02/20/18 11:31	X	X					
CCVA	1	02/20/18 11:34			X	X	X	X	X
CCB	1	02/20/18 11:36	X	X	X	X	X	X	X
LLCCV	1	02/20/18 11:38	X		X	X	X	X	X
LLCCV-TCLP	1	02/20/18 11:41		X					
ZZZZZZ	5	02/20/18 11:44							
ZZZZZZ	1	02/20/18 11:46							
ZZZZZZ	1	02/20/18 11:49							
ZZZZZZ	1	02/20/18 11:51							
ZZZZZZ	1	02/20/18 11:54							

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-03

Analytical BatchID: 580921

Sample	Dilution Factor	Date/Time	A s	B a	C d	C r	P b	S e	A g
ZZZZZZ	1.111	02/20/18 11:56							
ZZZZZZ	1.111	02/20/18 11:59							
ZZZZZZ	1.111	02/20/18 12:01							
ZZZZZZ	1.111	02/20/18 12:04							
ZZZZZZ	1.111	02/20/18 12:06							
CCVB	1	02/20/18 12:08	X	X					
CCVA	1	02/20/18 12:11			X	X	X	X	X
CCB	1	02/20/18 12:13	X	X	X	X	X	X	X
ZZZZZZ	1.111	02/20/18 12:16							
KQ1801951-02MB	5	02/20/18 12:18	X	X	X	X	X	X	X
KQ1801951-01LCS	5	02/20/18 12:21	X	X	X	X	X	X	X
K1801267-010	5	02/20/18 12:23	X	X	X	X	X	X	X
K1801267-010SDL	25	02/20/18 12:26	X	X	X	X	X	X	X
K1801267-010DUP	5	02/20/18 12:28	X	X	X	X	X	X	X
K1801267-010MS	5	02/20/18 12:31	X	X	X	X	X	X	X
K1801267-010PS	5	02/20/18 12:34	X	X	X	X	X	X	X
ZZZZZZ	1	02/20/18 12:36							
ZZZZZZ	1	02/20/18 12:39							
CCVB	1	02/20/18 12:41	X	X					
ZZZZZZ	1	02/20/18 12:52							
ZZZZZZ	1	02/20/18 12:54							
CCVA	1	02/20/18 13:05			X	X	X	X	X
CCB	1	02/20/18 13:07	X	X	X	X	X	X	X
ZZZZZZ	1	02/20/18 13:10							
LLCCV	1	02/20/18 13:13	X		X	X	X	X	X
LLCCV-TCLP	1	02/20/18 13:15		X					

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 580986

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	02/19/18 14:52	
ZZZZZZ	1	02/19/18 14:53	
ZZZZZZ	1	02/19/18 14:55	
ZZZZZZ	1	02/19/18 14:57	
ZZZZZZ	1	02/19/18 14:58	
ZZZZZZ	1	02/19/18 15:00	
ICV1	1	02/19/18 15:01	X
ICB1	1	02/19/18 15:03	X
LLICV1	1	02/19/18 15:05	X
CCV1	1	02/19/18 15:06	X
CCB1	1	02/19/18 15:08	X
KQ1801999-01MB	1	02/19/18 15:09	X
KQ1801999-02LCS	1	02/19/18 15:11	X
K1801267-010	1	02/19/18 15:13	X
K1801267-010DUP	1	02/19/18 15:14	X
K1801267-010MS	1	02/19/18 15:16	X
K1801267-010PS	1	02/19/18 15:18	X
CCV2	1	02/19/18 15:19	X
CCB2	1	02/19/18 15:21	X

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-03

Analytical BatchID: 581112

Sample	Dilution Factor	Date/Time	C a	F e	M g	K	N a	S	Z n
ZZZZZZ	1	02/21/18 11:48							
ZZZZZZ	1	02/21/18 11:50							
ZZZZZZ	1	02/21/18 11:52							
ICVB	1	02/21/18 11:55	X		X			X	
ICV	1	02/21/18 11:57	X	X	X	X	X	X	X
ICB	1	02/21/18 12:00	X	X	X	X	X	X	X
LLICV	1	02/21/18 12:02	X	X	X	X	X	X	X
ZZZZZZ	1	02/21/18 12:05							
ZZZZZZ	0.5	02/21/18 12:07							
ZZZZZZ	1	02/21/18 12:10							
CCVB1	1	02/21/18 12:14	X	X	X	X	X		
CCVA1	1	02/21/18 12:17	X		X			X	X
CCB	1	02/21/18 12:19	X	X	X	X	X	X	X
ICSA	1	02/21/18 12:22	X	X		X	X	X	X
ICSAB	1	02/21/18 12:25	X	X	X	X	X	X	X
ZZZZZZ	1	02/21/18 12:32							
ZZZZZZ	1	02/21/18 12:42							
ZZZZZZ	1.111	02/21/18 12:45							
ZZZZZZ	1.111	02/21/18 12:47							
ZZZZZZ	1.111	02/21/18 12:50							
ZZZZZZ	1.111	02/21/18 12:52							
ZZZZZZ	1.111	02/21/18 12:55							
ZZZZZZ	1.111	02/21/18 12:57							
ZZZZZZ	1.111	02/21/18 13:00							
ZZZZZZ	2	02/21/18 13:02							
CCVB	1	02/21/18 13:05	X	X	X	X	X		
CCVA	1	02/21/18 13:07	X		X			X	X
CCB	1	02/21/18 13:09	X	X	X	X	X	X	X
ZZZZZZ	2	02/21/18 13:12							
ZZZZZZ	2	02/21/18 13:14							
ZZZZZZ	2	02/21/18 13:17							
ZZZZZZ	2	02/21/18 13:19							
ZZZZZZ	2	02/21/18 13:22							
ZZZZZZ	2	02/21/18 13:24							
ZZZZZZ	2	02/21/18 13:27							
ZZZZZZ	2	02/21/18 13:29							
ZZZZZZ	2	02/21/18 13:31							

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-03

Analytical BatchID: 581112

Sample	Dilution Factor	Date/Time	C	F	M	K	N	S	Z
			a	e	g		a	n	n
CCVB	1	02/21/18 13:34	X	X	X	X	X		
CCVA	1	02/21/18 13:37	X		X			X	X
CCB	1	02/21/18 13:39	X	X	X	X	X	X	X
ZZZZZZ	1	02/21/18 13:41							
LLCCV	1	02/21/18 13:44	X	X	X	X	X	X	X
ZZZZZZ	1	02/21/18 13:46							
ZZZZZZ	0.5	02/21/18 13:49							
ZZZZZZ	2	02/21/18 14:18							
ZZZZZZ	2	02/21/18 14:21							
ZZZZZZ	2	02/21/18 14:23							
ZZZZZZ	2	02/21/18 14:26							
ZZZZZZ	10	02/21/18 14:28							
ZZZZZZ	2	02/21/18 14:31							
ZZZZZZ	2	02/21/18 14:33							
ZZZZZZ	2	02/21/18 14:36							
KQ1802193-02MB	1	02/21/18 14:38	X	X	X	X	X	X	
KQ1802193-03LCS	1	02/21/18 14:41	X	X	X	X	X	X	
ZZZZZZ	1	02/21/18 14:43							
CCVB	1	02/21/18 14:48	X	X	X	X	X		
CCVA	1	02/21/18 14:51	X		X			X	X
CCB	1	02/21/18 14:53	X	X	X	X	X	X	X
LLCCV	1	02/21/18 14:56	X	X	X	X	X	X	X
ZZZZZZ	1	02/21/18 14:59							
ZZZZZZ	0.5	02/21/18 15:02							
KQ1802193-04DLCS	1	02/21/18 15:05	X	X	X	X	X	X	
ZZZZZZ	1	02/21/18 15:07							
ZZZZZZ	1	02/21/18 15:10							
K1801267-004	1	02/21/18 15:12	X	X	X	X	X	X	
K1801267-004SDL	5	02/21/18 15:15	X	X	X	X	X	X	X
K1801267-018	1	02/21/18 15:17	X	X	X	X	X	X	
KQ1801937-03MB	2	02/21/18 15:20	X	X	X	X	X	X	X
KQ1801937-04LCS1	2	02/21/18 15:22	X	X	X	X	X	X	X
K1801267-009	2	02/21/18 15:24	X	X	X	X	X	X	
K1801267-009DUP	2	02/21/18 15:27	X	X	X	X	X	X	
CCVB	1	02/21/18 15:30	X	X	X	X	X		
CCVA	1	02/21/18 15:32	X		X			X	X
CCB	1	02/21/18 15:39	X	X	X	X	X	X	X

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-03

Analytical BatchID: 581112

Sample	Dilution Factor	Date/Time	C	F	M	K	N	S	Z
			a	e	g		a	n	n
K1801267-009SDL	10	02/21/18 15:42	X	X	X	X	X	X	X
K1801267-009PS	2	02/21/18 15:44	X		X	X	X	X	X
K1801267-009MS	2	02/21/18 15:46	X	X	X	X	X	X	
K1801267-001	2	02/21/18 15:49	X	X	X	X	X	X	
K1801267-013	2	02/21/18 15:51	X	X	X	X	X	X	X
ZZZZZ	5	02/21/18 15:54							
ZZZZZ	5	02/21/18 15:57							
ZZZZZ	5	02/21/18 15:59							
ZZZZZ	5	02/21/18 16:01							
ZZZZZ	5	02/21/18 16:04							
CCVB	1	02/21/18 16:06	X	X	X	X	X		
CCVA	1	02/21/18 16:09	X		X			X	X
CCB	1	02/21/18 16:12	X	X	X	X	X	X	X
ZZZZZ	5	02/21/18 16:15							
K1801267-009	100	02/21/18 16:17							X
K1801267-009DUP	100	02/21/18 16:19							X
K1801267-009SDL	500	02/21/18 16:22	X	X	X	X	X	X	X
K1801267-009PS	100	02/21/18 16:24	X		X	X	X	X	X
K1801267-009MS	100	02/21/18 16:27							X
K1801267-001	100	02/21/18 16:29							X
ZZZZZ	100	02/21/18 16:31							
CCVB	1	02/21/18 16:34	X	X	X	X	X		
CCVA	1	02/21/18 16:37	X		X			X	X
CCB	1	02/21/18 16:39	X	X	X	X	X	X	X
ZZZZZ	1	02/21/18 16:41							
LLCCV	1	02/21/18 16:44	X	X	X	X	X	X	X
ZZZZZ	1	02/21/18 16:46							
ZZZZZ	0.5	02/21/18 16:49							

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 581176

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	02/21/18 14:36	
ZZZZZZ	1	02/21/18 14:37	
ZZZZZZ	1	02/21/18 14:39	
ZZZZZZ	1	02/21/18 14:40	
ZZZZZZ	1	02/21/18 14:42	
ZZZZZZ	1	02/21/18 14:44	
ICV1	1	02/21/18 14:45	X
ICB1	1	02/21/18 14:47	X
LLICV1	1	02/21/18 14:49	X
CCV1	1	02/21/18 14:50	X
CCB1	1	02/21/18 14:52	X
KQ1801822-05MB	1	02/21/18 14:53	X
KQ1801822-06LCS1	10	02/21/18 14:55	X
ZZZZZZ	1	02/21/18 14:57	
ZZZZZZ	1	02/21/18 14:58	
ZZZZZZ	1	02/21/18 15:00	
ZZZZZZ	1	02/21/18 15:01	
ZZZZZZ	1	02/21/18 15:03	
ZZZZZZ	1	02/21/18 15:05	
ZZZZZZ	1	02/21/18 15:06	
ZZZZZZ	1	02/21/18 15:08	
CCV2	1	02/21/18 15:10	X
CCB2	1	02/21/18 15:11	X
K1801265-009SDL	5	02/21/18 15:13	X
ZZZZZZ	1	02/21/18 15:15	
ZZZZZZ	1	02/21/18 15:16	
K1801265-009PS	1	02/21/18 15:18	X
ZZZZZZ	1	02/21/18 15:19	
ZZZZZZ	1	02/21/18 15:21	
ZZZZZZ	1	02/21/18 15:23	
ZZZZZZ	1	02/21/18 15:24	
ZZZZZZ	1	02/21/18 15:26	
ZZZZZZ	1	02/21/18 15:27	
CCV3	1	02/21/18 15:29	X
CCB3	1	02/21/18 15:31	X
ZZZZZZ	1	02/21/18 15:32	
K1801267-001	1	02/21/18 15:34	X

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 581176

Sample	Dilution Factor	Date/Time	H g
K1801267-009	1	02/21/18 15:35	X
K1801267-009DUP	1	02/21/18 15:37	X
K1801267-009MS	1	02/21/18 15:39	X
K1801267-013	1	02/21/18 15:40	X
ZZZZZZ	1	02/21/18 15:42	
ZZZZZZ	1	02/21/18 15:44	
ZZZZZZ	1	02/21/18 15:45	
ZZZZZZ	1	02/21/18 15:48	
CCV4	1	02/21/18 15:49	X
CCB4	1	02/21/18 15:51	X
ZZZZZZ	1	02/21/18 15:53	
ZZZZZZ	1	02/21/18 15:54	
ZZZZZZ	1	02/21/18 15:56	
ZZZZZZ	1	02/21/18 15:58	
ZZZZZZ	1	02/21/18 15:59	
ZZZZZZ	1	02/21/18 16:02	
ZZZZZZ	1	02/21/18 16:03	

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 581405

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	02/22/18 14:50	
ZZZZZZ	1	02/22/18 14:51	
ZZZZZZ	1	02/22/18 14:53	
ZZZZZZ	1	02/22/18 14:55	
ZZZZZZ	1	02/22/18 14:56	
ZZZZZZ	1	02/22/18 14:58	
ICV1	1	02/22/18 15:00	X
ICB1	1	02/22/18 15:01	X
LLICV1	1	02/22/18 15:03	X
CCV1	1	02/22/18 15:04	X
CCB1	1	02/22/18 15:06	X
KQ1802022-02MB	1	02/22/18 15:08	X
KQ1802022-01LCS	1	02/22/18 15:09	X
ZZZZZZ	1	02/22/18 15:11	
ZZZZZZ	1	02/22/18 15:12	
ZZZZZZ	1	02/22/18 15:14	
ZZZZZZ	1	02/22/18 15:16	
K1801202-021PS	1	02/22/18 15:17	X
ZZZZZZ	1	02/22/18 15:19	
ZZZZZZ	1	02/22/18 15:21	
K1801267-004	1	02/22/18 15:22	X
CCV2	1	02/22/18 15:24	X
CCB2	1	02/22/18 15:25	X
K1801267-018	1	02/22/18 15:27	X
ZZZZZZ	1	02/22/18 15:29	
ZZZZZZ	1	02/22/18 15:30	
ZZZZZZ	1	02/22/18 15:32	
ZZZZZZ	1	02/22/18 15:34	
ZZZZZZ	1	02/22/18 15:35	
ZZZZZZ	1	02/22/18 15:37	
ZZZZZZ	1	02/22/18 15:38	
ZZZZZZ	1	02/22/18 15:40	
ZZZZZZ	5	02/22/18 15:42	
CCV3	1	02/22/18 15:43	X
CCB3	1	02/22/18 15:45	X
ZZZZZZ	5	02/22/18 15:46	
ZZZZZZ	1	02/22/18 15:51	

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-MS-04

Analytical BatchID: 581650

Sample	Dilution Factor	Date/Time	A	B	B	C	C	C	P	M	M	N	S	A	T	V	Z
			s	a	e	d	r	o	u	b	n	o	i	e	g	l	n
ZZZZZZ	1	02/26/18 13:02															
ZZZZZZ	1	02/26/18 13:06															
ICV	1	02/26/18 13:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV	1	02/26/18 13:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB	1	02/26/18 13:18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 13:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLICVW	1	02/26/18 13:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA	1	02/26/18 13:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSAB	1	02/26/18 13:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 13:47															
ZZZZZZ	1	02/26/18 13:50															
ZZZZZZ	1	02/26/18 13:54															
ZZZZZZ	1	02/26/18 13:58															
ZZZZZZ	5	02/26/18 14:02															
ZZZZZZ	1	02/26/18 14:06															
ZZZZZZ	1	02/26/18 14:10															
ZZZZZZ	1	02/26/18 14:14															
ZZZZZZ	1	02/26/18 14:17															
ZZZZZZ	1	02/26/18 14:21															
CCV	1	02/26/18 14:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 14:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 14:33															
ZZZZZZ	1	02/26/18 14:37															
ZZZZZZ	1	02/26/18 14:41															
ZZZZZZ	1	02/26/18 14:44															
ZZZZZZ	1	02/26/18 14:48															
ZZZZZZ	1	02/26/18 14:52															
ZZZZZZ	1	02/26/18 14:56															
ZZZZZZ	1	02/26/18 15:00															
ZZZZZZ	1	02/26/18 15:04															
ZZZZZZ	1	02/26/18 15:08															
CCV	1	02/26/18 15:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 15:15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLCCVW	1	02/26/18 15:19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 15:23															
LLCCVW 2X	1	02/26/18 15:33														X	
ZZZZZZ	1	02/26/18 15:42															

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-MS-04

Analytical BatchID: 581650

Sample	Dilution Factor	Date/Time	A	B	B	C	C	C	C	P	M	M	N	S	A	T	V	Z
			s	a	e	d	r	o	u	b	n	o	i	e	g	l		n
ZZZZZZ	1	02/26/18 15:46																
ZZZZZZ	1	02/26/18 15:50																
ZZZZZZ	5	02/26/18 15:54																
ZZZZZZ	1	02/26/18 15:58																
ZZZZZZ	1	02/26/18 16:01																
ZZZZZZ	1	02/26/18 16:05																
ZZZZZZ	1	02/26/18 16:09																
ZZZZZZ	1	02/26/18 16:13																
ZZZZZZ	1	02/26/18 16:17																
CCV	1	02/26/18 16:21	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 16:25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 16:29																
ZZZZZZ	2	02/26/18 16:32																
ZZZZZZ	1	02/26/18 16:36																
ZZZZZZ	1	02/26/18 16:40																
ZZZZZZ	1	02/26/18 16:44																
ZZZZZZ	1	02/26/18 16:48																
KQ1802192-01MB	1	02/26/18 16:52	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
KQ1802192-02LCS	1	02/26/18 16:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
KQ1802192-03DLCS	1	02/26/18 16:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 17:03																
CCV	1	02/26/18 17:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 17:11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLCCVW	1	02/26/18 17:15	X		X	X	X	X	X	X	X	X	X	X	X	X		X
ZZZZZZ	1	02/26/18 17:19																
ZZZZZZ	1	02/26/18 17:23																
LLCCVW 2X	1	02/26/18 17:28		X														X
K1801267-004	1	02/26/18 17:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-004SDL	5	02/26/18 17:35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-018	1	02/26/18 17:39	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 17:43																
ZZZZZZ	1	02/26/18 17:47																
ZZZZZZ	1	02/26/18 17:51																
ZZZZZZ	5	02/26/18 17:55																
ZZZZZZ	1	02/26/18 17:58																
ZZZZZZ	1	02/26/18 18:02																
ZZZZZZ	1	02/26/18 18:06																

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-MS-04

Analytical BatchID: 581650

Sample	Dilution Factor	Date/Time	A	B	B	C	C	C	P	M	M	N	S	A	T	V	Z
			s	a	e	d	r	o	u	b	n	o	i	e	g	l	n
CCV	1	02/26/18 18:10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 18:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	02/26/18 18:18															
ZZZZZZ	1	02/26/18 18:22															
ZZZZZZ	1	02/26/18 18:25															
ZZZZZZ	1	02/26/18 18:29															
CCV	1	02/26/18 18:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	02/26/18 18:37	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLCCVW	1	02/26/18 18:41	X		X	X	X	X	X	X	X	X	X	X	X		X
LLCCVW 2X	1	02/26/18 18:45		X													X

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-04

Analytical BatchID: 583591

Sample	Dilution Factor	Date/Time	C	F	M	K	N	S
			a	e	g		a	n
ZZZZZZ	1	03/14/18 10:06						
ZZZZZZ	1	03/14/18 10:09						
ZZZZZZ	1	03/14/18 10:11						
ICVB	1	03/14/18 10:13	X		X			X
ICV	1	03/14/18 10:16	X	X	X	X	X	
ICB	1	03/14/18 10:19	X	X	X	X	X	X
ZZZZZZ	1	03/14/18 10:22						
LLICV	1	03/14/18 10:26	X	X	X	X	X	X
ZZZZZZ	0.5	03/14/18 10:29						
CCVB1	1	03/14/18 10:31	X	X	X	X	X	
CCVA1	1	03/14/18 10:34	X		X			X
CCB	1	03/14/18 10:36	X	X	X	X	X	X
ICSA	1	03/14/18 10:38		X		X	X	X
ICSAB	1	03/14/18 10:41		X		X	X	X
ZZZZZZ	1	03/14/18 10:52						
ZZZZZZ	1	03/14/18 11:16						
ZZZZZZ	1	03/14/18 11:18						
ZZZZZZ	1	03/14/18 11:20						
ZZZZZZ	1	03/14/18 11:23						
ZZZZZZ	1	03/14/18 11:25						
ZZZZZZ	1.111	03/14/18 11:28						
ZZZZZZ	1.111	03/14/18 11:30						
ZZZZZZ	1.111	03/14/18 11:33						
KQ1803087-02MB	1	03/14/18 11:35	X	X	X	X	X	X
KQ1803087-01LCS	1	03/14/18 11:37	X	X	X	X	X	X
CCVB	1	03/14/18 11:40	X	X	X	X	X	
CCVA	1	03/14/18 11:42	X		X			X
CCB	1	03/14/18 11:45	X	X	X	X	X	X
LLCCV	1	03/14/18 11:47	X	X	X	X	X	X
ZZZZZZ	1	03/14/18 11:51						
ZZZZZZ	0.5	03/14/18 11:54						
K1801267-008	1	03/14/18 11:56	X	X		X		X
K1801267-008SDL	5	03/14/18 11:59	X	X	X	X	X	X
K1801267-008DUP	1	03/14/18 12:02	X	X		X		X
K1801267-008MS	1	03/14/18 12:04	X	X		X		X
K1801267-008PS	1	03/14/18 12:07		X				X
K1801267-017	1	03/14/18 12:10	X	X	X	X		X

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-AES-04

Analytical BatchID: 583591

Sample	Dilution Factor	Date/Time	C	F	M	K	N	S
			a	e	g		a	n
K1801267-008	100	03/14/18 12:15			X		X	
K1801267-008SDL	500	03/14/18 12:17	X	X	X	X	X	X
K1801267-008DUP	100	03/14/18 12:19			X		X	
K1801267-008MS	100	03/14/18 12:22			X		X	
CCVB	1	03/14/18 12:24	X	X	X	X	X	
CCVA	1	03/14/18 12:27	X		X			X
ZZZZZZ	1	03/14/18 12:29						
CCB	1	03/14/18 12:33	X	X	X	X	X	X
K1801267-017	100	03/14/18 12:36					X	
ZZZZZZ	1	03/14/18 12:38						
ZZZZZZ	1	03/14/18 12:41						
ZZZZZZ	1	03/14/18 12:43						
ZZZZZZ	1	03/14/18 12:46						
ZZZZZZ	1	03/14/18 12:48						
ZZZZZZ	1	03/14/18 12:51						
ZZZZZZ	1	03/14/18 12:53						
ZZZZZZ	1	03/14/18 12:56						
ZZZZZZ	1	03/14/18 12:58						
CCVB	1	03/14/18 13:00	X	X	X	X	X	
CCVA	1	03/14/18 13:03	X		X			X
CCB	1	03/14/18 13:05	X	X	X	X	X	X
ZZZZZZ	1	03/14/18 13:08						
LLCCV	1	03/14/18 13:13	X	X	X	X		X
LLCCV	0.5	03/14/18 13:16					X	
ZZZZZZ	1	03/14/18 13:18						
ZZZZZZ	5	03/14/18 13:21						
ZZZZZZ	1	03/14/18 13:23						
ZZZZZZ	1	03/14/18 13:26						
ZZZZZZ	1	03/14/18 13:28						
ZZZZZZ	1	03/14/18 13:30						
ZZZZZZ	1	03/14/18 13:33						
ZZZZZZ	1	03/14/18 13:35						
ZZZZZZ	1	03/14/18 13:38						
ZZZZZZ	1	03/14/18 13:40						
ZZZZZZ	1	03/14/18 13:43						
ZZZZZZ	1	03/14/18 13:45						
ZZZZZZ	1	03/14/18 13:48						

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-ICP-MS-05

Analytical BatchID: 583685

Sample	Dilution Factor	Date/Time	A	B	B	C	C	C	P	M	M	N	S	A	T	V	Z
			s	a	e	d	r	o	b	n	o	i	e	g	l		n
ZZZZZZ	1	03/15/18 07:26															
ZZZZZZ	1	03/15/18 07:28															
ICV	1	03/15/18 07:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCV	1	03/15/18 07:33	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICB	1	03/15/18 07:36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	03/15/18 07:38	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/15/18 07:41															
LLICVW	1	03/15/18 07:43	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ICSA	1	03/15/18 07:46	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/15/18 07:48															
ICSAB	1	03/15/18 07:56	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
KQ1803090-01MB	1	03/15/18 08:02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
KQ1803090-02LCS	1	03/15/18 08:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-008	20	03/15/18 08:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-017	10	03/15/18 08:09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-017DUP	10	03/15/18 08:12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-017SDL	50	03/15/18 08:14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-017PS	10	03/15/18 08:17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
K1801267-017MS	10	03/15/18 08:22	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/15/18 08:26															
CCV	1	03/15/18 08:29	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	03/15/18 08:31	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ZZZZZZ	1	03/15/18 08:36															
ZZZZZZ	1	03/15/18 08:39															
ZZZZZZ	1	03/15/18 08:48															
ZZZZZZ	1	03/15/18 08:51															
ZZZZZZ	1	03/15/18 08:53															
ZZZZZZ	1	03/15/18 08:56															
ZZZZZZ	1	03/15/18 08:58															
ZZZZZZ	1	03/15/18 09:00															
CCV	1	03/15/18 09:03	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CCB	1	03/15/18 09:05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LLCCVW	1	03/15/18 09:08	X	X	X	X	X		X	X	X	X	X	X	X	X	X
LLCCVW 2X	1	03/15/18 09:11							X								
ZZZZZZ	1	03/15/18 09:13															
ZZZZZZ	1	03/15/18 09:15															
ZZZZZZ	1	03/15/18 09:18															

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 584203

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	03/20/18 09:16	
ZZZZZZ	1	03/20/18 09:17	
ZZZZZZ	1	03/20/18 09:19	
ZZZZZZ	1	03/20/18 09:20	
ZZZZZZ	1	03/20/18 09:22	
ZZZZZZ	1	03/20/18 09:24	
ICV1	1	03/20/18 09:25	X
ICB1	1	03/20/18 09:27	X
LLICV1	1	03/20/18 09:29	X
CCV1	1	03/20/18 09:30	X
CCB1	1	03/20/18 09:32	X
ZZZZZZ	1	03/20/18 09:33	
ZZZZZZ	1	03/20/18 09:35	
ZZZZZZ	1	03/20/18 09:37	
ZZZZZZ	1	03/20/18 09:38	
ZZZZZZ	1	03/20/18 09:40	
ZZZZZZ	1	03/20/18 09:41	
ZZZZZZ	1	03/20/18 09:43	
ZZZZZZ	1	03/20/18 09:45	
ZZZZZZ	1	03/20/18 09:46	
ZZZZZZ	1	03/20/18 09:48	
CCV2	1	03/20/18 09:50	X
CCB2	1	03/20/18 09:51	X
ZZZZZZ	1	03/20/18 09:53	
ZZZZZZ	1	03/20/18 09:54	
ZZZZZZ	1	03/20/18 09:56	
ZZZZZZ	1	03/20/18 09:58	
ZZZZZZ	1	03/20/18 09:59	
ZZZZZZ	1	03/20/18 10:01	
ZZZZZZ	1	03/20/18 10:02	
ZZZZZZ	1	03/20/18 10:04	
ZZZZZZ	1	03/20/18 10:06	
ZZZZZZ	1	03/20/18 10:07	
CCV3	1	03/20/18 10:09	X
CCB3	1	03/20/18 10:11	X
ZZZZZZ	1	03/20/18 10:12	
ZZZZZZ	1	03/20/18 10:14	

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

Analysis Run Log

Instrument ID: K-CVAA-02

Analytical BatchID: 584203

Sample	Dilution Factor	Date/Time	H g
ZZZZZZ	1	03/20/18 10:15	
ZZZZZZ	1	03/20/18 10:17	
ZZZZZZ	1	03/20/18 10:19	
ZZZZZZ	1	03/20/18 10:20	
ZZZZZZ	1	03/20/18 10:22	
ZZZZZZ	1	03/20/18 10:23	
ZZZZZZ	1	03/20/18 10:25	
ZZZZZZ	1	03/20/18 10:27	
CCV4	1	03/20/18 10:28	X
CCB4	1	03/20/18 10:30	X
ZZZZZZ	1	03/20/18 10:32	
ZZZZZZ	1	03/20/18 10:33	
ZZZZZZ	5	03/20/18 10:35	
ZZZZZZ	5	03/20/18 10:36	
KQ1803003-01MB	1	03/20/18 10:40	X
KQ1803003-02LCS	1	03/20/18 10:42	X
K1801267-008	1	03/20/18 10:44	X
K1801267-017	1	03/20/18 10:45	X
ZZZZZZ	1	03/20/18 10:47	
ZZZZZZ	1	03/20/18 10:48	
CCV5	1	03/20/18 10:50	X
CCB5	1	03/20/18 10:52	X
ZZZZZZ	1	03/20/18 10:53	
K1801988-001PS	1	03/20/18 10:55	X
K1801988-001DUP	1	03/20/18 10:56	X
K1801988-001MS	1	03/20/18 10:58	X
ZZZZZZ	1	03/20/18 11:00	
ZZZZZZ	1	03/20/18 11:01	
ZZZZZZ	1	03/20/18 11:03	
ZZZZZZ	1	03/20/18 11:05	
ZZZZZZ	1	03/20/18 11:06	
ZZZZZZ	1	03/20/18 11:08	
CCV6	1	03/20/18 11:09	X
CCB6	1	03/20/18 11:11	X
ZZZZZZ	1	03/20/18 11:13	
ZZZZZZ	1	03/20/18 11:14	
ZZZZZZ	1	03/20/18 11:16	

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-05

Analytical BatchID: 580895

Sample	Date/Time	Li6NG	Ge72He	Ge72H2	In115He	Lu175He	Sc45NG
ZZZZZZ	02/20/18 09:26						
ZZZZZZ	02/20/18 09:29						
ICV	02/20/18 09:33	101	99	100	99	100	102
CCV	02/20/18 09:36	103	99	99	99	100	101
ICB	02/20/18 09:39	103	100	100	100	102	103
CCB	02/20/18 09:42	103	99	100	99	100	102
LLICVS	02/20/18 09:45	101	100	100	99	101	101
ICSA	02/20/18 09:48	94	95	94	91	97	95
ICSAB	02/20/18 09:51	97	96	97	94	99	98
ZZZZZZ	02/20/18 09:54						
ZZZZZZ	02/20/18 09:57						
ZZZZZZ	02/20/18 10:00						
ZZZZZZ	02/20/18 10:03						
ZZZZZZ	02/20/18 10:06						
ZZZZZZ	02/20/18 10:09						
ZZZZZZ	02/20/18 10:12						
ZZZZZZ	02/20/18 10:15						
ZZZZZZ	02/20/18 10:18						
ZZZZZZ	02/20/18 10:21						
CCV	02/20/18 10:24	96	94	97	96	98	99
CCB	02/20/18 10:27	94	96	98	96	99	100
ZZZZZZ	02/20/18 10:30						
ZZZZZZ	02/20/18 10:33						
ZZZZZZ	02/20/18 10:36						
ZZZZZZ	02/20/18 10:39						
ZZZZZZ	02/20/18 10:42						
CCV	02/20/18 10:45	90	93	96	93	96	98
CCB	02/20/18 10:48	92	94	96	94	97	96
LLCCVS	02/20/18 10:51	88	93	96	94	98	95
ZZZZZZ	02/20/18 10:54						
ZZZZZZ	02/20/18 10:57						
ZZZZZZ	02/20/18 11:00						
ZZZZZZ	02/20/18 11:03						
ZZZZZZ	02/20/18 11:06						
ZZZZZZ	02/20/18 11:09						
ZZZZZZ	02/20/18 11:12						
ZZZZZZ	02/20/18 11:16						

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-05

Analytical BatchID: 580895

Sample	Date/Time	Li6NG	Ge72He	Ge72H2	In115He	Lu175He	Sc45NG
CCV	02/20/18 11:19	90	92	95	94	97	98
CCB	02/20/18 11:22	89	94	95	94	97	99
KQ1801937-03MB	02/20/18 11:29	90	95	98	96	99	101
KQ1801937-04LCS1	02/20/18 11:32	87	92	94	90	95	97
K1801267-009	02/20/18 11:35	87	91	93	90	95	100
K1801267-009DUP	02/20/18 11:38	87	93	95	91	96	102
K1801267-009SDL	02/20/18 11:41	88	92	95	92	96	96
K1801267-009PS	02/20/18 11:44	86	93	93	92	97	100
K1801267-009MS	02/20/18 11:47	87	90	92	88	95	102
K1801267-001	02/20/18 11:51	86	92	93	90	96	105
K1801267-013	02/20/18 11:54	85	93	94	91	99	105
ZZZZZZ	02/20/18 11:57						
CCV	02/20/18 12:00	85	92	95	91	95	92
CCB	02/20/18 12:12	87	92	95	92	96	99
LLCCVS	02/20/18 12:15	88	92	95	91	96	96
ZZZZZZ	02/20/18 12:18						
LLCCVS 1.0 ppb	02/20/18 12:21	86	90	93	90	92	95
ZZZZZZ	02/20/18 12:24						
ZZZZZZ	02/20/18 12:27						
ZZZZZZ	02/20/18 12:32						
ZZZZZZ	02/20/18 12:35						
ZZZZZZ	02/20/18 12:37						
ZZZZZZ	02/20/18 12:41						
ZZZZZZ	02/20/18 12:44						
ZZZZZZ	02/20/18 12:47						
ZZZZZZ	02/20/18 12:53						
ZZZZZZ	02/20/18 12:56						
ZZZZZZ	02/20/18 12:59						
ZZZZZZ	02/20/18 13:02						
ZZZZZZ	02/20/18 13:05						
ZZZZZZ	02/20/18 13:08						
ZZZZZZ	02/20/18 13:11						
ZZZZZZ	02/20/18 13:14						
ZZZZZZ	02/20/18 13:17						
ZZZZZZ	02/20/18 13:20						
ZZZZZZ	02/20/18 13:23						
ZZZZZZ	02/20/18 13:26						

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-04

Analytical BatchID: 581650

Sample	Date/Time	LiSTD	GeSTD	ScKED2	GeKED3	GeKED2	GeKED1	RhKED2
ZZZZZZ	02/26/18 13:02							
ZZZZZZ	02/26/18 13:06							
ICV	02/26/18 13:10	98	97	100	99	101	100	102
CCV	02/26/18 13:14	98	97	102	99	99	101	102
ICB	02/26/18 13:18	98	95	101	100	100	102	102
CCB	02/26/18 13:21	98	98	101	100	100	102	100
LLICVW	02/26/18 13:25	97	96	100	98	100	102	101
ICSA	02/26/18 13:29	85	85	95	87	88	87	87
ICSAB	02/26/18 13:33	87	91	95	85	89	89	87
ZZZZZZ	02/26/18 13:47							
ZZZZZZ	02/26/18 13:50							
ZZZZZZ	02/26/18 13:54							
ZZZZZZ	02/26/18 13:58							
ZZZZZZ	02/26/18 14:02							
ZZZZZZ	02/26/18 14:06							
ZZZZZZ	02/26/18 14:10							
ZZZZZZ	02/26/18 14:14							
ZZZZZZ	02/26/18 14:17							
ZZZZZZ	02/26/18 14:21							
CCV	02/26/18 14:25	97	99	97	96	97	99	101
CCB	02/26/18 14:29	98	102	97	94	99	101	100
ZZZZZZ	02/26/18 14:33							
ZZZZZZ	02/26/18 14:37							
ZZZZZZ	02/26/18 14:41							
ZZZZZZ	02/26/18 14:44							
ZZZZZZ	02/26/18 14:48							
ZZZZZZ	02/26/18 14:52							
ZZZZZZ	02/26/18 14:56							
ZZZZZZ	02/26/18 15:00							
ZZZZZZ	02/26/18 15:04							
ZZZZZZ	02/26/18 15:08							
CCV	02/26/18 15:11	103	94	98	92	96	97	98
CCB	02/26/18 15:15	101	92	97	92	95	95	97
LLCCVW	02/26/18 15:19	100	92	97	93	95	95	97
ZZZZZZ	02/26/18 15:23							
LLCCVW 2X	02/26/18 15:33	100	93	94	92	93	94	97
ZZZZZZ	02/26/18 15:42							

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

LuKED2	ThKED2
102	100
101	100
102	102
100	99
102	102
98	96
99	98
101	103
99	101
98	100
100	100
99	98
98	100

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-04

Analytical BatchID: 581650

Sample	Date/Time	LiSTD	GeSTD	ScKED2	GeKED3	GeKED2	GeKED1	RhKED2
ZZZZZZ	02/26/18 15:46							
ZZZZZZ	02/26/18 15:50							
ZZZZZZ	02/26/18 15:54							
ZZZZZZ	02/26/18 15:58							
ZZZZZZ	02/26/18 16:01							
ZZZZZZ	02/26/18 16:05							
ZZZZZZ	02/26/18 16:09							
ZZZZZZ	02/26/18 16:13							
ZZZZZZ	02/26/18 16:17							
CCV	02/26/18 16:21	99	98	98	95	98	98	101
CCB	02/26/18 16:25	99	98	97	94	97	98	98
ZZZZZZ	02/26/18 16:29							
ZZZZZZ	02/26/18 16:32							
ZZZZZZ	02/26/18 16:36							
ZZZZZZ	02/26/18 16:40							
ZZZZZZ	02/26/18 16:44							
ZZZZZZ	02/26/18 16:48							
KQ1802192-01MB	02/26/18 16:52	100	92	95	91	93	95	95
KQ1802192-02LCS	02/26/18 16:56	99	90	95	93	94	95	94
KQ1802192-03DLCS	02/26/18 16:59	100	92	94	92	93	95	95
ZZZZZZ	02/26/18 17:03							
CCV	02/26/18 17:07	100	94	98	92	96	94	95
CCB	02/26/18 17:11	104	96	97	93	96	97	96
LLCCVW	02/26/18 17:15	99	93	96	92	96	97	97
ZZZZZZ	02/26/18 17:19							
ZZZZZZ	02/26/18 17:23							
LLCCVW 2X	02/26/18 17:28	102	95	95	94	96	95	100
K1801267-004	02/26/18 17:31	103	96	97	93	96	97	100
K1801267-004SDL	02/26/18 17:35	97	92	96	92	95	96	95
K1801267-018	02/26/18 17:39	100	93	98	93	95	95	98
ZZZZZZ	02/26/18 17:43							
ZZZZZZ	02/26/18 17:47							
ZZZZZZ	02/26/18 17:51							
ZZZZZZ	02/26/18 17:55							
ZZZZZZ	02/26/18 17:58							
ZZZZZZ	02/26/18 18:02							
ZZZZZZ	02/26/18 18:06							

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

LuKED2	ThKED2
101	102
101	101
98	99
99	99
97	98

98	99
101	100
99	100
99	100
99	101
98	99
98	99

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-04

Analytical BatchID: 581650

Sample	Date/Time	LiSTD	GeSTD	ScKED2	GeKED3	GeKED2	GeKED1	RhKED2
CCV	02/26/18 18:10	99	93	93	92	93	96	97
CCB	02/26/18 18:14	96	90	96	91	96	94	95
ZZZZZZ	02/26/18 18:18							
ZZZZZZ	02/26/18 18:22							
ZZZZZZ	02/26/18 18:25							
ZZZZZZ	02/26/18 18:29							
CCV	02/26/18 18:33	101	98	96	93	96	97	97
CCB	02/26/18 18:37	97	92	96	92	95	96	96
LLCCVW	02/26/18 18:41	99	96	95	92	93	94	96
LLCCVW 2X	02/26/18 18:45	95	90	94	89	95	94	96

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

LuKED2	ThKED2
98	100
99	100
99	101
98	101
99	100
98	100

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS/

Service Request: K1801267

ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY

Instrument ID: K-ICP-MS-05

Analytical BatchID: 583685

Sample	Date/Time	Sc45NG	Ge72He	Ge72H2	In115He	Lu175He	Th232He
ZZZZZZ	03/15/18 07:26						
ZZZZZZ	03/15/18 07:28						
ICV	03/15/18 07:31	97	98	100	101	99	101
CCV	03/15/18 07:33	96	99	99	99	100	99
ICB	03/15/18 07:36	97	98	100	100	101	100
CCB	03/15/18 07:38	96	97	98	99	101	99
ZZZZZZ	03/15/18 07:41						
LLICVW	03/15/18 07:43	98	99	99	101	100	101
ICSA	03/15/18 07:46	91	92	92	92	95	95
ZZZZZZ	03/15/18 07:48						
ICSAB	03/15/18 07:56	91	91	90	89	94	94
KQ1803090-01MB	03/15/18 08:02	94	96	96	99	100	100
KQ1803090-02LCS	03/15/18 08:05	90	94	94	94	97	98
K1801267-008	03/15/18 08:07	99	102	104	100	101	96
K1801267-017	03/15/18 08:09	101	108	104	103	105	100
K1801267-017DUP	03/15/18 08:12	99	108	108	105	106	100
K1801267-017SDL	03/15/18 08:14	101	107	106	107	110	107
K1801267-017PS	03/15/18 08:17	107	115	114	112	113	109
K1801267-017MS	03/15/18 08:22	108	112	110	110	113	108
ZZZZZZ	03/15/18 08:26						
CCV	03/15/18 08:29	84	90	89	95	102	102
CCB	03/15/18 08:31	88	91	90	95	100	102
ZZZZZZ	03/15/18 08:36						
ZZZZZZ	03/15/18 08:39						
ZZZZZZ	03/15/18 08:48						
ZZZZZZ	03/15/18 08:51						
ZZZZZZ	03/15/18 08:53						
ZZZZZZ	03/15/18 08:56						
ZZZZZZ	03/15/18 08:58						
ZZZZZZ	03/15/18 09:00						
CCV	03/15/18 09:03	94	95	94	98	103	103
CCB	03/15/18 09:05	96	97	93	99	102	103
LLCCVW	03/15/18 09:08	92	92	92	94	97	100
LLCCVW 2X	03/15/18 09:11	95	97	94	97	101	102
ZZZZZZ	03/15/18 09:13						
ZZZZZZ	03/15/18 09:15						
ZZZZZZ	03/15/18 09:18						

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Al 167.079 {502}	<input checked="" type="checkbox"/>	2	Fe	0.000943	0.000000	No
			Mg	0.000033	0.000000	No
Al 394.401 {85}	<input checked="" type="checkbox"/>	None				
Sb 206.833 {463}	<input checked="" type="checkbox"/>	2	Cr	0.017911	0.000000	No
			Ti	0.000690	0.000000	No
Sb 217.581 {455}	<input checked="" type="checkbox"/>	3	Fe	-0.000154	0.000000	No
			Mn	-0.000919	0.000000	No
			V	0.002321	0.000000	No
As 189.042 {478}	<input checked="" type="checkbox"/>	4	Cr	0.000460	0.000000	No
			Al	0.000035	0.000000	No
			Fe	-0.000112	0.000000	No
			Mo	0.001321	0.000000	No
Ba 455.403 {74}	<input checked="" type="checkbox"/>	None				
Be 234.861 {144}	<input checked="" type="checkbox"/>	3	Fe	0.000010	0.000000	No
			Mn	-0.000073	0.000000	No
			Mo	-0.000423	0.000000	No
B 249.678 {135}	<input checked="" type="checkbox"/>	4	Fe	-0.000665	0.000000	No
			Co	0.003184	0.000000	No
			Mo	-0.001955	0.000000	No
			V	-0.000559	0.000000	No
Cd 214.438 {457}	<input checked="" type="checkbox"/>	1	Fe	0.000031	0.000000	No
Cd 226.502 {449}	<input checked="" type="checkbox"/>	2	Fe	0.000144	0.000000	No
			Ti	0.000113	0.000000	No
Ca 315.887 {107}	<input checked="" type="checkbox"/>	None				
Ca 393.366 {86}	<input checked="" type="checkbox"/>	None				
Cr 267.716 {126}	<input checked="" type="checkbox"/>	4	Cd	-0.000185	0.000000	No
			Fe	0.000030	0.000000	No
			Mn	0.000324	0.000000	No
			V	-0.000111	0.000000	No
Co 228.616 {447}	<input checked="" type="checkbox"/>	6	Cr	0.000095	0.000000	No
			Fe	0.000024	0.000000	No
			Mo	-0.001485	0.000000	No
			Ni	0.000116	0.000000	No
			Ti	0.002427	0.000000	No
			Ba	-0.000551	0.000000	No
Co 230.786 {446}	<input checked="" type="checkbox"/>	3	Fe	0.000028	0.000000	No
			Mo	0.000263	0.000000	No
			Ni	-0.000084	0.000000	No
Cu 224.700 {450}	<input checked="" type="checkbox"/>	5	Fe	0.000275	0.000000	No
			Pb	0.001122	0.000000	No
			Mo	0.001796	0.000000	No
			Ni	-0.000583	0.000000	No
			Ti	0.000370	0.000000	No
Cu 327.396 {103}	<input checked="" type="checkbox"/>	4	Ca	0.000018	0.000000	No
			Co	0.000288	0.000000	No
			Mo	-0.000329	0.000000	No
			V	-0.000115	0.000000	No
Fe 259.940 {130}	<input checked="" type="checkbox"/>	None				
Pb 220.353 {453}	<input checked="" type="checkbox"/>	3	Al	-0.000094	0.000000	No
			Mo	-0.000439	0.000000	No
			Cu	0.000829	0.000000	No
Li 670.784 {50}	<input checked="" type="checkbox"/>	None				
Mg 279.079 {121}	<input checked="" type="checkbox"/>	None				
Mg 279.553 {121}	<input checked="" type="checkbox"/>	None				
Mg 285.213 {118}	<input checked="" type="checkbox"/>	None				
Mn 257.610 {131}	<input checked="" type="checkbox"/>	2	Fe	0.000015	0.000000	No
			Mg	0.000029	0.000000	No
Mn 260.569 {129}	<input checked="" type="checkbox"/>	None				

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Mo 202.030 {467}	<input checked="" type="checkbox"/>	2	Ni	0.000105	0.000000	No
			V	-0.000267	0.000000	No
Ni 221.647 {452}	<input checked="" type="checkbox"/>	4	Cr	-0.000826	0.000000	No
			Fe	0.000032	0.000000	No
			Co	-0.000751	0.000000	No
			Si	0.000361	0.000000	No
Ni 231.604 {446}	<input checked="" type="checkbox"/>	2	Fe	0.000038	0.000000	No
			Co	0.000108	0.000000	No
P 178.284 {489}	<input checked="" type="checkbox"/>	None				
P 214.914 {457}	<input checked="" type="checkbox"/>	6	Al	-0.000809	0.000000	No
			Cd	-0.001944	0.000000	No
			Fe	0.000595	0.000000	No
			Mo	0.010837	0.000000	No
			V	-0.001803	0.000000	No
			Cu	0.005313	0.000000	No
K 766.490 { 44}	<input checked="" type="checkbox"/>	None				
Se 196.090 {472}	<input checked="" type="checkbox"/>	2	Fe	-0.000270	0.000000	No
			Mn	0.000435	0.000000	No
Si 251.611 {134}	<input checked="" type="checkbox"/>	1	Mo	0.009099	0.000000	No
Ag 328.068 {103}	<input checked="" type="checkbox"/>	2	Mn	0.000152	0.000000	No
			Mo	0.000179	0.000000	No
Na 589.592 { 57}	<input checked="" type="checkbox"/>	None				
Sr 407.771 { 83}	<input checked="" type="checkbox"/>	None				
Tl 190.856 {477}	<input checked="" type="checkbox"/>	3	Co	0.002563	0.000000	No
			Mn	-0.000412	0.000000	No
			V	0.001210	0.000000	No
Sn 189.989 {477}	<input checked="" type="checkbox"/>	None				
Ti 336.121 {100}	<input checked="" type="checkbox"/>	2	Ca	0.000014	0.000000	No
			Ni	0.000105	0.000000	No
V 292.402 {115}	<input checked="" type="checkbox"/>	4	Cr	-0.002755	0.000000	No
			Fe	-0.000022	0.000000	No
			Mn	-0.000243	0.000000	No
			Ti	0.000520	0.000000	No
Zn 206.200 {463}	<input checked="" type="checkbox"/>	2	Cr	-0.000109	0.000000	No
			Mo	0.000224	0.000000	No
Zn 213.856 {458}	<input checked="" type="checkbox"/>	5	Fe	0.000116	0.000000	No
			Mo	-0.000138	0.000000	No
			Ni	0.005892	0.000000	No
			Ti	-0.000520	0.000000	No
			Cu	0.000751	0.000000	No
Y 224.306 {450}* Y 360.073 { 94}* Y 360.073 { 94}2* In 230.606 {446}	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	None None None None				
Bi 223.061 {451}	<input checked="" type="checkbox"/>	4	Cr	0.001529	0.000000	No
			Co	-0.001667	0.000000	No
			V	-0.001327	0.000000	No
			Cu	-0.001809	0.000000	No
S 182.034 {485}	<input checked="" type="checkbox"/>	2	Mn	0.004430	0.000000	No
			Mo	0.001310	0.000000	No

ICP-04

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?			
Al 167.079 {502}	<input checked="" type="checkbox"/>	7	Cd	-0.000236	0.000000	No			
			Fe	0.001720	0.000000	No			
			Mg	0.000034	0.000000	No			
			Co	-0.000304	0.000000	No			
			Mo	-0.000319	0.000000	No			
			Ni	-0.000292	0.000000	No			
			Cu	-0.000269	0.000000	No			
Al 394.401 {85}	<input checked="" type="checkbox"/>	4	Ca	0.000071	0.000000	No			
			Mg	0.000037	0.000000	No			
			Ni	0.000574	0.000000	No			
			V	0.000307	0.000000	No			
Sb 206.833 {463}	<input checked="" type="checkbox"/>	2	Cr	0.015500	0.000000	No			
			Ti	0.000805	0.000000	No			
Sb 217.581 {455}	<input checked="" type="checkbox"/>	2	Pb	-0.000565	0.000000	No			
			V	0.002340	0.000000	No			
As 189.042 {478}	<input checked="" type="checkbox"/>	3	Cr	0.000551	0.000000	No			
			Fe	-0.000096	0.000000	No			
			Mo	0.000971	0.000000	No			
Ba 455.403 {74}	<input checked="" type="checkbox"/>	None							
Be 234.861 {144}	<input checked="" type="checkbox"/>	3	Fe	0.000017	0.000000	No			
			Mn	-0.000052	0.000000	No			
			Mo	-0.000381	0.000000	No			
B 249.678 {135}	<input checked="" type="checkbox"/>	4	Fe	-0.000740	0.000000	No			
			Co	0.002099	0.000000	No			
			Mo	-0.001768	0.000000	No			
			V	-0.000481	0.000000	No			
Cd 214.438 {457}	<input checked="" type="checkbox"/>	2	Al	-0.000004	0.000000	No			
			Fe	0.000072	0.000000	No			
Cd 226.502 {449}	<input checked="" type="checkbox"/>	4	Fe	0.000131	0.000000	No			
			Co	-0.000042	0.000000	No			
			Ni	-0.000025	0.000000	No			
			Ti	0.000052	0.000000	No			
Ca 315.887 {107}	<input checked="" type="checkbox"/>	2	Co	0.000989	0.000000	No			
			V	-0.000922	0.000000	No			
Ca 393.366 {86}	<input checked="" type="checkbox"/>	None							
			Cr 267.716 {126}	<input checked="" type="checkbox"/>	3	Cd	-0.000332	0.000000	No
						Fe	0.000030	0.000000	No
Co 228.616 {447}	<input checked="" type="checkbox"/>	5	V	-0.000147	0.000000	No			
			Cr	-0.000151	0.000000	No			
			Fe	0.000031	0.000000	No			
			Mo	-0.000113	0.000000	No			
			Ni	0.000157	0.000000	No			
			Ti	0.002048	0.000000	No			
Co 230.786 {446}	<input checked="" type="checkbox"/>	4	Cr	-0.000050	0.000000	No			
			Fe	0.000037	0.000000	No			
			Mo	0.000103	0.000000	No			
			Ni	0.000510	0.000000	No			
Cu 224.700 {450}	<input checked="" type="checkbox"/>	5	Fe	0.000677	0.000000	No			
			Pb	0.003729	0.000000	No			
			Mo	0.002224	0.000000	No			
			Ni	-0.001888	0.000000	No			
			Ti	0.000423	0.000000	No			
Cu 327.396 {103}	<input checked="" type="checkbox"/>	3	Ca	0.000016	0.000000	No			
			Co	0.000237	0.000000	No			
			Ti	-0.000129	0.000000	No			
Fe 259.940 {130}	<input checked="" type="checkbox"/>	1	Mo	-0.000790	0.000000	No			

ICP-04

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
Pb 220.353 {453}	<input checked="" type="checkbox"/>	4	Al	-0.000076	0.000000	No
			Mo	-0.000742	0.000000	No
			Si	0.000943	0.000000	No
			Cu	0.001778	0.000000	No
Li 670.784 { 50}	<input checked="" type="checkbox"/>	None				
Mg 279.079 {121}	<input checked="" type="checkbox"/>	None				
Mg 279.553 {121}	<input checked="" type="checkbox"/>	None				
Mg 285.213 {118}	<input checked="" type="checkbox"/>	1	V	-0.000204	0.000000	No
Mn 257.610 {131}	<input checked="" type="checkbox"/>	2	Fe	0.000014	0.000000	No
			Mg	0.000028	0.000000	No
Mn 260.569 {129}	<input checked="" type="checkbox"/>	None				
Mo 202.030 {467}	<input checked="" type="checkbox"/>	None				
Ni 221.647 {452}	<input checked="" type="checkbox"/>	5	Cr	-0.000816	0.000000	No
			Fe	0.000035	0.000000	No
			Co	-0.000385	0.000000	No
			Si	0.000307	0.000000	No
			Ti	-0.000290	0.000000	No
Ni 231.604 {446}	<input checked="" type="checkbox"/>	1	Fe	0.000070	0.000000	No
P 178.284 {489}	<input checked="" type="checkbox"/>	None				
P 214.914 {457}	<input checked="" type="checkbox"/>	5	Al	-0.000849	0.000000	No
			Fe	0.000928	0.000000	No
			Mo	0.008717	0.000000	No
			V	-0.003228	0.000000	No
			Cu	0.002265	0.000000	No
K 766.490 { 44}	<input checked="" type="checkbox"/>	None				
Se 196.090 {472}	<input checked="" type="checkbox"/>	3	Al	-0.000046	0.000000	No
			Fe	-0.000153	0.000000	No
			Mn	0.000411	0.000000	No
Si 251.611 {134}	<input checked="" type="checkbox"/>	1	Mo	0.008114	0.000000	No
Ag 328.068 {103}	<input checked="" type="checkbox"/>	None				
Na 589.592 { 57}	<input checked="" type="checkbox"/>	None				
Sr 407.771 { 83}	<input checked="" type="checkbox"/>	None				
Tl 190.856 {477}	<input checked="" type="checkbox"/>	4	Cr	0.000292	0.000000	No
			Co	0.000608	0.000000	No
			Mn	-0.000352	0.000000	No
			Ti	-0.000616	0.000000	No
Sn 189.989 {477}	<input checked="" type="checkbox"/>	None				
Tl 336.121 {100}	<input checked="" type="checkbox"/>	2	Ca	0.000010	0.000000	No
			Ni	0.000097	0.000000	No
V 292.402 {115}	<input checked="" type="checkbox"/>	3	Cr	-0.003085	0.000000	No
			Mn	-0.000166	0.000000	No
			Ti	0.000613	0.000000	No
Zn 206.200 {463}	<input checked="" type="checkbox"/>	2	Cr	-0.000237	0.000000	No
			Mo	0.000211	0.000000	No
Zn 213.856 {458}	<input checked="" type="checkbox"/>	4	Fe	0.000147	0.000000	No
			Ni	0.005885	0.000000	No
			Ti	-0.000127	0.000000	No
			Cu	0.001211	0.000000	No
Y 224.306 {450}* Y 360.073 { 94}* Y 360.073 { 94}2* Bi 223.061 {451}	<input checked="" type="checkbox"/>	None None None 4				
			Cr	0.001580	0.000000	No
			Co	-0.003771	0.000000	No
			V	-0.000951	0.000000	No
			Cu	-0.002871	0.000000	No
S 182.034 {485}	<input checked="" type="checkbox"/>	2	Mn	0.003299	0.000000	No

ICP-04

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
			Mo	0.001086	0.000000	No



Polychlorinated Biphenyls (PCBs)

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

**Cover Page - Organic Analysis Data Package
 Polychlorinated Biphenyls (PCBs)**

Sample Name	Lab Code	Date Collected	Date Received
CO2-SD-3-5	K1801267-001	02/06/2018	02/08/2018
EQB-SD-01	K1801267-004	02/07/2018	02/08/2018
CO1-PW-3-5 (W)	K1801267-008	03/06/2018	03/06/2018
CO3-SD-3-5	K1801267-009	02/07/2018	02/08/2018
CO1-SD-3-5	K1801267-013	02/06/2018	02/08/2018
CO3-PW-3-5 (W)	K1801267-017	03/07/2018	03/08/2018
EQB-PW-01	K1801267-018	02/08/2018	02/08/2018

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 02/07/2018
Date Received: 02/08/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: EQB-SD-01
Lab Code: K1801267-004
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	*
Aroclor 1221	ND	U	0.040	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1232	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1242	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1248	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1254	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1260	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	33	70-130	02/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/06/2018
Date Received: 03/06/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.24	0.033	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1221	ND	U	0.47	0.033	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1232	ND	U	0.24	0.033	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1242	0.64		0.24	0.033	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1248	ND	U	0.24	0.033	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1254	1.5		0.24	0.033	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1260	0.45		0.24	0.033	1	03/09/18	03/29/18	KWG1801348	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	38	70-130	03/29/18	Outside Control Limits

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/2018
Date Received: 03/08/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	0.028	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1221	ND	U	0.40	0.028	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1232	ND	U	0.20	0.028	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1242	1.0		0.20	0.028	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1248	ND	U	0.20	0.028	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1254	1.8		0.20	0.028	1	03/09/18	03/29/18	KWG1801348	
Aroclor 1260	0.51		0.20	0.028	1	03/09/18	03/29/18	KWG1801348	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	45	70-130	03/29/18	Outside Control Limits

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 02/08/2018
Date Received: 02/08/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: EQB-PW-01
Lab Code: K1801267-018
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	*
Aroclor 1221	ND	U	0.038	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1232	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1242	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1248	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1254	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1260	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	33	70-130	02/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1800932-3
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	*
Aroclor 1221	ND	U	0.038	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1232	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1242	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1248	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1254	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	
Aroclor 1260	ND	U	0.028	0.028	1	02/14/18	02/15/18	KWG1800932	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	36	70-130	02/15/18	Outside Control Limits

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1801348-3
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.20	0.028	1	03/09/18	03/15/18	KWG1801348	
Aroclor 1221	ND	U	0.40	0.028	1	03/09/18	03/15/18	KWG1801348	
Aroclor 1232	ND	U	0.20	0.028	1	03/09/18	03/15/18	KWG1801348	
Aroclor 1242	ND	U	0.20	0.028	1	03/09/18	03/15/18	KWG1801348	
Aroclor 1248	ND	U	0.20	0.028	1	03/09/18	03/15/18	KWG1801348	
Aroclor 1254	ND	U	0.20	0.028	1	03/09/18	03/15/18	KWG1801348	
Aroclor 1260	ND	U	0.20	0.028	1	03/09/18	03/15/18	KWG1801348	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	103	70-130	03/15/18	Acceptable

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/2018
Date Received: 02/08/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO2-SD-3-5
Lab Code: K1801267-001
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	270	77	20	02/15/18	02/23/18	KWG1800943	
Aroclor 1221	ND	U	540	77	20	02/15/18	02/23/18	KWG1800943	
Aroclor 1232	ND	U	270	77	20	02/15/18	02/23/18	KWG1800943	
Aroclor 1242	720	D	270	77	20	02/15/18	02/23/18	KWG1800943	
Aroclor 1248	ND	U	270	77	20	02/15/18	02/23/18	KWG1800943	
Aroclor 1254	1900	D	270	77	20	02/15/18	02/23/18	KWG1800943	
Aroclor 1260	560	PD	270	77	20	02/15/18	02/23/18	KWG1800943	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	117	70-130	02/23/18	Acceptable

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/2018
Date Received: 02/08/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	11	3.2	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1221	ND	U	22	3.2	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1232	ND	U	11	3.2	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1242	60	P	11	3.2	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1248	ND	U	11	3.2	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1254	110		11	3.2	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1260	25		11	3.2	1	02/15/18	02/23/18	KWG1800943	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	82	70-130	02/23/18	Acceptable

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/2018
Date Received: 02/08/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO1-SD-3-5
Lab Code: K1801267-013
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	13	3.6	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1221	ND	U	25	3.6	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1232	ND	U	13	3.6	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1242	53	P	13	3.6	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1248	ND	U	13	3.6	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1254	190		13	3.6	1	02/15/18	02/23/18	KWG1800943	
Aroclor 1260	200		13	3.6	1	02/15/18	02/23/18	KWG1800943	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	104	70-130	02/23/18	Acceptable

Comments: _____

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: NA
Date Received: NA

Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1800943-4
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	10	2.9	1	02/15/18	02/22/18	KWG1800943	
Aroclor 1221	ND	U	17	2.9	1	02/15/18	02/22/18	KWG1800943	
Aroclor 1232	ND	U	10	2.9	1	02/15/18	02/22/18	KWG1800943	
Aroclor 1242	ND	U	10	2.9	1	02/15/18	02/22/18	KWG1800943	
Aroclor 1248	ND	U	10	2.9	1	02/15/18	02/22/18	KWG1800943	
Aroclor 1254	ND	U	10	2.9	1	02/15/18	02/22/18	KWG1800943	
Aroclor 1260	ND	U	10	2.9	1	02/15/18	02/22/18	KWG1800943	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	75	70-130	02/22/18	Acceptable

Comments: _____

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267

**Surrogate Recovery Summary
 Polychlorinated Biphenyls (PCBs)**

Extraction Method: EPA 3511
Analysis Method: 8082A

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	
EQB-SD-01	K1801267-004	33	*
CO1-PW-3-5 (W)	K1801267-008	38	*
CO3-PW-3-5 (W)	K1801267-017	45	*
EQB-PW-01	K1801267-018	33	*
Method Blank	KWG1800932-3	36	*
Method Blank	KWG1801348-3	103	
Lab Control Sample	KWG1800932-1	34	*
Duplicate Lab Control Sample	KWG1800932-2	35	*
Lab Control Sample	KWG1801348-1	107	
Duplicate Lab Control Sample	KWG1801348-2	111	

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267

**Surrogate Recovery Summary
 Polychlorinated Biphenyls (PCBs)**

Extraction Method: EPA 3546
Analysis Method: 8082A

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
Batch QC	K1801096-023	78
CO2-SD-3-5	K1801267-001	117 D #
CO3-SD-3-5	K1801267-009	82
CO1-SD-3-5	K1801267-013	104
Method Blank	KWG1800943-4	75
Batch QCMS	KWG1800943-1	77
Batch QCDMS	KWG1800943-2	77
Lab Control Sample	KWG1800943-3	75

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 70-130

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Extracted: 02/15/2018
Date Analyzed: 02/22/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Batch QC
Lab Code: K1801096-023
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1800943

Analyte Name	Sample Result	Batch QCMS KWG1800943-1 Matrix Spike			Batch QCDMS KWG1800943-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Aroclor 1016	ND	1000	995	101	1030	1030	101	70-130	3	40
Aroclor 1260	110	1070	995	96	1140	1030	100	70-130	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/14/2018
Date Analyzed: 02/15/2018

Lab Control Spike/Duplicate Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1800932

Analyte Name	Lab Control Sample KWG1800932-1 Lab Control Spike			Duplicate Lab Control Sample KWG1800932-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Aroclor 1016	0.146	0.625	23 *	0.150	0.625	24 *	70-130	3	30
Aroclor 1260	0.147	0.625	23 *	0.153	0.625	25 *	70-130	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 03/09/2018
Date Analyzed: 03/15/2018

Lab Control Spike/Duplicate Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1801348

Analyte Name	Lab Control Sample KWG1801348-1 Lab Control Spike			Duplicate Lab Control Sample KWG1801348-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Aroclor 1016	2.88	2.50	115	2.77	2.50	111	70-130	4	30
Aroclor 1260	2.94	2.50	118	2.91	2.50	117	70-130	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Extracted: 02/15/2018
Date Analyzed: 02/22/2018

Lab Control Spike Summary
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1800943

Lab Control Sample
 KWG1800943-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Aroclor 1016	97.9	100	98	70-130
Aroclor 1260	99.8	100	100	70-130

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/14/2018
Date Analyzed: 02/15/2018
Time Analyzed: 18:01

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1800932-3
Extraction Method: EPA 3511
Analysis Method: 8082A

Instrument ID: GC32.i
File ID: J:\GC32\DATA\021518.B\0215F020.D
Level: Low
Extraction Lot: KWG1800932

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
EQB-SD-01	K1801267-004	J:\GC32\DATA\021518.B\0215F016.D	02/15/18	15:54
EQB-PW-01	K1801267-018	J:\GC32\DATA\021518.B\0215F017.D	02/15/18	16:26
Lab Control Sample	KWG1800932-1	J:\GC32\DATA\021518.B\0215F018.D	02/15/18	16:57
Duplicate Lab Control Sample	KWG1800932-2	J:\GC32\DATA\021518.B\0215F019.D	02/15/18	17:29

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 03/09/2018
Date Analyzed: 03/15/2018
Time Analyzed: 01:17

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1801348-3
Extraction Method: EPA 3511
Analysis Method: 8082A

Instrument ID: GC32.i
File ID: J:\GC32\DATA\031418.B\0314F026.D
Level: Low
Extraction Lot: KWG1801348

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1801348-1	J:\GC32\DATA\031418.B\0314F024.D	03/15/18	00:13
Duplicate Lab Control Sample	KWG1801348-2	J:\GC32\DATA\031418.B\0314F025.D	03/15/18	00:45
CO1-PW-3-5 (W)	K1801267-008	J:\GC32\DATA\032918.B\0329F006.D	03/29/18	14:32
CO3-PW-3-5 (W)	K1801267-017	J:\GC32\DATA\032918.B\0329F007.D	03/29/18	15:04

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Extracted: 02/15/2018
Date Analyzed: 02/22/2018
Time Analyzed: 14:05

Method Blank Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Method Blank
Lab Code: KWG1800943-4
Extraction Method: EPA 3546
Analysis Method: 8082A

Instrument ID: GC32.i
File ID: J:\GC32\DATA\022118.B\0221F029.D
Level: Low
Extraction Lot: KWG1800943

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Batch QC	K1801096-023	J:\GC32\DATA\022118.B\0221F002.D	02/21/18	23:47
Batch QCMS	KWG1800943-1	J:\GC32\DATA\022118.B\0221F026.D	02/22/18	12:30
Batch QCDMS	KWG1800943-2	J:\GC32\DATA\022118.B\0221F027.D	02/22/18	13:02
Lab Control Sample	KWG1800943-3	J:\GC32\DATA\022118.B\0221F028.D	02/22/18	13:33
CO3-SD-3-5	K1801267-009	J:\GC32\DATA\022318.B\0223F007.D	02/23/18	14:14
CO1-SD-3-5	K1801267-013	J:\GC32\DATA\022318.B\0223F008.D	02/23/18	14:46
CO2-SD-3-5	K1801267-001	J:\GC32\DATA\022318.B\0223FX15.D	02/23/18	18:28

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/14/2018
Date Analyzed: 02/15/2018
Time Analyzed: 16:57

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG1800932-1
Extraction Method: EPA 3511
Analysis Method: 8082A

Instrument ID: GC32.i
File ID: J:\GC32\DATA\021518.B\0215F018.D
Level: Low
Extraction Lot: KWG1800932

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
EQB-SD-01	K1801267-004	J:\GC32\DATA\021518.B\0215F016.D	02/15/18	15:54
EQB-PW-01	K1801267-018	J:\GC32\DATA\021518.B\0215F017.D	02/15/18	16:26
Method Blank	KWG1800932-3	J:\GC32\DATA\021518.B\0215F020.D	02/15/18	18:01

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 03/09/2018
Date Analyzed: 03/15/2018
Time Analyzed: 00:13

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG1801348-1
Extraction Method: EPA 3511
Analysis Method: 8082A
Instrument ID: GC32.i
File ID: J:\GC32\DATA\031418.B\0314F024.D
Level: Low
Extraction Lot: KWG1801348

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1801348-3	J:\GC32\DATA\031418.B\0314F026.D	03/15/18	01:17
CO1-PW-3-5 (W)	K1801267-008	J:\GC32\DATA\032918.B\0329F006.D	03/29/18	14:32
CO3-PW-3-5 (W)	K1801267-017	J:\GC32\DATA\032918.B\0329F007.D	03/29/18	15:04

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Extracted: 02/15/2018
Date Analyzed: 02/22/2018
Time Analyzed: 13:33

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Sample Name: Lab Control Sample
Lab Code: KWG1800943-3
Extraction Method: EPA 3546
Analysis Method: 8082A

Instrument ID: GC32.i
File ID: J:\GC32\DATA\022118.B\0221F028.D
Level: Low
Extraction Lot: KWG1800943

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Batch QC	K1801096-023	J:\GC32\DATA\022118.B\0221F002.D	02/21/18	23:47
Batch QCMS	KWG1800943-1	J:\GC32\DATA\022118.B\0221F026.D	02/22/18	12:30
Batch QCDMS	KWG1800943-2	J:\GC32\DATA\022118.B\0221F027.D	02/22/18	13:02
Method Blank	KWG1800943-4	J:\GC32\DATA\022118.B\0221F029.D	02/22/18	14:05
CO3-SD-3-5	K1801267-009	J:\GC32\DATA\022318.B\0223F007.D	02/23/18	14:14
CO1-SD-3-5	K1801267-013	J:\GC32\DATA\022318.B\0223F008.D	02/23/18	14:46
CO2-SD-3-5	K1801267-001	J:\GC32\DATA\022318.B\0223FX15.D	02/23/18	18:28

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-35MS

Level ID	File ID	Level ID	File ID
A	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F005.D	S	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F015.D
B	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F006.D	T	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F016.D
C	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F007.D	U	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F017.D
D	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F008.D	V	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F018.D
E	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F009.D	W	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F019.D
F	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F010.D	X	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F020.D
G	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F011.D	Y	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F021.D
H	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F004.D	Z	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F022.D
I	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F005.D	AA	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F023.D
J	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F006.D	AB	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F024.D
K	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F007.D	AC	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F025.D
L	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F008.D	AD	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F026.D
M	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F009.D	AE	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F027.D
N	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F010.D	AF	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F028.D
O	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F011.D	AG	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F029.D
P	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F012.D	AH	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F030.D
Q	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F013.D	AI	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F031.D
R	\\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F014.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Decachlorobiphenyl	A	0.10	1.22E+6	B	0.20	1.14E+6	C	0.50	1.04E+6	D	1.0	9.96E+5	E	2.0	9.49E+5
	F	5.0	8.76E+5	G	10	8.14E+5									
Aroclor 1016 {1}	A	1.0	23300	B	2.0	26000	C	5.0	24300	D	10	23800	E	20	24100
	F	50	23100	G	100	21100									
Aroclor 1016 {2}	A	1.0	58100	B	2.0	56400	C	5.0	64100	D	10	62200	E	20	56600
	F	50	56700	G	100	52700									
Aroclor 1016 {3}	A	1.0	43300	B	2.0	42000	C	5.0	38700	D	10	41500	E	20	38900
	F	50	36900	G	100	33900									
Aroclor 1016 {4}	A	1.0	36800	B	2.0	32900	C	5.0	33300	D	10	33100	E	20	31600
	F	50	28100	G	100	25900									
Aroclor 1016 {5}	A	1.0	23000	B	2.0	21400	C	5.0	25400	D	10	25800	E	20	25200
	F	50	23800	G	100	21300									
Aroclor 1260 {1}	A	1.0	67400	B	2.0	64000	C	5.0	61800	D	10	60200	E	20	57300
	F	50	52200	G	100	48500									
Aroclor 1260 {2}	A	1.0	38900	B	2.0	41600	C	5.0	35300	D	10	39500	E	20	35500
	F	50	31800	G	100	29500									
Aroclor 1260 {3}	A	1.0	39300	B	2.0	40600	C	5.0	41200	D	10	40400	E	20	39500
	F	50	36200	G	100	34500									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Aroclor 1260 {4}	A	1.0	99000	B	2.0	96300	C	5.0	84100	D	10	83600	E	20	82200
	F	50	74500	G	100	71200									
Aroclor 1260 {5}	A	1.0	75900	B	2.0	71600	C	5.0	67700	D	10	64900	E	20	62300
	F	50	58200	G	100	54400									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018

**Initial Calibration Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-35MS

Analyte Name	Compound Type	Calibration Evaluation				Control Criteria
		Fit Type	Eval.	Eval. Result	Q	
Decachlorobiphenyl	SURR	AverageRF	% RSD	14.3		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	6.2		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	6.6		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	8.2		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	11.4		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	8.0		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	11.3		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	12.0		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	6.4		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	12.2		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	11.5		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018
Date Analyzed: 01/24/2018 - 01/31/2018

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration ID: CAL15681
Units: ng/mL

File ID: \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F033.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F035.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F036.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F037.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0124F040.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F032.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F034.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F038.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL.b\0130F039.D

Column ID: DB-35MS

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	20	21	23700	24800	5	NA	± 100 %	AverageRF
Aroclor 1016 {2}	20	20	58100	58800	1	NA	± 100 %	AverageRF
Aroclor 1016 {3}	20	19	39300	37800	-4	NA	± 100 %	AverageRF
Aroclor 1016 {4}	20	18	31700	28600	-10	NA	± 100 %	AverageRF
Aroclor 1016 {5}	20	20	23700	23500	-1	NA	± 100 %	AverageRF
Aroclor 1016	20	20	NA	NA	NA	-2	± 20 %	NA
Aroclor 1260 {1}	50	50	58800	58600	0	NA	± 100 %	AverageRF
Aroclor 1260 {2}	50	50	36000	36100	0	NA	± 100 %	AverageRF
Aroclor 1260 {3}	50	61	38800	47600	23	NA	± 100 %	AverageRF
Aroclor 1260 {4}	50	57	84400	96600	14	NA	± 100 %	AverageRF
Aroclor 1260 {5}	50	57	65000	73800	14	NA	± 100 %	AverageRF
Aroclor 1260	50	55	NA	NA	NA	10	± 20 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-XLB

Level ID	File ID	Level ID	File ID
A	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F005.D	S	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F015.D
B	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F006.D	T	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F016.D
C	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F007.D	U	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F017.D
D	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F008.D	V	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F018.D
E	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F009.D	W	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F019.D
F	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F010.D	X	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F020.D
G	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0124F011.D	Y	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F021.D
H	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F004.D	Z	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F022.D
I	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F005.D	AA	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F023.D
J	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F006.D	AB	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F024.D
K	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F007.D	AC	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F025.D
L	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F008.D	AD	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F026.D
M	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F009.D	AE	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F027.D
N	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F010.D	AF	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F028.D
O	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F011.D	AG	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F029.D
P	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F012.D	AH	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F030.D
Q	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F013.D	AI	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F031.D
R	\\alksls002\instdata\GC32\DATA\012418ICAL_r.b\0130F014.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Decachlorobiphenyl	A	0.10	1.33E+6	B	0.20	1.26E+6	C	0.50	1.13E+6	D	1.0	1.11E+6	E	2.0	1.05E+6
	F	5.0	9.47E+5	G	10	8.71E+5									
Aroclor 1016 {1}	A	1.0	31400	B	2.0	33200	C	5.0	27600	D	10	25900	E	20	24900
	F	50	20300	G	100	19800									
Aroclor 1016 {2}	A	1.0	16900	B	2.0	19800	C	5.0	20800	D	10	20900	E	20	21600
	F	50	20800	G	100	20000									
Aroclor 1016 {3}	A	1.0	49500	B	2.0	49800	C	5.0	49600	D	10	49500	E	20	50000
	F	50	48900	G	100	46600									
Aroclor 1016 {4}	A	1.0	39400	B	2.0	35400	C	5.0	29800	D	10	30700	E	20	30700
	F	50	28900	G	100	27500									
Aroclor 1016 {5}	A	1.0	14500	B	2.0	18100	C	5.0	15600	D	10	17200	E	20	15700
	F	50	15900	G	100	15100									
Aroclor 1260 {1}	A	1.0	20800	B	2.0	27300	C	5.0	19200	D	10	19900	E	20	22900
	F	50	20800	G	100	19400									
Aroclor 1260 {2}	A	1.0	48300	B	2.0	46800	C	5.0	40400	D	10	39800	E	20	40000
	F	50	37500	G	100	35800									
Aroclor 1260 {3}	A	1.0	46500	B	2.0	43000	C	5.0	41300	D	10	39700	E	20	40300
	F	50	37000	G	100	35600									

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018

Initial Calibration Summary
Polychlorinated Biphenyls (PCBs)

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Aroclor 1260 {4}	A	1.0	94800	B	2.0	94400	C	5.0	87100	D	10	88200	E	20	83700
	F	50	78700	G	100	74600									
Aroclor 1260 {5}	A	1.0	79200	B	2.0	79000	C	5.0	61600	D	10	57600	E	20	57300
	F	50	52000	G	100	49200									

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018

**Initial Calibration Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration ID: CAL15681
Instrument ID: GC32.i

Column: DB-XLB

Analyte Name	Compound Type	Calibration Evaluation				Control Criteria
		Fit Type	Eval.	Eval. Result	Q	
Decachlorobiphenyl	SURR	AverageRF	% RSD	14.6		≤ 20
Aroclor 1016 {1}	MULTI	AverageRF	% RSD	19.5		≤ 20
Aroclor 1016 {2}	MULTI	AverageRF	% RSD	7.7		≤ 20
Aroclor 1016 {3}	MULTI	AverageRF	% RSD	2.4		≤ 20
Aroclor 1016 {4}	MULTI	AverageRF	% RSD	13.1		≤ 20
Aroclor 1016 {5}	MULTI	AverageRF	% RSD	7.8		≤ 20
Aroclor 1260 {1}	MULTI	AverageRF	% RSD	13.4		≤ 20
Aroclor 1260 {2}	MULTI	AverageRF	% RSD	11.2		≤ 20
Aroclor 1260 {3}	MULTI	AverageRF	% RSD	9.0		≤ 20
Aroclor 1260 {4}	MULTI	AverageRF	% RSD	8.8		≤ 20
Aroclor 1260 {5}	MULTI	AverageRF	% RSD	19.6		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 01/24/2018
Date Analyzed: 01/24/2018 - 01/31/2018

Second Source Calibration Verification
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration ID: CAL15681
Units: ng/mL

File ID: \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0124F040.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F032.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F033.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F034.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F035.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F036.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F037.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F038.D
 \\alklsws002\instdata\GC32\DATA\012418ICAL_r.b\0130F039.D

Column ID: DB-XLB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Aroclor 1016 {1}	20	15	26200	20300	-23	NA	± 100 %	AverageRF
Aroclor 1016 {2}	20	21	20100	21100	5	NA	± 100 %	AverageRF
Aroclor 1016 {3}	20	20	49100	48200	-2	NA	± 100 %	AverageRF
Aroclor 1016 {4}	20	18	31800	28500	-10	NA	± 100 %	AverageRF
Aroclor 1016 {5}	20	23	16000	18100	13	NA	± 100 %	AverageRF
Aroclor 1016	20	19	NA	NA	NA	-3	± 20 %	NA
Aroclor 1260 {1}	50	47	21400	20100	-6	NA	± 100 %	AverageRF
Aroclor 1260 {2}	50	62	41200	50900	23	NA	± 100 %	AverageRF
Aroclor 1260 {3}	50	60	40500	48600	20	NA	± 100 %	AverageRF
Aroclor 1260 {4}	50	60	85900	104000	21	NA	± 100 %	AverageRF
Aroclor 1260 {5}	50	54	62300	66800	7	NA	± 100 %	AverageRF
Aroclor 1260	50	57	NA	NA	NA	13	± 20 %	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/15/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1800961
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F010.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1010000	851000	-15	NA	± 20	AverageRF
Aroclor 1016 {1}	25	27	23700	25800	9	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	58100	64300	11	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	39300	42400	8	NA	± 100	AverageRF
Aroclor 1016 {4}	25	26	31700	32600	3	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27500	16	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	9	± 20	NA
Aroclor 1260 {1}	25	26	58800	61900	5	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	37600	4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	40600	5	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	80700	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	65000	60300	-7	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	0	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/15/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1800961
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F010.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	941000	-14	NA	± 20	AverageRF
Aroclor 1016 {1}	25	22	26200	23100	-12	NA	± 100	AverageRF
Aroclor 1016 {2}	25	30	20100	24100	20	NA	± 100	AverageRF
Aroclor 1016 {3}	25	29	49100	56100	14	NA	± 100	AverageRF
Aroclor 1016 {4}	25	26	31800	33500	5	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	16000	18500	15	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	9	± 20	NA
Aroclor 1260 {1}	25	31	21400	26700	24	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	42800	4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	40700	1	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	83700	-3	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	52700	-15	NA	± 100	AverageRF
Aroclor 1260	25	26	NA	NA	NA	2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/15/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1800961
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F021.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1010000	904000	-10	NA	± 20	AverageRF
Aroclor 1016 {1}	25	27	23700	25600	8	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	58100	64600	11	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	39300	41600	6	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31700	31500	0	NA	± 100	AverageRF
Aroclor 1016 {5}	25	28	23700	26600	12	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	7	± 20	NA
Aroclor 1260 {1}	25	26	58800	61200	4	NA	± 100	AverageRF
Aroclor 1260 {2}	25	28	36000	40400	12	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	40800	5	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	80700	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	24	65000	62000	-5	NA	± 100	AverageRF
Aroclor 1260	25	26	NA	NA	NA	2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/15/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1800961
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F021.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.3	1100000	993000	-10	NA	± 20	AverageRF
Aroclor 1016 {1}	25	21	26200	22100	-15	NA	± 100	AverageRF
Aroclor 1016 {2}	25	29	20100	23300	16	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	49100	54300	11	NA	± 100	AverageRF
Aroclor 1016 {4}	25	26	31800	33300	5	NA	± 100	AverageRF
Aroclor 1016 {5}	25	28	16000	17700	11	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	5	± 20	NA
Aroclor 1260 {1}	25	26	21400	22200	4	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	42300	3	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	40200	-1	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	82400	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	62300	54200	-13	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/21/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F029.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1010000	869000	-14	NA	± 20	AverageRF
Aroclor 1016 {1}	25	26	23700	24300	2	NA	± 100	AverageRF
Aroclor 1016 {2}	25	27	58100	62100	7	NA	± 100	AverageRF
Aroclor 1016 {3}	25	25	39300	39300	0	NA	± 100	AverageRF
Aroclor 1016 {4}	25	24	31700	30700	-3	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	23700	25000	6	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	2	± 20	NA
Aroclor 1260 {1}	25	25	58800	57900	-1	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	36000	35200	-2	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	38800	38300	-1	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	84400	74900	-11	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	65000	59400	-9	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-5	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/21/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F029.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1100000	983000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	20	26200	21300	-18	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	20100	22200	10	NA	± 100	AverageRF
Aroclor 1016 {3}	25	25	49100	49800	1	NA	± 100	AverageRF
Aroclor 1016 {4}	25	31	31800	39600	25	NA	± 100	AverageRF
Aroclor 1016 {5}	25	24	16000	15300	-5	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	3	± 20	NA
Aroclor 1260 {1}	25	27	21400	23000	7	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	41200	39600	-4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	40500	39700	-2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	85900	78200	-9	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	51600	-17	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-5	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/22/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F011.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1010000	899000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	28	23700	26600	12	NA	± 100	AverageRF
Aroclor 1016 {2}	25	31	58100	72500	25	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	39300	44300	13	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31700	33600	6	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27800	17	NA	± 100	AverageRF
Aroclor 1016	25	29	NA	NA	NA	15	± 20	NA
Aroclor 1260 {1}	25	26	58800	60900	4	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	37500	4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	40900	5	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	80800	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	24	65000	61700	-5	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/22/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F011.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.3	1100000	1020000	-8	NA	± 20	AverageRF
Aroclor 1016 {1}	25	22	26200	22500	-14	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	20100	22500	12	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	49100	52700	7	NA	± 100	AverageRF
Aroclor 1016 {4}	25	34	31800	42900	35	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	16000	16800	5	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	9	± 20	NA
Aroclor 1260 {1}	25	27	21400	22900	7	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	41200	41400	0	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	41100	1	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	82600	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	62300	54300	-13	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	-2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/22/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F023.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1010000	863000	-14	NA	± 20	AverageRF
Aroclor 1016 {1}	25	25	23700	24100	2	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	58100	65900	13	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	39300	40700	4	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31700	31600	0	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	23700	24200	2	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	4	± 20	NA
Aroclor 1260 {1}	25	25	58800	59000	0	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	37500	4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	39800	3	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	80800	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	65000	59500	-9	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	-1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/22/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F023.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	945000	-14	NA	± 20	AverageRF
Aroclor 1016 {1}	25	21	26200	21800	-17	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	20100	22300	11	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	49100	53300	9	NA	± 100	AverageRF
Aroclor 1016 {4}	25	33	31800	42300	33	NA	± 100	AverageRF
Aroclor 1016 {5}	25	25	16000	16000	0	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	7	± 20	NA
Aroclor 1260 {1}	25	25	21400	21500	0	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	41200	39700	-4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	40500	39200	-3	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	85900	80200	-7	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	52600	-16	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-6	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/22/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F030.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1010000	892000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	26	23700	25000	6	NA	± 100	AverageRF
Aroclor 1016 {2}	25	26	58100	61400	6	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	39300	41100	5	NA	± 100	AverageRF
Aroclor 1016 {4}	25	24	31700	31000	-2	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	23700	24900	5	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	4	± 20	NA
Aroclor 1260 {1}	25	26	58800	61200	4	NA	± 100	AverageRF
Aroclor 1260 {2}	25	27	36000	39500	10	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	40300	4	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	79500	-6	NA	± 100	AverageRF
Aroclor 1260 {5}	25	24	65000	61800	-5	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/22/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801092
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F030.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.3	1100000	1000000	-9	NA	± 20	AverageRF
Aroclor 1016 {1}	25	21	26200	22100	-16	NA	± 100	AverageRF
Aroclor 1016 {2}	25	29	20100	23100	15	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	49100	52000	6	NA	± 100	AverageRF
Aroclor 1016 {4}	25	34	31800	42700	34	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	16000	16500	3	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	9	± 20	NA
Aroclor 1260 {1}	25	29	21400	24500	14	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	41200	42800	4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	40500	41400	2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	82400	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	22	62300	53700	-14	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	0	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/23/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801127
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F003.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.0	1010000	795000	-21 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	25	23700	23900	1	NA	± 100	AverageRF
Aroclor 1016 {2}	25	26	58100	59500	2	NA	± 100	AverageRF
Aroclor 1016 {3}	25	24	39300	37400	-5	NA	± 100	AverageRF
Aroclor 1016 {4}	25	23	31700	29300	-8	NA	± 100	AverageRF
Aroclor 1016 {5}	25	25	23700	23800	0	NA	± 100	AverageRF
Aroclor 1016	25	25	NA	NA	NA	-2	± 20	NA
Aroclor 1260 {1}	25	24	58800	55400	-6	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	36000	34700	-4	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	38800	37500	-3	NA	± 100	AverageRF
Aroclor 1260 {4}	25	21	84400	72200	-14	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	55400	-15	NA	± 100	AverageRF
Aroclor 1260	25	23	NA	NA	NA	-8	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/23/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801127
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F003.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.0	1100000	891000	-19	NA	± 20	AverageRF
Aroclor 1016 {1}	25	20	26200	21100	-20	NA	± 100	AverageRF
Aroclor 1016 {2}	25	25	20100	20100	0	NA	± 100	AverageRF
Aroclor 1016 {3}	25	24	49100	47400	-3	NA	± 100	AverageRF
Aroclor 1016 {4}	25	23	31800	29000	-9	NA	± 100	AverageRF
Aroclor 1016 {5}	25	24	16000	15500	-3	NA	± 100	AverageRF
Aroclor 1016	25	23	NA	NA	NA	-7	± 20	NA
Aroclor 1260 {1}	25	24	21400	20500	-4	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	41200	38900	-6	NA	± 100	AverageRF
Aroclor 1260 {3}	25	23	40500	37200	-8	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	85900	75600	-12	NA	± 100	AverageRF
Aroclor 1260 {5}	25	20	62300	48900	-21	NA	± 100	AverageRF
Aroclor 1260	25	22	NA	NA	NA	-10	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/23/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801127
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F013.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1010000	854000	-15	NA	± 20	AverageRF
Aroclor 1016 {1}	25	27	23700	25300	7	NA	± 100	AverageRF
Aroclor 1016 {2}	25	27	58100	63500	9	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	39300	41100	5	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31700	32000	1	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	23700	27800	17	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	8	± 20	NA
Aroclor 1260 {1}	25	26	58800	60100	2	NA	± 100	AverageRF
Aroclor 1260 {2}	25	27	36000	38600	7	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	41000	6	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	80400	-5	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	65000	61000	-6	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	1	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/23/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801127
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F013.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1100000	950000	-14	NA	± 20	AverageRF
Aroclor 1016 {1}	25	21	26200	21600	-17	NA	± 100	AverageRF
Aroclor 1016 {2}	25	27	20100	22000	9	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	49100	50300	2	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31800	32000	1	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	16000	16500	3	NA	± 100	AverageRF
Aroclor 1016	25	25	NA	NA	NA	0	± 20	NA
Aroclor 1260 {1}	25	25	21400	21300	-1	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	41200	40400	-2	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	40500	39500	-3	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	81700	-5	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	52500	-16	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-5	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/24/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801127
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F026.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1010000	837000	-17	NA	± 20	AverageRF
Aroclor 1016 {1}	25	28	23700	26900	13	NA	± 100	AverageRF
Aroclor 1016 {2}	25	28	58100	65800	13	NA	± 100	AverageRF
Aroclor 1016 {3}	25	27	39300	42600	8	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31700	32100	1	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	23700	25900	9	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	9	± 20	NA
Aroclor 1260 {1}	25	26	58800	61300	4	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	37000	3	NA	± 100	AverageRF
Aroclor 1260 {3}	25	26	38800	40700	5	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	84400	80600	-5	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	65000	61000	-6	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	0	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/24/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801127
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F026.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.2	1100000	978000	-11	NA	± 20	AverageRF
Aroclor 1016 {1}	25	22	26200	23300	-11	NA	± 100	AverageRF
Aroclor 1016 {2}	25	30	20100	24200	20	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	49100	55000	12	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31800	34200	8	NA	± 100	AverageRF
Aroclor 1016 {5}	25	28	16000	17800	11	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	8	± 20	NA
Aroclor 1260 {1}	25	26	21400	22600	5	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	41200	42000	2	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	41200	2	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	82800	-4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	53500	-14	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	-2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/14/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801562
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F020.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	1.9	1010000	771000	-23 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	24	23700	23000	-3	NA	± 100	AverageRF
Aroclor 1016 {2}	25	27	58100	61900	6	NA	± 100	AverageRF
Aroclor 1016 {3}	25	24	39300	37400	-5	NA	± 100	AverageRF
Aroclor 1016 {4}	25	23	31700	29500	-7	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	23700	25000	5	NA	± 100	AverageRF
Aroclor 1016	25	25	NA	NA	NA	0	± 20	NA
Aroclor 1260 {1}	25	23	58800	54300	-8	NA	± 100	AverageRF
Aroclor 1260 {2}	25	23	36000	33800	-6	NA	± 100	AverageRF
Aroclor 1260 {3}	25	23	38800	36200	-7	NA	± 100	AverageRF
Aroclor 1260 {4}	25	20	84400	68900	-18	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	53800	-17	NA	± 100	AverageRF
Aroclor 1260	25	22	NA	NA	NA	-11	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/14/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801562
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F020.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.4	1100000	1060000	-3	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	23800	-9	NA	± 100	AverageRF
Aroclor 1016 {2}	25	29	20100	23700	18	NA	± 100	AverageRF
Aroclor 1016 {3}	25	29	49100	56100	14	NA	± 100	AverageRF
Aroclor 1016 {4}	25	27	31800	34300	8	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	16000	17400	9	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	8	± 20	NA
Aroclor 1260 {1}	25	27	21400	23600	10	NA	± 100	AverageRF
Aroclor 1260 {2}	25	28	41200	45500	10	NA	± 100	AverageRF
Aroclor 1260 {3}	25	27	40500	43300	7	NA	± 100	AverageRF
Aroclor 1260 {4}	25	26	85900	89000	4	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	62300	58400	-6	NA	± 100	AverageRF
Aroclor 1260	25	26	NA	NA	NA	5	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/15/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801562
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F041.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1010000	842000	-16	NA	± 20	AverageRF
Aroclor 1016 {1}	25	26	23700	24900	5	NA	± 100	AverageRF
Aroclor 1016 {2}	25	29	58100	66700	15	NA	± 100	AverageRF
Aroclor 1016 {3}	25	26	39300	41000	4	NA	± 100	AverageRF
Aroclor 1016 {4}	25	25	31700	31700	0	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	23700	25800	9	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	7	± 20	NA
Aroclor 1260 {1}	25	26	58800	61400	5	NA	± 100	AverageRF
Aroclor 1260 {2}	25	26	36000	36900	3	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	38800	39100	1	NA	± 100	AverageRF
Aroclor 1260 {4}	25	23	84400	76800	-9	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	65000	60300	-7	NA	± 100	AverageRF
Aroclor 1260	25	25	NA	NA	NA	-2	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/15/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801562
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F041.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.6	1100000	1130000	3	NA	± 20	AverageRF
Aroclor 1016 {1}	25	25	26200	25800	-1	NA	± 100	AverageRF
Aroclor 1016 {2}	25	33	20100	26400	31	NA	± 100	AverageRF
Aroclor 1016 {3}	25	33	49100	64100	30	NA	± 100	AverageRF
Aroclor 1016 {4}	25	30	31800	38200	20	NA	± 100	AverageRF
Aroclor 1016 {5}	25	32	16000	20300	27	NA	± 100	AverageRF
Aroclor 1016	25	30	NA	NA	NA	22 *	± 20	NA
Aroclor 1260 {1}	25	30	21400	26000	21	NA	± 100	AverageRF
Aroclor 1260 {2}	25	29	41200	47700	16	NA	± 100	AverageRF
Aroclor 1260 {3}	25	29	40500	47500	17	NA	± 100	AverageRF
Aroclor 1260 {4}	25	28	85900	96800	13	NA	± 100	AverageRF
Aroclor 1260 {5}	25	25	62300	63200	2	NA	± 100	AverageRF
Aroclor 1260	25	28	NA	NA	NA	14	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/29/2018

**Continuing Calibration Verification Summary
 Polychlorinated Biphenyls (PCBs)**

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801852
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F004.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	1.7	1010000	699000	-31 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	25	23700	23900	1	NA	± 100	AverageRF
Aroclor 1016 {2}	25	25	58100	57900	0	NA	± 100	AverageRF
Aroclor 1016 {3}	25	23	39300	36600	-7	NA	± 100	AverageRF
Aroclor 1016 {4}	25	22	31700	27900	-12	NA	± 100	AverageRF
Aroclor 1016 {5}	25	25	23700	24200	2	NA	± 100	AverageRF
Aroclor 1016	25	24	NA	NA	NA	-3	± 20	NA
Aroclor 1260 {1}	25	23	58800	54500	-7	NA	± 100	AverageRF
Aroclor 1260 {2}	25	24	36000	34300	-5	NA	± 100	AverageRF
Aroclor 1260 {3}	25	23	38800	35000	-10	NA	± 100	AverageRF
Aroclor 1260 {4}	25	20	84400	66600	-21	NA	± 100	AverageRF
Aroclor 1260 {5}	25	20	65000	50900	-22	NA	± 100	AverageRF
Aroclor 1260	25	22	NA	NA	NA	-13	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/29/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801852
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F004.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	902000	-18	NA	± 20	AverageRF
Aroclor 1016 {1}	25	23	26200	24500	-7	NA	± 100	AverageRF
Aroclor 1016 {2}	25	29	20100	23600	17	NA	± 100	AverageRF
Aroclor 1016 {3}	25	28	49100	54700	11	NA	± 100	AverageRF
Aroclor 1016 {4}	25	26	31800	33600	6	NA	± 100	AverageRF
Aroclor 1016 {5}	25	26	16000	16900	6	NA	± 100	AverageRF
Aroclor 1016	25	27	NA	NA	NA	7	± 20	NA
Aroclor 1260 {1}	25	26	21400	22500	5	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	41200	40700	-1	NA	± 100	AverageRF
Aroclor 1260 {3}	25	25	40500	40500	0	NA	± 100	AverageRF
Aroclor 1260 {4}	25	24	85900	81300	-5	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	62300	52400	-16	NA	± 100	AverageRF
Aroclor 1260	25	24	NA	NA	NA	-4	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/29/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801852
Units: ng/mL
Column ID: DB-35MS

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F016.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	1.9	1010000	751000	-25 *	NA	± 20	AverageRF
Aroclor 1016 {1}	25	28	23700	26200	11	NA	± 100	AverageRF
Aroclor 1016 {2}	25	27	58100	63700	10	NA	± 100	AverageRF
Aroclor 1016 {3}	25	25	39300	39200	0	NA	± 100	AverageRF
Aroclor 1016 {4}	25	24	31700	30300	-4	NA	± 100	AverageRF
Aroclor 1016 {5}	25	27	23700	25900	9	NA	± 100	AverageRF
Aroclor 1016	25	26	NA	NA	NA	5	± 20	NA
Aroclor 1260 {1}	25	24	58800	56900	-3	NA	± 100	AverageRF
Aroclor 1260 {2}	25	25	36000	35700	-1	NA	± 100	AverageRF
Aroclor 1260 {3}	25	24	38800	37500	-3	NA	± 100	AverageRF
Aroclor 1260 {4}	25	22	84400	73400	-13	NA	± 100	AverageRF
Aroclor 1260 {5}	25	21	65000	55200	-15	NA	± 100	AverageRF
Aroclor 1260	25	23	NA	NA	NA	-7	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/29/2018

Continuing Calibration Verification Summary
Polychlorinated Biphenyls (PCBs)

Calibration Type: External Standard
Analysis Method: 8082A

Calibration Date: 01/24/2018
Calibration ID: CAL15681
Analysis Lot: KWG1801852
Units: ng/mL
Column ID: DB-XLB

File ID: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F016.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Decachlorobiphenyl	2.5	2.1	1100000	941000	-14	NA	± 20	AverageRF
Aroclor 1016 {1}	25	24	26200	24900	-5	NA	± 100	AverageRF
Aroclor 1016 {2}	25	31	20100	25300	26	NA	± 100	AverageRF
Aroclor 1016 {3}	25	30	49100	59700	22	NA	± 100	AverageRF
Aroclor 1016 {4}	25	30	31800	37600	18	NA	± 100	AverageRF
Aroclor 1016 {5}	25	29	16000	18500	16	NA	± 100	AverageRF
Aroclor 1016	25	29	NA	NA	NA	15	± 20	NA
Aroclor 1260 {1}	25	30	21400	25700	20	NA	± 100	AverageRF
Aroclor 1260 {2}	25	27	41200	44900	9	NA	± 100	AverageRF
Aroclor 1260 {3}	25	27	40500	42900	6	NA	± 100	AverageRF
Aroclor 1260 {4}	25	25	85900	86300	0	NA	± 100	AverageRF
Aroclor 1260 {5}	25	23	62300	56200	-10	NA	± 100	AverageRF
Aroclor 1260	25	26	NA	NA	NA	5	± 20	NA

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1800961
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0215F003.D	Continuing Calibration Verification	KWG1800961-1	2/15/2018	09:01		2/15/2018	09:01
0215F004.D	Instrument Blank	KWG1800961-2	2/15/2018	09:33		2/15/2018	09:33
0215F005.D	ZZZZZZ	ZZZZZZ	2/15/2018	10:04		2/15/2018	10:04
0215F006.D	ZZZZZZ	ZZZZZZ	2/15/2018	10:36		2/15/2018	10:36
0215F007.D	ZZZZZZ	ZZZZZZ	2/15/2018	11:08		2/15/2018	11:08
0215F008.D	ZZZZZZ	ZZZZZZ	2/15/2018	11:40		2/15/2018	11:40
0215F009.D	ZZZZZZ	ZZZZZZ	2/15/2018	12:11		2/15/2018	12:11
0215F010.D	Continuing Calibration Verification	KWG1800961-3	2/15/2018	12:43		2/15/2018	12:43
0215F011.D	Instrument Blank	KWG1800961-4	2/15/2018	13:15		2/15/2018	13:15
0215F012.D	ZZZZZZ	ZZZZZZ	2/15/2018	13:47		2/15/2018	13:47
0215F013.D	ZZZZZZ	ZZZZZZ	2/15/2018	14:18		2/15/2018	14:18
0215F014.D	ZZZZZZ	ZZZZZZ	2/15/2018	14:50		2/15/2018	14:50
0215F015.D	ZZZZZZ	ZZZZZZ	2/15/2018	15:22		2/15/2018	15:22
0215F016.D	EQB-SD-01	K1801267-004	2/15/2018	15:54		2/15/2018	15:54
0215F017.D	EQB-PW-01	K1801267-018	2/15/2018	16:26		2/15/2018	16:26
0215F018.D	Lab Control Sample	KWG1800932-1	2/15/2018	16:57		2/15/2018	16:57
0215F019.D	Duplicate Lab Control Sample	KWG1800932-2	2/15/2018	17:29		2/15/2018	17:29
0215F020.D	Method Blank	KWG1800932-3	2/15/2018	18:01		2/15/2018	18:01
0215F021.D	Continuing Calibration Verification	KWG1800961-5	2/15/2018	18:32		2/15/2018	18:32
0215F022.D	Instrument Blank	KWG1800961-6	2/15/2018	19:04		2/15/2018	19:04
0215F023.D	ZZZZZZ	ZZZZZZ	2/15/2018	19:36		2/15/2018	19:36
0215F024.D	ZZZZZZ	ZZZZZZ	2/15/2018	20:07		2/15/2018	20:07
0215F025.D	ZZZZZZ	ZZZZZZ	2/15/2018	20:39		2/15/2018	20:39
0215F026.D	ZZZZZZ	ZZZZZZ	2/15/2018	21:11		2/15/2018	21:11
0215F027.D	ZZZZZZ	ZZZZZZ	2/15/2018	21:43		2/15/2018	21:43
0215F028.D	Continuing Calibration Verification	KWG1800961-7	2/15/2018	22:14		2/15/2018	22:14
0215F029.D	Instrument Blank	KWG1800961-8	2/15/2018	22:46		2/15/2018	22:46

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801092
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0219F042.D	Continuing Calibration Verification	KWG1801092-1	2/21/2018	06:20		2/21/2018	06:20
0219F043.D	Instrument Blank	KWG1801092-2	2/21/2018	06:52		2/21/2018	06:52
0220F002.D	ZZZZZZ	ZZZZZZ	2/21/2018	07:55		2/21/2018	07:55
0220F003.D	ZZZZZZ	ZZZZZZ	2/21/2018	08:27		2/21/2018	08:27
0220F004.D	ZZZZZZ	ZZZZZZ	2/21/2018	08:59		2/21/2018	08:59
0220F005.D	ZZZZZZ	ZZZZZZ	2/21/2018	09:30		2/21/2018	09:30
0220F006.D	ZZZZZZ	ZZZZZZ	2/21/2018	10:02		2/21/2018	10:02
0220F007.D	ZZZZZZ	ZZZZZZ	2/21/2018	10:34		2/21/2018	10:34
0220F008.D	ZZZZZZ	ZZZZZZ	2/21/2018	11:06		2/21/2018	11:06
0220F009.D	ZZZZZZ	ZZZZZZ	2/21/2018	11:37		2/21/2018	11:37
0220F010.D	ZZZZZZ	ZZZZZZ	2/21/2018	12:09		2/21/2018	12:09
0220F011.D	Continuing Calibration Verification	KWG1801092-3	2/21/2018	12:41		2/21/2018	12:41
0220F012.D	Instrument Blank	KWG1801092-4	2/21/2018	13:12		2/21/2018	13:12
0220F013.D	ZZZZZZ	ZZZZZZ	2/21/2018	13:44		2/21/2018	13:44
0220F014.D	ZZZZZZ	ZZZZZZ	2/21/2018	14:16		2/21/2018	14:16
0220F015.D	ZZZZZZ	ZZZZZZ	2/21/2018	14:48		2/21/2018	14:48
0220F016.D	ZZZZZZ	ZZZZZZ	2/21/2018	15:19		2/21/2018	15:19
0220F017.D	ZZZZZZ	ZZZZZZ	2/21/2018	15:51		2/21/2018	15:51
0220F018.D	ZZZZZZ	ZZZZZZ	2/21/2018	16:23		2/21/2018	16:23
0220F019.D	ZZZZZZ	ZZZZZZ	2/21/2018	16:55		2/21/2018	16:55
0220F020.D	ZZZZZZ	ZZZZZZ	2/21/2018	17:26		2/21/2018	17:26
0220F021.D	ZZZZZZ	ZZZZZZ	2/21/2018	17:58		2/21/2018	17:58
0220F022.D	ZZZZZZ	ZZZZZZ	2/21/2018	18:30		2/21/2018	18:30
0220F023.D	Continuing Calibration Verification	KWG1801092-5	2/21/2018	19:02		2/21/2018	19:02
0220F024.D	Instrument Blank	KWG1801092-6	2/21/2018	19:33		2/21/2018	19:33
0220F025.D	ZZZZZZ	ZZZZZZ	2/21/2018	20:05		2/21/2018	20:05
0220F026.D	ZZZZZZ	ZZZZZZ	2/21/2018	20:37		2/21/2018	20:37
0220F027.D	ZZZZZZ	ZZZZZZ	2/21/2018	21:09		2/21/2018	21:09
0220F028.D	ZZZZZZ	ZZZZZZ	2/21/2018	21:40		2/21/2018	21:40
0220F029.D	Continuing Calibration Verification	KWG1801092-7	2/21/2018	22:12		2/21/2018	22:12
0220F030.D	Instrument Blank	KWG1801092-8	2/21/2018	22:44		2/21/2018	22:44
0221F002.D	Batch QC	K1801096-023	2/21/2018	23:47		2/21/2018	23:47
0221F003.D	ZZZZZZ	ZZZZZZ	2/22/2018	00:19		2/22/2018	00:19
0221F004.D	ZZZZZZ	ZZZZZZ	2/22/2018	00:51		2/22/2018	00:51
0221F005.D	ZZZZZZ	ZZZZZZ	2/22/2018	01:23		2/22/2018	01:23

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801092
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0221F006.D	ZZZZZZ	ZZZZZZ	2/22/2018	01:54		2/22/2018	01:54
0221F007.D	ZZZZZZ	ZZZZZZ	2/22/2018	02:26		2/22/2018	02:26
0221F008.D	ZZZZZZ	ZZZZZZ	2/22/2018	02:58		2/22/2018	02:58
0221F009.D	ZZZZZZ	ZZZZZZ	2/22/2018	03:30		2/22/2018	03:30
0221F010.D	ZZZZZZ	ZZZZZZ	2/22/2018	04:02		2/22/2018	04:02
0221F011.D	Continuing Calibration Verification	KWG1801092-9	2/22/2018	04:33		2/22/2018	04:33
0221F012.D	Instrument Blank	KWG1801092-10	2/22/2018	05:05		2/22/2018	05:05
0221F013.D	ZZZZZZ	ZZZZZZ	2/22/2018	05:37		2/22/2018	05:37
0221F014.D	ZZZZZZ	ZZZZZZ	2/22/2018	06:09		2/22/2018	06:09
0221F015.D	ZZZZZZ	ZZZZZZ	2/22/2018	06:40		2/22/2018	06:40
0221F016.D	ZZZZZZ	ZZZZZZ	2/22/2018	07:12		2/22/2018	07:12
0221F017.D	ZZZZZZ	ZZZZZZ	2/22/2018	07:44		2/22/2018	07:44
0221F021.D	ZZZZZZ	ZZZZZZ	2/22/2018	09:51		2/22/2018	09:51
0221F022.D	ZZZZZZ	ZZZZZZ	2/22/2018	10:23		2/22/2018	10:23
0221F023.D	Continuing Calibration Verification	KWG1801092-11	2/22/2018	10:54		2/22/2018	10:54
0221F024.D	Instrument Blank	KWG1801092-12	2/22/2018	11:26		2/22/2018	11:26
0221F025.D	ZZZZZZ	ZZZZZZ	2/22/2018	11:58		2/22/2018	11:58
0221F026.D	Batch QCMS	KWG1800943-1	2/22/2018	12:30		2/22/2018	12:30
0221F027.D	Batch QCDMS	KWG1800943-2	2/22/2018	13:02		2/22/2018	13:02
0221F028.D	Lab Control Sample	KWG1800943-3	2/22/2018	13:33		2/22/2018	13:33
0221F029.D	Method Blank	KWG1800943-4	2/22/2018	14:05		2/22/2018	14:05
0221F030.D	Continuing Calibration Verification	KWG1801092-13	2/22/2018	14:37		2/22/2018	14:37
0221F031.D	Instrument Blank	KWG1801092-14	2/22/2018	15:09		2/22/2018	15:09

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801127
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0223F003.D	Continuing Calibration Verification	KWG1801127-1	2/23/2018	12:07		2/23/2018	12:07
0223F004.D	Instrument Blank	KWG1801127-2	2/23/2018	12:39		2/23/2018	12:39
0223F005.D	ZZZZZZ	ZZZZZZ	2/23/2018	13:11		2/23/2018	13:11
0223F006.D	ZZZZZZ	ZZZZZZ	2/23/2018	13:42		2/23/2018	13:42
0223F007.D	CO3-SD-3-5	K1801267-009	2/23/2018	14:14		2/23/2018	14:14
0223F008.D	CO1-SD-3-5	K1801267-013	2/23/2018	14:46		2/23/2018	14:46
0223F009.D	ZZZZZZ	ZZZZZZ	2/23/2018	15:18		2/23/2018	15:18
0223F010.D	ZZZZZZ	ZZZZZZ	2/23/2018	15:49		2/23/2018	15:49
0223F011.D	ZZZZZZ	ZZZZZZ	2/23/2018	16:21		2/23/2018	16:21
0223F012.D	ZZZZZZ	ZZZZZZ	2/23/2018	16:53		2/23/2018	16:53
0223F013.D	Continuing Calibration Verification	KWG1801127-3	2/23/2018	17:24		2/23/2018	17:24
0223F014.D	Instrument Blank	KWG1801127-4	2/23/2018	17:56		2/23/2018	17:56
0223FX15.D	CO2-SD-3-5	K1801267-001	2/23/2018	18:28		2/23/2018	18:28
0223F015.D	ZZZZZZ	ZZZZZZ	2/23/2018	18:59		2/23/2018	18:59
0223F016.D	ZZZZZZ	ZZZZZZ	2/23/2018	19:31		2/23/2018	19:31
0223F017.D	ZZZZZZ	ZZZZZZ	2/23/2018	20:03		2/23/2018	20:03
0223F018.D	ZZZZZZ	ZZZZZZ	2/23/2018	20:34		2/23/2018	20:34
0223F019.D	ZZZZZZ	ZZZZZZ	2/23/2018	21:06		2/23/2018	21:06
0223F020.D	ZZZZZZ	ZZZZZZ	2/23/2018	21:38		2/23/2018	21:38
0223F021.D	ZZZZZZ	ZZZZZZ	2/23/2018	22:09		2/23/2018	22:09
0223F022.D	ZZZZZZ	ZZZZZZ	2/23/2018	22:41		2/23/2018	22:41
0223F023.D	ZZZZZZ	ZZZZZZ	2/23/2018	23:12		2/23/2018	23:12
0223F024.D	ZZZZZZ	ZZZZZZ	2/23/2018	23:44		2/23/2018	23:44
0223F025.D	ZZZZZZ	ZZZZZZ	2/24/2018	00:16		2/24/2018	00:16
0223F026.D	Continuing Calibration Verification	KWG1801127-5	2/24/2018	00:47		2/24/2018	00:47
0223F027.D	Instrument Blank	KWG1801127-6	2/24/2018	01:19		2/24/2018	01:19
0223F028.D	ZZZZZZ	ZZZZZZ	2/24/2018	01:51		2/24/2018	01:51
0223F029.D	ZZZZZZ	ZZZZZZ	2/24/2018	02:22		2/24/2018	02:22
0223F030.D	ZZZZZZ	ZZZZZZ	2/24/2018	02:54		2/24/2018	02:54
0223F031.D	ZZZZZZ	ZZZZZZ	2/24/2018	03:25		2/24/2018	03:25
0223F032.D	ZZZZZZ	ZZZZZZ	2/24/2018	03:57		2/24/2018	03:57
0223F033.D	ZZZZZZ	ZZZZZZ	2/24/2018	04:29		2/24/2018	04:29
0223F034.D	ZZZZZZ	ZZZZZZ	2/24/2018	05:00		2/24/2018	05:00
0223F035.D	ZZZZZZ	ZZZZZZ	2/24/2018	05:32		2/24/2018	05:32
0223F036.D	Continuing Calibration Verification	KWG1801127-7	2/24/2018	06:04		2/24/2018	06:04

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801127
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0223F037.D	Instrument Blank	KWG1801127-8	2/24/2018	06:35		2/24/2018	06:35
0223F038.D	ZZZZZZ	ZZZZZZ	2/24/2018	07:07		2/24/2018	07:07
0223F039.D	ZZZZZZ	ZZZZZZ	2/24/2018	07:39		2/24/2018	07:39
0223F040.D	ZZZZZZ	ZZZZZZ	2/24/2018	08:10		2/24/2018	08:10
0223F041.D	ZZZZZZ	ZZZZZZ	2/24/2018	08:42		2/24/2018	08:42
0223F042.D	ZZZZZZ	ZZZZZZ	2/24/2018	09:14		2/24/2018	09:14
0223F043.D	ZZZZZZ	ZZZZZZ	2/24/2018	09:45		2/24/2018	09:45
0223F044.D	Continuing Calibration Verification	KWG1801127-9	2/24/2018	10:17		2/24/2018	10:17
0223F045.D	Instrument Blank	KWG1801127-10	2/24/2018	10:49		2/24/2018	10:49

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801562
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0314F003.D	Continuing Calibration Verification	KWG1801562-1	3/14/2018	13:05		3/14/2018	13:05
0314F004.D	Instrument Blank	KWG1801562-2	3/14/2018	13:37		3/14/2018	13:37
0314F005.D	ZZZZZZ	ZZZZZZ	3/14/2018	14:09		3/14/2018	14:09
0314F006.D	ZZZZZZ	ZZZZZZ	3/14/2018	14:41		3/14/2018	14:41
0314F007.D	ZZZZZZ	ZZZZZZ	3/14/2018	15:13		3/14/2018	15:13
0314F008.D	ZZZZZZ	ZZZZZZ	3/14/2018	15:44		3/14/2018	15:44
0314F009.D	ZZZZZZ	ZZZZZZ	3/14/2018	16:16		3/14/2018	16:16
0314F010.D	ZZZZZZ	ZZZZZZ	3/14/2018	16:48		3/14/2018	16:48
0314F011.D	ZZZZZZ	ZZZZZZ	3/14/2018	17:20		3/14/2018	17:20
0314F012.D	ZZZZZZ	ZZZZZZ	3/14/2018	17:52		3/14/2018	17:52
0314F013.D	ZZZZZZ	ZZZZZZ	3/14/2018	18:23		3/14/2018	18:23
0314F014.D	ZZZZZZ	ZZZZZZ	3/14/2018	18:55		3/14/2018	18:55
0314F015.D	ZZZZZZ	ZZZZZZ	3/14/2018	19:27		3/14/2018	19:27
0314F016.D	ZZZZZZ	ZZZZZZ	3/14/2018	19:59		3/14/2018	19:59
0314F017.D	ZZZZZZ	ZZZZZZ	3/14/2018	20:31		3/14/2018	20:31
0314F018.D	ZZZZZZ	ZZZZZZ	3/14/2018	21:03		3/14/2018	21:03
0314F019.D	ZZZZZZ	ZZZZZZ	3/14/2018	21:34		3/14/2018	21:34
0314F020.D	Continuing Calibration Verification	KWG1801562-3	3/14/2018	22:06		3/14/2018	22:06
0314F021.D	Instrument Blank	KWG1801562-4	3/14/2018	22:38		3/14/2018	22:38
0314F022.D	ZZZZZZ	ZZZZZZ	3/14/2018	23:10		3/14/2018	23:10
0314F023.D	ZZZZZZ	ZZZZZZ	3/14/2018	23:42		3/14/2018	23:42
0314F024.D	Lab Control Sample	KWG1801348-1	3/15/2018	00:13		3/15/2018	00:13
0314F025.D	Duplicate Lab Control Sample	KWG1801348-2	3/15/2018	00:45		3/15/2018	00:45
0314F026.D	Method Blank	KWG1801348-3	3/15/2018	01:17		3/15/2018	01:17
0314F031.D	ZZZZZZ	ZZZZZZ	3/15/2018	01:49		3/15/2018	01:49
0314F032.D	ZZZZZZ	ZZZZZZ	3/15/2018	02:21		3/15/2018	02:21
0314F033.D	ZZZZZZ	ZZZZZZ	3/15/2018	02:52		3/15/2018	02:52
0314F034.D	ZZZZZZ	ZZZZZZ	3/15/2018	03:24		3/15/2018	03:24
0314F035.D	ZZZZZZ	ZZZZZZ	3/15/2018	03:56		3/15/2018	03:56
0314F037.D	ZZZZZZ	ZZZZZZ	3/15/2018	04:28		3/15/2018	04:28
0314F039.D	ZZZZZZ	ZZZZZZ	3/15/2018	05:00		3/15/2018	05:00
0314F040.D	ZZZZZZ	ZZZZZZ	3/15/2018	05:32		3/15/2018	05:32
0314F041.D	Continuing Calibration Verification	KWG1801562-5	3/15/2018	06:03		3/15/2018	06:03
0314F042.D	Instrument Blank	KWG1801562-6	3/15/2018	06:35		3/15/2018	06:35

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A

Analysis Lot: KWG1801852
Instrument ID: GC32.i
Column: DB-35MS

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0329F004.D	Continuing Calibration Verification	KWG1801852-1	3/29/2018	13:28		3/29/2018	13:28
0329F005.D	Instrument Blank	KWG1801852-2	3/29/2018	14:00		3/29/2018	14:00
0329F006.D	CO1-PW-3-5 (W)	K1801267-008	3/29/2018	14:32		3/29/2018	14:32
0329F007.D	CO3-PW-3-5 (W)	K1801267-017	3/29/2018	15:04		3/29/2018	15:04
0329F008.D	ZZZZZZ	ZZZZZZ	3/29/2018	15:35		3/29/2018	15:35
0329F009.D	ZZZZZZ	ZZZZZZ	3/29/2018	16:07		3/29/2018	16:07
0329F010.D	ZZZZZZ	ZZZZZZ	3/29/2018	16:39		3/29/2018	16:39
0329F011.D	ZZZZZZ	ZZZZZZ	3/29/2018	17:11		3/29/2018	17:11
0329F012.D	ZZZZZZ	ZZZZZZ	3/29/2018	17:43		3/29/2018	17:43
0329F013.D	ZZZZZZ	ZZZZZZ	3/29/2018	18:14		3/29/2018	18:14
0329F014.D	ZZZZZZ	ZZZZZZ	3/29/2018	18:46		3/29/2018	18:46
0329F015.D	ZZZZZZ	ZZZZZZ	3/29/2018	19:18		3/29/2018	19:18
0329F016.D	Continuing Calibration Verification	KWG1801852-3	3/29/2018	19:50		3/29/2018	19:50
0329F017.D	Instrument Blank	KWG1801852-4	3/29/2018	20:21		3/29/2018	20:21
0329F018.D	ZZZZZZ	ZZZZZZ	3/29/2018	20:53		3/29/2018	20:53
0329F019.D	ZZZZZZ	ZZZZZZ	3/29/2018	21:25		3/29/2018	21:25
0329F020.D	ZZZZZZ	ZZZZZZ	3/29/2018	21:57		3/29/2018	21:57
0329F024.D	ZZZZZZ	ZZZZZZ	3/30/2018	00:04		3/30/2018	00:04
0329F025.D	ZZZZZZ	ZZZZZZ	3/30/2018	00:35		3/30/2018	00:35
0329F026.D	Continuing Calibration Verification	KWG1801852-5	3/30/2018	01:07		3/30/2018	01:07
0329F027.D	Instrument Blank	KWG1801852-6	3/30/2018	01:39		3/30/2018	01:39

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/14/2018

Extraction Prep Log
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3511
Analysis Method: 8082A

Extraction Lot: KWG1800932
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
EQB-SD-01	K1801267-004	02/07/18	02/08/18	410ml	2ml	NA	
EQB-PW-01	K1801267-018	02/08/18	02/08/18	425ml	2ml	NA	
Method Blank	KWG1800932-3	NA	NA	425ml	2ml	NA	
Lab Control Sample	KWG1800932-1	NA	NA	400ml	2ml	NA	
Duplicate Lab Control Sample	KWG1800932-2	NA	NA	400ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 03/09/2018

Extraction Prep Log
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3511
Analysis Method: 8082A

Extraction Lot: KWG1801348
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
CO1-PW-3-5 (W)	K1801267-008	03/06/18	03/06/18	86ml	5ml	NA	
CO3-PW-3-5 (W)	K1801267-017	03/07/18	03/08/18	100ml	5ml	NA	
Method Blank	KWG1801348-3	NA	NA	100ml	5ml	NA	
Lab Control Sample	KWG1801348-1	NA	NA	100ml	5ml	NA	
Duplicate Lab Control Sample	KWG1801348-2	NA	NA	100ml	5ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Extracted: 02/15/2018

Extraction Prep Log
Polychlorinated Biphenyls (PCBs)

Extraction Method: EPA 3546
Analysis Method: 8082A

Extraction Lot: KWG1800943
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
CO2-SD-3-5	K1801267-001	02/06/18	02/08/18	2.372g	8mL	63.6	
CO3-SD-3-5	K1801267-009	02/07/18	02/08/18	2.438g	8mL	75.9	
CO1-SD-3-5	K1801267-013	02/06/18	02/08/18	2.402g	8mL	67.6	
Method Blank	KWG1800943-4	NA	NA	2.438g	8mL	NA	
Batch QC	K1801096-023	NA	NA	2.070g	8mL	9.65	
Batch QCMS	KWG1800943-1	NA	NA	2.083g	8mL	9.65	
Batch QCDMS	KWG1800943-2	NA	NA	2.018g	8mL	9.65	
Lab Control Sample	KWG1800943-3	NA	NA	2.000g	8mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Confirmation Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/06/2018
Date Received: 03/06/2018
Date Extracted: 03/09/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	0.24	0.033	0.64	0.78	19.7		1	03/29/18
Aroclor 1254	0.24	0.033	1.5	1.7	12.5		1	03/29/18
Aroclor 1260	0.24	0.033	0.45	0.60	28.6		1	03/29/18

Confirmation Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/2018
Date Received: 03/08/2018
Date Extracted: 03/09/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017
Extraction Method: EPA 3511
Analysis Method: 8082A

Units: ug/L
Basis: NA
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	0.20	0.028	1.0	1.5	40.0		1	03/29/18
Aroclor 1254	0.20	0.028	1.8	2.3	24.4		1	03/29/18
Aroclor 1260	0.20	0.028	0.51	0.61	17.9		1	03/29/18

Confirmation Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/2018
Date Received: 02/08/2018
Date Extracted: 02/15/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO2-SD-3-5
Lab Code: K1801267-001
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	270	77	720	1000	32.6	D	20	02/23/18
Aroclor 1254	270	77	1900	1900	0.0	D	20	02/23/18
Aroclor 1260	270	77	560	860	42.3	PD	20	02/23/18

Confirmation Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/2018
Date Received: 02/08/2018
Date Extracted: 02/15/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	11	3.2	60	120	66.7	P	1	02/23/18
Aroclor 1254	11	3.2	110	130	16.7		1	02/23/18
Aroclor 1260	11	3.2	25	35	33.3		1	02/23/18

Confirmation Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/2018
Date Received: 02/08/2018
Date Extracted: 02/15/2018

Polychlorinated Biphenyls (PCBs)

Sample Name: CO1-SD-3-5
Lab Code: K1801267-013
Extraction Method: EPA 3546
Analysis Method: 8082A

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	MRL	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Aroclor 1242	13	3.6	53	100	61.4	P	1	02/23/18
Aroclor 1254	13	3.6	190	210	10.0		1	02/23/18
Aroclor 1260	13	3.6	200	210	4.9		1	02/23/18



Polynuclear Aromatic Hydrocarbons

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Cover Page - Organic Analysis Data Package
Polynuclear Aromatic Hydrocarbons

Sample Name	Lab Code	Date Collected	Date Received
CO2-SD-3-5	K1801267-001	02/06/2018	02/08/2018
EQB-SD-01	K1801267-004	02/07/2018	02/08/2018
CO1-PW-3-5 (W)	K1801267-008	03/06/2018	03/06/2018
CO3-SD-3-5	K1801267-009	02/07/2018	02/08/2018
CO1-SD-3-5	K1801267-013	02/06/2018	02/08/2018
CO3-PW-3-5 (W)	K1801267-017	03/07/2018	03/08/2018
EQB-PW-01	K1801267-018	02/08/2018	02/08/2018

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 02/07/2018
Date Received: 02/08/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: EQB-SD-01
Lab Code: K1801267-004
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.012	J	0.020	0.0014	1	02/13/18	02/14/18	KWG1800892	
2-Methylnaphthalene	0.0036	J	0.020	0.0013	1	02/13/18	02/14/18	KWG1800892	
Acenaphthylene	ND	U	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Acenaphthene	ND	U	0.020	0.0012	1	02/13/18	02/14/18	KWG1800892	
Dibenzofuran	0.0016	J	0.020	0.00096	1	02/13/18	02/14/18	KWG1800892	
Fluorene	ND	U	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Phenanthrene	0.0012	J	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Anthracene	ND	U	0.020	0.00082	1	02/13/18	02/14/18	KWG1800892	
Fluoranthene	ND	U	0.020	0.00082	1	02/13/18	02/14/18	KWG1800892	
Pyrene	0.0027	J	0.020	0.0010	1	02/13/18	02/14/18	KWG1800892	
Benz(a)anthracene	0.0023	J	0.020	0.00097	1	02/13/18	02/14/18	KWG1800892	
Chrysene	ND	U	0.020	0.00076	1	02/13/18	02/14/18	KWG1800892	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	02/13/18	02/14/18	KWG1800892	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	02/13/18	02/14/18	KWG1800892	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	02/13/18	02/14/18	KWG1800892	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	02/13/18	02/14/18	KWG1800892	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	02/13/18	02/14/18	KWG1800892	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	96	42-131	02/14/18	Acceptable
Fluoranthene-d10	96	42-133	02/14/18	Acceptable
Terphenyl-d14	68	32-129	02/14/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/06/2018
Date Received: 03/06/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: CO1-PW-3-5 (W)
Lab Code: K1801267-008
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.030	J	0.11	0.0074	1	03/09/18	03/13/18	KWG1801347	
2-Methylnaphthalene	0.011	J	0.11	0.0069	1	03/09/18	03/13/18	KWG1801347	
Acenaphthylene	0.047	J	0.11	0.0058	1	03/09/18	03/13/18	KWG1801347	
Acenaphthene	0.067	J	0.11	0.0063	1	03/09/18	03/13/18	KWG1801347	
Dibenzofuran	0.024	J	0.11	0.0051	1	03/09/18	03/13/18	KWG1801347	
Fluorene	0.047	JX	0.11	0.0058	1	03/09/18	03/13/18	KWG1801347	
Phenanthrene	0.13		0.11	0.0058	1	03/09/18	03/13/18	KWG1801347	
Anthracene	0.14		0.11	0.0043	1	03/09/18	03/13/18	KWG1801347	
Fluoranthene	0.39		0.11	0.0043	1	03/09/18	03/13/18	KWG1801347	
Pyrene	4.0		0.11	0.0053	1	03/09/18	03/13/18	KWG1801347	
Benz(a)anthracene	0.15		0.11	0.0051	1	03/09/18	03/13/18	KWG1801347	
Chrysene	0.086	J	0.11	0.0040	1	03/09/18	03/13/18	KWG1801347	
Benzo(b)fluoranthene†	0.69		0.11	0.0044	1	03/09/18	03/13/18	KWG1801347	
Benzo(k)fluoranthene	0.24		0.11	0.0050	1	03/09/18	03/13/18	KWG1801347	
Benzo(a)pyrene	0.42		0.11	0.0058	1	03/09/18	03/13/18	KWG1801347	
Indeno(1,2,3-cd)pyrene	0.16		0.11	0.0047	1	03/09/18	03/13/18	KWG1801347	
Dibenz(a,h)anthracene	0.050	J	0.11	0.0069	1	03/09/18	03/13/18	KWG1801347	
Benzo(g,h,i)perylene	0.19		0.11	0.0045	1	03/09/18	03/13/18	KWG1801347	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	84	42-131	03/13/18	Acceptable
Fluoranthene-d10	92	42-133	03/13/18	Acceptable
Terphenyl-d14	85	32-129	03/13/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 03/07/2018
Date Received: 03/08/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: CO3-PW-3-5 (W)
Lab Code: K1801267-017
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.41		0.071	0.0050	1	03/09/18	03/13/18	KWG1801347	
2-Methylnaphthalene	12		0.071	0.0046	1	03/09/18	03/13/18	KWG1801347	
Acenaphthylene	0.97		0.071	0.0039	1	03/09/18	03/13/18	KWG1801347	
Acenaphthene	63	D	0.71	0.043	10	03/09/18	03/13/18	KWG1801347	
Dibenzofuran	26		0.071	0.0034	1	03/09/18	03/13/18	KWG1801347	
Fluorene	29		0.071	0.0039	1	03/09/18	03/13/18	KWG1801347	
Phenanthrene	29		0.071	0.0039	1	03/09/18	03/13/18	KWG1801347	
Anthracene	6.5		0.071	0.0029	1	03/09/18	03/13/18	KWG1801347	
Fluoranthene	50	D	0.71	0.029	10	03/09/18	03/13/18	KWG1801347	
Pyrene	48	D	0.71	0.036	10	03/09/18	03/13/18	KWG1801347	
Benz(a)anthracene	6.4		0.071	0.0035	1	03/09/18	03/13/18	KWG1801347	
Chrysene	3.4		0.071	0.0027	1	03/09/18	03/13/18	KWG1801347	
Benzo(b)fluoranthene†	4.5		0.071	0.0030	1	03/09/18	03/13/18	KWG1801347	
Benzo(k)fluoranthene	1.4		0.071	0.0034	1	03/09/18	03/13/18	KWG1801347	
Benzo(a)pyrene	2.6		0.071	0.0039	1	03/09/18	03/13/18	KWG1801347	
Indeno(1,2,3-cd)pyrene	0.81		0.071	0.0032	1	03/09/18	03/13/18	KWG1801347	
Dibenz(a,h)anthracene	0.22		0.071	0.0046	1	03/09/18	03/13/18	KWG1801347	
Benzo(g,h,i)perylene	0.75		0.071	0.0031	1	03/09/18	03/13/18	KWG1801347	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	99	42-131	03/13/18	Acceptable
Fluoranthene-d10	103	42-133	03/13/18	Acceptable
Terphenyl-d14	95	32-129	03/13/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: 02/08/2018
Date Received: 02/08/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: EQB-PW-01
Lab Code: K1801267-018
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	0.013	J	0.021	0.0015	1	02/13/18	02/14/18	KWG1800892	
2-Methylnaphthalene	0.0038	J	0.021	0.0014	1	02/13/18	02/14/18	KWG1800892	
Acenaphthylene	ND	U	0.021	0.0012	1	02/13/18	02/14/18	KWG1800892	
Acenaphthene	ND	U	0.021	0.0013	1	02/13/18	02/14/18	KWG1800892	
Dibenzofuran	0.0016	J	0.021	0.0011	1	02/13/18	02/14/18	KWG1800892	
Fluorene	ND	U	0.021	0.0012	1	02/13/18	02/14/18	KWG1800892	
Phenanthrene	0.0014	J	0.021	0.0012	1	02/13/18	02/14/18	KWG1800892	
Anthracene	ND	U	0.021	0.00086	1	02/13/18	02/14/18	KWG1800892	
Fluoranthene	ND	U	0.021	0.00086	1	02/13/18	02/14/18	KWG1800892	
Pyrene	ND	U	0.021	0.0011	1	02/13/18	02/14/18	KWG1800892	
Benz(a)anthracene	0.0024	J	0.021	0.0011	1	02/13/18	02/14/18	KWG1800892	
Chrysene	ND	U	0.021	0.00080	1	02/13/18	02/14/18	KWG1800892	
Benzo(b)fluoranthene†	ND	U	0.021	0.00087	1	02/13/18	02/14/18	KWG1800892	
Benzo(k)fluoranthene	ND	U	0.021	0.00099	1	02/13/18	02/14/18	KWG1800892	
Benzo(a)pyrene	ND	U	0.021	0.0012	1	02/13/18	02/14/18	KWG1800892	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.00094	1	02/13/18	02/14/18	KWG1800892	
Dibenz(a,h)anthracene	ND	U	0.021	0.0014	1	02/13/18	02/14/18	KWG1800892	
Benzo(g,h,i)perylene	ND	U	0.021	0.00091	1	02/13/18	02/14/18	KWG1800892	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	100	42-131	02/14/18	Acceptable
Fluoranthene-d10	102	42-133	02/14/18	Acceptable
Terphenyl-d14	90	32-129	02/14/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1800892-3
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0014	1	02/13/18	02/14/18	KWG1800892	
2-Methylnaphthalene	ND	U	0.020	0.0013	1	02/13/18	02/14/18	KWG1800892	
Acenaphthylene	ND	U	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Acenaphthene	ND	U	0.020	0.0012	1	02/13/18	02/14/18	KWG1800892	
Dibenzofuran	ND	U	0.020	0.00096	1	02/13/18	02/14/18	KWG1800892	
Fluorene	ND	U	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Phenanthrene	0.0016	J	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Anthracene	ND	U	0.020	0.00082	1	02/13/18	02/14/18	KWG1800892	
Fluoranthene	ND	U	0.020	0.00082	1	02/13/18	02/14/18	KWG1800892	
Pyrene	ND	U	0.020	0.0010	1	02/13/18	02/14/18	KWG1800892	
Benz(a)anthracene	0.0023	J	0.020	0.00097	1	02/13/18	02/14/18	KWG1800892	
Chrysene	ND	U	0.020	0.00076	1	02/13/18	02/14/18	KWG1800892	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	02/13/18	02/14/18	KWG1800892	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	02/13/18	02/14/18	KWG1800892	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	02/13/18	02/14/18	KWG1800892	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	02/13/18	02/14/18	KWG1800892	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	02/13/18	02/14/18	KWG1800892	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	02/13/18	02/14/18	KWG1800892	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	89	42-131	02/14/18	Acceptable
Fluoranthene-d10	90	42-133	02/14/18	Acceptable
Terphenyl-d14	83	32-129	02/14/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Ground water

Service Request: K1801267
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1801347-3
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	0.020	0.0014	1	03/09/18	03/13/18	KWG1801347	
2-Methylnaphthalene	ND	U	0.020	0.0013	1	03/09/18	03/13/18	KWG1801347	
Acenaphthylene	ND	U	0.020	0.0011	1	03/09/18	03/13/18	KWG1801347	
Acenaphthene	ND	U	0.020	0.0012	1	03/09/18	03/13/18	KWG1801347	
Dibenzofuran	ND	U	0.020	0.00096	1	03/09/18	03/13/18	KWG1801347	
Fluorene	ND	U	0.020	0.0011	1	03/09/18	03/13/18	KWG1801347	
Phenanthrene	0.0017	J	0.020	0.0011	1	03/09/18	03/13/18	KWG1801347	
Anthracene	ND	U	0.020	0.00082	1	03/09/18	03/13/18	KWG1801347	
Fluoranthene	ND	U	0.020	0.00082	1	03/09/18	03/13/18	KWG1801347	
Pyrene	ND	U	0.020	0.0010	1	03/09/18	03/13/18	KWG1801347	
Benz(a)anthracene	0.0021	J	0.020	0.00097	1	03/09/18	03/13/18	KWG1801347	
Chrysene	ND	U	0.020	0.00076	1	03/09/18	03/13/18	KWG1801347	
Benzo(b)fluoranthene†	ND	U	0.020	0.00083	1	03/09/18	03/13/18	KWG1801347	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/09/18	03/13/18	KWG1801347	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	03/09/18	03/13/18	KWG1801347	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	03/09/18	03/13/18	KWG1801347	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/09/18	03/13/18	KWG1801347	
Benzo(g,h,i)perylene	ND	U	0.020	0.00086	1	03/09/18	03/13/18	KWG1801347	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	93	42-131	03/13/18	Acceptable
Fluoranthene-d10	100	42-133	03/13/18	Acceptable
Terphenyl-d14	90	32-129	03/13/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/2018
Date Received: 02/08/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: CO2-SD-3-5
Lab Code: K1801267-001
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	94		7.6	0.72	1	02/19/18	02/27/18	KWG1801007	
2-Methylnaphthalene	33		7.6	0.57	1	02/19/18	02/27/18	KWG1801007	
Acenaphthylene	56		7.6	0.43	1	02/19/18	02/27/18	KWG1801007	
Acenaphthene	61		7.6	0.46	1	02/19/18	02/27/18	KWG1801007	
Dibenzofuran	53		7.6	0.91	1	02/19/18	02/27/18	KWG1801007	
Fluorene	86		7.6	0.87	1	02/19/18	02/27/18	KWG1801007	
Phenanthrene	370		7.6	0.90	1	02/19/18	02/27/18	KWG1801007	
Anthracene	390		7.6	0.44	1	02/19/18	02/27/18	KWG1801007	
Fluoranthene	4200	D	38	4.8	5	02/19/18	02/28/18	KWG1801007	
Pyrene	6500	D	38	2.5	5	02/19/18	02/28/18	KWG1801007	
Benz(a)anthracene	1700		7.6	0.35	1	02/19/18	02/27/18	KWG1801007	
Chrysene	2000		7.6	0.47	1	02/19/18	02/27/18	KWG1801007	
Benzo(b)fluoranthene†	2300		7.6	0.44	1	02/19/18	02/27/18	KWG1801007	
Benzo(k)fluoranthene	800		7.6	0.37	1	02/19/18	02/27/18	KWG1801007	
Benzo(a)pyrene	1500		7.6	0.58	1	02/19/18	02/27/18	KWG1801007	
Indeno(1,2,3-cd)pyrene	670		7.6	0.55	1	02/19/18	02/27/18	KWG1801007	
Dibenz(a,h)anthracene	180		7.6	0.35	1	02/19/18	02/27/18	KWG1801007	
Benzo(g,h,i)perylene	530		7.6	0.61	1	02/19/18	02/27/18	KWG1801007	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	54	38-104	02/27/18	Acceptable
Fluoranthene-d10	61	39-109	02/27/18	Acceptable
Terphenyl-d14	65	38-113	02/27/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/2018
Date Received: 02/08/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: CO3-SD-3-5
Lab Code: K1801267-009
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	28		6.4	0.60	1	02/19/18	02/27/18	KWG1801007	
2-Methylnaphthalene	12		6.4	0.47	1	02/19/18	02/27/18	KWG1801007	
Acenaphthylene	62		6.4	0.36	1	02/19/18	02/27/18	KWG1801007	
Acenaphthene	83		6.4	0.38	1	02/19/18	02/27/18	KWG1801007	
Dibenzofuran	34		6.4	0.76	1	02/19/18	02/27/18	KWG1801007	
Fluorene	260		6.4	0.72	1	02/19/18	02/27/18	KWG1801007	
Phenanthrene	1500		6.4	0.75	1	02/19/18	02/27/18	KWG1801007	
Anthracene	5400	D	130	7.4	20	02/19/18	02/28/18	KWG1801007	
Fluoranthene	34000	D	130	16	20	02/19/18	02/28/18	KWG1801007	
Pyrene	33000	D	130	8.1	20	02/19/18	02/28/18	KWG1801007	
Benz(a)anthracene	14000	D	130	5.9	20	02/19/18	02/28/18	KWG1801007	
Chrysene	16000	D	130	7.9	20	02/19/18	02/28/18	KWG1801007	
Benzo(b)fluoranthene†	7600	D	130	7.4	20	02/19/18	02/28/18	KWG1801007	
Benzo(k)fluoranthene	2400		6.4	0.31	1	02/19/18	02/27/18	KWG1801007	
Benzo(a)pyrene	4000	D	130	9.6	20	02/19/18	02/28/18	KWG1801007	
Indeno(1,2,3-cd)pyrene	1300		6.4	0.46	1	02/19/18	02/27/18	KWG1801007	
Dibenz(a,h)anthracene	430		6.4	0.30	1	02/19/18	02/27/18	KWG1801007	
Benzo(g,h,i)perylene	880		6.4	0.51	1	02/19/18	02/27/18	KWG1801007	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	73	38-104	02/27/18	Acceptable
Fluoranthene-d10	79	39-109	02/27/18	Acceptable
Terphenyl-d14	90	38-113	02/27/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/06/2018
Date Received: 02/08/2018

Polynuclear Aromatic Hydrocarbons

Sample Name: CO1-SD-3-5
Lab Code: K1801267-013
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	280		7.1	0.67	1	02/19/18	02/27/18	KWG1801007	
2-Methylnaphthalene	99		7.1	0.53	1	02/19/18	02/27/18	KWG1801007	
Acenaphthylene	49		7.1	0.40	1	02/19/18	02/27/18	KWG1801007	
Acenaphthene	150		7.1	0.43	1	02/19/18	02/27/18	KWG1801007	
Dibenzofuran	130		7.1	0.86	1	02/19/18	02/27/18	KWG1801007	
Fluorene	150		7.1	0.81	1	02/19/18	02/27/18	KWG1801007	
Phenanthrene	410		7.1	0.84	1	02/19/18	02/27/18	KWG1801007	
Anthracene	240		7.1	0.42	1	02/19/18	02/27/18	KWG1801007	
Fluoranthene	960		7.1	0.90	1	02/19/18	02/27/18	KWG1801007	
Pyrene	3500	D	15	0.91	2	02/19/18	02/28/18	KWG1801007	
Benz(a)anthracene	470		7.1	0.33	1	02/19/18	02/27/18	KWG1801007	
Chrysene	780		7.1	0.44	1	02/19/18	02/27/18	KWG1801007	
Benzo(b)fluoranthene†	1100		7.1	0.42	1	02/19/18	02/27/18	KWG1801007	
Benzo(k)fluoranthene	340		7.1	0.35	1	02/19/18	02/27/18	KWG1801007	
Benzo(a)pyrene	730		7.1	0.54	1	02/19/18	02/27/18	KWG1801007	
Indeno(1,2,3-cd)pyrene	350		7.1	0.52	1	02/19/18	02/27/18	KWG1801007	
Dibenz(a,h)anthracene	96		7.1	0.33	1	02/19/18	02/27/18	KWG1801007	
Benzo(g,h,i)perylene	330		7.1	0.57	1	02/19/18	02/27/18	KWG1801007	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	71	38-104	02/27/18	Acceptable
Fluoranthene-d10	78	39-109	02/27/18	Acceptable
Terphenyl-d14	81	38-113	02/27/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Analytical Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Soil

Service Request: K1801267
Date Collected: NA
Date Received: NA

Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1801007-4
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Naphthalene	ND	U	4.8	0.47	1	02/19/18	02/27/18	KWG1801007	
2-Methylnaphthalene	ND	U	4.8	0.37	1	02/19/18	02/27/18	KWG1801007	
Acenaphthylene	ND	U	4.8	0.28	1	02/19/18	02/27/18	KWG1801007	
Acenaphthene	ND	U	4.8	0.30	1	02/19/18	02/27/18	KWG1801007	
Dibenzofuran	ND	U	4.8	0.60	1	02/19/18	02/27/18	KWG1801007	
Fluorene	ND	U	4.8	0.57	1	02/19/18	02/27/18	KWG1801007	
Phenanthrene	ND	U	4.8	0.59	1	02/19/18	02/27/18	KWG1801007	
Anthracene	ND	U	4.8	0.29	1	02/19/18	02/27/18	KWG1801007	
Fluoranthene	ND	U	4.8	0.63	1	02/19/18	02/27/18	KWG1801007	
Pyrene	ND	U	4.8	0.32	1	02/19/18	02/27/18	KWG1801007	
Benz(a)anthracene	0.45	J	4.8	0.23	1	02/19/18	02/27/18	KWG1801007	
Chrysene	ND	U	4.8	0.31	1	02/19/18	02/27/18	KWG1801007	
Benzo(b)fluoranthene†	ND	U	4.8	0.29	1	02/19/18	02/27/18	KWG1801007	
Benzo(k)fluoranthene	ND	U	4.8	0.24	1	02/19/18	02/27/18	KWG1801007	
Benzo(a)pyrene	ND	U	4.8	0.38	1	02/19/18	02/27/18	KWG1801007	
Indeno(1,2,3-cd)pyrene	ND	U	4.8	0.36	1	02/19/18	02/27/18	KWG1801007	
Dibenz(a,h)anthracene	ND	U	4.8	0.23	1	02/19/18	02/27/18	KWG1801007	
Benzo(g,h,i)perylene	ND	U	4.8	0.40	1	02/19/18	02/27/18	KWG1801007	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Fluorene-d10	68	38-104	02/27/18	Acceptable
Fluoranthene-d10	72	39-109	02/27/18	Acceptable
Terphenyl-d14	79	38-113	02/27/18	Acceptable

† Analyte Comments

Benzo(b)fluoranthene This analyte cannot be separated from Benzo(j)fluoranthene.

Comments:

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267

**Surrogate Recovery Summary
 Polynuclear Aromatic Hydrocarbons**

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
EQB-SD-01	K1801267-004	96	96	68
CO1-PW-3-5 (W)	K1801267-008	84	92	85
CO3-PW-3-5 (W)	K1801267-017	99	103	95
EQB-PW-01	K1801267-018	100	102	90
Method Blank	KWG1800892-3	89	90	83
Method Blank	KWG1801347-3	93	100	90
Lab Control Sample	KWG1800892-1	98	101	91
Duplicate Lab Control Sample	KWG1800892-2	95	100	84
Lab Control Sample	KWG1801347-1	92	102	87
Duplicate Lab Control Sample	KWG1801347-2	94	105	91

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	42-131
Sur2 = Fluoranthene-d10	42-133
Sur3 = Terphenyl-d14	32-129

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Soil

Service Request: K1801267

**Surrogate Recovery Summary
 Polynuclear Aromatic Hydrocarbons**

Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>
Batch QC	K1801257-001	66	74	77
CO2-SD-3-5	K1801267-001	54	61	65
CO3-SD-3-5	K1801267-009	73	79	90
CO1-SD-3-5	K1801267-013	71	78	81
Method Blank	KWG1801007-4	68	72	79
Batch QCMS	KWG1801007-1	71	76	79
Batch QCDMS	KWG1801007-2	64	68	72
Lab Control Sample	KWG1801007-3	71	75	80

Surrogate Recovery Control Limits (%)

Sur1 = Fluorene-d10	38-104
Sur2 = Fluoranthene-d10	39-109
Sur3 = Terphenyl-d14	38-113

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/14/2018
Time Analyzed: 06:09

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\021418\0214F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1800938-2
Analysis Lot: KWG1800938

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	40,889	4.72	19,453	6.28	42,645	7.51
Upper Limit ==>	81,778	5.22	38,906	6.78	85,290	8.01
Lower Limit ==>	20,445	4.22	9,727	5.78	21,323	7.01
ICAL Result ==>	45,603	4.78	23,247	6.33	49,507	7.56

Associated Analyses

Method Blank	KWG1800892-3	49,172	4.73	23,137	6.28	47,417	7.51
Lab Control Sample	KWG1800892-1	48,368	4.73	21,491	6.28	43,999	7.51
Duplicate Lab Control Sample	KWG1800892-2	47,696	4.73	21,337	6.28	43,802	7.51
EQB-SD-01	K1801267-004	47,613	4.73	23,181	6.28	46,638	7.51
EQB-PW-01	K1801267-018	47,548	4.73	22,835	6.28	46,079	7.51

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/14/2018
Time Analyzed: 06:09

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\021418\0214F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1800938-2
Analysis Lot: KWG1800938

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	45,484	10.02	44,446	13.03
Upper Limit ==>	90,968	10.52	88,892	13.53
Lower Limit ==>	22,742	9.52	22,223	12.53
ICAL Result ==>	64,481	10.08	65,038	13.14

Associated Analyses

Method Blank	KWG1800892-3	47,170	10.01	46,670	13.01
Lab Control Sample	KWG1800892-1	46,197	10.01	45,842	13.02
Duplicate Lab Control Sample	KWG1800892-2	46,165	10.01	45,984	13.02
EQB-SD-01	K1801267-004	46,661	10.01	47,124	13.01
EQB-PW-01	K1801267-018	46,895	10.01	47,529	13.01

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/27/2018
Time Analyzed: 10:37

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\022718\0227F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1801193-2
Analysis Lot: KWG1801193

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	96,022	5.98	50,555	8.30	103,428	11.50
Upper Limit ==>	192,044	6.48	101,110	8.80	206,856	12.00
Lower Limit ==>	48,011	5.48	25,278	7.80	51,714	11.00
ICAL Result ==>	90,101	6.06	44,197	8.42	87,517	11.64

Associated Analyses

Method Blank	KWG1801007-4	95,473	5.98	48,948	8.31	98,004	11.51
Lab Control Sample	KWG1801007-3	98,752	5.98	48,558	8.30	98,792	11.50
Batch QCMS	KWG1801007-1	97,060	5.98	47,101	8.30	96,104	11.50
Batch QCDMS	KWG1801007-2	102,921	5.98	48,677	8.31	100,669	11.50
Batch QC	K1801257-001	98,433	5.98	50,363	8.30	99,226	11.50
CO2-SD-3-5	K1801267-001	98,966	5.98	47,749	8.30	93,973	11.51
CO3-SD-3-5	K1801267-009	83,925	5.98	46,037	8.30	92,245	11.50
CO1-SD-3-5	K1801267-013	88,510	5.98	44,387	8.31	88,584	11.51

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/27/2018
Time Analyzed: 10:37

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\022718\0227F002.D
Instrument ID: MS20
Analysis Method: 8270D SIM

Lab Code: KWG1801193-2
Analysis Lot: KWG1801193

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	119,651	18.84	122,069	23.14
Upper Limit ==>	239,302	19.34	244,138	23.64
Lower Limit ==>	59,826	18.34	61,035	22.64
ICAL Result ==>	105,110	19.00	102,151	23.35

Associated Analyses

Method Blank	KWG1801007-4	110,587	18.85	120,810	23.15
Lab Control Sample	KWG1801007-3	112,412	18.85	117,719	23.14
Batch QCMS	KWG1801007-1	109,353	18.84	115,242	23.14
Batch QCDMS	KWG1801007-2	113,482	18.84	119,828	23.14
Batch QC	K1801257-001	111,786	18.85	116,478	23.15
CO2-SD-3-5	K1801267-001	104,332	18.87	115,060	23.18
CO3-SD-3-5	K1801267-009	94,737	18.88	111,877	23.16
CO1-SD-3-5	K1801267-013	97,862	18.87	109,093	23.18

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/28/2018
Time Analyzed: 09:28

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\022818\0228F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1801214-2
Analysis Lot: KWG1801214

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	59,226	4.71	27,937	6.28	58,621	7.52
Upper Limit ==>	118,452	5.21	55,874	6.78	117,242	8.02
Lower Limit ==>	29,613	4.21	13,969	5.78	29,311	7.02
ICAL Result ==>	45,603	4.78	23,247	6.33	49,507	7.56

Associated Analyses

CO2-SD-3-5DL	K1801267-001	63,926	4.71	31,508	6.28	65,781	7.52
CO3-SD-3-5DL	K1801267-009	61,130	4.71	31,561	6.28	64,515	7.52
CO1-SD-3-5DL	K1801267-013	62,268	4.70	30,897	6.28	69,628	7.52

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/28/2018
Time Analyzed: 09:28

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\022818\0228F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1801214-2
Analysis Lot: KWG1801214

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	75,634	10.03	81,793	13.07
Upper Limit ==>	151,268	10.53	163,586	13.57
Lower Limit ==>	37,817	9.53	40,897	12.57
ICAL Result ==>	64,481	10.08	65,038	13.14

Associated Analyses

Sample ID	Reference ID	Area	RT	Area	RT
CO2-SD-3-5DL	K1801267-001	85,207	10.04	91,753	13.09
CO3-SD-3-5DL	K1801267-009	74,923	10.03	87,204	13.07
CO1-SD-3-5DL	K1801267-013	89,073	10.04	94,032	13.12

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/13/2018
Time Analyzed: 05:18

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\031318\0313F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1801409-2
Analysis Lot: KWG1801409

	Naphthalene-d8		Acenaphthene-d10		Phenanthrene-d10		
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	
Results ==>	47,439	4.72	25,241	6.29	54,158	7.53	
Upper Limit ==>	94,878	5.22	50,482	6.79	108,316	8.03	
Lower Limit ==>	23,720	4.22	12,621	5.79	27,079	7.03	
ICAL Result ==>	45,603	4.78	23,247	6.33	49,507	7.56	
<i>Associated Analyses</i>							
Method Blank	KWG1801347-3	50,638	4.73	26,668	6.29	55,539	7.53
Lab Control Sample	KWG1801347-1	50,680	4.72	25,791	6.29	55,214	7.53
Duplicate Lab Control Sample	KWG1801347-2	50,489	4.72	25,644	6.29	55,026	7.53
CO1-PW-3-5 (W)	K1801267-008	56,164	4.72	30,745	6.29	61,955	7.53
CO3-PW-3-5 (W)	K1801267-017	52,848	4.72	30,024	6.29	70,840	7.54
CO3-PW-3-5 (W)DL	K1801267-017	43,655	4.71	25,019	6.29	49,678	7.53

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/13/2018
Time Analyzed: 05:18

Internal Standard Area and RT Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\031318\0313F002.D
Instrument ID: MS14
Analysis Method: 8270D SIM

Lab Code: KWG1801409-2
Analysis Lot: KWG1801409

	Chrysene-d12		Perylene-d12	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	62,363	10.06	67,350	13.14
Upper Limit ==>	124,726	10.56	134,700	13.64
Lower Limit ==>	31,182	9.56	33,675	12.64
ICAL Result ==>	64,481	10.08	65,038	13.14

Associated Analyses

Method Blank	KWG1801347-3	60,553	10.06	64,608	13.15
Lab Control Sample	KWG1801347-1	62,573	10.06	69,179	13.14
Duplicate Lab Control Sample	KWG1801347-2	62,103	10.05	68,006	13.13
CO1-PW-3-5 (W)	K1801267-008	76,318	10.05	82,546	13.14
CO3-PW-3-5 (W)	K1801267-017	76,409	10.06	80,514	13.16
CO3-PW-3-5 (W)DL	K1801267-017	60,509	10.05	66,808	13.12

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Soil

Service Request: K1801267
Date Extracted: 02/19/2018
Date Analyzed: 02/27/2018

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Batch QC
Lab Code: K1801257-001
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1801007

Analyte Name	Sample Result	Batch QCMS KWG1801007-1 Matrix Spike			Batch QCDMS KWG1801007-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Naphthalene	2.3	455	589	77	426	602	70	29-88	7	40
2-Methylnaphthalene	3.5	464	589	78	434	602	72	28-98	7	40
Acenaphthylene	0.35	480	589	81	464	602	77	32-97	3	40
Acenaphthene	1.2	460	589	78	449	602	74	30-101	2	40
Dibenzofuran	1.4	470	589	80	457	602	76	28-105	3	40
Fluorene	2.1	471	589	80	464	602	77	23-116	2	40
Phenanthrene	18	462	589	75	451	602	72	10-128	2	40
Anthracene	2.2	475	589	80	461	602	76	27-116	3	40
Fluoranthene	10	513	589	85	509	602	83	10-138	1	40
Pyrene	18	530	589	87	524	602	84	16-134	1	40
Benz(a)anthracene	11	538	589	90	534	602	87	27-127	1	40
Chrysene	17	519	589	85	514	602	82	25-132	1	40
Benzo(b)fluoranthene	13	522	589	86	520	602	84	21-130	0	40
Benzo(k)fluoranthene	1.3	504	589	85	499	602	83	22-126	1	40
Benzo(a)pyrene	6.9	530	589	89	524	602	86	25-129	1	40
Indeno(1,2,3-cd)pyrene	3.3	522	589	88	514	602	85	17-138	2	40
Dibenz(a,h)anthracene	5.3	512	589	86	503	602	83	32-116	2	40
Benzo(g,h,i)perylene	9.3	467	589	78	464	602	76	17-130	1	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/13/2018
Date Analyzed: 02/14/2018

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1800892

Analyte Name	Lab Control Sample KWG1800892-1 Lab Control Spike			Duplicate Lab Control Sample KWG1800892-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Naphthalene	2.75	2.78	99	2.66	2.78	96	52-115	3	30
2-Methylnaphthalene	2.37	2.78	85	2.32	2.78	84	48-120	2	30
Acenaphthylene	2.96	2.78	106	2.90	2.78	105	58-124	2	30
Acenaphthene	2.97	2.78	107	2.89	2.78	104	63-121	3	30
Dibenzofuran	3.24	2.78	117	2.92	2.78	105	56-132	10	30
Fluorene	2.90	2.78	104	2.84	2.78	102	68-121	2	30
Phenanthrene	2.96	2.78	107	2.91	2.78	105	64-126	2	30
Anthracene	3.05	2.78	110	2.94	2.78	106	68-127	4	30
Fluoranthene	2.84	2.78	102	2.74	2.78	99	70-127	3	30
Pyrene	3.52	2.78	127	3.42	2.78	123	72-127	3	30
Benz(a)anthracene	3.17	2.78	114	3.09	2.78	111	74-124	3	30
Chrysene	3.30	2.78	119	3.17	2.78	114	74-132	4	30
Benzo(b)fluoranthene	3.10	2.78	112	3.03	2.78	109	73-136	2	30
Benzo(k)fluoranthene	3.25	2.78	117	3.10	2.78	112	74-134	4	30
Benzo(a)pyrene	3.12	2.78	112	3.01	2.78	108	75-131	4	30
Indeno(1,2,3-cd)pyrene	2.96	2.78	107	2.85	2.78	103	63-136	4	30
Dibenz(a,h)anthracene	2.88	2.78	104	2.77	2.78	100	59-135	4	30
Benzo(g,h,i)perylene	3.22	2.78	116	3.11	2.78	112	63-127	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Ground water

Service Request: K1801267
Date Extracted: 03/09/2018
Date Analyzed: 03/13/2018

Lab Control Spike/Duplicate Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1801347

Analyte Name	Lab Control Sample KWG1801347-1 Lab Control Spike			Duplicate Lab Control Sample KWG1801347-2 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Naphthalene	2.31	2.78	83	2.46	2.78	89	52-115	6	30
2-Methylnaphthalene	2.36	2.78	85	2.49	2.78	90	48-120	6	30
Acenaphthylene	2.56	2.78	92	2.73	2.78	98	58-124	7	30
Acenaphthene	2.54	2.78	91	2.73	2.78	98	63-121	7	30
Dibenzofuran	2.68	2.78	96	2.88	2.78	104	56-132	7	30
Fluorene	2.55	2.78	92	2.74	2.78	99	68-121	7	30
Phenanthrene	2.55	2.78	92	2.72	2.78	98	64-126	6	30
Anthracene	2.64	2.78	95	2.79	2.78	100	68-127	5	30
Fluoranthene	2.46	2.78	89	2.69	2.78	97	70-127	9	30
Pyrene	2.86	2.78	103	3.11	2.78	112	72-127	9	30
Benz(a)anthracene	2.72	2.78	98	2.94	2.78	106	74-124	8	30
Chrysene	2.66	2.78	96	2.89	2.78	104	74-132	8	30
Benzo(b)fluoranthene	2.53	2.78	91	2.73	2.78	98	73-136	8	30
Benzo(k)fluoranthene	2.44	2.78	88	2.67	2.78	96	74-134	9	30
Benzo(a)pyrene	2.55	2.78	92	2.77	2.78	100	75-131	8	30
Indeno(1,2,3-cd)pyrene	2.60	2.78	94	2.81	2.78	101	63-136	8	30
Dibenz(a,h)anthracene	2.44	2.78	88	2.62	2.78	94	59-135	7	30
Benzo(g,h,i)perylene	2.54	2.78	92	2.71	2.78	98	63-127	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Soil

Service Request: K1801267
Date Extracted: 02/19/2018
Date Analyzed: 02/27/2018

Lab Control Spike Summary
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Units: ug/Kg
Basis: Dry
Level: Low
Extraction Lot: KWG1801007

Lab Control Sample
 KWG1801007-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Naphthalene	358	500	72	42-88
2-Methylnaphthalene	361	500	72	43-92
Acenaphthylene	376	500	75	44-93
Acenaphthene	357	500	71	44-95
Dibenzofuran	369	500	74	44-96
Fluorene	371	500	74	45-98
Phenanthrene	363	500	73	41-99
Anthracene	375	500	75	46-100
Fluoranthene	400	500	80	49-102
Pyrene	410	500	82	48-104
Benz(a)anthracene	432	500	86	52-105
Chrysene	412	500	82	51-110
Benzo(b)fluoranthene	428	500	86	52-114
Benzo(k)fluoranthene	418	500	84	52-112
Benzo(a)pyrene	432	500	86	52-111
Indeno(1,2,3-cd)pyrene	445	500	89	44-117
Dibenz(a,h)anthracene	432	500	86	44-110
Benzo(g,h,i)perylene	392	500	78	45-107

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/13/2018
Date Analyzed: 02/14/2018
Time Analyzed: 07:41

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1800892-3
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Instrument ID: MS14
File ID: J:\MS14\DATA\021418\0214F006.D
Level: Low
Extraction Lot: KWG1800892

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1800892-1	J:\MS14\DATA\021418\0214F007.D	02/14/18	08:04
Duplicate Lab Control Sample	KWG1800892-2	J:\MS14\DATA\021418\0214F008.D	02/14/18	08:27
EQB-SD-01	K1801267-004	J:\MS14\DATA\021418\0214F017.D	02/14/18	11:55
EQB-PW-01	K1801267-018	J:\MS14\DATA\021418\0214F018.D	02/14/18	12:18

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Ground water

Service Request: K1801267
Date Extracted: 03/09/2018
Date Analyzed: 03/13/2018
Time Analyzed: 06:34

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1801347-3
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Instrument ID: MS14
File ID: J:\MS14\DATA\031318\0313F003.D
Level: Low
Extraction Lot: KWG1801347

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1801347-1	J:\MS14\DATA\031318\0313F004.D	03/13/18	06:57
Duplicate Lab Control Sample	KWG1801347-2	J:\MS14\DATA\031318\0313F005.D	03/13/18	07:20
CO1-PW-3-5 (W)	K1801267-008	J:\MS14\DATA\031318\0313F006.D	03/13/18	07:43
CO3-PW-3-5 (W)	K1801267-017	J:\MS14\DATA\031318\0313F007.D	03/13/18	08:06
CO3-PW-3-5 (W)	K1801267-017	J:\MS14\DATA\031318\0313F013.D	03/13/18	10:26

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Soil

Service Request: K1801267
Date Extracted: 02/19/2018
Date Analyzed: 02/27/2018
Time Analyzed: 11:17

Method Blank Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Method Blank
Lab Code: KWG1801007-4
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Instrument ID: MS20
File ID: J:\MS20\DATA\022718\0227F003.D
Level: Low
Extraction Lot: KWG1801007

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1801007-3	J:\MS20\DATA\022718\0227F004.D	02/27/18	11:56
Batch QCMS	KWG1801007-1	J:\MS20\DATA\022718\0227F005.D	02/27/18	13:15
Batch QCDMS	KWG1801007-2	J:\MS20\DATA\022718\0227F006.D	02/27/18	13:54
Batch QC	K1801257-001	J:\MS20\DATA\022718\0227F007.D	02/27/18	14:34
CO2-SD-3-5	K1801267-001	J:\MS20\DATA\022718\0227F010.D	02/27/18	16:32
CO3-SD-3-5	K1801267-009	J:\MS20\DATA\022718\0227F011.D	02/27/18	17:12
CO1-SD-3-5	K1801267-013	J:\MS20\DATA\022718\0227F012.D	02/27/18	17:51
CO2-SD-3-5	K1801267-001	J:\MS14\DATA\022818\0228F004.D	02/28/18	10:14
CO3-SD-3-5	K1801267-009	J:\MS14\DATA\022818\0228F005.D	02/28/18	10:37
CO1-SD-3-5	K1801267-013	J:\MS14\DATA\022818\0228F006.D	02/28/18	11:00

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/13/2018
Date Analyzed: 02/14/2018
Time Analyzed: 08:04

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG1800892-1
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Instrument ID: MS14
File ID: J:\MS14\DATA\021418\0214F007.D
Level: Low
Extraction Lot: KWG1800892

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1800892-3	J:\MS14\DATA\021418\0214F006.D	02/14/18	07:41
EQB-SD-01	K1801267-004	J:\MS14\DATA\021418\0214F017.D	02/14/18	11:55
EQB-PW-01	K1801267-018	J:\MS14\DATA\021418\0214F018.D	02/14/18	12:18

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Ground water

Service Request: K1801267
Date Extracted: 03/09/2018
Date Analyzed: 03/13/2018
Time Analyzed: 06:57

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG1801347-1
Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Instrument ID: MS14
File ID: J:\MS14\DATA\031318\0313F004.D
Level: Low
Extraction Lot: KWG1801347

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1801347-3	J:\MS14\DATA\031318\0313F003.D	03/13/18	06:34
CO1-PW-3-5 (W)	K1801267-008	J:\MS14\DATA\031318\0313F006.D	03/13/18	07:43
CO3-PW-3-5 (W)	K1801267-017	J:\MS14\DATA\031318\0313F007.D	03/13/18	08:06
CO3-PW-3-5 (W)	K1801267-017	J:\MS14\DATA\031318\0313F013.D	03/13/18	10:26

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Soil

Service Request: K1801267
Date Extracted: 02/19/2018
Date Analyzed: 02/27/2018
Time Analyzed: 11:56

Lab Control Sample Summary
Polynuclear Aromatic Hydrocarbons

Sample Name: Lab Control Sample
Lab Code: KWG1801007-3
Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Instrument ID: MS20
File ID: J:\MS20\DATA\022718\0227F004.D
Level: Low
Extraction Lot: KWG1801007

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1801007-4	J:\MS20\DATA\022718\0227F003.D	02/27/18	11:17
Batch QCMS	KWG1801007-1	J:\MS20\DATA\022718\0227F005.D	02/27/18	13:15
Batch QCDMS	KWG1801007-2	J:\MS20\DATA\022718\0227F006.D	02/27/18	13:54
Batch QC	K1801257-001	J:\MS20\DATA\022718\0227F007.D	02/27/18	14:34
CO2-SD-3-5	K1801267-001	J:\MS20\DATA\022718\0227F010.D	02/27/18	16:32
CO3-SD-3-5	K1801267-009	J:\MS20\DATA\022718\0227F011.D	02/27/18	17:12
CO1-SD-3-5	K1801267-013	J:\MS20\DATA\022718\0227F012.D	02/27/18	17:51
CO2-SD-3-5	K1801267-001	J:\MS14\DATA\022818\0228F004.D	02/28/18	10:14
CO3-SD-3-5	K1801267-009	J:\MS14\DATA\022818\0228F005.D	02/28/18	10:37
CO1-SD-3-5	K1801267-013	J:\MS14\DATA\022818\0228F006.D	02/28/18	11:00

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/14/2018
Time Analyzed: 05:44

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\021418\0214F001.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1800938

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	51.6	70653	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	49.5	67746	PASS
70	69	0	2	0.6	418	PASS
127	198	10	80	49.3	67538	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	63.3	136944	PASS
199	198	5	9	6.4	8771	PASS
275	198	10	60	34.9	47842	PASS
365	442	1	50	3.5	7494	PASS
441	443	0	100	79.5	33424	PASS
442	442	100	100	100.0	216426	PASS
443	442	15	24	19.4	42050	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1800938-2	J:\MS14\DATA\021418\0214F002.D	02/14/2018	06:09	
Method Blank	KWG1800892-3	J:\MS14\DATA\021418\0214F006.D	02/14/2018	07:41	
Lab Control Sample	KWG1800892-1	J:\MS14\DATA\021418\0214F007.D	02/14/2018	08:04	
Duplicate Lab Control Sample	KWG1800892-2	J:\MS14\DATA\021418\0214F008.D	02/14/2018	08:27	
EQB-SD-01	K1801267-004	J:\MS14\DATA\021418\0214F017.D	02/14/2018	11:55	
EQB-PW-01	K1801267-018	J:\MS14\DATA\021418\0214F018.D	02/14/2018	12:18	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/27/2018
Time Analyzed: 09:58

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS20\DATA\022718\0227F001.D
Instrument ID: MS20
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1801193

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	27.6	90733	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	29.9	98237	PASS
70	69	0	2	0.5	511	PASS
127	198	10	80	42.1	138272	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	42.0	328234	PASS
199	198	5	9	6.7	21840	PASS
275	198	10	60	33.6	110264	PASS
365	442	1	50	2.2	17257	PASS
441	443	0	100	79.3	123106	PASS
442	442	100	100	100.0	781482	PASS
443	442	15	24	19.9	155205	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1801193-2	J:\MS20\DATA\022718\0227F002.D	02/27/2018	10:37	
Method Blank	KWG1801007-4	J:\MS20\DATA\022718\0227F003.D	02/27/2018	11:17	
Lab Control Sample	KWG1801007-3	J:\MS20\DATA\022718\0227F004.D	02/27/2018	11:56	
Batch QCMS	KWG1801007-1	J:\MS20\DATA\022718\0227F005.D	02/27/2018	13:15	
Batch QCDS	KWG1801007-2	J:\MS20\DATA\022718\0227F006.D	02/27/2018	13:54	
Batch QC	K1801257-001	J:\MS20\DATA\022718\0227F007.D	02/27/2018	14:34	
CO2-SD-3-5	K1801267-001	J:\MS20\DATA\022718\0227F010.D	02/27/2018	16:32	
CO3-SD-3-5	K1801267-009	J:\MS20\DATA\022718\0227F011.D	02/27/2018	17:12	
CO1-SD-3-5	K1801267-013	J:\MS20\DATA\022718\0227F012.D	02/27/2018	17:51	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/28/2018
Time Analyzed: 09:03

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\022818\0228F001.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1801214

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	50.2	126845	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	47.8	120816	PASS
70	69	0	2	0.7	831	PASS
127	198	10	80	49.4	124821	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	53.7	252757	PASS
199	198	5	9	6.9	17370	PASS
275	198	10	60	34.7	87650	PASS
365	442	1	50	3.4	15988	PASS
441	443	0	100	76.9	68896	PASS
442	442	100	100	100.0	470826	PASS
443	442	15	24	19.0	89568	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1801214-2	J:\MS14\DATA\022818\0228F002.D	02/28/2018	09:28	
CO2-SD-3-5	K1801267-001	J:\MS14\DATA\022818\0228F004.D	02/28/2018	10:14	
CO3-SD-3-5	K1801267-009	J:\MS14\DATA\022818\0228F005.D	02/28/2018	10:37	
CO1-SD-3-5	K1801267-013	J:\MS14\DATA\022818\0228F006.D	02/28/2018	11:00	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/13/2018
Time Analyzed: 04:54

Tune Summary
Polynuclear Aromatic Hydrocarbons

File ID: J:\MS14\DATA\031318\0313F001.D
Instrument ID: MS14
Column:

Analysis Method: 8270D SIM
Analysis Lot: KWG1801409

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	47.8	91958	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	45.5	87620	PASS
70	69	0	2	0.7	606	PASS
127	198	10	80	49.4	94986	PASS
197	198	0	2	0.0	0	PASS
198	442	30	100	51.8	192466	PASS
199	198	5	9	6.4	12374	PASS
275	198	10	60	35.8	68901	PASS
365	442	1	50	3.4	12790	PASS
441	443	0	100	75.4	53954	PASS
442	442	100	100	100.0	371690	PASS
443	442	15	24	19.2	71544	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1801409-2	J:\MS14\DATA\031318\0313F002.D	03/13/2018	05:18	
Method Blank	KWG1801347-3	J:\MS14\DATA\031318\0313F003.D	03/13/2018	06:34	
Lab Control Sample	KWG1801347-1	J:\MS14\DATA\031318\0313F004.D	03/13/2018	06:57	
Duplicate Lab Control Sample	KWG1801347-2	J:\MS14\DATA\031318\0313F005.D	03/13/2018	07:20	
CO1-PW-3-5 (W)	K1801267-008	J:\MS14\DATA\031318\0313F006.D	03/13/2018	07:43	
CO3-PW-3-5 (W)	K1801267-017	J:\MS14\DATA\031318\0313F007.D	03/13/2018	08:06	
CO3-PW-3-5 (W)	K1801267-017	J:\MS14\DATA\031318\0313F013.D	03/13/2018	10:26	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS14\DATA\101317\1013F003.D	F	J:\MS14\DATA\101317\1013F008.D
B	J:\MS14\DATA\101317\1013F004.D	G	J:\MS14\DATA\101317\1013F009.D
C	J:\MS14\DATA\101317\1013F005.D	H	J:\MS14\DATA\101317\1013F010.D
D	J:\MS14\DATA\101317\1013F006.D	I	J:\MS14\DATA\101317\1013F011.D
E	J:\MS14\DATA\101317\1013F007.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID					
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF			
Naphthalene	A	4.0	1.18	B	8.0	1.19	C	20	1.14	D	100	1.10	E	200	1.11
	F	400	1.15	G	1000	1.13	H	1600	1.13	I	2000	1.12			
2-Methylnaphthalene	A	4.0	0.984	B	8.0	0.814	C	20	0.820	D	100	0.773	E	200	0.768
	F	400	0.768	G	1000	0.737	H	1600	0.739	I	2000	0.736			
Acenaphthylene	A	4.0	2.48	B	8.0	2.37	C	20	2.40	D	100	2.32	E	200	2.36
	F	400	2.47	G	1000	2.51	H	1600	2.56	I	2000	2.57			
Acenaphthene	A	4.0	1.34	B	8.0	1.36	C	20	1.34	D	100	1.31	E	200	1.33
	F	400	1.38	G	1000	1.41	H	1600	1.45	I	2000	1.46			
Dibenzofuran	A	4.0	2.14	B	8.0	2.12	C	20	2.10	D	100	2.07	E	200	2.11
	F	400	2.18	G	1000	2.22	H	1600	2.26	I	2000	2.27			
Fluorene	A	4.0	1.73	B	8.0	1.67	C	20	1.65	D	100	1.63	E	200	1.65
	F	400	1.70	G	1000	1.71	H	1600	1.75	I	2000	1.77			
Phenanthrene	A	4.0	1.33	B	8.0	1.25	C	20	1.21	D	100	1.17	E	200	1.18
	F	400	1.22	G	1000	1.24	H	1600	1.27	I	2000	1.29			
Anthracene	A	4.0	1.23	B	8.0	1.19	C	20	1.20	D	100	1.17	E	200	1.20
	F	400	1.23	G	1000	1.25	H	1600	1.27	I	2000	1.28			
Fluoranthene	A	4.0	1.48	B	8.0	1.41	C	20	1.44	D	100	1.41	E	200	1.41
	F	400	1.48	G	1000	1.53	H	1600	1.54	I	2000	1.55			
Pyrene	A	4.0	1.21	B	8.0	1.17	C	20	1.17	D	100	1.14	E	200	1.15
	F	400	1.20	G	1000	1.24	H	1600	1.28	I	2000	1.29			
Benz(a)anthracene	A	4.0	1.30	B	8.0	1.21	C	20	1.17	D	100	1.12	E	200	1.14
	F	400	1.20	G	1000	1.23	H	1600	1.25	I	2000	1.25			
Chrysene	A	4.0	1.13	B	8.0	1.14	C	20	1.10	D	100	1.08	E	200	1.09
	F	400	1.12	G	1000	1.14	H	1600	1.17	I	2000	1.17			
Benzo(b)fluoranthene	A	4.0	1.37	B	8.0	1.19	C	20	1.21	D	100	1.18	E	200	1.23
	F	400	1.28	G	1000	1.30	H	1600	1.31	I	2000	1.30			
Benzo(k)fluoranthene	A	4.0	1.29	B	8.0	1.22	C	20	1.19	D	100	1.19	E	200	1.22
	F	400	1.28	G	1000	1.25	H	1600	1.27	I	2000	1.26			
Benzo(a)pyrene	A	4.0	1.11	B	8.0	1.07	C	20	1.08	D	100	1.05	E	200	1.07
	F	400	1.12	G	1000	1.13	H	1600	1.15	I	2000	1.14			

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF
Indeno(1,2,3-cd)pyrene	A	4.0	1.07	B	8.0	0.946	C	20	0.945	D	100	0.956	E	200	0.969
	F	400	1.02	G	1000	1.00	H	1600	1.01	I	2000	1.00			
Dibenz(a,h)anthracene	A	4.0	1.14	B	8.0	1.13	C	20	0.979	D	100	0.947	E	200	0.961
	F	400	0.975	G	1000	0.975	H	1600	0.993	I	2000	0.983			
Benzo(g,h,i)perylene	A	4.0	1.28	B	8.0	1.15	C	20	1.07	D	100	1.07	E	200	1.08
	F	400	1.11	G	1000	1.07	H	1600	1.06	I	2000	1.04			
Fluorene-d10	A	4.0	1.65	B	8.0	1.44	C	20	1.31	D	100	1.26	E	200	1.27
	F	400	1.31	G	1000	1.33	H	1600	1.37	I	2000	1.38			
Fluoranthene-d10	A	4.0	1.21	B	8.0	1.18	C	20	1.19	D	100	1.19	E	200	1.20
	F	400	1.27	G	1000	1.34	H	1600	1.37	I	2000	1.36			
Terphenyl-d14	A	4.0	0.889	B	8.0	0.855	C	20	0.825	D	100	0.800	E	200	0.814
	F	400	0.833	G	1000	0.845	H	1600	0.864	I	2000	0.864			

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 10/13/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15579
Instrument ID: MS14

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	2.6		≤20	1.14		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	9.8		≤20	0.793		0.40
Acenaphthylene	MS	AverageRF	% RSD	3.6		≤20	2.45		0.90
Acenaphthene	MS	AverageRF	% RSD	3.8		≤20	1.38		0.90
Dibenzofuran	MS	AverageRF	% RSD	3.3		≤20	2.16		0.80
Fluorene	MS	AverageRF	% RSD	2.8		≤20	1.70		0.90
Phenanthrene	MS	AverageRF	% RSD	4.1		≤20	1.24		0.70
Anthracene	MS	AverageRF	% RSD	3.0		≤20	1.22		0.70
Fluoranthene	MS	AverageRF	% RSD	4.0		≤20	1.47		0.60
Pyrene	MS	AverageRF	% RSD	4.6		≤20	1.21		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	4.8		≤20	1.21		0.80
Chrysene	MS	AverageRF	% RSD	2.9		≤20	1.13		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	4.9		≤20	1.26		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	3.1		≤20	1.24		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	3.3		≤20	1.10		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	4.1		≤20	0.992		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	7.2		≤20	1.01		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	6.5		≤20	1.10		0.50
Fluorene-d10	SURR	AverageRF	% RSD	8.8		≤20	1.37		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	6.5		≤20	1.26		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	3.3		≤20	0.843		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 10/13/2017
Date Analyzed: 10/13/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15579
Units: ng/ml

File ID: J:\MS14\DATA\101317\1013F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	380	1.14	1.08	-6	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	360	0.793	0.716	-10	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.45	2.30	-6	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.38	1.32	-4	NA	± 30 %	AverageRF
Dibenzofuran	400	350	2.16	1.87	-14	NA	± 30 %	AverageRF
Fluorene	400	380	1.70	1.60	-6	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.24	1.14	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.22	1.15	-6	NA	± 30 %	AverageRF
Fluoranthene	400	390	1.47	1.44	-2	NA	± 30 %	AverageRF
Pyrene	400	380	1.21	1.14	-6	NA	± 30 %	AverageRF
Benz(a)anthracene	400	380	1.21	1.15	-5	NA	± 30 %	AverageRF
Chrysene	400	380	1.13	1.08	-4	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	390	1.26	1.22	-3	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.24	1.20	-3	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	380	1.10	1.05	-5	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	0.992	0.913	-8	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	370	1.01	0.924	-8	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	370	1.10	1.02	-7	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594
Instrument ID: MS20

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS20\DATA\110217\1102F003.D	G	J:\MS20\DATA\110217\1102F009.D
B	J:\MS20\DATA\110217\1102F004.D	H	J:\MS20\DATA\110217\1102F010.D
C	J:\MS20\DATA\110217\1102F005.D	I	J:\MS20\DATA\110217\1102F011.D
D	J:\MS20\DATA\110217\1102F006.D	J	J:\MS20\DATA\110217\1102F012.D
E	J:\MS20\DATA\110217\1102F007.D		
F	J:\MS20\DATA\110217\1102F008.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF
Naphthalene	A	2.0	1.21	B	4.0	1.04	C	8.0	1.03	D	20	0.996	E	100	0.990
	F	200	0.989	G	400	1.02	H	1000	1.01	I	1600	0.972	J	2000	0.967
2-Methylnaphthalene	A	2.0	0.781	B	4.0	0.671	C	8.0	0.661	D	20	0.679	E	100	0.678
	F	200	0.694	G	400	0.692	H	1000	0.678	I	1600	0.645	J	2000	0.644
Acenaphthylene	A	2.0	2.23	B	4.0	1.95	C	8.0	1.92	D	20	1.97	E	100	1.97
	F	200	2.00	G	400	2.07	H	1000	2.08	I	1600	2.05	J	2000	2.02
Acenaphthene	A	2.0	1.45	B	4.0	1.25	C	8.0	1.25	D	20	1.24	E	100	1.21
	F	200	1.22	G	400	1.25	H	1000	1.23	I	1600	1.21	J	2000	1.19
Dibenzofuran	A	2.0	2.15	B	4.0	1.87	C	8.0	1.84	D	20	1.85	E	100	1.84
	F	200	1.85	G	400	1.90	H	1000	1.88	I	1600	1.82	J	2000	1.80
Fluorene	A	2.0	1.81	B	4.0	1.46	C	8.0	1.44	D	20	1.44	E	100	1.46
	F	200	1.47	G	400	1.51	H	1000	1.48	I	1600	1.45	J	2000	1.44
Phenanthrene	A	2.0	1.50	B	4.0	1.16	C	8.0	1.16	D	20	1.16	E	100	1.12
	F	200	1.13	G	400	1.15	H	1000	1.14	I	1600	1.10	J	2000	1.09
Anthracene	A	2.0	1.32	B	4.0	1.05	C	8.0	1.04	D	20	1.03	E	100	1.03
	F	200	1.06	G	400	1.10	H	1000	1.11	I	1600	1.08	J	2000	1.06
Fluoranthene	A	2.0	1.51	B	4.0	1.20	C	8.0	1.19	D	20	1.24	E	100	1.23
	F	200	1.27	G	400	1.32	H	1000	1.30	I	1600	1.25	J	2000	1.24
Pyrene	A	2.0	1.34	B	4.0	1.10	C	8.0	1.09	D	20	1.10	E	100	1.08
	F	200	1.09	G	400	1.12	H	1000	1.13	I	1600	1.12	J	2000	1.11
Benz(a)anthracene	A	2.0	1.36	B	4.0	1.13	C	8.0	1.03	D	20	1.02	E	100	0.986
	F	200	1.01	G	400	1.05	H	1000	1.09	I	1600	1.09	J	2000	1.10
Chrysene	A	2.0	1.26	B	4.0	1.06	C	8.0	1.08	D	20	1.07	E	100	1.06
	F	200	1.06	G	400	1.07	H	1000	1.06	I	1600	1.06	J	2000	1.04
Benzo(b)fluoranthene	A	2.0	1.22	B	4.0	1.06	C	8.0	1.06	D	20	1.10	E	100	1.10
	F	200	1.12	G	400	1.17	H	1000	1.19	I	1600	1.20	J	2000	1.18
Benzo(k)fluoranthene	A	2.0	1.19	B	4.0	1.07	C	8.0	1.09	D	20	1.09	E	100	1.15
	F	200	1.18	G	400	1.20	H	1000	1.19	I	1600	1.19	J	2000	1.18

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594
Instrument ID: MS20

Column: MS

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF
Benzo(a)pyrene	A	2.0	0.956	B	4.0	0.883	C	8.0	0.866	D	20	0.903	E	100	0.955
	F	200	1.00	G	400	1.06	H	1000	1.06	I	1600	1.08	J	2000	1.08
Indeno(1,2,3-cd)pyrene	A	2.0	1.05	B	4.0	0.927	C	8.0	0.901	D	20	0.943	E	100	0.987
	F	200	1.03	G	400	1.10	H	1000	1.08	I	1600	1.07	J	2000	1.07
Dibenz(a,h)anthracene	A	2.0	1.02	B	4.0	0.967	C	8.0	0.953	D	20	1.01	E	100	1.05
	F	200	1.08	G	400	1.13	H	1000	1.11	I	1600	1.10	J	2000	1.10
Benzo(g,h,i)perylene	A	2.0	1.36	B	4.0	1.19	C	8.0	1.17	D	20	1.25	E	100	1.21
	F	200	1.23	G	400	1.27	H	1000	1.18	I	1600	1.17	J	2000	1.16
Fluorene-d10				B	4.0	1.51	C	8.0	1.31	D	20	1.26	E	100	1.23
	F	200	1.23	G	400	1.27	H	1000	1.25	I	1600	1.23	J	2000	1.21
Fluoranthene-d10	A	2.0	1.49	B	4.0	1.12	C	8.0	1.07	D	20	1.08	E	100	1.06
	F	200	1.10	G	400	1.15	H	1000	1.17	I	1600	1.16	J	2000	1.15
Terphenyl-d14	A	2.0	1.04	B	4.0	0.848	C	8.0	0.825	D	20	0.837	E	100	0.817
	F	200	0.826	G	400	0.831	H	1000	0.840	I	1600	0.837	J	2000	0.829

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 11/02/2017

Initial Calibration Summary
Polynuclear Aromatic Hydrocarbons

Calibration ID: CAL15594
Instrument ID: MS20

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Naphthalene	MS	AverageRF	% RSD	6.8		≤20	1.02		0.70
2-Methylnaphthalene	MS	AverageRF	% RSD	5.7		≤20	0.682		0.40
Acenaphthylene	MS	AverageRF	% RSD	4.4		≤20	2.03		0.90
Acenaphthene	MS	AverageRF	% RSD	5.8		≤20	1.25		0.90
Dibenzofuran	MS	AverageRF	% RSD	5.3		≤20	1.88		0.80
Fluorene	MS	AverageRF	% RSD	7.5		≤20	1.50		0.90
Phenanthrene	MS	AverageRF	% RSD	10.0		≤20	1.17		0.70
Anthracene	MS	AverageRF	% RSD	7.9		≤20	1.09		0.70
Fluoranthene	MS	AverageRF	% RSD	7.2		≤20	1.27		0.60
Pyrene	MS	AverageRF	% RSD	6.7		≤20	1.13		0.60
Benz(a)anthracene	MS	AverageRF	% RSD	9.8		≤20	1.09		0.80
Chrysene	MS	AverageRF	% RSD	5.7		≤20	1.08		0.70
Benzo(b)fluoranthene	MS	AverageRF	% RSD	5.0		≤20	1.14		0.70
Benzo(k)fluoranthene	MS	AverageRF	% RSD	4.4		≤20	1.15		0.70
Benzo(a)pyrene	MS	AverageRF	% RSD	8.4		≤20	0.984		0.70
Indeno(1,2,3-cd)pyrene	MS	AverageRF	% RSD	7.1		≤20	1.02		0.50
Dibenz(a,h)anthracene	MS	AverageRF	% RSD	5.9		≤20	1.05		0.40
Benzo(g,h,i)perylene	MS	AverageRF	% RSD	5.1		≤20	1.22		0.50
Fluorene-d10	SURR	AverageRF	% RSD	7.1		≤20	1.28		0.01
Fluoranthene-d10	SURR	AverageRF	% RSD	10.7		≤20	1.15		0.01
Terphenyl-d14	SURR	AverageRF	% RSD	7.7		≤20	0.853		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 11/02/2017
Date Analyzed: 11/02/2017

Second Source Calibration Verification
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration ID: CAL15594
Units: ng/ml

File ID: J:\MS20\DATA\110217\1102F013.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	360	1.02	0.924	-10	NA	± 30 %	AverageRF
2-Methylnaphthalene	400	380	0.682	0.644	-6	NA	± 30 %	AverageRF
Acenaphthylene	400	380	2.03	1.93	-5	NA	± 30 %	AverageRF
Acenaphthene	400	380	1.25	1.17	-6	NA	± 30 %	AverageRF
Dibenzofuran	400	350	1.88	1.63	-13	NA	± 30 %	AverageRF
Fluorene	400	370	1.50	1.39	-7	NA	± 30 %	AverageRF
Phenanthrene	400	370	1.17	1.08	-8	NA	± 30 %	AverageRF
Anthracene	400	380	1.09	1.03	-6	NA	± 30 %	AverageRF
Fluoranthene	400	400	1.27	1.28	0	NA	± 30 %	AverageRF
Pyrene	400	380	1.13	1.08	-5	NA	± 30 %	AverageRF
Benz(a)anthracene	400	370	1.09	0.996	-8	NA	± 30 %	AverageRF
Chrysene	400	380	1.08	1.03	-5	NA	± 30 %	AverageRF
Benzo(b)fluoranthene	400	380	1.14	1.10	-4	NA	± 30 %	AverageRF
Benzo(k)fluoranthene	400	390	1.15	1.13	-2	NA	± 30 %	AverageRF
Benzo(a)pyrene	400	400	0.984	0.973	-1	NA	± 30 %	AverageRF
Indeno(1,2,3-cd)pyrene	400	370	1.02	0.946	-7	NA	± 30 %	AverageRF
Dibenz(a,h)anthracene	400	380	1.05	1.00	-5	NA	± 30 %	AverageRF
Benzo(g,h,i)perylene	400	360	1.22	1.11	-9	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/14/2018

**Continuing Calibration Verification Summary
 Polynuclear Aromatic Hydrocarbons**

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 10/13/2017
Calibration ID: CAL15579
Analysis Lot: KWG1800938
Units: ng/ml

File ID: J:\MS14\DATA\021418\0214F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	400	0.70	1.14	1.14	0	NA	± 20	AverageRF
2-Methylnaphthalene	400	370	0.40	0.793	0.733	-8	NA	± 20	AverageRF
Acenaphthylene	400	420	0.90	2.45	2.58	5	NA	± 20	AverageRF
Acenaphthene	400	420	0.90	1.38	1.43	4	NA	± 20	AverageRF
Dibenzofuran	400	460	0.80	2.16	2.47	14	NA	± 20	AverageRF
Fluorene	400	430	0.90	1.70	1.80	6	NA	± 20	AverageRF
Phenanthrene	400	410	0.70	1.24	1.27	2	NA	± 20	AverageRF
Anthracene	400	410	0.70	1.22	1.25	2	NA	± 20	AverageRF
Fluoranthene	400	400	0.60	1.47	1.46	-1	NA	± 20	AverageRF
Pyrene	400	480	0.60	1.21	1.44	19	NA	± 20	AverageRF
Benz(a)anthracene	400	420	0.80	1.21	1.27	5	NA	± 20	AverageRF
Chrysene	400	440	0.70	1.13	1.25	11	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	420	0.70	1.26	1.33	5	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	440	0.70	1.24	1.37	11	NA	± 20	AverageRF
Benzo(a)pyrene	400	420	0.70	1.10	1.16	5	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	410	0.50	0.992	1.03	4	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	410	0.40	1.01	1.03	2	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	450	0.50	1.10	1.24	13	NA	± 20	AverageRF
Fluorene-d10	400	390	0.01	1.37	1.34	-2	NA	± 20	AverageRF
Fluoranthene-d10	400	380	0.01	1.26	1.21	-4	NA	± 20	AverageRF
Terphenyl-d14	400	380	0.01	0.843	0.807	-4	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/27/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 11/02/2017
Calibration ID: CAL15594
Analysis Lot: KWG1801193
Units: ng/ml

File ID: J:\MS20\DATA\022718\0227F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	420	0.70	1.02	1.06	4	NA	± 20	AverageRF
2-Methylnaphthalene	400	400	0.40	0.682	0.691	1	NA	± 20	AverageRF
Acenaphthylene	400	370	0.90	2.03	1.90	-6	NA	± 20	AverageRF
Acenaphthene	400	380	0.90	1.25	1.17	-6	NA	± 20	AverageRF
Dibenzofuran	400	380	0.80	1.88	1.80	-4	NA	± 20	AverageRF
Fluorene	400	380	0.90	1.50	1.42	-5	NA	± 20	AverageRF
Phenanthrene	400	370	0.70	1.17	1.08	-8	NA	± 20	AverageRF
Anthracene	400	370	0.70	1.09	0.995	-9	NA	± 20	AverageRF
Fluoranthene	400	390	0.60	1.27	1.24	-2	NA	± 20	AverageRF
Pyrene	400	400	0.60	1.13	1.13	0	NA	± 20	AverageRF
Benz(a)anthracene	400	410	0.80	1.09	1.11	2	NA	± 20	AverageRF
Chrysene	400	390	0.70	1.08	1.05	-3	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	410	0.70	1.14	1.17	2	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	400	0.70	1.15	1.15	0	NA	± 20	AverageRF
Benzo(a)pyrene	400	410	0.70	0.984	1.01	2	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	430	0.50	1.02	1.09	7	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	420	0.40	1.05	1.10	4	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	380	0.50	1.22	1.15	-6	NA	± 20	AverageRF
Fluorene-d10	400	400	0.01	1.28	1.27	-1	NA	± 20	AverageRF
Fluoranthene-d10	400	410	0.01	1.15	1.18	2	NA	± 20	AverageRF
Terphenyl-d14	400	400	0.01	0.853	0.857	0	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/28/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 10/13/2017
Calibration ID: CAL15579
Analysis Lot: KWG1801214
Units: ng/ml

File ID: J:\MS14\DATA\022818\0228F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	380	0.70	1.14	1.10	-4	NA	± 20	AverageRF
2-Methylnaphthalene	400	350	0.40	0.793	0.692	-13	NA	± 20	AverageRF
Acenaphthylene	400	400	0.90	2.45	2.47	1	NA	± 20	AverageRF
Acenaphthene	400	400	0.90	1.38	1.39	1	NA	± 20	AverageRF
Dibenzofuran	400	430	0.80	2.16	2.32	7	NA	± 20	AverageRF
Fluorene	400	400	0.90	1.70	1.68	-1	NA	± 20	AverageRF
Phenanthrene	400	390	0.70	1.24	1.22	-1	NA	± 20	AverageRF
Anthracene	400	400	0.70	1.22	1.21	-1	NA	± 20	AverageRF
Fluoranthene	400	420	0.60	1.47	1.55	5	NA	± 20	AverageRF
Pyrene	400	430	0.60	1.21	1.31	8	NA	± 20	AverageRF
Benz(a)anthracene	400	410	0.80	1.21	1.25	4	NA	± 20	AverageRF
Chrysene	400	420	0.70	1.13	1.20	6	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	400	0.70	1.26	1.26	0	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	400	0.70	1.24	1.25	1	NA	± 20	AverageRF
Benzo(a)pyrene	400	400	0.70	1.10	1.10	0	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	390	0.50	0.992	0.973	-2	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	370	0.40	1.01	0.932	-8	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	410	0.50	1.10	1.14	4	NA	± 20	AverageRF
Fluorene-d10	400	360	0.01	1.37	1.24	-9	NA	± 20	AverageRF
Fluoranthene-d10	400	410	0.01	1.26	1.28	2	NA	± 20	AverageRF
Terphenyl-d14	400	370	0.01	0.843	0.783	-7	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 03/13/2018

Continuing Calibration Verification Summary
Polynuclear Aromatic Hydrocarbons

Calibration Type: Internal Standard
Analysis Method: 8270D SIM

Calibration Date: 10/13/2017
Calibration ID: CAL15579
Analysis Lot: KWG1801409
Units: ng/ml

File ID: J:\MS14\DATA\031318\0313F002.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Naphthalene	400	380	0.70	1.14	1.09	-4	NA	± 20	AverageRF
2-Methylnaphthalene	400	370	0.40	0.793	0.741	-7	NA	± 20	AverageRF
Acenaphthylene	400	390	0.90	2.45	2.37	-3	NA	± 20	AverageRF
Acenaphthene	400	400	0.90	1.38	1.38	0	NA	± 20	AverageRF
Dibenzofuran	400	420	0.80	2.16	2.25	4	NA	± 20	AverageRF
Fluorene	400	400	0.90	1.70	1.71	1	NA	± 20	AverageRF
Phenanthrene	400	390	0.70	1.24	1.21	-2	NA	± 20	AverageRF
Anthracene	400	380	0.70	1.22	1.16	-5	NA	± 20	AverageRF
Fluoranthene	400	370	0.60	1.47	1.35	-8	NA	± 20	AverageRF
Pyrene	400	420	0.60	1.21	1.26	5	NA	± 20	AverageRF
Benz(a)anthracene	400	410	0.80	1.21	1.23	2	NA	± 20	AverageRF
Chrysene	400	410	0.70	1.13	1.17	3	NA	± 20	AverageRF
Benzo(b)fluoranthene	400	390	0.70	1.26	1.25	-1	NA	± 20	AverageRF
Benzo(k)fluoranthene	400	390	0.70	1.24	1.22	-2	NA	± 20	AverageRF
Benzo(a)pyrene	400	400	0.70	1.10	1.11	1	NA	± 20	AverageRF
Indeno(1,2,3-cd)pyrene	400	440	0.50	0.992	1.09	10	NA	± 20	AverageRF
Dibenz(a,h)anthracene	400	420	0.40	1.01	1.06	5	NA	± 20	AverageRF
Benzo(g,h,i)perylene	400	440	0.50	1.10	1.21	10	NA	± 20	AverageRF
Fluorene-d10	400	370	0.01	1.37	1.28	-7	NA	± 20	AverageRF
Fluoranthene-d10	400	360	0.01	1.26	1.15	-9	NA	± 20	AverageRF
Terphenyl-d14	400	380	0.01	0.843	0.806	-4	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM

Analysis Lot: KWG1800938
Instrument ID: MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0214F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1800938-1	2/14/2018	05:44		2/14/2018	06:04
0214F002.D	Continuing Calibration Verification	KWG1800938-2	2/14/2018	06:09		2/14/2018	06:28
0214F003.D	ZZZZZZ	ZZZZZZ	2/14/2018	06:32		2/14/2018	06:51
0214F004.D	ZZZZZZ	ZZZZZZ	2/14/2018	06:55		2/14/2018	07:14
0214F005.D	ZZZZZZ	ZZZZZZ	2/14/2018	07:18		2/14/2018	07:37
0214F006.D	Method Blank	KWG1800892-3	2/14/2018	07:41		2/14/2018	08:00
0214F007.D	Lab Control Sample	KWG1800892-1	2/14/2018	08:04		2/14/2018	08:23
0214F008.D	Duplicate Lab Control Sample	KWG1800892-2	2/14/2018	08:27		2/14/2018	08:46
0214F009.D	ZZZZZZ	ZZZZZZ	2/14/2018	08:50		2/14/2018	09:09
0214F010.D	ZZZZZZ	ZZZZZZ	2/14/2018	09:13		2/14/2018	09:32
0214F011.D	ZZZZZZ	ZZZZZZ	2/14/2018	09:36		2/14/2018	09:55
0214F012.D	ZZZZZZ	ZZZZZZ	2/14/2018	09:59		2/14/2018	10:18
0214F013.D	ZZZZZZ	ZZZZZZ	2/14/2018	10:22		2/14/2018	10:41
0214F014.D	ZZZZZZ	ZZZZZZ	2/14/2018	10:45		2/14/2018	11:04
0214F015.D	ZZZZZZ	ZZZZZZ	2/14/2018	11:09		2/14/2018	11:28
0214F016.D	ZZZZZZ	ZZZZZZ	2/14/2018	11:32		2/14/2018	11:51
0214F017.D	EQB-SD-01	K1801267-004	2/14/2018	11:55		2/14/2018	12:14
0214F018.D	EQB-PW-01	K1801267-018	2/14/2018	12:18		2/14/2018	12:37
0214F019.D	ZZZZZZ	ZZZZZZ	2/14/2018	12:41		2/14/2018	13:00
0214F020.D	ZZZZZZ	ZZZZZZ	2/14/2018	13:05		2/14/2018	13:24
0214F021.D	ZZZZZZ	ZZZZZZ	2/14/2018	13:28		2/14/2018	13:47
0214F022.D	ZZZZZZ	ZZZZZZ	2/14/2018	13:51		2/14/2018	14:10
0214F023.D	ZZZZZZ	ZZZZZZ	2/14/2018	14:14		2/14/2018	14:33
0214F024.D	ZZZZZZ	ZZZZZZ	2/14/2018	14:37		2/14/2018	14:56
0214F025.D	ZZZZZZ	ZZZZZZ	2/14/2018	15:01		2/14/2018	15:20
0214F026.D	ZZZZZZ	ZZZZZZ	2/14/2018	15:24		2/14/2018	15:43
0214F027.D	ZZZZZZ	ZZZZZZ	2/14/2018	15:47		2/14/2018	16:06
0214F028.D	ZZZZZZ	ZZZZZZ	2/14/2018	16:10		2/14/2018	16:29
0214F029.D	ZZZZZZ	ZZZZZZ	2/14/2018	16:33		2/14/2018	16:52
0214F030.D	ZZZZZZ	ZZZZZZ	2/14/2018	16:56		2/14/2018	17:15
0214F031.D	ZZZZZZ	ZZZZZZ	2/14/2018	17:19		2/14/2018	17:38

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM

Analysis Lot: KWG1801214
Instrument ID: MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0228F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1801214-1	2/28/2018	09:03		2/28/2018	09:23
0228F002.D	Continuing Calibration Verification	KWG1801214-2	2/28/2018	09:28		2/28/2018	09:47
0228F004.D	CO2-SD-3-5	K1801267-001	2/28/2018	10:14		2/28/2018	10:33
0228F005.D	CO3-SD-3-5	K1801267-009	2/28/2018	10:37		2/28/2018	10:56
0228F006.D	CO1-SD-3-5	K1801267-013	2/28/2018	11:00		2/28/2018	11:19
0228F007.D	ZZZZZZ	ZZZZZZ	2/28/2018	12:12		2/28/2018	12:31
0228F008.D	ZZZZZZ	ZZZZZZ	2/28/2018	12:35		2/28/2018	12:54
0228F009.D	ZZZZZZ	ZZZZZZ	2/28/2018	12:58		2/28/2018	13:17
0228F010.D	ZZZZZZ	ZZZZZZ	2/28/2018	13:21		2/28/2018	13:40
0228F011.D	ZZZZZZ	ZZZZZZ	2/28/2018	13:44		2/28/2018	14:03

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM

Analysis Lot: KWG1801409
Instrument ID: MS14

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0313F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1801409-1	3/13/2018	04:54		3/13/2018	05:14
0313F002.D	Continuing Calibration Verification	KWG1801409-2	3/13/2018	05:18		3/13/2018	05:37
0313F003.D	Method Blank	KWG1801347-3	3/13/2018	06:34		3/13/2018	06:53
0313F004.D	Lab Control Sample	KWG1801347-1	3/13/2018	06:57		3/13/2018	07:16
0313F005.D	Duplicate Lab Control Sample	KWG1801347-2	3/13/2018	07:20		3/13/2018	07:39
0313F006.D	CO1-PW-3-5 (W)	K1801267-008	3/13/2018	07:43		3/13/2018	08:02
0313F007.D	CO3-PW-3-5 (W)	K1801267-017	3/13/2018	08:06		3/13/2018	08:25
0313F008.D	ZZZZZZ	ZZZZZZ	3/13/2018	08:29		3/13/2018	08:48
0313F009.D	ZZZZZZ	ZZZZZZ	3/13/2018	08:53		3/13/2018	09:12
0313F010.D	ZZZZZZ	ZZZZZZ	3/13/2018	09:16		3/13/2018	09:35
0313F011.D	ZZZZZZ	ZZZZZZ	3/13/2018	09:39		3/13/2018	09:58
0313F012.D	ZZZZZZ	ZZZZZZ	3/13/2018	10:02		3/13/2018	10:21
0313F013.D	CO3-PW-3-5 (W)	K1801267-017	3/13/2018	10:26		3/13/2018	10:45

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267

Analysis Run Log
Polynuclear Aromatic Hydrocarbons

Analysis Method: 8270D SIM

Analysis Lot: KWG1801193
Instrument ID: MS20

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0227F001.D	GC/MS Tuning - Decafluorotriphenylphosph	KWG1801193-1	2/27/2018	09:58		2/27/2018	10:28
0227F002.D	Continuing Calibration Verification	KWG1801193-2	2/27/2018	10:37		2/27/2018	11:06
0227F003.D	Method Blank	KWG1801007-4	2/27/2018	11:17		2/27/2018	11:46
0227F004.D	Lab Control Sample	KWG1801007-3	2/27/2018	11:56		2/27/2018	12:25
0227F005.D	Batch QCMS	KWG1801007-1	2/27/2018	13:15		2/27/2018	13:44
0227F006.D	Batch QCDMS	KWG1801007-2	2/27/2018	13:54		2/27/2018	14:23
0227F007.D	Batch QC	K1801257-001	2/27/2018	14:34		2/27/2018	15:03
0227F008.D	ZZZZZZ	ZZZZZZ	2/27/2018	15:13		2/27/2018	15:42
0227F009.D	ZZZZZZ	ZZZZZZ	2/27/2018	15:53		2/27/2018	16:22
0227F010.D	CO2-SD-3-5	K1801267-001	2/27/2018	16:32		2/27/2018	17:01
0227F011.D	CO3-SD-3-5	K1801267-009	2/27/2018	17:12		2/27/2018	17:41
0227F012.D	CO1-SD-3-5	K1801267-013	2/27/2018	17:51		2/27/2018	18:20
0227F013.D	ZZZZZZ	ZZZZZZ	2/27/2018	18:31		2/27/2018	19:00
0227F014.D	ZZZZZZ	ZZZZZZ	2/27/2018	19:10		2/27/2018	19:39
0227F015.D	ZZZZZZ	ZZZZZZ	2/27/2018	19:50		2/27/2018	20:19

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 02/13/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Extraction Lot: KWG1800892
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
EQB-SD-01	K1801267-004	02/07/18	02/08/18	455ml	2ml	NA	
EQB-PW-01	K1801267-018	02/08/18	02/08/18	430ml	2ml	NA	
Method Blank	KWG1800892-3	NA	NA	460ml	2ml	NA	
Lab Control Sample	KWG1800892-1	NA	NA	450ml	2ml	NA	
Duplicate Lab Control Sample	KWG1800892-2	NA	NA	450ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Water

Service Request: K1801267
Date Extracted: 03/09/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3511
Analysis Method: 8270D SIM

Extraction Lot: KWG1801347
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
CO1-PW-3-5 (W)	K1801267-008	03/06/18	03/06/18	86ml	2ml	NA	
CO3-PW-3-5 (W)	K1801267-017	03/07/18	03/08/18	128ml	2ml	NA	
CO3-PW-3-5 (W)DL	K1801267-017	03/07/18	03/08/18	128ml	2ml	NA	
Method Blank	KWG1801347-3	NA	NA	460ml	2ml	NA	
Lab Control Sample	KWG1801347-1	NA	NA	450ml	2ml	NA	
Duplicate Lab Control Sample	KWG1801347-2	NA	NA	450ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Extracted: 02/19/2018

Extraction Prep Log
Polynuclear Aromatic Hydrocarbons

Extraction Method: EPA 3546
Analysis Method: 8270D SIM

Extraction Lot: KWG1801007
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
CO2-SD-3-5	K1801267-001	02/06/18	02/08/18	10.372g	10mL	63.6	
CO2-SD-3-5DL	K1801267-001	02/06/18	02/08/18	10.372g	10mL	63.6	
CO3-SD-3-5	K1801267-009	02/07/18	02/08/18	10.433g	10mL	75.9	
CO3-SD-3-5DL	K1801267-009	02/07/18	02/08/18	10.433g	10mL	75.9	
CO1-SD-3-5	K1801267-013	02/06/18	02/08/18	10.440g	10mL	67.6	
CO1-SD-3-5DL	K1801267-013	02/06/18	02/08/18	10.440g	10mL	67.6	
Method Blank	KWG1801007-4	NA	NA	10.440g	10mL	NA	
Batch QC	K1801257-001	NA	NA	10.350g	10mL	82.3	
Batch QCMS	KWG1801007-1	NA	NA	10.315g	10mL	82.3	
Batch QCDMS	KWG1801007-2	NA	NA	10.098g	10mL	82.3	
Lab Control Sample	KWG1801007-3	NA	NA	10.000g	10mL	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis



Raw Data

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Benchsheet

Service Request #: K1801267, KQ1801889, K1801367
 Test: TS
 Method: 160.3 Modified

Run #: 580156
 Balance ID: K-BALANCE-48

Pan ID:	Lab Code:	Tare (g)	Wet Wt. (g)	Tare + Dry Wt. (g)	Dry Weight (g)	% Total Solids	RPD
	K1801267-001	1.296	14.132	10.285	8.99	63.6	
	K1801267-001DUP	1.313	14.222	10.473	9.16	64.4	1
	K1801267-002	1.286	10.436	7.533	6.25	59.9	
	K1801267-003	1.285	12.474	10.709	9.42	75.5	
	K1801267-009	1.302	12.618	10.881	9.58	75.9	
	K1801267-011	1.296	10.489	8.939	7.64	72.9	
	K1801267-012	1.289	10.869	8.910	7.62	70.1	
	K1801267-013	1.298	10.422	8.342	7.04	67.6	
	K1801267-014	1.294	12.599	10.978	9.68	76.9	
	K1801267-015	1.308	12.356	10.632	9.32	75.5	
	K1801367-001	1.303	1.096	2.398	1.10	99.9	

Oven1	Oven ID	Temp In	Temp Out	Date In	Time In	Date Out	Time Out	Thermometer ID
	K-OVEN-7	105	105	2/13/2018	17:35	2/14/2018	08:03	

	Cal EQID	Cal Start Value	Cal End Value	Start Date	Start Time	End Date	End Time
Calibration1	K-BALANCE-48	1.000, 100.000	1.000, 100.000	2/13/2018	14:27	2/13/2018	17:35
Calibration2		0.999, 99.998	1.000, 99.999	2/14/2018	08:31	2/14/2018	08:37

Comments: APosey SN:42868 Reviewed by SC 2/14/18



General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Work Request # K1800961, 1267
 Tier: II IV
 Date Analyzed: 3/5/18
 Analyst: DAB Run # 582500
 Analysis: TOC Soil/9060

**DATA QUALITY REPORT
 INORGANICS**

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

- | | | |
|-----|---|--|
| 1. | Is the method name and number correct and appropriate? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 2. | Holding times met for all analyses and for all samples? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA <i>See below</i> |
| 3. | Are calculations correct? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 4. | Is the reporting basis correct? (Dry Weight) | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 5. | All quality control criteria met? | <input checked="" type="radio"/> yes/ <input type="radio"/> no |
| 6. | Is the calibration curve correlation coefficient ≥ 0.995 ? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 7. | MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 8. | Are ICVs, CCVs, and CCBs all within acceptance limits? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 9. | Are results for methods blanks all ND? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 10. | Are all QC samples within acceptance criteria?
(LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 11. | Are all exceptions explained? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 12. | Have all applicable service requests been reviewed? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 13. | Are all samples labeled correctly? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 14. | Have all instructions on the service request been followed?
(e.g. Special MRLs, QC on a specific sample, Form V) | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 15. | Are detection limits and units reported correctly? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 16. | Is the unused space on the benchsheet crossed out? | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA |
| 17. | Was analysis turned in by the due date? (n-2) (If not record SR#) | <input checked="" type="radio"/> yes/ <input type="radio"/> no/NA <i>Late</i> |

COMMENTS:

K1800961 -> OK to analyze past hold time per PC/client.

Final Approved by: *[Signature]* Date: 03/15/18
 DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-04

Analyst: DBRADBURY

Analysis Lot: 582500

Method/Testcode: 9060/TOC

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	POL	% Rec	% RSD	Date Analyzed	QC? Tier
K1800961-001	Carbon, Total Organic (TOC)	N/A		Sediment	0.49 Percent	250.4 mg	0.49 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-002	Carbon, Total Organic (TOC)	N/A		Sediment	0.35 Percent	250.3 mg	0.35 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-003	Carbon, Total Organic (TOC)	N/A		Sediment	0.38 Percent	250.9 mg	0.38 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-004	Carbon, Total Organic (TOC)	N/A		Sediment	0.31 Percent	250.5 mg	0.31 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-005	Carbon, Total Organic (TOC)	N/A		Sediment	0.40 Percent	250.6 mg	0.40 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-006	Carbon, Total Organic (TOC)	N/A		Sediment	0.34 Percent	250.4 mg	0.34 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-007	Carbon, Total Organic (TOC)	N/A		Sediment	0.32 Percent	250.7 mg	0.32 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-008	Carbon, Total Organic (TOC)	N/A		Sediment	0.38 Percent	250.9 mg	0.38 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-009	Carbon, Total Organic (TOC)	N/A		Sediment	0.38 Percent	250.6 mg	0.38 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-010	Carbon, Total Organic (TOC)	N/A		Sediment	0.36 Percent	250.7 mg	0.36 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-011	Carbon, Total Organic (TOC)	N/A		Sediment	0.30 Percent	250.3 mg	0.30 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-012	Carbon, Total Organic (TOC)	N/A		Sediment	0.36 Percent	250.8 mg	0.36 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-013	Carbon, Total Organic (TOC)	N/A		Sediment	0.43 Percent	250.2 mg	0.43 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-014	Carbon, Total Organic (TOC)	N/A		Sediment	0.34 Percent	250.8 mg	0.34 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-015	Carbon, Total Organic (TOC)	N/A		Sediment	0.32 Percent	250.2 mg	0.32 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-016	Carbon, Total Organic (TOC)	N/A		Sediment	0.33 Percent	250.5 mg	0.33 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1800961-017	Carbon, Total Organic (TOC)	N/A		Sediment	0.29 Percent	250.5 mg	0.29 Percent	1	0.02	0.10			3/5/18 14:38:00	N II
K1801267-001	Carbon, Total Organic (TOC)	N/A		Sediment	4.15 Percent	250.3 mg	4.15 Percent	1	0.02	0.10			3/5/18 14:38:00	N IV
K1801267-009	Carbon, Total Organic (TOC)	N/A		Sediment	0.76 Percent	250.3 mg	0.76 Percent	1	0.02	0.10			3/5/18 14:38:00	N IV
K1801267-013	Carbon, Total Organic (TOC)	N/A		Sediment	2.37 Percent	250.2 mg	2.37 Percent	1	0.02	0.10			3/5/18 14:38:00	N IV
KQ1802868-01	Carbon, Total Organic (TOC)	DUP	K1800961-001	Sediment	0.49 Percent	250.1 mg	0.49 Percent	1	0.02	0.10		<1	3/5/18 14:38:00	N II
KQ1802868-02	Carbon, Total Organic (TOC)	MS	K1800961-001	Sediment	2.86 Percent	125.6 mg	2.86 Percent	1	0.02	0.10	98		3/5/18 14:38:00	N II
KQ1802868-03	Carbon, Total Organic (TOC)	DMS	K1800961-001	Sediment	2.83 Percent	125.6 mg	2.83 Percent	1	0.02	0.10	97		3/5/18 14:38:00	N II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

03/15/18
Fawcett

Analytical Results Summary

Instrument Name: K-TOC-04 Analysis: DBRADBURY Analysis Lot: 582500 Method/Testcode: 9060/TOC

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC? Tier
KQ1802868-04	Carbon, Total Organic (TOC)	DUP	K1800961-011	Sediment	0.31 Percent	250.6 mg	0.31 Percent	1	0.02	0.10		3	3/5/18 14:38:00	N II
KQ1802868-05	Carbon, Total Organic (TOC)	LCS		Sediment	0.59 Percent	250.5 mg	0.590 Percent	1	0.02	0.10	98		3/5/18 14:38:00	N IV
KQ1802868-06	Carbon, Total Organic (TOC)	MB		Sediment	0.01 Percent	250.0 mg	0.10 Percent U	1	0.02	0.10			3/5/18 14:38:00	N IV
KQ1802868-07	Carbon, Total Organic (TOC)	SRM		Sediment	3.00 Percent	100.8 mg	3.00 Percent	1	0.02	0.10	100		3/5/18 14:38:00	N IV
KQ1803250-01	Carbon, Total Organic (TOC)	CCV		Sediment	11.64 Percent	25.1 mg	11.6 Percent	1			97		3/5/18 14:38:00	N II
KQ1803250-02	Carbon, Total Organic (TOC)	CCV		Sediment	11.61 Percent	25.1 mg	11.6 Percent	1			97		3/5/18 14:38:00	N II
KQ1803250-03	Carbon, Total Organic (TOC)	CCV		Sediment	11.50 Percent	25.2 mg	11.5 Percent	1			96		3/5/18 14:38:00	N II
KQ1803250-04	Carbon, Total Organic (TOC)	CCV		Sediment	11.74 Percent	25.1 mg	11.7 Percent	1			98		3/5/18 14:38:00	N II
KQ1803250-05	Carbon, Total Organic (TOC)	CCB		Sediment	0.01 Percent	250.0 mg	0.10 Percent U	1	0.02	0.10			3/5/18 14:38:00	N II
KQ1803250-06	Carbon, Total Organic (TOC)	CCB		Sediment	0.01 Percent	250.0 mg	0.10 Percent U	1	0.02	0.10			3/5/18 14:38:00	N II
KQ1803250-07	Carbon, Total Organic (TOC)	CCB		Sediment	0.01 Percent	250.0 mg	0.10 Percent U	1	0.02	0.10			3/5/18 14:38:00	N II
KQ1803250-08	Carbon, Total Organic (TOC)	CCB		Sediment	0.01 Percent	250.0 mg	0.10 Percent U	1	0.02	0.10			3/5/18 14:38:00	N II

DAB 3/14/18

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

AnalysisGroup

AnalysisGroup: % TOC 2018 / EPA 9060M

Run # 582500

Created on: 2/7/2018 2:32:20 PM

Last modification: 3/5/2018 6:53:18 PM

State: solid

Analysis name	Result (average)	Sample quantity	Time of analysis
CCV	TC: 11.64%	25.100mg %REC=97	3/5/2018 2:38:03 PM
CCB	TC: 0.0064%	250.000mg	3/5/2018 2:44:59 PM
LCS	TC: 0.59%	250.500mg %REC=98	3/5/2018 2:50:39 PM
MB	TC: 0.0064%	250.000mg	3/5/2018 3:10:29 PM
SRM	TC: 3.00%	100.800mg %REC=100	3/5/2018 3:16:22 PM
K1800961-001	TC: 0.49%	250.400mg	3/5/2018 3:23:30 PM
K1800961-001d	TC: 0.49%	250.100mg	3/5/2018 3:30:16 PM
K1800961-001ms	TC: 2.86%	125.600mg	3/5/2018 3:37:07 PM
K1800961-001msd	TC: 2.83%	125.600mg	3/5/2018 3:44:07 PM
K1800961-002	TC: 0.35%	250.300mg	3/5/2018 3:51:40 PM
K1800961-003	TC: 0.38%	250.900mg	3/5/2018 3:58:26 PM
K1800961-004	TC: 0.31%	250.500mg	3/5/2018 4:05:07 PM
CCV	TC: 11.61%	25.100mg %REC=97	3/5/2018 4:12:47 PM
CCB	TC: 0.0064%	250.000mg	3/5/2018 4:19:44 PM
K1800961-005	TC: 0.40%	250.600mg	3/5/2018 4:25:24 PM
K1800961-006	TC: 0.34%	250.400mg	3/5/2018 4:32:57 PM
K1800961-007	TC: 0.32%	250.700mg	3/5/2018 4:39:45 PM
K1800961-008	TC: 0.38%	250.900mg	3/5/2018 4:46:26 PM
K1800961-009	TC: 0.38%	250.600mg	3/5/2018 4:53:13 PM
K1800961-010	TC: 0.36%	250.700mg	3/5/2018 5:00:04 PM
K1800961-011	TC: 0.30%	250.300mg	3/5/2018 5:06:52 PM
K1800961-011d	TC: 0.31%	250.600mg	3/5/2018 5:14:32 PM
K1800961-012	TC: 0.36%	250.800mg	3/5/2018 5:21:17 PM
K1800961-013	TC: 0.43%	250.200mg	3/5/2018 5:28:13 PM
CCV	TC: 11.50%	25.200mg %REC=96	3/5/2018 5:35:54 PM
CCB	TC: 0.0064%	250.000mg	3/5/2018 5:44:25 PM
K1800961-014	TC: 0.34%	250.800mg	3/5/2018 5:50:15 PM
K1800961-015	TC: 0.32%	250.200mg	3/5/2018 5:57:05 PM
K1800961-016	TC: 0.33%	250.500mg	3/5/2018 6:03:53 PM
K1800961-017	TC: 0.29%	250.500mg	3/5/2018 6:10:49 PM
K1801267-001	TC: 4.15%	250.300mg	3/5/2018 6:17:41 PM
K1801267-009	TC: 0.76%	250.300mg	3/5/2018 6:25:37 PM
K1801267-013	TC: 2.37%	250.200mg	3/5/2018 6:33:10 PM
CCV	TC: 11.74%	25.100mg %REC=98	3/5/2018 6:40:33 PM
CCB	TC: 0.0064%	250.000mg	3/5/2018 6:47:39 PM

03/15/18
[Handwritten signature]

DAB 3/5/18

Service Request: K1800961, K1801267

Method: EPA 9060

Date Weighed: 3/5/18

Analysis: Total Organic Carbon in Soil

Analyst: DAB

Prep Run / Run # 307791 / 582500

Sample Position	Sample ID	Weight (mg)
1	Clean	NA
2	CCV	25.1
3	CCB	250.0
4	LCS	250.5
5	MB	250.0
6	SRM	100.8
7	K1800961-001	250.4
8	K1800961-001d	250.1
9	K1800961-001ms	125.6
10	K1800961-001msd	125.6
11	K1800961-002	250.3
12	K1800961-003	250.9
13	K1800961-004	250.5
14	CCV	25.1
15	CCB	250.0
16	K1800961-005	250.6
17	K1800961-006	250.4
18	K1800961-007	250.7
19	K1800961-008	250.9
20	K1800961-009	250.6
21	K1800961-010	250.7
22	K1800961-011	250.3
23	K1800961-011d	250.6
24	K1800961-012	250.8

Sample Position	Sample ID	Weight (mg)
25	K1800961-013	250.2
26	CCV	25.2
27	CCB	250.0
28	K1800961-014	250.8
29	K1800961-015	250.2
30	K1800961-016	250.5
31	K1800961-017	250.5
32	K1801267-001	250.3
33	K1801267-009	250.3
34	K1801267-013	250.2
35	CCV	25.1
36	CCB	250.0
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		

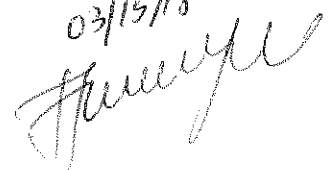
MS CaCO3 (mg)	K1800961-001ms	25.3
MSD CaCO3 (mg)	K1800961-001msd	25.2

Balance ID: K-BALANCE-38

HCL ID: TOC/2-82-G

Oven ID: K-OVEN-11

Thermometer ID: 96977

03/15/18


CCV: CaCO3, Alfa Aesar, ID: 13-TOC-01-1E, Lot # Y07D024, TV = 12.0%

LCS: Nutrients in Soil, ERA, ID: TOCS/1-17-H, Lot # D092-542, TV = 0.603%

SRM: Organics in Marine Sediment, ID: TOCs/1-17-I, Lot # 1941b, TV = 2.99%

% REC = 97, 97, 96, 98

% REC = 98

% REC = 100

Work Request # K1802076, 1755, 1735, 2025, 1917, 2038, 2006, 1267
 Tier: II II II II IV IV II IV
 Date Analyzed: 3/7/18
 Analyst: CES Run # TOC/DOC
 Analysis: TOC/DOC 582867
582868

**DATA QUALITY REPORT
INORGANICS**

Explain any "no" responses to questions below, and any corrective actions in the comments section below.

1. Is the method name and number correct and appropriate? yes/no/NA
2. Holding times met for all analyses and for all samples? yes/no/NA
3. Are calculations correct? yes/no/NA
4. Is the reporting basis correct? (Dry Weight) yes/no/NA
5. All quality control criteria met? yes/ no
6. Is the calibration curve correlation coefficient ≥ 0.995 ? yes/no/NA
7. MBs, CCVs, CCBs, LCSs, Dups, and Spikes, analyzed at proper frequency? yes/no/NA
8. Are ICVs, CCVs, and CCBs all within acceptance limits? yes/no/NA
9. Are results for methods blanks all ND? yes/no/NA
10. Are all QC samples within acceptance criteria? (LCS % rec, MS/DMS % rec, DUP or MS/DMS RPDs, etc.) yes/ no/NA
11. Are all exceptions explained? yes/no/NA
12. Have all applicable service requests been reviewed? yes/no/NA
13. Are all samples labeled correctly? yes/no/NA
14. Have all instructions on the service request been followed? (e.g. Special MRLs, QC on a specific sample, Form V) yes/no/NA
15. Are detection limits and units reported correctly? yes/no/NA
16. Is the unused space on the benchsheet crossed out? yes/no/NA
17. Was analysis turned in by the due date? (n-2) (If not record SR#) yes/no/NA

COMMENTS:

1267-17 MS % R not within acceptance limits
 - pore water samples.

RA 2006-2 DOC - carry over.

Final Approved by: Humpy Date: 03/13/18
DQREPORT

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: CSETHE

Analysis Lot:

582867

Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC? Tier
K1801735-001	Carbon, Total Organic	N/A		Water	2.47 mg/L	10 ml	123 mg/L	50	4	25			3/8/18 04:49	N II
K1801755-008	Carbon, Total Organic	N/A		Water	0.05 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 04:17	N II
K1801917-001	Carbon, Total Organic	N/A		Water	1.51 mg/L	10 ml	1.51 mg/L	1	0.07	0.50			3/8/18 07:28	N IV
K1801917-002	Carbon, Total Organic	N/A		Water	2.46 mg/L	10 ml	2.46 mg/L	1	0.07	0.50			3/8/18 10:25	N IV
K1801917-003	Carbon, Total Organic	N/A		Water	1.97 mg/L	10 ml	1.97 mg/L	1	0.07	0.50			3/8/18 11:28	N IV
K1801917-004	Carbon, Total Organic	N/A		Water	1.55 mg/L	10 ml	1.55 mg/L	1	0.07	0.50			3/8/18 12:31	N IV
K1801917-005	Carbon, Total Organic	N/A		Water	0.77 mg/L	10 ml	0.77 mg/L	1	0.07	0.50			3/8/18 13:34	N IV
K1801917-006	Carbon, Total Organic	N/A		Water	1.40 mg/L	10 ml	1.40 mg/L	1	0.07	0.50			3/8/18 14:37	N IV
K1801917-007	Carbon, Total Organic	N/A		Water	1.48 mg/L	10 ml	1.48 mg/L	1	0.07	0.50			3/8/18 15:39	N IV
K1802025-001	Carbon, Total Organic	N/A		Water	1.18 mg/L	10 ml	1.18 mg/L	1	0.07	0.50			3/8/18 05:37	N II
K1802025-002	Carbon, Total Organic	N/A		Water	1.45 mg/L	10 ml	1.45 mg/L	1	0.07	0.50			3/8/18 06:25	N II
K1802025-003	Carbon, Total Organic	N/A		Water	1.97 mg/L	10 ml	1.97 mg/L	1	0.07	0.50			3/8/18 06:57	N II
K1802038-001	Carbon, Total Organic	N/A		Water	4.76 mg/L	10 ml	4.76 mg/L	1	0.07	0.50			3/8/18 17:14	N IV
K1802076-001	Carbon, Total Organic	N/A		Water	5.90 mg/L	10 ml	118 mg/L	20	2	10			3/8/18 01:53	N II
K1802076-002	Carbon, Total Organic	N/A		Water	2.48 mg/L	10 ml	50 mg/L	20	2	10			3/8/18 03:12	N II
K1802986-01	Carbon, Total Organic	MS	K1802076-001	Water	31.62 mg/L	10 ml	632 mg/L	20	2	10	103		3/8/18 02:24	N II
K1802986-02	Carbon, Total Organic	DUP	K1802076-001	Water	5.61 mg/L	10 ml	112 mg/L	20	2	10		5	3/8/18 01:53	N II
K1802986-03	Carbon, Total Organic	DUP	K1802076-002	Water	2.33 mg/L	10 ml	47 mg/L	20	2	10		6	3/8/18 03:12	N II
K1802986-04	Carbon, Total Organic	DUP	K1801755-008	Water	0.06 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 04:17	N II
K1802986-05	Carbon, Total Organic	MS	K1801755-001	Water	28.75 mg/L	10 ml	1440 mg/L	50	4	25	105		3/8/18 05:21	N II
K1802986-06	Carbon, Total Organic	DUP	K1801755-001	Water	2.27 mg/L	10 ml	114 mg/L	50	4	25		8	3/8/18 04:49	N II
K1802986-07	Carbon, Total Organic	MS	K1802025-001	Water	26.58 mg/L	10 ml	26.6 mg/L	1	0.07	0.50	102		3/8/18 06:09	N II
K1802986-08	Carbon, Total Organic	DUP	K1802025-001	Water	0.98 mg/L	10 ml	0.98 mg/L	1	0.07	0.50		19	3/8/18 05:37	N II
K1802986-09	Carbon, Total Organic	DUP	K1802025-002	Water	1.20 mg/L	10 ml	1.20 mg/L	1	0.07	0.50		19	3/8/18 06:25	N II
K1802986-10	Carbon, Total Organic	DUP	K1802025-003	Water	1.90 mg/L	10 ml	1.90 mg/L	1	0.07	0.50		4	3/8/18 06:57	N II
K1802986-11	Carbon, Total Organic	MS	K1801917-001	Water	27.29 mg/L	10 ml	27.3 mg/L	1	0.07	0.50	103		3/8/18 08:31	N IV
K1802986-12	Carbon, Total Organic	DUP	K1801917-001	Water	1.43 mg/L	10 ml	1.43 mg/L	1	0.07	0.50		5	3/8/18 07:28	N IV
K1802986-13	Carbon, Total Organic	TRP	K1801917-001	Water	1.36 mg/L	10 ml	1.36 mg/L	1	0.07	0.50		5	3/8/18 07:28	N IV
K1802986-14	Carbon, Total Organic	QUAD	K1801917-001	Water	1.34 mg/L	10 ml	1.34 mg/L	1	0.07	0.50		6	3/8/18 07:28	N IV
K1802986-15	Carbon, Total Organic	DUP	K1801917-002	Water	2.25 mg/L	10 ml	2.25 mg/L	1	0.07	0.50		9	3/8/18 10:25	N IV
K1802986-16	Carbon, Total Organic	TRP	K1801917-002	Water	2.27 mg/L	10 ml	2.27 mg/L	1	0.07	0.50		5	3/8/18 10:25	N IV
K1802986-17	Carbon, Total Organic	QUAD	K1801917-002	Water	2.21 mg/L	10 ml	2.21 mg/L	1	0.07	0.50		5	3/8/18 10:25	N IV
K1802986-18	Carbon, Total Organic	DUP	K1801917-003	Water	1.91 mg/L	10 ml	1.91 mg/L	1	0.07	0.50		3	3/8/18 11:28	N IV
K1802986-19	Carbon, Total Organic	TRP	K1801917-003	Water	1.88 mg/L	10 ml	1.88 mg/L	1	0.07	0.50		2	3/8/18 11:28	N IV
K1802986-20	Carbon, Total Organic	QUAD	K1801917-003	Water	1.77 mg/L	10 ml	1.77 mg/L	1	0.07	0.50		4	3/8/18 11:28	N IV
K1802986-21	Carbon, Total Organic	DUP	K1801917-004	Water	1.49 mg/L	10 ml	1.49 mg/L	1	0.07	0.50		4	3/8/18 12:31	N IV

Indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Printed 3/12/18 16:07

Results Summary

*03/12/18
The Group*

CES 3/12/18

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: CSETHE

Analysis Lot:

582867

Method/Testcode: 9060/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC? Tier
KQ1802986-22	Carbon, Total Organic	TRP	K1801917-004	Water	1.57 mg/L	10 ml	1.57 mg/L	1	0.07	0.50	102	1	3/8/18 12:31	N IV
KQ1802986-23	Carbon, Total Organic	QUAD	K1801917-004	Water	1.54 mg/L	10 ml	1.54 mg/L	1	0.07	0.50	102	2	3/8/18 12:31	N IV
KQ1802986-24	Carbon, Total Organic	DUP	K1801917-005	Water	0.74 mg/L	10 ml	0.74 mg/L	1	0.07	0.50	102	4	3/8/18 13:34	N IV
KQ1802986-25	Carbon, Total Organic	TRP	K1801917-005	Water	0.70 mg/L	10 ml	0.70 mg/L	1	0.07	0.50	102	5	3/8/18 13:34	N IV
KQ1802986-26	Carbon, Total Organic	QUAD	K1801917-005	Water	0.75 mg/L	10 ml	0.75 mg/L	1	0.07	0.50	102	4	3/8/18 13:34	N IV
KQ1802986-27	Carbon, Total Organic	DUP	K1801917-006	Water	1.30 mg/L	10 ml	1.30 mg/L	1	0.07	0.50	103	7	3/8/18 14:37	N IV
KQ1802986-28	Carbon, Total Organic	TRP	K1801917-006	Water	1.40 mg/L	10 ml	1.40 mg/L	1	0.07	0.50	102	4	3/8/18 14:37	N IV
KQ1802986-29	Carbon, Total Organic	QUAD	K1801917-006	Water	1.34 mg/L	10 ml	1.34 mg/L	1	0.07	0.50	102	4	3/8/18 14:37	N IV
KQ1802986-30	Carbon, Total Organic	DUP	K1801917-007	Water	1.46 mg/L	10 ml	1.46 mg/L	1	0.07	0.50	102	1	3/8/18 15:39	N IV
KQ1802986-31	Carbon, Total Organic	TRP	K1801917-007	Water	1.44 mg/L	10 ml	1.44 mg/L	1	0.07	0.50	102	1	3/8/18 15:39	N IV
KQ1802986-32	Carbon, Total Organic	QUAD	K1801917-007	Water	1.37 mg/L	10 ml	1.37 mg/L	1	0.07	0.50	102	3	3/8/18 15:39	N IV
KQ1802986-33	Carbon, Total Organic	MS	K1802038-001	Water	30.58 mg/L	10 ml	30.6 mg/L	1	0.07	0.50	103		3/8/18 18:19	N IV
KQ1802986-34	Carbon, Total Organic	DUP	K1802038-001	Water	4.72 mg/L	10 ml	4.72 mg/L	1	0.07	0.50	102	<1	3/8/18 17:14	N IV
KQ1802986-35	Carbon, Total Organic	MB		Water	-0.01 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:30	N II
KQ1802986-35	Carbon, Total Organic	MB		Water	-0.01 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:30	N II
KQ1802986-35	Carbon, Total Organic	MB		Water	-0.01 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:30	N II
KQ1802986-35	Carbon, Total Organic	MB		Water	-0.01 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:30	N II
KQ1802986-36	Carbon, Total Organic	LCS		Water	24.37 mg/L	10 ml	24.4 mg/L	1	0.07	0.50	102		3/8/18 00:47	N II
KQ1802986-36	Carbon, Total Organic	LCS		Water	24.37 mg/L	10 ml	24.4 mg/L	1	0.07	0.50	102		3/8/18 00:47	N II
KQ1802986-36	Carbon, Total Organic	LCS		Water	24.37 mg/L	10 ml	24.4 mg/L	1	0.07	0.50	102		3/8/18 00:47	N II
KQ1802986-37	Carbon, Total Organic	LCS		Water	24.37 mg/L	10 ml	24.4 mg/L	1	0.07	0.50	102		3/8/18 00:47	N II
KQ1802986-37	Carbon, Total Organic	CCV		Water	25.35 mg/L	10 ml	25.3 mg/L	1			102		3/7/18 23:57	N II
KQ1802986-37	Carbon, Total Organic	CCV		Water	25.35 mg/L	10 ml	25.3 mg/L	1			102		3/7/18 23:57	N II
KQ1802986-37	Carbon, Total Organic	CCV		Water	25.35 mg/L	10 ml	25.3 mg/L	1			102		3/7/18 23:57	N II
KQ1802986-37	Carbon, Total Organic	CCV		Water	25.35 mg/L	10 ml	25.3 mg/L	1			102		3/7/18 23:57	N II
KQ1802986-37	Carbon, Total Organic	CCV		Water	25.35 mg/L	10 ml	25.3 mg/L	1			102		3/7/18 23:57	N II
KQ1802986-38	Carbon, Total Organic	CCV		Water	25.75 mg/L	10 ml	25.7 mg/L	1			102		3/8/18 03:44	N II
KQ1802986-38	Carbon, Total Organic	CCV		Water	25.75 mg/L	10 ml	25.7 mg/L	1			102		3/8/18 03:44	N II
KQ1802986-38	Carbon, Total Organic	CCV		Water	25.75 mg/L	10 ml	25.7 mg/L	1			102		3/8/18 03:44	N II
KQ1802986-38	Carbon, Total Organic	CCV		Water	25.75 mg/L	10 ml	25.7 mg/L	1			102		3/8/18 03:44	N II
KQ1802986-38	Carbon, Total Organic	CCV		Water	25.75 mg/L	10 ml	25.7 mg/L	1			102		3/8/18 03:44	N II
KQ1802986-39	Carbon, Total Organic	CCV		Water	25.55 mg/L	10 ml	25.5 mg/L	1			102		3/8/18 09:19	N II
KQ1802986-39	Carbon, Total Organic	CCV		Water	25.55 mg/L	10 ml	25.5 mg/L	1			102		3/8/18 09:19	N II
KQ1802986-39	Carbon, Total Organic	CCV		Water	25.55 mg/L	10 ml	25.5 mg/L	1			102		3/8/18 09:19	N II
KQ1802986-39	Carbon, Total Organic	CCV		Water	25.55 mg/L	10 ml	25.5 mg/L	1			102		3/8/18 09:19	N II
KQ1802986-39	Carbon, Total Organic	CCV		Water	25.55 mg/L	10 ml	25.5 mg/L	1			102		3/8/18 09:19	N II
KQ1802986-40	Carbon, Total Organic	CCV		Water	25.24 mg/L	10 ml	25.2 mg/L	1			102		3/8/18 17:46	N II
KQ1802986-40	Carbon, Total Organic	CCV		Water	25.24 mg/L	10 ml	25.2 mg/L	1			102		3/8/18 17:46	N II
KQ1802986-40	Carbon, Total Organic	CCV		Water	25.24 mg/L	10 ml	25.2 mg/L	1			102		3/8/18 17:46	N II
KQ1802986-40	Carbon, Total Organic	CCV		Water	25.24 mg/L	10 ml	25.2 mg/L	1			102		3/8/18 17:46	N II
KQ1802986-40	Carbon, Total Organic	CCV		Water	25.24 mg/L	10 ml	25.2 mg/L	1			102		3/8/18 17:46	N II
KQ1802986-41	Carbon, Total Organic	CCV		Water	25.59 mg/L	10 ml	25.6 mg/L	1			102		3/9/18 00:08	N II
KQ1802986-41	Carbon, Total Organic	CCV		Water	25.59 mg/L	10 ml	25.6 mg/L	1			102		3/9/18 00:08	N II
KQ1802986-41	Carbon, Total Organic	CCV		Water	25.59 mg/L	10 ml	25.6 mg/L	1			102		3/9/18 00:08	N II
KQ1802986-41	Carbon, Total Organic	CCV		Water	25.59 mg/L	10 ml	25.6 mg/L	1			102		3/9/18 00:08	N II
KQ1802986-41	Carbon, Total Organic	CCV		Water	25.59 mg/L	10 ml	25.6 mg/L	1			102		3/9/18 00:08	N II
KQ1802986-42	Carbon, Total Organic	CCB		Water	-0.10 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:14	N II
KQ1802986-42	Carbon, Total Organic	CCB		Water	-0.10 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:14	N II
KQ1802986-42	Carbon, Total Organic	CCB		Water	-0.10 mg/L	10 ml	0.50 mg/L	U	1	0.07	0.50		3/8/18 00:14	N II

U indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: CSETHE

Analysis Lot: 582867

Method/Testcode: SM 5310 C/TOC T

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC? Tier
KQ1802986-42	Carbon, Total Organic	CCB		Water	-0.10 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 00:14	N II
KQ1802986-43	Carbon, Total Organic	CCB		Water	0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 04:00	N II
KQ1802986-43	Carbon, Total Organic	CCB		Water	0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 04:00	N II
KQ1802986-43	Carbon, Total Organic	CCB		Water	0.03 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 04:00	N II
KQ1802986-44	Carbon, Total Organic	CCB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 09:36	N II
KQ1802986-44	Carbon, Total Organic	CCB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 09:36	N II
KQ1802986-44	Carbon, Total Organic	CCB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 09:36	N II
KQ1802986-44	Carbon, Total Organic	CCB		Water	-0.01 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 09:36	N II
KQ1802986-45	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 18:02	N II
KQ1802986-45	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 18:02	N II
KQ1802986-45	Carbon, Total Organic	CCB		Water	-0.02 mg/L	10 ml	0.50 mg/L U	1	0.07	0.50			3/8/18 18:02	N II
KQ1802986-46	Carbon, Total Organic	CCB		Water	0.24 mg/L	10 ml	0.24 mg/L J	1	0.07	0.50			3/9/18 00:24	N II
KQ1802986-46	Carbon, Total Organic	CCB		Water	0.24 mg/L	10 ml	0.24 mg/L J	1	0.07	0.50			3/9/18 00:24	N II
KQ1802986-46	Carbon, Total Organic	CCB		Water	0.24 mg/L	10 ml	0.24 mg/L J	1	0.07	0.50			3/9/18 00:24	N II
KQ1802986-47	Carbon, Total Organic	LODV		Water	0.17 mg/L	10 ml	0.17 mg/L J	1	0.07	0.50			3/8/18 01:20	N II
KQ1802986-47	Carbon, Total Organic	LODV		Water	0.17 mg/L	10 ml	0.17 mg/L J	1	0.07	0.50			3/8/18 01:20	N II
KQ1802986-48	Carbon, Total Organic	LOQV		Water	0.47 mg/L	10 ml	0.47 mg/L J	1	0.07	0.50			3/8/18 01:36	N II
KQ1802986-48	Carbon, Total Organic	LOQV		Water	0.47 mg/L	10 ml	0.47 mg/L J	1	0.07	0.50			3/8/18 01:36	N II

† indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Analytical Results Summary

Instrument Name: K-TOC-03

Analyst: CSETHE

Analysis Lot:

582868

Method/Testcode: 9060/TOC D

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC? Tier
K1801267-008	Carbon, Dissolved Organic N/A (DOC)			Water	5.47 mg/L	10 ml	5.47 mg/L	1	0.07	0.50			3/8/18 21:30	N IV
K1801267-017	Carbon, Dissolved Organic N/A (DOC)			Water	7.85 mg/L	10 ml	7.85 mg/L	1	0.07	0.50			3/8/18 22:33	N IV
K1802006-001	Carbon, Dissolved Organic N/A (DOC)			Water	14.96 mg/L	10 ml	59.8 mg/L	4	0.3	2.0			3/8/18 19:39	N II
K1802006-002	Carbon, Dissolved Organic N/A (DOC)			Water	1.71 mg/L	10 ml	1.71 mg/L	1	0.07	0.50			3/8/18 20:42	N II
KQ1802987-01	Carbon, Dissolved Organic DUP (DOC)		K1802006-001	Water	15.21 mg/L	10 ml	60.9 mg/L	4	0.3	2.0			3/8/18 19:39	N II
KQ1802987-02	Carbon, Dissolved Organic MS (DOC)		K1802006-002	Water	27.21 mg/L	10 ml	27.2 mg/L	1	0.07	0.50	102		3/8/18 21:14	N II
KQ1802987-03	Carbon, Dissolved Organic DUP (DOC)		K1802006-002	Water	1.49 mg/L	10 ml	1.49 mg/L	1	0.07	0.50		14*	3/8/18 20:42	N II
KQ1802987-04	Carbon, Dissolved Organic MB (DOC)			Water	1.360000000000003E-006	10 ml	0.50 mg/L	1	0.07	0.50			3/8/18 09:52	N II
KQ1802987-05	Carbon, Dissolved Organic LCS (DOC)			Water	24.27 mg/L	10 ml	24.3 mg/L	1	0.07	0.50	101		3/8/18 10:09	N II
KQ1802987-06	Carbon, Dissolved Organic CCV (DOC)			Water	25.55 mg/L	10 ml	25.5 mg/L	1	0.07	0.50	102		3/8/18 09:19	N II
KQ1802987-07	Carbon, Dissolved Organic CCV (DOC)			Water	25.24 mg/L	10 ml	25.2 mg/L	1	0.07	0.50	101		3/8/18 17:46	N II
KQ1802987-08	Carbon, Dissolved Organic CCV (DOC)			Water	25.59 mg/L	10 ml	25.6 mg/L	1	0.07	0.50	102		3/9/18 00:08	N II
KQ1802987-09	Carbon, Dissolved Organic CCB (DOC)			Water	-0.01 mg/L	10 ml	0.50 mg/L	1	0.07	0.50			3/8/18 09:36	N II
KQ1802987-10	Carbon, Dissolved Organic CCB (DOC)			Water	-0.02 mg/L	10 ml	0.50 mg/L	1	0.07	0.50			3/8/18 18:02	N II
KQ1802987-11	Carbon, Dissolved Organic CCB (DOC)			Water	0.24 mg/L	10 ml	0.24 mg/L	1	0.07	0.50			3/9/18 00:24	N II
KQ1802987-12	Carbon, Dissolved Organic DUP (DOC)		K1801267-008	Water	5.35 mg/L	10 ml	5.35 mg/L	1	0.07	0.50			3/8/18 21:30	N IV
KQ1802987-13	Carbon, Dissolved Organic TRP (DOC)		K1801267-008	Water	5.57 mg/L	10 ml	5.57 mg/L	1	0.07	0.50			3/8/18 21:30	N IV
KQ1802987-14	Carbon, Dissolved Organic QUAD (DOC)		K1801267-008	Water	5.55 mg/L	10 ml	5.55 mg/L	1	0.07	0.50			3/8/18 21:30	N IV
KQ1802987-15	Carbon, Dissolved Organic MS (DOC)		K1801267-017	Water	22.40 mg/L	10 ml	22.4 mg/L	1	0.07	0.50	58*		3/9/18 00:40	N IV
KQ1802987-16	Carbon, Dissolved Organic DUP (DOC)		K1801267-017	Water	7.88 mg/L	10 ml	7.88 mg/L	1	0.07	0.50			3/8/18 22:33	N IV
KQ1802987-17	Carbon, Dissolved Organic TRP (DOC)		K1801267-017	Water	7.83 mg/L	10 ml	7.83 mg/L	1	0.07	0.50			3/8/18 22:33	N IV
KQ1802987-18	Carbon, Dissolved Organic QUAD (DOC)		K1801267-017	Water	7.55 mg/L	10 ml	7.55 mg/L	1	0.07	0.50			3/8/18 22:33	N IV
KQ1802987-19	Carbon, Dissolved Organic CCV (DOC)			Water	25.29 mg/L	10 ml	25.3 mg/L	1	0.07	0.50			3/9/18 01:29	N II

* indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

03/13/18
For Review

CS/3/12/18

Analytical Results Summary

Instrument Name:	K-TOC-03	Analyst:	CSETHE	Analysis Lot:	582868	Method/Testcode:	SM 5310 C/TOC D								
Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC?	Tier
KQ1802987-19	Carbon, Dissolved Organic (DOC)	CCV		Water	25.29 mg/L	10 ml	25.3 mg/L	1			101		3/9/18 01:29	N	II
KQ1802987-20	Carbon, Dissolved Organic (DOC)	CCB		Water	0.20 mg/L	10 ml	0.19 mg/L	1	0.07	0.50			3/9/18 01:45	N	II
KQ1802987-20	Carbon, Dissolved Organic (DOC)	CCB		Water	0.20 mg/L	10 ml	0.19 mg/L	1	0.07	0.50			3/9/18 01:45	N	II

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

TOC: 582867
 DOC: 582868

Schedule: 03072018B

Version: 6

Instrument: Fusion1

Last Saved by: Fusion1 (Fusion1)

Last Saved on: 2018/03/08 22:39 - Thursday

03/13/18
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Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps
(Clean)	Clean	Clean		1
(Clean)	Clean	Clean		1
(Clean)	Clean	Clean		1
(Blank)	Blank	Reagent/Acid Blank		1
D	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	1
B	Check Standard	[TOC] CCV 021711 [25 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
1	Sample	MB1	Extended Reaction 021711 (Extended Reaction 021711)	1
2	Check Standard	[TOC] LCS ER [24.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
3	Sample	IGS	Extended Reaction 021711 (Extended Reaction 021711)	1
4	Sample	LOD	Extended Reaction 021711 (Extended Reaction 021711)	1
5	Sample	LOQ	Extended Reaction 021711 (Extended Reaction 021711)	1
6	Sample	K1802076-001.01 20x	Extended Reaction 021711 (Extended Reaction 021711)	2
7	Sample	K1802076-001.01 ms 20x	Extended Reaction 021711 (Extended Reaction 021711)	1
8	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
9	Sample	K1802076-002.01 20x	Extended Reaction 021711 (Extended Reaction 021711)	2
B	Check Standard	[TOC] CCV 021711 [25 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
10	Sample	K1801755-008.05	Extended Reaction 021711 (Extended Reaction 021711)	2
11	Sample	K1801735-001.02 50x	Extended Reaction 021711 (Extended Reaction 021711)	2
12	Sample	K1801735-001.02 ms 50x	Extended Reaction 021711 (Extended Reaction 021711)	1
13	Sample	K1802025-001.03	Extended Reaction 021711 (Extended Reaction 021711)	2
14	Sample	K1802025-001.03 ms	Extended Reaction 021711 (Extended Reaction 021711)	1
15	Sample	K1802025-002.03	Extended Reaction 021711 (Extended Reaction 021711)	2
16	Sample	K1802025-003.04	Extended Reaction 021711 (Extended Reaction 021711)	2
17	Sample	K1801917-001.13	Extended Reaction 021711 (Extended Reaction 021711)	4
18	Sample	K1801917-001.13 ms	Extended Reaction 021711 (Extended Reaction 021711)	1
19	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
B	Check Standard	[TOC] CCV 021711 [25 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
20	Sample	MB2	Extended Reaction 021711 (Extended Reaction 021711)	1
2	Check Standard	[TOC] LCS ER [24.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
21	Sample	K1801917-002.13	Extended Reaction 021711 (Extended Reaction 021711)	4
22	Sample	K1801917-003.13	Extended Reaction 021711 (Extended Reaction 021711)	4
23	Sample	K1801917-004.13	Extended Reaction 021711 (Extended Reaction 021711)	4
24	Sample	K1801917-005.13	Extended Reaction 021711 (Extended Reaction 021711)	4
25	Sample	K1801917-006.13	Extended Reaction 021711 (Extended Reaction 021711)	4
26	Sample	K1801917-007.13	Extended Reaction 021711 (Extended Reaction 021711)	4
27	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
28	Sample	K1802038-001.02	Extended Reaction 021711 (Extended Reaction 021711)	2
B	Check Standard	[TOC] CCV 021711 [25 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
29	Sample	K1802038-001.02 ms	Extended Reaction 021711 (Extended Reaction 021711)	1
30	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
31	Sample	FB 3/5/18	Extended Reaction 021711 (Extended Reaction 021711)	2
32	Sample	K1802006-001 doc 4x	Extended Reaction 021711 (Extended Reaction 021711)	2
33	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
34	Sample	K1802006-002 doc	Extended Reaction 021711 (Extended Reaction 021711)	2
35	Sample	K1802006-002 ms doc	Extended Reaction 021711 (Extended Reaction 021711)	1
36	Sample	K1801267-008.10 doc	Extended Reaction 021711 (Extended Reaction 021711)	4
37	Sample	K1801267-017.04 doc	Extended Reaction 021711 (Extended Reaction 021711)	4
38	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
B	Check Standard	[TOC] CCV 021711 [25 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1

Printed on: March 12, 2018 14:44:43

Page 1

Schedule: 03072018B

Position	Sample Type	Sample ID	Method ID (Calibration ID)	Reps
39	Sample	K1801267-017.04 ms doc	Extended Reaction 021711 (Extended Reaction 021711)	1
40	Sample	RB	Extended Reaction 021711 (Extended Reaction 021711)	2
B	Check Standard	[TOC] CCV 021711 [25 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1
D	Check Standard	[TOC] CCB 021711 [0.0 ppm]	Extended Reaction 021711 (Extended Reaction 021711)	1

0.418				OBSERVATIONS	8	BELOW
0.508	0.508	0.508	0.508	STD Deviation	0.11313	0.5077
0.540	0.540	0.540	0.540	AVERAGE	0.55528	0.5395
0.507	0.507	0.507	0.507	UCL	0.66841	0.507
0.515	0.515	0.515	0.515	LCL	0.44214	0.5147
0.498	0.498	0.498	0.498			0.4978
0.749						ABOVE
0.708				OBSERVATIONS	5	ABOVE
				STD Deviation	0.17225	BELOW
				AVERAGE	0.51334	BELOW
				UCL	0.68559	BELOW
				LCL	0.34109	BELOW
						BELOW
				OBSERVATIONS	5	BELOW
				STD Deviation	0.17225	BELOW
				AVERAGE	0.51334	BELOW
				UCL	0.68559	BELOW
				LCL	0.34109	BELOW
						BELOW
				OBSERVATIONS	5	BELOW
				STD Deviation	0.01767	BELOW
				AVERAGE	0.51334	BELOW
						BELOW
						BELOW
						BELOW
						BELOW
						BELOW
						BELOW

03/13/18
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ICAL Date 7/24/17

ICAL ID: 11-GEN-05-59A

LCS = 24.0 ppm APG 4013 Lot: 010615 (Ref: 11-GEN-05-63J)

CCV = 25.0 ppm (Ref: 11-GEN-05-64C)

Spike: 0.05 ml of 5000 ppm stock ----> 10.0 ml = 25.0 ppm x Dilution Factor (Ref: 11-GEN-05-63C)

ICS TV = 25.0 ppm %Rec=4

ICS ID: 11-GEN-05-63E

Date: 3/7/18

Fusion Report - 03072018B

Wednesday, March 07, 2018 10:15 PM

(View - Repts, Unused Repts, Meta-Data, Signature, History)
 Printed on 2018/03/12 14:45 - Monday

Report Summary Information

Company Location: Gen Chem Lab
 Schedule Name: 03072018B
 Instrument Name: Fusion1
 Report Version: 1 of 1
 Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v1)
 Fusion1 (Fusion1) (v3)
 Fusion1 (Fusion1) (v5)
 Fusion1 (Fusion1) (v6)
 Comment:

Engine Version: 1.1.5.1
 Firmware Version: 1.2.0696
 Connection: RS232 COM1

Report Results

03/13/18
Healy

Sample Type: Clean From Schedule Version 1

Pos	Analysis Type	Sample ID	Start Time
◆ (clean)		Clean	2018/03/07 22:15

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	11.54	16.85	5.31	46.85	08:00
2	TC Clean	5.86	8.38	2.53	49.42	07:17
3	TC Clean	2.57	5.08	2.51	49.48	07:00
4	TC Clean	1.94	4.64	2.71	49.56	07:04

Sample Type: Blank (Creating v1092) From Schedule Version 1

Pos	Analysis Type	Sample ID	Start Time
◆ (blank)		Reagent/Acid Blank	2018/03/07 22:49

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.82	3.46	2.63	46.64	08:00
2	TC Clean	3.74	6.36	2.62	49.54	07:17
3	TC Clean	2.50	5.17	2.67	49.53	07:02

4	TC Clean	2.55	5.38	2.83	49.49	07:03
5	Reagent Blank	6.26	8.90	2.64	49.48	08:13
6	Acid Blank	1.72	4.08	2.36	46.40	08:01

Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
D	TOC	RB	0.8035 ppm	0.0000 ppm	0.0000%	2018/03/07 23:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8035	8.0345	17.33	20.12	2.79	49.55	12:29

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 11.4746 (IC) (v1092)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Sample Type: Check Standard --> CCV 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.8631 ppm (PASS)	0.0000 ppm	0%	2018/03/07 23:57

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8631	258.6309	200.64	203.22	2.58	49.55	12:28

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos B</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	50 ppmC

Sample Type: Check Standard --> CCB 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.4181 ppm (PASS)	0.0000 ppm	0%	2018/03/08 00:14

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.4181	4.1807	15.33	17.98	2.65	49.51	12:31

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	0 ppmC

Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
1	TOC	MB1	0.5077 ppm	0.0000 ppm	0.0000%	2018/03/08 00:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5077	5.0768	15.17	17.75	2.58	49.52	12:33

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 11.4746 (IC) (v1092)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Sample Type: Check Standard --> LCS ER From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
2	TOC	24.0000	1:1	[TOC] LCS ER [24.0 ppm]	0 / infinity (NA / NA)	24.8859 ppm (PASS)	0.0000 ppm	0%	2018/03/08 00:47

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
2	TOC	24.0 ppm	1	24.8859	248.8586	193.52	196.11	2.58	49.50	12:31

<u>Completion State</u>	<u>Success Action</u>	<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos 2</u>
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	24 ppmC

Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
3	TOC	ICS	1.0004 ppm	0.0000 ppm	0.0000%	2018/03/08 01:03

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.0004	10.0035	18.76	21.44	2.68	49.49	12:29

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 11.4746 (IC) (v1092)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
4	TOC	LOD	0.6871 ppm	0.0000 ppm	0.0000%	2018/03/08 01:20

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6871	6.8715	16.48	19.09	2.61	49.51	12:31

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 11.4746 (IC) (v1092)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
5	TOC	LOQ	0.9785 ppm	0.0000 ppm	0.0000%	2018/03/08 01:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.9785	9.7852	18.60	21.43	2.83	49.49	12:31

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
6	TOC	K1802076-001.01 20x	6.2680 ppm	0.2011 ppm	3.2100%	2018/03/08 01:53

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	6.4102	64.1022	58.16	60.67	2.51	49.50	12:25
2	TOC	6.1259	61.2585	56.09	58.82	2.73	49.51	12:25

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
7	TOC	K1802076-001.01 ms 20x	32.1338 ppm	0.0000 ppm	0.0000%	2018/03/08 02:24

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	32.1338	321.3385	245.50	248.09	2.59	49.48	12:34

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
8	TOC	RB	0.6212 ppm	0.1206 ppm	19.4100%	2018/03/08 02:41

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.7065	7.0651	16.62	19.29	2.67	49.46	12:24
2	TOC	0.5360	5.3597	15.38	18.13	2.75	49.46	12:26

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
9	TOC	K1802076-002.01 20x	2.9201 ppm	0.1087 ppm	3.7200%	2018/03/08 03:12

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9970	29.9697	33.30	35.94	2.64	49.48	12:25
2	TOC	2.8432	28.4319	32.18	34.96	2.78	49.45	12:23

<u>Dilution</u> 1:10	<u>Blank Contribution</u> (TC) 11.4746 (IC) (v1092)	<u>Method</u> Extended Reaction 021711 (v3)	<u>Calibration</u> Extended Reaction 021711 (v16)
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Sample Type: Check Standard --> CCV 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	26.2584 ppm (PASS)	0.0000 ppm	0%	2018/03/08 03:44

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.2584	262.5841	203.52	206.19	2.67	49.48	12:28

<u>Completion State</u> Success - Criteria met.	<u>Success Action</u> Do Nothing	<u>Method</u> Extended Reaction 021711 (v3)	<u>Calibration</u> Extended Reaction 021711 (v16)	<u>STD Conc - Pos B</u> 50 ppmC
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Sample Type: Check Standard --> CCB 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.5395 ppm (PASS)	0.0000 ppm	0%	2018/03/08 04:00

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.5395	5.3945	16.22	18.91	2.70	49.48	12:33

<u>Completion State</u> Success - Criteria met.	<u>Success Action</u> Do Nothing	<u>Method</u> Extended Reaction 021711 (v3)	<u>Calibration</u> Extended Reaction 021711 (v16)	<u>STD Conc - Pos D</u> 0 ppmC
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Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 10	TOC	K1801755-008.05	0.5710 ppm	0.0082 ppm	1.4300%	2018/03/08 04:17

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5652	5.6522	15.59	18.25	2.66	49.47	12:30
2	TOC	0.5768	5.7675	15.68	18.38	2.70	49.47	12:24

<u>Dilution</u> 1:10	<u>Blank Contribution</u> (TC) 11.4746 (IC) (v1092)	<u>Method</u> Extended Reaction 021711 (v3)	<u>Calibration</u> Extended Reaction 021711 (v16)
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Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	11	TOC	K1801735-001.02 50x	2.8818 ppm	0.1366 ppm	4.7400%	2018/03/08 04:49		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	2.9784	29.7844	33.17	35.88	2.71	49.47	12:29	
2	TOC	2.7852	27.8524	31.76	34.61	2.85	49.44	12:27	
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>				
1:10		(TC) 11.4746 (IC) (v1092)		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)				
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
◆	12	TOC	K1801735-001.02 ms 50x	29.2643 ppm	0.0000 ppm	0.0000%	2018/03/08 05:21		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	29.2643	292.6435	224.60	227.43	2.82	49.44	12:34	
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>				
1:10		(TC) 11.4746 (IC) (v1092)		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)				
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
◆	13	TOC	K1802025-001.03	1.5957 ppm	0.1434 ppm	8.9900%	2018/03/08 05:37		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	1.6971	16.9706	23.83	26.52	2.69	49.42	12:26	
2	TOC	1.4943	14.9426	22.36	25.27	2.91	49.45	12:27	
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>				
1:10		(TC) 11.4746 (IC) (v1092)		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)				
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
◆	14	TOC	K1802025-001.03 ms	27.0902 ppm	0.0000 ppm	0.0000%	2018/03/08 06:09		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	27.0902	270.9018	208.77	211.40	2.63	49.46	12:31	
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>				
1:10		(TC) 11.4746 (IC) (v1092)		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)				
Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time			
◆	15	TOC	K1802025-002.03	1.8372 ppm	0.1778 ppm	9.6800%	2018/03/08 06:25		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	1.9629	19.6289	25.77	28.51	2.74	49.47	12:26	
2	TOC	1.7115	17.1148	23.94	26.70	2.76	49.47	12:23	
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>				
1:10		(TC) 11.4746 (IC)		Extended Reaction	Extended Reaction				

(v1092) 021711 (v3) 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
16	TOC	K1802025-003.04	2.4519 ppm	0.0505 ppm	2.0600%	2018/03/08 06:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4876	24.8756	29.59	32.36	2.76	49.47	12:26
2	TOC	2.4162	24.1615	29.07	31.82	2.74	49.47	12:26

Dilution 1:10
Blank Contribution (TC) 11.4746 (IC) (v1092)
Method Extended Reaction 021711 (v3)
Calibration Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
17	TOC	K1801917-001.13	1.9230 ppm	0.0792 ppm	4.1200%	2018/03/08 07:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0240	20.2400	26.22	28.98	2.76	49.51	12:25
2	TOC	1.9475	19.4752	25.66	28.27	2.61	49.49	12:26
3	TOC	1.8690	18.6897	25.09	27.80	2.72	49.54	12:27
4	TOC	1.8515	18.5154	24.96	27.70	2.74	49.51	12:24

Dilution 1:10
Blank Contribution (TC) 11.4746 (IC) (v1092)
Method Extended Reaction 021711 (v3)
Calibration Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
18	TOC	K1801917-001.13 ms	27.8032 ppm	0.0000 ppm	0.0000%	2018/03/08 08:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.8032	278.0323	213.96	216.75	2.79	49.50	12:34

Dilution 1:10
Blank Contribution (TC) 11.4746 (IC) (v1092)
Method Extended Reaction 021711 (v3)
Calibration Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
19	TOC	RB	0.5747 ppm	0.1258 ppm	21.9000%	2018/03/08 08:48

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6637	6.6367	16.31	18.98	2.67	49.48	12:24
2	TOC	0.4857	4.8572	15.01	17.78	2.76	49.52	12:28

Dilution 1:10
Blank Contribution (TC) 11.4746 (IC) (v1092)
Method Extended Reaction 021711 (v3)
Calibration Extended Reaction 021711 (v16)

Sample Type: Check Standard --> CCV 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	26.0629 ppm (PASS)	0.0000 ppm	0%	2018/03/08 09:19

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.0629	260.6288	202.10	204.73	2.63	49.52	12:29

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	50 ppmC

Sample Type: Check Standard --> CCB 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.5070 ppm (PASS)	0.0000 ppm	0%	2018/03/08 09:36

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.5070	5.0705	15.98	18.60	2.62	49.51	12:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	0 ppmC

Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ 20	TOC	MB2	0.5147 ppm	0.0000 ppm	0.0000%	2018/03/08 09:52

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.5147	5.1469	15.22	17.89	2.66	49.51	12:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 11.4746 (IC) (v1092)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Sample Type: Check Standard --> LCS ER From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
♦ 2	TOC	24.0000	1:1	[TOC] LCS ER [24.0 ppm]	0 / infinity (NA / NA)	24.7811 ppm (PASS)	0.0000 ppm	0%	2018/03/08 10:09

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
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Type	24.0 ppm	1	24.7811	247.8109	192.76	195.43	2.67	49.52	12:31
Completion State	Success - Criteria met.	Success Action	Do Nothing	Method	Extended Reaction 021711 (v3)	Calibration	Extended Reaction 021711 (v16)	STD Conc - Pos 2 24 ppmC	

Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
21	TOC	K1801917-002.13	2.8100 ppm	0.1113 ppm	3.9600%	2018/03/08 10:25

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.9729	29.7295	33.13	35.87	2.75	49.52	12:28
2	TOC	2.7590	27.5902	31.57	34.35	2.78	49.54	12:24
3	TOC	2.7839	27.8387	31.75	34.40	2.65	49.55	12:23
4	TOC	2.7243	27.2428	31.32	34.10	2.78	49.56	12:25

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
22	TOC	K1801917-003.13	2.3972 ppm	0.0819 ppm	3.4200%	2018/03/08 11:28

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.4834	24.8344	29.56	32.25	2.69	49.56	12:28
2	TOC	2.4254	24.2535	29.14	31.74	2.60	49.59	12:25
3	TOC	2.3920	23.9199	28.90	31.52	2.62	49.58	12:27
4	TOC	2.2882	22.8818	28.14	31.01	2.87	49.57	12:24

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
23	TOC	K1801917-004.13	2.0516 ppm	0.0355 ppm	1.7300%	2018/03/08 12:31

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.0627	20.6272	26.50	29.29	2.79	49.59	12:23
2	TOC	2.0019	20.0189	26.05	28.78	2.73	49.57	12:26
3	TOC	2.0856	20.8565	26.66	29.41	2.75	49.62	12:27
4	TOC	2.0563	20.5626	26.45	29.21	2.76	49.60	12:26

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
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◆ 24	TOC	K1801917-005.13	1.2514 ppm	0.0295 ppm	2.3600%	2018/03/08 13:34
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Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2827	12.8266	20.82	23.69	2.87	49.66	12:24
2	TOC	1.2523	12.5232	20.60	23.35	2.75	49.63	12:26
3	TOC	1.2117	12.1167	20.30	23.10	2.80	49.65	12:25
4	TOC	1.2589	12.5891	20.64	23.37	2.73	49.63	12:26

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆ 25	TOC	K1801917-006.13	1.8765 ppm	0.0480 ppm	2.5600%	2018/03/08 14:37

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9151	19.1511	25.42	28.07	2.64	49.63	12:26
2	TOC	1.8180	18.1803	24.72	27.69	2.98	49.63	12:26
3	TOC	1.9163	19.1635	25.43	28.18	2.75	49.62	12:27
4	TOC	1.8565	18.5648	24.99	27.71	2.71	49.65	12:23

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆ 26	TOC	K1801917-007.13	1.9501 ppm	0.0477 ppm	2.4400%	2018/03/08 15:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.9902	19.9022	25.97	28.68	2.71	49.61	12:26
2	TOC	1.9718	19.7182	25.84	28.56	2.72	49.61	12:26
3	TOC	1.9566	19.5658	25.72	28.42	2.70	49.63	12:27
4	TOC	1.8816	18.8161	25.18	28.02	2.84	49.66	12:25

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◆ 27	TOC	RB	0.4947 ppm	0.0384 ppm	7.7500%	2018/03/08 16:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4676	4.6759	14.88	17.70	2.82	49.64	12:26
2	TOC	0.5218	5.2183	15.28	18.10	2.82	49.67	12:22

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time

◆	28	TOC	K1802038-001.02	5.2576 ppm	0.0278 ppm	0.5300%	2018/03/08 17:14		
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time	
1	TOC	5.2773	52.7728	49.91	52.65	2.75	49.65	12:28	
2	TOC	5.2380	52.3801	49.62	52.61	2.98	49.64	12:21	
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>				
1:10		(TC) 11.4746 (IC) (v1092)		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)				

Sample Type: Check Standard --> CCV 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
◆	B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.7552 ppm (PASS)	0.0000 ppm	0%	2018/03/08 17:46
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.7552	257.5517	199.86	202.54	2.68	49.62	12:32
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos B</u>				
Success - Criteria met.		Do Nothing		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	50 ppmC				

Sample Type: Check Standard --> CCB 021711 From Schedule Version 1

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time	
◆	D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.4978 ppm (PASS)	0.0000 ppm	0%	2018/03/08 18:02
Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.4978	4.9785	15.91	18.74	2.82	49.60	12:33
<u>Completion State</u>		<u>Success Action</u>		<u>Method</u>	<u>Calibration</u>	<u>STD Conc - Pos D</u>				
Success - Criteria met.		Do Nothing		Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	0 ppmC				

Sample Type: Sample From Schedule Version 1

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time		
◆	29	TOC	K1802038-001.02 ms	31.0918 ppm	0.0000 ppm	0.0000%	2018/03/08 18:19	
Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	31.0918	310.9180	237.91	240.71	2.80	49.60	12:30
<u>Dilution</u>		<u>Blank Contribution</u>		<u>Method</u>	<u>Calibration</u>			

1:10 (TC) 11.4746 (IC) (v1092) Extended Reaction 021711 (v3) Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
30	TOC	RB	0.5962 ppm	0.1170 ppm	19.6200%	2018/03/08 18:35

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6789	6.7891	16.42	19.31	2.89	49.63	12:29
2	TOC	0.5135	5.1345	15.21	18.17	2.96	49.61	12:26

Dilution 1:10 Blank Contribution (TC) 11.4746 (IC) (v1092) Method Extended Reaction 021711 (v3) Calibration Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
31	TOC	FB 3/5/18	0.5766 ppm	0.0600 ppm	10.4100%	2018/03/08 19:07

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.6190	6.1904	15.98	18.80	2.82	49.58	12:24
2	TOC	0.5342	5.3419	15.36	18.11	2.75	49.59	12:22

Dilution 1:10 Blank Contribution (TC) 11.4746 (IC) (v1092) Method Extended Reaction 021711 (v3) Calibration Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
32	TOC	K1802006-001 doc 4x	15.5975 ppm	0.1827 ppm	1.1700%	2018/03/08 19:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	15.4683	154.6828	124.13	126.72	2.59	49.59	12:24
2	TOC	15.7267	157.2669	126.01	128.70	2.69	49.50	12:25

Dilution 1:10 Blank Contribution (TC) 11.4746 (IC) (v1092) Method Extended Reaction 021711 (v3) Calibration Extended Reaction 021711 (v16)

Sample Type: Sample

From Schedule Version 3

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
33	TOC	RB	1.0489 ppm	0.2178 ppm	20.7600%	2018/03/08 20:11

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.2029	12.0288	20.24	22.66	2.42	49.42	12:25
2	TOC	0.8949	8.9490	17.99	20.48	2.49	49.47	12:28

Dilution 1:10 Blank Contribution (TC) 11.4746 (IC) (v1092) Method Extended Reaction 021711 (v3) Calibration Extended Reaction 021711 (v16)

Analysis	Std. Dev.

Pos	Type	Sample ID	Result (ppmC)	(ppmC)	RSD	Start Time
34	TOC	K1802006-002 doc	2.1143 ppm	0.1566 ppm	7.4100%	2018/03/08 20:42

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	2.2250	22.2502	27.68	30.15	2.47	49.55	12:30
2	TOC	2.0035	20.0354	26.07	28.84	2.78	49.59	12:26

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
35	TOC	K1802006-002 ms doc	27.7226 ppm	0.0000 ppm	0.0000%	2018/03/08 21:14

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	27.7226	277.2263	213.37	216.01	2.64	49.61	12:31

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
36	TOC	K1801267-008.10 doc	5.9968 ppm	0.1009 ppm	1.6800%	2018/03/08 21:30

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	5.9820	59.8195	55.04	57.88	2.84	49.60	12:24
2	TOC	5.8600	58.6002	54.15	57.04	2.88	49.67	12:27
3	TOC	6.0814	60.8137	55.76	58.54	2.78	49.63	12:24
4	TOC	6.0638	60.6379	55.64	58.58	2.94	49.61	12:26

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Sample Type: Sample

From Schedule Version 5

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
37	TOC	K1801267-017.04 doc	8.2933 ppm	0.1552 ppm	1.8700%	2018/03/08 22:33

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	8.3673	83.6730	72.41	75.18	2.77	49.57	12:26
2	TOC	8.3959	83.9586	72.62	75.48	2.86	49.57	12:26
3	TOC	8.3477	83.4766	72.27	75.23	2.96	49.62	12:27
4	TOC	8.0623	80.6233	70.19	73.18	2.99	49.59	12:23

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Sample Type: Sample

From Schedule Version 6

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
38	TOC	RB	1.5569 ppm	0.3613 ppm	23.2000%	2018/03/08 23:36

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.8124	18.1240	24.67	27.40	2.72	49.58	12:25
2	TOC	1.3015	13.0147	20.95	23.84	2.89	49.57	12:26

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Sample Type: Check Standard --> CCV 021711

From Schedule Version 6

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev. (ppm)	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	26.1031 ppm (PASS)	0.0000 ppm	0%	2018/03/09 00:08

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	26.1031	261.0311	202.39	205.22	2.83	49.63	12:27

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB 021711

From Schedule Version 6

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev. (ppm)	RSD	Start Time
D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.7491 ppm (PASS)	0.0000 ppm	0%	2018/03/09 00:24

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.7491	7.4913	17.74	20.49	2.75	49.59	12:29

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16) **STD Conc - Pos D** 0 ppmC

Sample Type: Sample

From Schedule Version 6

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
39	TOC	K1801267-017.04 ms doc	22.9106 ppm	0.0000 ppm	0.0000%	2018/03/09 00:40

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	22.9106	229.1061	178.33	181.05	2.72	49.59	12:33

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
40	TOC	RB	0.9589 ppm	0.3365 ppm	35.1000%	2018/03/09 00:57

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	1.1968	11.9684	20.19	22.84	2.64	49.60	12:27
2	TOC	0.7209	7.2093	16.72	19.44	2.72	49.58	12:24

Dilution 1:10 **Blank Contribution** (TC) 11.4746 (IC) (v1092) **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16)

Sample Type: Check Standard --> CCV 021711

From Schedule Version 6

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.8002 ppm (PASS)	0.0000 ppm	0%	2018/03/09 01:29

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.8002	258.0021	200.18	202.77	2.59	49.58	12:29

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16) **STD Conc - Pos B** 50 ppmC

Sample Type: Check Standard --> CCB 021711

From Schedule Version 6

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.7083 ppm (PASS)	0.0000 ppm	0%	2018/03/09 01:45

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.7083	7.0835	17.44	20.08	2.63	49.55	12:29

Completion State Success - Criteria met. **Success Action** Do Nothing **Method** Extended Reaction 021711 (v3) **Calibration** Extended Reaction 021711 (v16) **STD Conc - Pos D** 0 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1091	1.7313	1.2820	0.0000	0.0000	0.0000	2018/03/07 20:39	Fusion1 (Fusion1)
v1092	2.0850	1.7200	0.0000	0.0000	0.0000	2018/03/07 23:41	Fusion1 (Fusion1)

Calibrations

Name: Extended Reaction 021711 (TOC)

Version: v16
 Calibration curve formula: TOC: $y = 7.283x + 12.286$
 Ver Creation: 2017/07/24 23:31
 r^2 value: TOC: $r^2 = 0.99991$
 Comment:
 Operator: Fusion1 (Fusion1)
 Basic Analysis Type: TOC

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
0.0 ppm	12.1780	0.0000		2017/07/24 21:53
0.50 ppm	15.5530	0.5000		2017/07/24 22:09
1.00 ppm	18.9640	1.0000		2017/07/24 22:25
5.00 ppm	49.8650	5.0000		2017/07/24 22:41
10.0 ppm	83.7530	10.0000		2017/07/24 22:58
25.0 ppm	196.5820	25.0000		2017/07/24 23:13
50.0 ppm	375.4850	50.0000		2017/07/24 23:29

Methods

Name: Extended Reaction 021711 (TOC)

Version: v3
 Operator: Gen Chem Lab (Fusion1)
 Ver Creation: 2013/02/04 11:44
 Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpurgeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpurgeTime	1.00 mins	SyringeSpeedAcid	7

DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpargeTime	4.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	7
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	7
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0
		LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2018/03/09 02:03

Fusion Report - 03072018

Wednesday, March 07, 2018 06:04 PM

(View - Repts, Unused Repts, Meta-Data, Signature, History)
 Printed on 2018/03/12 14:45 - Monday

Report Summary Information

Company Location: Gen Chem Lab
 Schedule Name: 03072018
 Instrument Name: Fusion1
 Report Version: 1 of 1
 Report Creation by Operators (schedule version): Fusion1 (Fusion1) (v2)
 Fusion1 (Fusion1) (v3)
 Fusion1 (Fusion1) (v4)
 Comment:
 Engine: 1.1.5.1
 Version:
 Firmware: 1.2.0696
 Version:
 Connection: RS232 COM1

Report Results

03/13/18
[Signature]

Sample Type: Clean From Schedule Version 2

Pos	Analysis Type	Sample ID	Start Time
◆ (clean)		Clean	2018/03/07 18:04

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.00	17.22	4.22	47.56	07:59
2	TC Clean	6.30	8.87	2.57	49.54	07:15
3	TC Clean	2.21	5.04	2.83	49.50	06:58
4	TC Clean	1.74	4.52	2.78	49.54	07:01

Sample Type: Clean From Schedule Version 3

Pos	Analysis Type	Sample ID	Start Time
◆ (clean)		Clean	2018/03/07 18:39

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	13.55	16.14	2.59	46.88	07:57
2	TC Clean	4.11	6.77	2.66	49.55	07:17
3	TC Clean	2.04	4.82	2.78	49.56	07:01
4	TC Clean	1.51	4.23	2.72	49.51	07:03

Sample Type: Clean From Schedule Version 4

Pos	Analysis Type	Sample ID	Start Time
♦ (clean)		Clean	2018/03/07 19:13

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.79	3.37	2.58	46.76	07:59
2	TC Clean	3.71	6.30	2.59	49.59	07:17
3	TC Clean	1.71	4.42	2.72	49.53	07:01
4	TC Clean	1.64	4.34	2.70	49.57	07:02

Sample Type: Blank (Creating v1091) From Schedule Version 4

Pos	Analysis Type	Sample ID	Start Time
♦ (blank)		Reagent/Acid Blank	2018/03/07 19:47

Rep #	Base Analysis Type	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	IC Clean	0.64	3.27	2.64	46.67	07:58
2	TC Clean	3.84	6.51	2.68	49.53	07:15
3	TC Clean	2.05	4.76	2.72	49.48	07:02
4	TC Clean	1.79	4.60	2.81	49.52	07:04
5	Reagent Blank	5.19	7.77	2.58	49.52	08:11
6	Acid Blank	1.28	3.88	2.59	46.42	08:04

Sample Type: Sample From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
♦ D	TOC	RB	0.8003 ppm	0.0000 ppm	0.0000%	2018/03/07 20:39

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.8003	8.0026	17.23	19.90	2.67	49.60	12:33

<u>Dilution</u>	<u>Blank Contribution</u>	<u>Method</u>	<u>Calibration</u>
1:10	(TC) 11.4039 (IC) (v1091)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Sample Type: Check Standard --> CCV 021711 From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◊ B	TOC	25.0000	1:2	[TOC] CCV 021711 [25 ppm]	0 / infinity (NA / NA)	25.9985 ppm (PASS)	0.0000 ppm	0%	2018/03/07 20:55

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
B	TOC	25 ppm	1	25.9985	259.9848	201.63	204.29	2.66	49.59	12:33

Completion State	Success Action	Method	Calibration	STD Conc - Pos B
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	50 ppmC

Sample Type: Check Standard --> CCB 021711 From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◊ D	TOC	0.0000	1:2	[TOC] CCB 021711 [0.0 ppm]	0 / infinity (NA / NA)	0.3914 ppm (PASS)	0.0000 ppm	0%	2018/03/07 21:12

Pos	Base Analysis Type	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
D	TOC	0.0 ppm	1	0.3914	3.9143	15.14	17.97	2.84	49.58	12:34

Completion State	Success Action	Method	Calibration	STD Conc - Pos D
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	0 ppmC

Sample Type: Sample From Schedule Version 4

Pos	Analysis Type	Sample ID	Result (ppmC)	Std. Dev. (ppmC)	RSD	Start Time
◊ 1	TOC	MB1	0.4141 ppm	0.0000 ppm	0.0000%	2018/03/07 21:29

Rep #	Base Analysis Type	ppm	µg	Adjusted (Abs)	NDIR (Abs)	Baseline (Abs)	Pressure (psig)	Run Time
1	TOC	0.4141	4.1414	14.42	17.20	2.78	49.57	12:34

Dilution	Blank Contribution	Method	Calibration
1:10	(TC) 11.4039 (IC) (v1091)	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)

Sample Type: Check Standard --> LCS ER From Schedule Version 4

Pos	BAT	Concentration (ppm)	Dil	Sample ID	Min / Max (% dev)	Result	Std. Dev.	RSD	Start Time
◊ 2	TOC	24.0000	1:1	[TOC] LCS ER [24.0 ppm]	0 / infinity (NA / NA)	51.1134 ppm (FAIL)	0.0000 ppm	0%	2018/03/07 21:45

Pos	Base Analysis	ID	Rep #	ppm	µg	Adjusted	NDIR	Baseline	Pressure	Run Time
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	Type									
2	TOC	24.0 ppm	1	51.1134	511.1341	384.54	387.09	2.55	49.51	12:32

Completion State	Success Action	Method	Calibration	STD Conc - Pos 2
Success - Criteria met.	Do Nothing	Extended Reaction 021711 (v3)	Extended Reaction 021711 (v16)	24 ppmC

Meta Data Used in this Report

Blanks

Version	Reagent (Abs)	Acid (Abs)	DI IC (Abs)	DI TC (Abs)	DI TOC (Abs)	Save Time	Operator
v1090	1.6490	1.1890	0.0000	0.0000	0.0000	2018/03/05 20:03	Fusion1 (Fusion1)
v1091	1.7313	1.2820	0.0000	0.0000	0.0000	2018/03/07 20:39	Fusion1 (Fusion1)

Calibrations

Name: Extended Reaction 021711 (TOC)

Version: v16
 Calibration curve formula: TOC: $y = 7.283x + 12.286$
 Ver Creation: 2017/07/24 23:31
 r² value: TOC: $r^2 = 0.99991$
 Comment:
 Operator: Fusion1 (Fusion1)
 Basic Analysis Type: TOC

Basic Analysis Type: TOC

Sample ID	Y Raw Value	X Expected	Message	End Time
0.0 ppm	12.1780	0.0000		2017/07/24 21:53
0.50 ppm	15.5530	0.5000		2017/07/24 22:09
1.00 ppm	18.9640	1.0000		2017/07/24 22:25
5.00 ppm	49.8650	5.0000		2017/07/24 22:41
10.0 ppm	83.7530	10.0000		2017/07/24 22:58
25.0 ppm	196.5820	25.0000		2017/07/24 23:13
50.0 ppm	375.4850	50.0000		2017/07/24 23:29

Methods

Name: Extended Reaction 021711 (TOC)

Version: v3
 Operator: Gen Chem Lab (Fusion1)
 Ver Creation: 2013/02/04 11:44
 Comment:

Parameter	Value	Advanced Parameter	Value
SampleVolume	10.0 mL	NeedleRinseVolume	5.0 ml
Dilution	1:10	VialPrimeVolume	2.0 ml
AcidVolume	0.5 ml	ICSamplePrimeVolume	2.0 ml
ReagentVolume	2.0 ml	ICSpurgeRinseVolume	12.0 ml
UVReactorPrerinse	Off	BaselineStabilizeTime	0.70 min
UVReactorPrerinseVolume	5.0	DetectorPressureFlow	150 ml/min
NumberOfUVReactorPrerinses	1	SyringeSpeedWaste	10
ICSpurgeTime	1.00 mins	SyringeSpeedAcid	7
DetectorSweepFlow	500 ml/min	SyringeSpeedReagent	7
PreSpurgeTime	4.00 mins	SyringeSpeedDIWater	7
SystemFlow	500 ml/min	NDIRPressurization	60 psig
		SyringeSpeedSampleDispense	5
		SyringeSpeedSampleAspirate	4
		SyringeSpeedUVDispense	7
		SyringeSpeedUVAspirate	5
		SyringeSpeedICDispense	7
		SyringeSpeedICAspirate	5
		NDIRPressureStabilize	1.75 min
		SampleMixing	Off
		SampleMixingCycles	1
		SampleMixingVolume	10.0
		LowLevelFilterNDIR	Off

Acceptance / Approval

Electronic Signatures

Report Version	User Name	Acceptance	Reason	Date
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Report History

Report History

Report Version	User Name	System Reason	User Reason	Date
1	Fusion1 (Fusion1)	Schedule completed	Schedule completed	2018/03/07 22:02

Analytical Results Summary

Instrument Name: K-Balance-20

Analyst: SCHAPPELLE

Analysis Lot: 580266

Method/Testcode: ASTM D2216/Water Cont

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	POL	% Rec	% RSD	Date Analyzed	QC? Tier
K1801267-002	Water	N/A		Sediment	66.98 Percent		66.98 Percent	1					2/14/18 09:40:00	N IV
K1801267-003	Water	N/A		Sediment	32.42 Percent		32.42 Percent	1					2/14/18 09:40:00	N IV
K1801267-011	Water	N/A		Sediment	37.29 Percent		37.29 Percent	1					2/14/18 09:40:00	N IV
K1801267-012	Water	N/A		Sediment	42.64 Percent		42.64 Percent	1					2/14/18 09:40:00	N IV
K1801267-014	Water	N/A		Sediment	30.15 Percent		30.15 Percent	1					2/14/18 09:40:00	N IV
K1801267-015	Water	N/A		Sediment	32.58 Percent		32.58 Percent	1					2/14/18 09:40:00	N IV
K1801291-004	Water	N/A		Sediment	842.59 Percent		842.59 Percent	1					2/14/18 09:40:00	N IV
K1801291-006	Water	N/A		Sediment	456.52 Percent		456.52 Percent	1					2/14/18 09:40:00	N IV
K1801291-010	Water	N/A		Sediment	373.87 Percent		373.87 Percent	1					2/14/18 09:40:00	N IV
K1801291-012	Water	N/A		Sediment	1027.75 Percent		1027.75 Percent	1					2/14/18 09:40:00	N IV
K1801291-016	Water	N/A		Sediment	377.42 Percent		377.42 Percent	1					2/14/18 09:40:00	N IV
K1801291-018	Water	N/A		Sediment	416.56 Percent		416.56 Percent	1					2/14/18 09:40:00	N IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

ALS

Service Request Number(s): K1801267, K1801291

Run # 580266

Sample Number	Wet Weight	Dry Weight	Moisture Content			
K1801267-002	10.436	6.25	66.98%			
K1801267-003	12.474	9.42	32.42%			
K1801267-011	10.489	7.64	37.29%			
K1801267-012	10.869	7.62	42.64%			
K1801267-014	12.599	9.68	30.15%			
K1801267-015	12.356	9.32	32.58%			
K1801291-004	10.18	1.08	842.59%			
K1801291-006	10.407	1.87	456.52%			
K1801291-010	10.283	2.17	373.87%			
K1801291-012	10.364	0.919	1027.75%			
K1801291-016	10.551	2.21	377.42%			
K1801291-018	10.073	1.95	416.56%			
			#DIV/0!			
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Water Content= (Wet Weight-Dry Weight)/Dry Weight

Analyst: SC	Date/Time: 2/14/2018 0940 AM
Reviewed: 	Date: 2/19/18

Analytical Results Summary

Instrument Name: K-Balance-20

Analyst: DMADDEN

Analysis Lot: 581666

Method/Testcode: ASTM D4318/Atter Limits

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt	Final Result	Dil	MDL	POL	% Rec	% RSD	Date Analyzed	QC? Tier
K1801267-002	Liquid Limit	N/A		Sediment	54.00 Percent	g	54.0 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-002	Plastic Limit	N/A		Sediment	35.00 Percent	g	35.0 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-002	Plasticity Index	N/A		Sediment	18.90 Percent	g	18.9 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-003	Liquid Limit	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-003	Plastic Limit	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-003	Plasticity Index	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-011	Liquid Limit	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-011	Plastic Limit	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-011	Plasticity Index	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-012	Liquid Limit	N/A		Sediment	23.20 Percent	g	23.2 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-012	Plastic Limit	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-012	Plasticity Index	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-014	Liquid Limit	N/A		Sediment	51.70 Percent	g	51.7 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-014	Plastic Limit	N/A		Sediment	33.50 Percent	g	33.5 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-014	Plasticity Index	N/A		Sediment	18.20 Percent	g	18.2 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-015	Liquid Limit	N/A		Sediment	20.30 Percent	g	20.3 Percent	1		1.0			2/21/18 14:39:00	N IV
K1801267-015	Plastic Limit	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV
K1801267-015	Plasticity Index	N/A		Sediment	0.00 Percent	g	1.0 Percent U	1		1.0			2/21/18 14:39:00	N IV

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Service Request #:
Analysis For:

K1801267

Method: Atterberg Limits ASTM D4318

Liquid Limit

Lab Code	N (number of drops)	Water content	LL	Difference
1267-2	29	52.2%	53.1%	
1267-2 D	30	53.4%	54.6%	1.4%
1267-3	na	#VALUE!		
1267-3 D	na	#VALUE!		
1267-11	na	#VALUE!		
1267-11 D	na	#VALUE!		
1267-12	20	23.2%	22.6%	
1267-12 D	22	24.2%	23.9%	1.2%
1267-14	28	51.6%	52.4%	
1267-14 D	27	50.6%	51.0%	1.3%
1267-15	24	20.8%	20.7%	
1267-15 D	25	19.8%	19.8%	0.9%
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		
0		#DIV/0!		

Sample:	Average:	Sample:	Average:	N	K
1267-2	54%	0	#DIV/0!	20	0.974
				21	0.979
1267-3	#DIV/0!	0	#DIV/0!	22	0.985
				23	0.990
1267-11	#DIV/0!	0	#DIV/0!	24	0.995
				25	1.000
1267-12	23.2%	0	#DIV/0!	26	1.005
				27	1.009
1267-14	51.7%	0	#DIV/0!	28	1.014
				29	1.018
1267-15	20.3%	0	0.0%	30	1.022

Comments:

Analyst:	Dean Madden	Date:	2/21/2018
Reviewed By:	SC	Date:	2/23/2018

Service Request #:
Analysis For:

K1801267

Method: Atterberg Limits ASTM D4318

Plastic Limit

Lab Code	Water content	Difference
1267-2	34.8%	
1267-2 D	35.1%	0.3%
1267-3	#VALUE!	
1267-3 D	#VALUE!	
1267-11	#VALUE!	
1267-11 D	#VALUE!	
1267-12	#VALUE!	
1267-12 D	#VALUE!	
1267-14	34.0%	
1267-14 D	33.0%	1.1%
1267-15	#VALUE!	
1267-15 D	#VALUE!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
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0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	
0	#DIV/0!	

Sample:	Average:	Sample:	Average:
1267-2	35.0%	0	#DIV/0!
1267-3	#VALUE!	0	#DIV/0!
1267-11	#VALUE!	0	#DIV/0!
1267-12	#VALUE!	0	#DIV/0!
1267-14	33.5%	0	#DIV/0!
1267-15	#VALUE!		

Comments:

Analyst:	Dean Madden	Date:	2/21/2018
Reviewed By:	SC	Date:	2/23/2018

Service Request #: K1801267
 Analysis For: Plasticity Index

Method: Atterberg Limits ASTM D4318

Lab Code	Liquid Limit	Plastic Limit	Plasticity Index
1267-2	53.1%	34.8%	18.3%
1267-2 D	54.6%	35.1%	19.5%
1267-3	0.0%	#VALUE!	#VALUE!
1267-3 D	0.0%	#VALUE!	#VALUE!
1267-11	0.0%	#VALUE!	#VALUE!
1267-11 D	0.0%	#VALUE!	#VALUE!
1267-12	22.6%	#VALUE!	#VALUE!
1267-12 D	23.9%	#VALUE!	#VALUE!
1267-14	52.4%	34.0%	18.3%
1267-14 D	51.0%	33.0%	18.1%
1267-15	20.7%	#VALUE!	#VALUE!
1267-15 D	19.8%	#VALUE!	#VALUE!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!
0	0.0%	#DIV/0!	#DIV/0!

Instrument ID: _____

Comments:

Analyst: Dean Madden	Date: 2/21/2018
Reviewed By: SC	Date: 2/23/2018

Revision I-R:/WET/ANALYSIS/GRAINSIZE/atterlims/atterlims

ALS ENVIRONMENTAL

U-581866-581666

Service Request #: K1801267
 Analysis For: Atterberg Limits / TotalSolids

Method: EPA METHOD 160-3MODIFIED

Pan ID	Lab Code	Tare (g)	Tare + Wet Wt.(g)	Tare + Dry Wt.(g)	Water Content
L	1267-2	1.298	9.42	6.64	52.2%
L	1267-2 D	1.294	6.38	4.61	53.4%
P	1267-2	1.304	4.92	3.99	34.8%
P	1267-2 D	1.306	6.65	5.26	35.1%
L	1267-3	1.309	na	na	#VALUE!
L	1267-3 D	1.284	na	na	#VALUE!
P	1267-3	1.300	na	na	#VALUE!
P	1267-3 D	1.301	na	na	#VALUE!
L	1267-11	1.291	na	na	#VALUE!
L	1267-11 D	1.296	na	na	#VALUE!
P	1267-11	1.298	na	na	#VALUE!
P	1267-11 D	1.297	na	na	#VALUE!
L	1267-12	1.294	9.28	7.78	23.2%
L	1267-12 D	1.291	7.51	6.30	24.2%
P	1267-12	1.298	na	na	#VALUE!
P	1267-12 D	1.298	na	na	#VALUE!
L	1267-14	1.290	7.25	5.22	51.6%
L	1267-14 D	1.290	7.32	5.30	50.6%
P	1267-14	1.298	7.61	6.01	34.0%
P	1267-14 D	1.291	7.54	5.99	33.0%
L	1267-15	1.300	9.22	7.85	20.8%
L	1267-15 D	1.295	9.13	7.83	19.8%
P	1267-15	1.293	na	na	#VALUE!
P	1267-15 D	1.290	na	na	#VALUE!

Instrument ID: K-BALANCE-53

Thermometer ID# K-Oven-07

Oven Temp : 105 Time In : 14:39 Time Out : 7:13

Comments: NA = could not be determined.

Analyst: Dean Madden	Date: 2/21/2018
Reviewed By: SC	Date: 2/23/2018

Revision I-R:/WET/ANALYSIS/GRAINSIZE/atterlims/atterlims

Analytical Results Summary

Instrument Name: K-Balance-35

Analyst: APOSEY

Analysis Lot: 584614

Method/Testcode: ASTM D854/Sp Grav

Lab Code	Target Analytes	QC	Parent Sample	Matrix	Raw Result	Sample Amt.	Final Result	Dil	MDL	PQL	% Rec	% RSD	Date Analyzed	QC? Tier
K1801267-002	Specific Gravity	N/A		Sediment	1.99 NONE	g	1.99 NONE	1					3/22/18 11:14:00	N IV
K1801267-003	Specific Gravity	N/A		Sediment	2.06 NONE	g	2.06 NONE	1					3/22/18 11:14:00	N IV
K1801267-011	Specific Gravity	N/A		Sediment	2.03 NONE	g	2.03 NONE	1					3/22/18 11:14:00	N IV
K1801267-012	Specific Gravity	N/A		Sediment	1.96 NONE	g	1.96 NONE	1					3/22/18 11:14:00	N IV
K1801267-014	Specific Gravity	N/A		Sediment	2.10 NONE	g	2.10 NONE	1					3/22/18 11:14:00	N IV
K1801267-015	Specific Gravity	N/A		Sediment	2.11 NONE	g	2.11 NONE	1					3/22/18 11:14:00	N IV
K1801601-003	Specific Gravity	N/A		Sediment	1.26 NONE	g	1.26 NONE	1					3/22/18 11:14:00	N IV
K1801601-011	Specific Gravity	N/A		Sediment	2.03 NONE	g	2.03 NONE	1					3/22/18 11:14:00	N IV
KQ1803195-01	Specific Gravity	DUP	K1801267-015	Sediment	2.15 NONE	g	2.15 NONE	1				3	3/22/18 11:14:00	N IV

OK
3/22/18

indicates Final Result is not yet adjusted for Solids because it has not yet been determined.

Service Request #: K1801267, 1601
 Analysis For: Specific Gravity

Method: ASTM D 854

Sample	Weight of DIW (Corrected) [W _a]	Weight of Wet sample (g)	Weight of Wet Sample and DIW(g) [W _b]	Specific Gravity	Total Solids	Weight of Dry sample (g) [W _c]	Weight of Dry sample & beaker (g)	Weight of beaker (g)
K1801267-002	100.3516	10.0297	103.1337	1.99	55.8%	5.5945	97.5075	91.913
K1801267-003	100.3516	10.0319	104.5195	2.15	77.7%	7.7912	95.1431	87.3519
K1801267-011	100.3516	10.0174	104.2435	2.06	75.4%	7.5502	76.9931	69.4429
K1801267-012	100.3516	10.0556	104.0362	2.03	72.2%	7.2651	84.0853	76.8202
K1801267-014	100.3516	10.0133	103.6202	1.96	66.7%	6.6827	79.375	72.6923
K1801267-015	100.3516	10.0342	104.4389	2.10	77.8%	7.8016	98.4082	90.6066
K1801267-015DUP	100.3516	10.0372	104.4968	2.11	78.5%	7.8833	89.4211	81.5378
K1801601-003	100.3516	10.0199	100.8202	1.26	22.4%	2.2421	93.8472	91.6051
K1801601-011	100.3516	10.0157	103.8274	2.03	68.5%	6.8598	96.4002	89.5404

Comments: Weight of 100mL DIW (g) = 100.3516 Thermometer ID# C65669

Correction Factor =	1.0002	Temp. °C	Temp. Correction F
		18	1.0004
Water Temperature =	19	19	1.0002
		20	1.0000
		21	0.9998
		22	0.9996
		23	0.9993

Specific Gravity = $W_o / [W_o + (W_a - W_b)]$

Analyzed By: Aposey	Date: 3/22/18	10:46
Reviewed By: <i>AC</i>	Date: <i>3/22/18</i>	



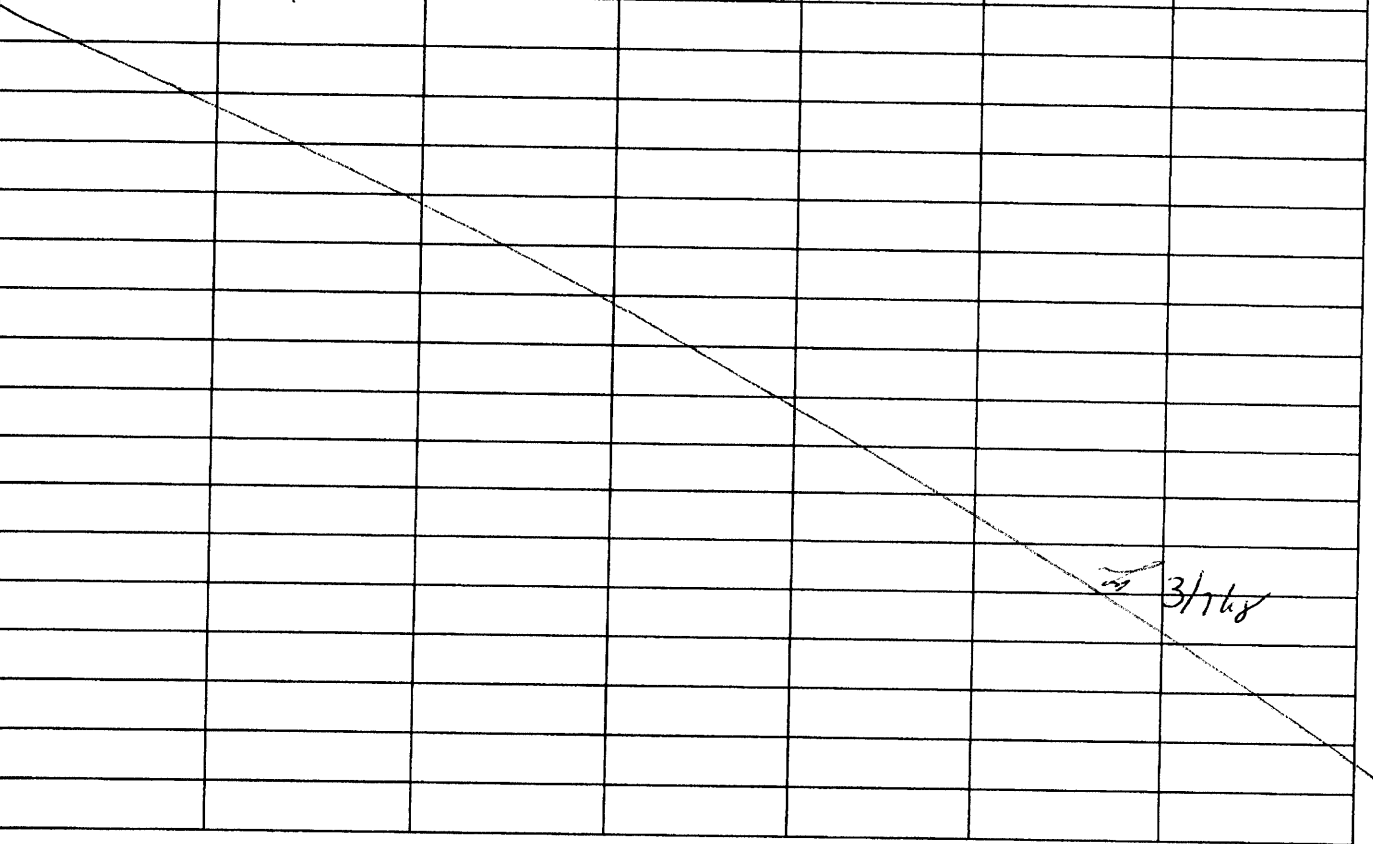
Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS

Service Request Number(s):

PORE WATER DATA

Sample Number	Centrifuged 30 minutes	Amount of Pore Water (mL)				
K1801267-6*	yes	100				
- 8	yes	250				
- 17	yes	200				
						

* K1801267-006 Top 7" of sample was centrifuged. The remaining sample did not yield any pore water after centrifuging.

Analyst:	<i>Lance from Stanley</i>	Date:	<i>3/7/18, 3/6/18</i>
Reviewed:	<i>Paul M</i>	Date:	<i>3/8/18</i>

Service Request Number(s):

PORE WATER DATA

Sample Number	Centrifuged 30 minutes	Amount of Pore Water (mL)				
K1801267-6*	yes	100				
- 8	yes	250				
- 17	yes	200				
3/7/18						

* K1801267-006 Top 7" of sample was centrifuged. The remaining sample did not yield any pore water after centrifuging.

Analyst: <i>Lance Jones</i>	Date: 3/7/18
Reviewed:	Date:

Preparation Information Benchsheet

Prep Run: 308626 **Prep Workflow:** MetDigAqMS **Status:** Prepped **Prep Date:** 02/20/2018
Team: Metals **Prep Method:** METALS **Current Step:** Digestion 12:32
Analyst: JHINSON ILM04.0 **Due Date:** 02/25/2018
Rush/NPDES: N/A **Hold Date:** 08/06/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1802192-01	Method Blank		10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
KQ1802192-02	Lab Control Sample		10 mL	10.3 mL	0.02 mL 0.1 mL 0.1 mL 0.02 mL 0.1 mL	183815 184106 184108 186271 186739	Metals T	1%HNO3, 0.2%HCl
KQ1802192-03	Duplicate Lab Control Sample		10 mL	10.3 mL	0.02 mL 0.1 mL 0.1 mL 0.02 mL 0.1 mL	183815 184106 184108 186271 186739	Metals T	1%HNO3, 0.2%HCl
K1801267-004	EQB-SD-01	.06	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-018	EQB-PW-01	.06	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl

5 Total Samples consisting of 2 Client Samples, 0 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET Alt 200.8 spiking solution	Spike	186271	12/31/2018	k-met 1/100 QCP-CICV-3	Spike	184108	9/15/2018
K-MET Mo/U 10ppm	Spike	183815	3/21/2018	k-met Sb 1ug/mL Sb	Spike	186739	6/18/2019
k-met 1/100 QCP CICV-1	Spike	184106	9/15/2018				

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HCl ULTREX	184998	Digestion	K-MET 16 mL Tube	187408
Digestion	K-MET HNO3	186553			

Preparation Hardware / Equipment

Step	Name	Property	Value	Step	Name	Property	Value
Digestion	K- CR 20-200			Digestion	K-BlockDigester-18	Thermometer ID 4185236	NONE
Digestion	K-BlockDigester-18	Corrected Temperature	95 deg C	Digestion	K-BlockDigester-18	Thermometer Location	79 NONE
Digestion	K-BlockDigester-18	Correction Factor	0 deg C	Digestion	K-CR 100A		
Digestion	K-BlockDigester-18	Observed Temperature	95 deg C				

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	20-FEB-18 12:32	20-FEB-18 14:32	JHINSON		N	

Comments

Review

Reviewed by: *SP* Date: 2/21/18

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
Zn	100*	1000ml	50		
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
	U	10	500mL	20	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10,000 ppm individual stock standards.

Standard	mils of standard	ppm	Logbook #	Exp. Date

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

0.50mL to 500mL Dilution of 1000ppm Sb

k-met 1ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	1000	10

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Preparation Information Benchsheet

* ¹¹ 200.8

Prep Run: 308626 **Prep Workflow:** MetDigAqMS **Status:** Draft **Prep Date:** 02/20/2018
Team: Metals **Prep Method:** METALS **Current Step:** Digestion 09:47
Analyst: JHINSON **Rush/NPDES:** N/A **Due Date:** 02/16/2018
Hold Date: 08/05/2018

2/20

5 10 CPS

MB LES DLCS
EAB

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1802192-01	Method Blank		10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
KQ1802192-02	Lab Control Sample		10 mL	10.3 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-004	EQB-SD-01	.06	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-004: KQ1802192-03	Duplicate	.06	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-004: KQ1802192-04	Matrix Spike	.06	10 mL	10.3 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-006	CO2-PW-3-5 (W)	.07	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-008	CO1-PW-3-5 (W)	.07	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017	CO3-PW-3-5 (W)	.01	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-018	EQB-PW-01	.06	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl

9 Total Samples consisting of 5 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Preparation Materials

Preparation Hardware / Equipment

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion					N	

Comments

75 added Sample 6, 7, +17 not created

Review

Reviewed by: _____ Date: _____

Preparation Information Benchsheet

Prep Run: 309729 **Prep Workflow:** MetDigAqMS **Status:** Prepped **Prep Date:** 03/13/2018
Team: Metals **Prep Method:** EPA CLP- **Current Step:** Digestion **Due Date:** 03/08/2018
Analyst: JHINSON **ILM04.0** **Hold Date:** 08/06/2018
Rush/NPDES: N/A

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803090-01	Method Blank		10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
KQ1803090-02	Lab Control Sample		10 mL	10.3 mL	0.1 mL 0.1 mL 0.1 mL 0.02 mL	184106 184108 186739 188524	Metals T	1%HNO3, 0.2%HCl
K1801267-008	CO1-PW-3-5 (W)	.09	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017	CO3-PW-3-5 (W)	.03	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017: KQ1803090-03	Duplicate	.03	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017: KQ1803090-04	Matrix Spike	.03	10 mL	10.3 mL	0.1 mL 0.1 mL 0.1 mL 0.02 mL	184106 184108 186739 188524	Metals T	1%HNO3, 0.2%HCl
K1801988-001	WR306-20180301	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-001	WR306-20180301	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-002	OF18-20180301	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-002	OF18-20180301	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-003	WR307-20180301	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-003	WR307-20180301	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-004	WR510-20180228	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-004	WR510-20180228	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl

10 Total Samples consisting of 6 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
K-MET Mo/U 10ppm	Spike	188524	11/3/2018	k-met 1/100 QCP-CICV-3	Spike	184108	9/15/2018
k-met 1/100 QCP CICV-1	Spike	184106	9/15/2018	k-met Sb 1ug/mL Sb	Spike	186739	6/18/2019

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HCl ULTREX	184998	Digestion	K-MET 16 mL Tube	188364
Digestion	K-MET HNO3	186553			

Preparation Hardware / Equipment

Step	Name	Property	Value	Step	Name	Property	Value

Digestion	K- CR 20-200				Digestion	K-BlockDigester-18	Thermometer ID 4185236		NONE
Digestion	K-BlockDigester-18	Corrected Temperature	95	deg C	Digestion	K-BlockDigester-18	Thermometer Location	93	NONE
Digestion	K-BlockDigester-18	Correction Factor	0	deg C	Digestion	K-CR 100A			
Digestion	K-BlockDigester-18	Observed Temperature	95	deg C					

Preparation Steps

<u>Step</u>	<u>Started</u>	<u>Finished</u>	<u>By</u>	<u>Assisted By</u>	<u>Training?</u>	<u>Comments</u>
Digestion	13-MAR-18 17:05	13-MAR-18 19:05	JHINSON		N	

Comments

Post spike added.

Review

Reviewed by: *JH* Date: 3/15/18

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

0.50mL to 500mL Dilution of 1000ppm Sb

k-met 1ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	1000	10

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

1705-1905
18195193

Preparation Information Benchsheet

Prep Run: 309729 **Prep Workflow:** MetDigAqMS **Status:** Draft **Prep Date:** 03/12/2018
Team: Metals **Prep Method:** EPA CLP-METALS **Current Step:** Digestion 08:52
Analyst: JHINSON **Rush/NPDES:** N/A **Due Date:** 02/22/2018
Hold Date: 08/06/2018

3/20

15 (75)

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803090-01	Method Blank		10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
KQ1803090-02	Lab Control Sample		10 mL	10.3 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-008	CO1-PW-3-5 (W)	.09	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017	CO3-PW-3-5 (W)	.03	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017: KQ1803090-03	Duplicate	.03	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801267-017: KQ1803090-04	Matrix Spike	.03	10 mL	10.3 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-001	WR306-20180301	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-001	WR306-20180301	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-002	OF18-20180301	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-002	OF18-20180301	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-003	WR307-20180301	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-003	WR307-20180301	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl
K1801988-004	WR510-20180228	.09	10 mL	10 mL			Metals D	1%HNO3, 0.2%HCl
K1801988-004	WR510-20180228	.18	10 mL	10 mL			Metals T	1%HNO3, 0.2%HCl

10 Total Samples consisting of 6 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Preparation Materials

Preparation Hardware / Equipment

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion					N	

Comments

Post spike added.

Review

Reviewed by: _____ Date: _____

Preparation Information Benchsheet

Prep Run#: 308347

Team: Metals/KLINN

Number of Copies to make: 1

Prep Workflow: MetDigSICP

Prep Method: EPA 3050B

Status: Prepped

Prep Date/Time: 2/16/18 09:00 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ1801937-03	MB		6010C/Metals T		Solid	1.0000g	100.00mL	10% HNO3, 10% HCl
2	KQ1801937-03	MB		6020A/Metals T		Solid	1.0000g	100.00mL	10% HNO3, 10% HCl
3	KQ1801937-04	LCSI		6010C/Metals T		Solid	1.0400g	100.00mL	10% HNO3, 10% HCl
4	KQ1801937-04	LCSI		6020A/Metals T		Solid	1.0400g	100.00mL	10% HNO3, 10% HCl
5	K1801267-001	CO2-SD-3-5	.01	6010C/Metals T		Sediment	2.118g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl /
6	K1801267-001	CO2-SD-3-5	.01	6020A/Metals T		Sediment	2.118g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl /
7	K1801267-009	CO3-SD-3-5	.01	6010C/Metals T		Sediment	2.357g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl / Fuel
8	K1801267-009	CO3-SD-3-5	.01	6020A/Metals T		Sediment	2.357g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl / Fuel
9	KQ1801937-01	K1801267-009 DUP	.01	6010C/Metals T		Solid	2.462g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl
10	KQ1801937-01	K1801267-009 DUP	.01	6020A/Metals T		Solid	2.462g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl
11	KQ1801937-02	K1801267-009 MS	.01	6010C/Metals T		Solid	2.421g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl
12	KQ1801937-02	K1801267-009 MS	.01	6020A/Metals T		Solid	2.421g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl
13	K1801267-013	CO1-SD-3-5	.01	6010C/Metals T		Sediment	2.287g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl / Fuel
14	K1801267-013	CO1-SD-3-5	.01	6020A/Metals T		Sediment	2.287g	100.00mL	APOSEY K-BALANCE-48 / 10% HNO3, 10% HCl / Fuel

Spiking Solutions

Name: K-MET SOIL CRM		Inventory ID	171958	Logbook Ref:	D087-540	Expires On:	04/30/2018
KQ1801937-04	1.00g	KQ1801937-04	1.00g				
Name: K-MET SSS		Inventory ID	185731	Logbook Ref:	MET3-27-D	Expires On:	03/21/2018
KQ1801937-02	1.00mL	KQ1801937-02	1.00mL				
Name: K-MET Alt 200.8 spiking solution		Inventory ID	186271	Logbook Ref:	MS22-92-G	Expires On:	12/31/2018
KQ1801937-02	2.00mL	KQ1801937-02	2.00mL				
Name: K-MET SS4		Inventory ID	186358	Logbook Ref:	MET3-29-K	Expires On:	11/10/2018
KQ1801937-02	1.00mL	KQ1801937-02	1.00mL				
Name: K-MET SS5		Inventory ID	187208	Logbook Ref:	MET3-30-G	Expires On:	06/06/2018
KQ1801937-02	1.00mL	KQ1801937-02	1.00mL				

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
V	100*	1000ml	50		
Zn	100*	1000ml	50		
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
	U	10	500mL	20	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10,000 ppm individual stock standards.

Standard	units of standard	ppm	Logbook #	Exp. Date

Preparation Information Benchsheet

Prep Run#: 308347
Team: Metals/APOSEY
 Number of Copies to make: 1

Prep Workflow: MetDigSICP
Prep Method: EPA 3050B

Status: Draft
Prep Date/Time: 2/14/18 10:23 AM

#	Lab Code	Client ID	B#	✓	Method / Test	Matrix	Amt. Ext.	pH	Int. Vol	Final Vol	Surr Amt	Spike Amt
1	KQ1801937-03	MB			6010C / Metals T	Solid						
2	KQ1801937-03	MB			6020A / Metals T	Solid						
3	KQ1801937-04	LCSI			6010C / Metals T	Solid						
4	KQ1801937-04	LCSI			6020A / Metals T	Solid						
5	K1801267-001	CO2-SD-3-5			6010C / Metals T	Sediment						
6	K1801267-001	CO2-SD-3-5			6020A / Metals T	Sediment						
7	K1801267-009	CO3-SD-3-5			6010C / Metals T	Sediment						
8	K1801267-009	CO3-SD-3-5			6020A / Metals T	Sediment						
9	KQ1801937-01	K1801267-009 DUP			6010C / Metals T	Solid						
10	KQ1801937-01	K1801267-009 DUP			6020A / Metals T	Solid						
11	KQ1801937-02	K1801267-009 MS			6010C / Metals T	Solid						
12	KQ1801937-02	K1801267-009 MS			6020A / Metals T	Solid						
13	K1801267-013	CO1-SD-3-5			6010C / Metals T	Sediment						
14	K1801267-013	CO1-SD-3-5			6020A / Metals T	Sediment						

1-09100 - 0915
 2-0920 - 1100
 3-1300 - 1315

Comments: Sn-free H₂O₂ RSD Y T95 T210 Alt 200.8 - 186271

Surrogate ID: _____ **Spike ID:** _____

Witnessed By: _____

Analyst: _____ **Assisted By:** _____

Pre-Prep Information Benchsheet

Prep Run #: 308347

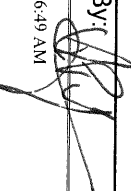

Prep Method:

Team:

Container Lot No: 1709027

Prep Due Date: Feb-19-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801267-001	.01	Metals T	2.118g	2/14AP. Strong Fuel smell, Few large rocks sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
2	K1801267-001	.01	Metals T	2.118g	2/14AP. Strong Fuel smell, Few large rocks sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
3	K1801267-009	.01	Metals T	2.357g	Fuel smell and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
4	K1801267-009	.01	Metals T	2.357g	Fuel smell and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
5	K1801267-009 DUP	.01	Metals T	2.462g		PrepComments:APOSEY K-BALANCE-48
6	K1801267-009 DUP	.01	Metals T	2.462g		PrepComments:APOSEY K-BALANCE-48
7	K1801267-009 MS	.01	Metals T	2.421g		PrepComments:APOSEY K-BALANCE-48
8	K1801267-009 MS	.01	Metals T	2.421g		PrepComments:APOSEY K-BALANCE-48
9	K1801267-013	.01	Metals T	2.287g	Fuel smell, Few large rocks, sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
10	K1801267-013	.01	Metals T	2.287g	Fuel smell, Few large rocks, sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48

Relinquished By: 	Date/Time: 2/14/18	10:30	Received By: 	Date/Time: 2-16-18 0730
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Preparation Information Benchsheet

Prep Run: 308627 **Prep Workflow:** MetDigAqICP **Status:** Prepped **Prep Date:** 02/20/2018
Team: Metals **Prep Method:** EPA CLP- **Current Step:** Digestion 12:32
Analyst: JHINSON **Prep Method:** METALS **Due Date:** 02/25/2018
Rush/NPDES: N/A **Hold Date:** 08/06/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1802193-02	Method Blank		10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
KQ1802193-03	Lab Control Sample		10 mL	11.2 mL	0.1 mL 0.1 mL 0.1 mL 0.1 mL 0.02 mL 0.05 mL 0.05 mL 0.1 mL 0.1 mL	178213 178214 178221 180011 180013 184062 184064 185709 186358	Metals T	1%HNO3, 5%HCl
KQ1802193-04	Duplicate Lab Control Sample		10 mL	11.2 mL	0.1 mL 0.1 mL 0.1 mL 0.1 mL 0.02 mL 0.05 mL 0.05 mL 0.1 mL 0.1 mL	178213 178214 178221 180011 180013 184062 184064 185709 186358	Metals T	1%HNO3, 5%HCl
KQ1802193-05	Lab Control Sample		10 mL	10.6 mL	0.1 mL	179489	Metals T	1%HNO3, 5%HCl
KQ1802193-06	Duplicate Lab Control Sample		10 mL	10.6 mL	0.1 mL	179489	Metals T	1%HNO3, 5%HCl
K1801267-004	EQB-SD-01	.06	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-018	EQB-PW-01	.06	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl

7 Total Samples consisting of 2 Client Samples, 0 Client QC Samples, 5 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
Antimony 1000 ug/mL Sb	Spike	180013	9/14/2018	Phosphorus 1000 ug/mL as P	Spike	178221	6/15/2018
K-MET QCP-CICV-1	Spike	184062	9/15/2018	Silicon 1000 ug/mL Si	Spike	179489	8/13/2018
K-MET QCP-CICV-3	Spike	184064	9/15/2018	Strontium 1000 ug/mL Sr	Spike	178214	6/15/2018
K-MET SS4	Spike	186358	11/10/2018	Tin 1000 ug/mL Sn	Spike	178213	6/15/2018
Lithium 1000 ug/mL Li	Spike	185709	5/31/2019	Titanium 1000 ug/mL Ti	Spike	180011	9/14/2018

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HCL	182777	Digestion	K-MET 16 mL Tube	187408
Digestion	K-MET HNO3	186553			

Preparation Hardware / Equipment

Step	Name	Property	Value	Step	Name	Property	Value
Digestion	K- CR 20-200			Digestion	K-BlockDigester-18	Thermometer ID 4185236	NONE
Digestion	K-BlockDigester-18	Corrected Temperature	95 deg C		K-		

Digestion	K-BlockDigester-18	Correction Factor	0	deg C	Digestion	BlockDigester-18	Thermometer Location	79	NONE
Digestion	K-BlockDigester-18	Observed Temperature	95	deg C	Digestion	K-CR 100A			
					Digestion	K-CR 50			

Preparation Steps

<u>Step</u>	<u>Started</u>	<u>Finished</u>	<u>By</u>	<u>Assisted By</u>	<u>Training?</u>	<u>Comments</u>
Digestion	20-FEB-18 12:32	20-FEB-18 14:32	JHINSON		N	

Comments

Review

Reviewed by:  Date: 2/21/18

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/L	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
V	100*	1000ml	50		
Zn	100*	1000ml	50		
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
	U	10	500mL	20	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
K-MET QCP-CICV-3	Be	no dilution	-	25	
	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1
k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

0.50mL to 500mL Dilution of 1000ppm Sb
k-met 1ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	1000	10

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3
k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U
k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

1232-1432
18195179

A 178221
Li 185709
Sr 178214
Sn 178213
Ti 180011

Preparation Information Benchsheet

Sc 179489

Prep Run: 308627 **Prep Workflow:** MetDigAqICP **Status:** Draft **Prep Date:** 02/20/2018 09:49
Team: Metals **Prep Method:** METALS **Current Step:** Digestion **Due Date:** 02/16/2018
Analyst: JHINSON **Rush/NPDES:** N/A **Hold Date:** 08/05/2018

7
12 (PS)

MB LCS/DLCS
ECS/DLCS
EQB

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1802193-02	Method Blank		10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
KQ1802193-01	Lab Control Sample		10 mL	11.2 mL			Metals T	1%HNO3, 5%HCl
KQ1802193-05	Lab Control Sample		10 mL	10.6 mL			Metals T	1%HNO3, 5%HCl
K1801267-004	EQB-SD-01	.06	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-006	CO2-PW-3-5 (W)	.07	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-006: KQ1802193-03	Duplicate	.07	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-006: KQ1802193-04	Matrix Spike	.07	10 mL	11.4 mL			Metals T	1%HNO3, 5%HCl
K1801267-006: KQ1802193-06	Matrix Spike	.07	10 mL	10.6 mL			Metals T	1%HNO3, 5%HCl
K1801267-008	CO1-PW-3-5 (W)	.07	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-017	CO3-PW-3-5 (W)	.01	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-018	EQB-PW-01	.06	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl

11 Total Samples consisting of 5 Client Samples, 3 Client QC Samples, 3 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Preparation Materials

Preparation Hardware / Equipment

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion					N	

Comments

PS added sample 6, 8, + 17 Not created

Review

Reviewed by: _____ Date: _____

Preparation Information Benchsheet

Prep Run: 308359 **Prep Workflow:** MetDigLP **Status:** Prepped **Prep Date:** 02/14/2018
Team: Metals **Prep Method:** EPA **Current Step:** Digestion **12:48**
Analyst: JHINSON **Rush/NPDES:** N/A **Due Date:** 02/16/2018
Hold Date: 08/12/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1801951-02	Method Blank		25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl
KQ1801951-01	Lab Control Sample		25 mL	25 mL	0.25 mL	180829	Metals TCLP	6%HNO3, 5%HCl
K1801267-010	TCLP-0-3	.01	25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl; CLUKKEN K-Balance-52
K1801267-010: KQ1801951-03	Duplicate	.01	25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl; CLUKKEN K-Balance-52
K1801267-010: KQ1801951-04	Matrix Spike	.01	25 mL	25 mL	0.25 mL	180829	Metals TCLP	6%HNO3, 5%HCl; CLUKKEN K-Balance-52

5 Total Samples consisting of 1 Client Sample, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
K-MET TCLP (ALS-57-R1)	Spike	180829	4/24/2018

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HCL	182777	Digestion	K-MET 50ml Centrifuge Tube	187238
Digestion	K-MET HNO3	186553			

Preparation Hardware / Equipment

Step	Name	Property	Value	Step	Name	Property	Value
Digestion	K-DG 250C			Digestion	K-HotPlate-03	Observed Temperature	95 deg C
Digestion	K-HotPlate-03	Corrected Temperature	95	Digestion	K-HotPlate-03	Thermometer ID 6428379	deg C
Digestion	K-HotPlate-03	Correction Factor	0				

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	14-FEB-18 12:48	14-FEB-18 15:45	JHINSON		N	

Comments

Review

Reviewed by:  Date: 2/15/18

TCLP Spike Solution

Lims Solution ID 180829

Expires 4/24/18

Analyte	Solution Concentration
Ag	100
Pb	500
As	500
Ba	1000
Cd	100
Cr	500
Se	100
Cu	100
Ni	100
Zn	1000

Additional spikes						
Element	Source	Lot #	mls of	ppm	Exp. date	Initials and date

This solution is a custom mix: ALS-57-R1

HP 3

Preparation Information Benchsheet

Prep Run: 308359 **Prep Workflow:** MetDigLP **Status:** Draft **Prep Date:** 02/14/2018
Team: Metals **Prep Method:** EPA **Current Step:** Digestion 12:24
Analyst: JHINSON **Rush/NPDES:** N/A **Due Date:** 02/16/2018
Hold Date: 08/12/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1801951-02	Method Blank		25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl
KQ1801951-01	Lab Control Sample		25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl
K1801267-010	TCLP-0-3	.01	25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl; CLUKKEN K-Balance-52
K1801267-010: KQ1801951-03	Duplicate	.01	25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl; CLUKKEN K-Balance-52
K1801267-010: KQ1801951-04	Matrix Spike	.01	25 mL	25 mL			Metals TCLP	6%HNO3, 5%HCl; CLUKKEN K-Balance-52

5 Total Samples consisting of 1 Client Sample, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Preparation Materials

1248-1403
 1415-1505
 1530-1545

Preparation Hardware / Equipment

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion					N	

Comments

Review

Reviewed by: _____ Date: _____

TCLP Extraction Worksheet

Service Request Number(s):

K1801267, K180151

308295 ^{CEL}
308256 ^{2/18}

Method: TCLP 1311

SPLP 1312

If Autofluff sample is used please place an X in this box
Wet Ext. MEP

Prep Run# 308256

Note: 1 Blank needed per every 20 extracts.

Sample Number	Teflon Extraction Vessel #	Sample Description (Solid, Liquid, Multiphasic)	Partical Size < 1cm ?	Solution Determination Weight (g)	Initial pH	Aliquot of 1N HCl (mL)	Final pH	Solution To Be Used	Extraction Weight (g)	Extraction Solution Volume (mL)	Post-Extraction pH
K1801267-10	4	S	Y	5.09	9.39	3.5	2.10	↓	100.06	2000	5.35
M.B. Teflon	5	M	-	-	-	-	-	↓	3.24	60	5.20
M.B. Plastic	-	F	-	-	-	-	-	↓	-	2000	-
					CEL 2/18					60-250	

pH Meter Calibrated at pH4 & pH7 Today?

pH Meter I.D. K-9 H-08

Balance I.D. 52 Date Balance Checked: 2/13/18

Extraction Solution Prep date: 1/30/18

Tumbler # 4 Thermometer# 4186165

Hot Plate Temp °C(50°C): 50

Extraction Solution pH: 4.89

Extraction Solution I.D. M&L-D6-25-AA

Filter Lot # 171164 HCl I.D. REI-48-A

Extraction Started Time: 15:42

Date: 2/13/18

Disposable Extraction Vessel Lot #: 1799027

Extraction Finished Time: 08:28

Date: 2/14/18

Tumbler Rotational Speed (28 - 32 rpm): 29.9

Room Temperature at the Beginning of Extraction (Temp. Range 21 ° C - 25 ° C): 22.73

Analyst: Cody Hln

Date: 2/13/18

Reviewer: [Signature]

Date: 2/14/18

File path: m:\tclpforms\TCLP Extraction Benchsheet 10-10-171

Pre-Prep Information Benchsheet

Prep Run #: 308295

Prep Method:

Team:

Container Lot No: 1709027

Prep Due Date: Feb-16-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801267-010	.01	TCLP	100.06g		PrepComments:CLUKKEN K-Balance-52
2	K1801267-010 DUP KQ1801893-01	.01	TCLP	5.09g		PrepComments:CLUKKEN K-Balance-52

Relinquished By: <i>Cathy Allen</i>	Date/Time: 2/13/18 11:43	Received By: <i>Cathy Allen</i>
Date/Time: 2/13/18 13:15		

Service Request Number(s) K180151

Method: 1311 1312

Analysis for:

Multi-phasic TCLP Sample Separation
for Homogenous Samples

ALS, Inc

Sample #	Total Sample Weight (g)	Bottle Tare (g)	Filter Tare (g)	Wt. of Filtrate + Bottle (g)	Wt. of Filtrate (g)	Wt. of Filterable Solid + Filter	Wt. of Solid for Extraction	Volume of Filtrate (ml)	Density (M/V)	Filtrate Miscible in Water?	Extract Miscible in Water?	Filtrate & Extract Recombine?
K180151-1	100.06	21.70	1.32	115.04	93.34	4.56	3.24	93.82	0.99	Y	Y	Y
						cc 2/13						

Balance I.D.: 28 Date Balance Checked: 2/13/18 Filter Lot # 171164

Comments:

Analyst: Costy Allen Date: 2/13/18

Reviewed: 7 Date: 2/14/18

Sample Number(s):	As listed	Service Request Number(s):	K1801151
Analysis for:	TCLP % Solids	Method:	1311

DATA

Sample Number	Filter Tare (g)	Bottle Tare (g)	Tot. Sample weight (g)	Wet Solid Phase + Filter wt. (g)	Liquid + Bottle wt. (g)	Liquid wt. (g)	Dried Solid Phase + Filter wt. (g) 1st	Dried Solid Phase + Filter wt. (g) 2nd	Dried Solid Phase + Filter wt. (g) 3rd	% Filtered Solids (wet)	% Filtered Solids (dry)	Extraction Required *
K1801151-1	1.32	19.52	101.61	4.25	114.86	95.34	2.72	2.62	2.24	2.88	0.90	Y
CCL 2/8												

Balance ID: 28 Checked: 2/8/18 2/9/18 Filter Lot #: 171164

* No extraction if less than 0.5% solids. All weights are in grams unless otherwise noted.

Oven temp = 105

1st:	In: 14:23	2/8/18	Out: 15:30	2/8/18
2nd:	In: 15:41	2/8/18	Out: 16:41	2/8/18
3rd:	In: 16:45	2/8/18	Out: 17:55	2/9/18

Analyst:	<i>Cathy Allen</i>	Date:	2/8/18 2/9/18
Reviewed:	<i>[Signature]</i>	Date:	2/9/18

Wash glass tare (g) — 3 - 101.94

Preparation Information Benchsheet

Prep Run: 309728 **Prep Workflow:** MetDigAqICP **Status:** Prepped **Prep Date:** 03/13/2018
Team: Metals **Prep Method:** EPA CLP- **Current Step:** Digestion **Due Date:** 02/17/2018
Analyst: JHINSON **Rush/NPDES:** NPDES **Hold Date:** 07/29/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803087-02	Method Blank		10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
KQ1803087-01	Lab Control Sample		10 mL	10.9 mL	0.1 mL 0.1 mL 0.02 mL 0.05 mL 0.05 mL 0.1 mL	178213 178221 180613 184062 184064 186358	Metals T	1%HNO3, 5%HCl
K1801267-008	CO1-PW-3-5 (W)	.09	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-008: KQ1803087-03	Duplicate	.09	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-008: KQ1803087-04	Matrix Spike	.09	10 mL	11.1 mL	0.1 mL 0.1 mL 0.1 mL 0.1 mL 0.1 mL 0.1 mL	178213 178221 185731 186358 188084 188300	Metals T	1%HNO3, 5%HCl
K1801267-017	CO3-PW-3-5 (W)	.03	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-001	Rinsate Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-002	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-003	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-004	Rinsate Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-005	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-006	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802153-001	Discharge Point-001	.06	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl

13 Total Samples consisting of 9 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires	Name	Type	ID	Expires
Antimony 1000 ug/mL Sb	Spike	180013	9/14/2018	K-MET SS4	Spike	186358	11/10/2018
K-MET QCP-CICV-1	Spike	184062	9/15/2018	K-MET SS5	Spike	188300	7/16/2018
K-MET QCP-CICV-3	Spike	184064	9/15/2018	Phosphorus 1000 ug/mL as P	Spike	178221	6/15/2018
K-MET SS1	Spike	188084	9/14/2018	Tin 1000 ug/mL Sn	Spike	178213	6/15/2018
K-MET SS3	Spike	185731	3/21/2018				

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET HCL	182777	Digestion	K-MET 16 mL Tube	188364
Digestion	K-MET HNO3	186553			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K- CR 20-200				Digestion	K-BlockDigester-18	Thermometer ID 4185236		NONE
Digestion	K-BlockDigester-18	Corrected Temperature	95	deg C	Digestion	K-BlockDigester-18	Thermometer Location	93	NONE
Digestion	K-BlockDigester-18	Correction Factor	0	deg C	Digestion	K-CR 100A			
Digestion	K-BlockDigester-18	Observed Temperature	95	deg C	Digestion	K-CR 50			

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	13-MAR-18 17:05	13-MAR-18 19:05	JHINSON		N	

Comments

Post spike added.

Review

Reviewed by: Date: 3/15/18

METALS SPIKING SOLUTIONS CONCENTRATIONS FORM

Solution Name	Element	mLs of 1000ppm Solution	Final Volume	Solution Conc. mg/l.	Enter mls Added
K-MET SS1 *** Add after HNO3 and before ALS-89 when making the solution	HNO3	50.0	1000ml	-	
	Al	100*	1000ml	200	
	Ag	100*	1000ml	5	
	Ba	100*	1000ml	100	
	Be	100*	1000ml	5	
	Cd	100*	1000ml	5	
	Co	100*	1000ml	50	
	Cr	100*	1000ml	20	
	Cu	100*	1000ml	25	
	Fe	100*	1000ml	100	
	Pb	100*	1000ml	50	
	Mn	100*	1000ml	50	
	Ni	100*	1000ml	50	
	Sb***	50	1000ml	50	
	V	100*	1000ml	50	
Zn	100*	1000ml	50		
K-MET SS2	HNO3	25.0	500ml	-	
	As	2.0	500ml	4	
	Cd	2.0	500ml	4	
	Pb	2.0	500ml	4	
	Se	2.0	500ml	4	
	Tl	2.0	500ml	4	
	Cu	2.0	500ml	4	
K-MET SS3	HNO3	25.0	500ml	-	
	As	50.0	500ml	100	
	Se	50.0	500ml	100	
	Tl	10.0	500ml	20	
	Hg	6	500	12	
K-MET SS4	HNO3	25	500ml	-	
	B	25	500ml	50	
	Mo	50	500ml	100	
	U	10	500mL	20	
K-MET SS5	HNO3	10.0	200ml	-	
	K**	20	200ml	1000	
	Na**	20	200ml	1000	
	Mg**	20	200ml	1000	
	Ca**	20	200ml	1000	

K-MET QCP-CICV-1	Ca, Mg, Na, K	no dilution	-	2500	
	Al, Ba	no dilution	-	1000	
	Fe	no dilution	-	500	
	Co, Mn, Ni, V, Zn	no dilution	-	250	
	Cu, Ag	no dilution	-	125	
	Cr	no dilution	-	100	
	Be	no dilution	-	25	
K-MET QCP-CICV-3	As, Pb, Se, Tl	no dilution	-	500	
	Cd	no dilution	-	250	

* Denotes volume of mixed stock standard.

** Denotes 10,000 ppm individual stock standards.

Standard	mls of standard	ppm	Logbook #	Exp. Date

ICP-MS LCSW AND SPIKING SOLUTIONS

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-1

k-met 1/100 QCP-CICV-1

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Al	10000	100
Ag	1250	12.5
Ba	10000	100
Be	250	2.5
Ca	25000	250
Co	2500	25
Cu	1250	12.5
Cr	1000	10
Fe	5000	50
K	25000	250
Mg	25000	250
Mn	2500	25
Na	25000	250
Ni	2500	25
V	2500	25
Zn	2500	25

0.50mL to 500mL Dilution of 1000ppm Sb

k-met 1ug/mL Sb

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Sb	1000	10

5.00mL to 500mL Dilution of Inorganics Ventures QCP-CICV-3

k-met 1/100 QCP-CICV-3

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
As	5000	50
Pb	5000	50
Se	5000	50
Tl	5000	50
Cd	2500	25

2.00mL to 200mL Dilution of 1,000 ppm Mo and 1,000 ppm U

k-met Mo/U 10ppm

Analyte	Concentration in solution (ppb)	Concentration in digest (ppb)
Mo	10000	20
U	10000	20

Preparation Information Benchsheet

Prep Run: 309728 **Prep Workflow:** MetDigAqICP **Status:** Draft **Prep Date:** 03/12/2018
Team: Metals **Prep Method:** METALS **Current Step:** Digestion 08:48
Analyst: JHINSON ILM04.0 **Due Date:** 02/08/2018
Rush/NPDES: NPDES **Hold Date:** 07/29/2018

3/20

18 (75)

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803087-02	Method Blank		10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
KQ1803087-01	Lab Control Sample		10 mL	10.9 mL			Metals T	1%HNO3, 5%HCl
K1801267-008	CO1-PW-3-5 (W)	.09	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-008: KQ1803087-03	Duplicate	.09	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1801267-008: KQ1803087-04	Matrix Spike	.09	10 mL	11.1 mL			Metals T	1%HNO3, 5%HCl
K1801267-017	CO3-PW-3-5 (W)	.03	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-001	Rinsate Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-002	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-003	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-004	Rinsate Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-005	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802063-006	Homog. Blank	.02	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802153-001	Discharge Point-001	.06	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802183-001	1	.01	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802183-002	2	.01	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802183-003	3	.01	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl
K1802183-004	4	.01	10 mL	10.5 mL			Metals T	1%HNO3, 5%HCl

Remove

17 Total Samples consisting of 13 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

K1802183 insufficient sample amounts for tests requested

Preparation Materials

Preparation Hardware / Equipment

Preparation Steps

Step Started Finished By Assisted By Training? Comments

Service Request #K1801628, K1801629, K1800770,
K1801138, ~~K1801267~~ #4,18; ~~K1801267~~ #9,1,13; K1801151

Instrument ID# K-ICP-AES-03

Calibration 022118AICP03

ALS LIMS Run # 581112

Pipette IDs: MU26922, V66550, V68260

Pipette Calibration Due: 4/22/18

ICP-OES Data Review Form

	Yes	No
1. Appropriate standardization completed	<u> X </u>	<u> </u>
2. ICV within control limits	<u> X </u>	<u> </u>
3. CCV's in control	<u> X </u>	<u> </u>
4. ICB/CCB's below MRL	<u> X </u>	<u> </u>
4. LLICV standard analyzed and in control	<u> X </u>	<u> </u>
5. ICS standards within 20% of true value	<u> X </u>	<u> </u>
7. All analytes within instrument linear range	<u> X </u>	<u> </u>
7. Adequate rinse out time allowed	<u> X </u>	<u> </u>
8. Was the run terminated? If so, why.	<u> </u>	<u> X </u>

See Benchsheet exception report for sample batch QC information.

Comments:

6010: 2X As MRL after 13:49

NR B after 15:02

Primary Review by RPM Date 2/21/18

Secondary Review by am Date 2/23/18

Data Review Form

Instrument ID#: K-ICP-AES-03
DataFile Name: R:\ICP\WIP\DATA\K-ICP-AES-03 (6500)\022118AICP03.txt
RUNNO: 581112

K1800770

No exceptions to report.

K1801138

K1801138-001SDL - Metals T - 6010C

Serial Dillution

6010C/Metals T - Al3944 - Recovery: 13 Limit: 90

K1801151

K1801151-001MS - Metals TCLP - 6010C

MS Recovery

6010C/Metals TCLP - Ag3280 - Recovery: 47 Limits: 75 - 125

- PDS in control.

K1801267

No exceptions to report.

K1801628

No exceptions to report.

K1801629

No exceptions to report.

Primary Approver: RPM 2/21/18
Secondary Approver: AM 2/23/18

Sample Name: BLK Acquired: 2/21/2018 11:48:06 Type: Cal
 Method: 2017B-6010-ICP-03(v113) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-22-C

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0002	-22.04	2.231	2.589	.0120	-5.2982	-12.49
Stddev	.0000	8.92	.975	1.127	.0009	2.3360	1.21
%RSD	16.87	40.47	43.70	43.54	7.603	44.091	9.687

#1	-.0002	-28.35	1.541	1.792	.0127	-6.9500	-13.35
#2	-.0003	-15.73	2.920	3.387	.0114	-3.6464	-11.64

Elem	Cd2144	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.0003	-.0001	.0013	.0368	-.0001	.0003	-.0003
Stddev	.0001	.0002	.0006	.0022	.0000	.0001	.0001
%RSD	47.52	201.1	42.82	5.982	26.16	23.83	33.39

#1	-.0002	-.0002	.0009	.0384	-.0001	.0004	-.0002
#2	-.0004	.0000	.0018	.0352	.0000	.0003	-.0003

Elem	Cu3273	Fe2599	Pb2203	Li6707	Mg2790	Mg2795	Mg2852
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-241.5	.0001	.0001	-11.67	-.0003	.0093	6.800
Stddev	.6	.0001	.0001	17.02	.0004	.0012	2.475
%RSD	.2609	90.61	71.55	145.8	124.7	12.60	36.40

#1	-241.9	.0000	.0001	-23.71	.0000	.0102	5.050
#2	-241.0	.0001	.0000	.3650	-.0006	.0085	8.550

Elem	Mn2576	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00013	.0000	.0002	.0009	.0001	-14.94	.3600
Stddev	.00002	.000	.0002	.0003	.0002	23.79	.6976
%RSD	17.689	21.99	94.60	33.23	175.0	159.2	193.8

#1	.00014	.0000	.0001	.0007	.0000	-31.77	-.1333
#2	.00011	.0000	.0003	.0012	.0003	1.880	.8533

Sample Name: BLK Acquired: 2/21/2018 11:48:06 Type: Cal
 Method: 2017B-6010-ICP-03(v113) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-22-C

Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.7750	-26.44	-57.18	-.00264	.0000	.0001	.0011
Stddev	.2475	4.86	15.61	.00059	.0001	.0000	.0001
%RSD	31.93	18.38	27.31	22.378	561.8	1.877	12.54

#1	.9500	-23.00	-68.22	-.00222	-.0001	.0001	.0012
#2	.6000	-29.87	-46.14	-.00305	.0001	.0001	.0010

Elem	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0002	.0000	2.236	.0012	-.9263
Stddev	.0000	.000	.307	.0002	.3012
%RSD	16.26	956.5	13.74	15.46	32.52

#1	.0002	-.0001	2.019	.0011	-1.139
#2	.0002	.0001	2.453	.0014	-.7133

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4203.4	140850.	7702.5
Stddev	9.2	811.	39.2
%RSD	.21784	.57601	.50905

#1	4209.9	140270.	7674.8
#2	4197.0	141420.	7730.2

*Paul
2/21/18
Ann
2/23/18*

Sample Name: STD A Acquired: 2/21/2018 11:50:34 Type: Cal
 Method: 2017B-6010-ICP-03(v113) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-19-A

Elem	Al1670	Sb2068	Be2348	B_2496	Cd2144	Cd2265	Ca3933	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1376	200.9	23833.	2142.	1.416	1.131	12.02	.0434
Stddev	.0005	.9	101.	1.	.008	.005	.02	.0002
%RSD	.3712	.4421	.42251	.0292	.5426	.4824	.1339	.4607

#1	.1372	200.3	23904.	2142.	1.411	1.127	12.03	.0433
#2	.1380	201.6	23762.	2142.	1.422	1.135	12.01	.0436

Elem	Co2307	Cu2247	Cu3273	Pb2203	Mg2795	Mn2576	Mo2020	Ni2216
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4472	.2547	9235.	.0896	2.082	.29208	.3333	.4496
Stddev	.0019	.0015	44.	.0008	.001	.00146	.0018	.0021
%RSD	.4317	.5785	.4760	.9216	.0323	.50137	.5347	.4710

#1	.4458	.2536	9267.	.0891	2.081	.29104	.3321	.4481
#2	.4486	.2557	9204.	.0902	2.082	.29311	.3346	.4511

Elem	Se1960	Ag3280	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	148.9	12390.	.0700	.0767	.1938	.0536	.3755	4700.
Stddev	.2	1.	.0003	.0005	.0003	.0003	.0008	6.
%RSD	.1312	.0095	.4952	.7045	.1700	.4678	.2060	.1237

#1	148.8	12390.	.0697	.0764	.1936	.0535	.3750	4696.
#2	149.0	12390.	.0702	.0771	.1941	.0538	.3761	4704.

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4237.5	143330.	7953.3
Stddev	12.0	456.	74.3
%RSD	.28248	.31805	.93378

#1	4246.0	143650.	7900.8
#2	4229.1	143010.	8005.8

Sample Name: STD B Acquired: 2/21/2018 11:52:46 Type: Cal
 Method: 2017B-6010-ICP-03(v113) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-19-B

Elem	Al3944	As1890	Ba4554	Ca3158	Fe2599	Li6707	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	139300.	540.1	81.76	1.506	2.177	16940.	.2493
Stddev	877.	.2	.94	.015	.023	100.	.0042
%RSD	.6299	.0366	1.154	.9732	1.066	.5910	1.677

#1	138600.	540.0	81.09	1.495	2.161	17010.	.2464
#2	139900.	540.3	82.43	1.516	2.194	16860.	.2523

Elem	Mg2852	Mn2605	P_1782	K_7664	Si2516	Na5895	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	53710.	.0278	1.184	7755.	5734.	23080.	16.496
Stddev	75.	.0000	.001	19.	4.	36.	.181
%RSD	.1391	.0497	.0420	.2472	.0677	.1566	1.0968

#1	53760.	.0278	1.184	7742.	5737.	23100.	16.368
#2	53650.	.0278	1.185	7769.	5731.	23050.	16.624

Elem	Bi2230	S_1820
Units	Cts/S	Cts/S
Avg	.2879	313.4
Stddev	.0006	.0
%RSD	.2248	.0090

#1	.2874	313.4
#2	.2883	313.4

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4250.3	140270.	8088.5
Stddev	5.4	435.	88.4
%RSD	.12723	.31034	1.0925

#1	4254.1	140570.	8151.0
#2	4246.5	139960.	8026.0

Sample Name: ICVB Acquired: 2/21/2018 11:55:24 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-20-A

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9654	1.117	-.0039	.0003	.0012	.00000	2.103	-.0001
Stddev	.0010	.002	.0003	.0009	.0004	.00007	.009	.0000
%RSD	.0993	.2006	6.986	266.3	34.38	2985.0	.4319	15.04

#1	.9661	1.118	-.0037	.0010	.0009	-.00005	2.097	-.0001
#2	.9647	1.115	-.0041	-.0003	.0015	.00005	2.109	-.0001

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	5.269	5.015	-.0013	-.0004	.0000	-.0011	10.73
Stddev	.000	.039	.007	.0002	.0000	.0002	.0008	.07
%RSD	15890.	.7386	.1411	15.52	10.50	1070.	73.81	.6129

#1	.0002	5.241	5.020	-.0015	-.0004	.0001	-.0016	10.68
#2	-.0002	5.296	5.010	-.0012	-.0004	-.0001	-.0005	10.77

Check ?	None	None	Chk Pass	None	None	None	None	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	2.016	5.168	5.087	5.093	9.6822	10.20	.0002
Stddev	.0001	.008	.093	.012	.004	.0961	.06	.0001
%RSD	160.8	.4122	1.799	.2272	.0888	.99258	.5921	30.68

#1	.0001	2.022	5.234	5.079	5.089	9.7502	10.24	.0003
#2	.0000	2.010	5.102	5.095	5.096	9.6143	10.16	.0002

Check ?	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	None
Value								
Range								

Sample Name: ICVB Acquired: 2/21/2018 11:55:24 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-20-A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	5.054	.0243	-.0001	5.173	-.0007	14.39	2.1255
Stddev	.0004	.011	.0333	.0015	.021	.0002	.01	.0143
%RSD	134.5	.2091	137.0	1143.	.4149	35.71	.0684	.67432

#1	.0006	5.062	.0008	.0009	5.158	-.0009	14.38	2.1154
#2	.0000	5.047	.0479	-.0012	5.188	-.0005	14.40	2.1356

Check ?	None	Chk Pass	None	None	Chk Pass	None	None	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	5.000	-.0002	.0002	.0001	.0002	5.251	4.991
Stddev	.0024	.000	.0001	.0004	.0005	.0000	.002	.012
%RSD	905.4	.0052	36.92	145.2	360.7	13.36	.0402	.2407

#1	.0014	5.000	-.0003	.0005	-.0002	.0002	5.252	4.983
#2	-.0020	4.999	-.0002	.0000	.0005	.0002	5.249	5.000

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4230.8	141270.	7946.1
Stddev	7.5	539.	15.1
%RSD	.17741	.38139	.19026

#1	4236.1	140890.	7956.7
#2	4225.5	141650.	7935.4

Sample Name: ICV Acquired: 2/21/2018 11:57:56 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-14-D

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.332	5.429	2.496	2.527	5.329	.12752	.0084	1.268
Stddev	.013	.053	.005	.005	.043	.00077	.0005	.004
%RSD	.3007	.9735	.1886	.2057	.7997	.60655	6.415	.2838

#1	4.323	5.392	2.500	2.531	5.298	.12806	.0087	1.265
#2	4.341	5.467	2.493	2.523	5.359	.12697	.0080	1.270

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.262	13.22	12.18	.5149	1.261	.6161	.6112	2.647
Stddev	.002	.08	.21	.0007	.003	.0007	.0022	.017
%RSD	.1775	.6005	1.738	.1297	.2037	.1078	.3600	.6336

#1	1.260	13.17	12.03	.5154	1.259	.6157	.6096	2.635
#2	1.263	13.28	12.33	.5144	1.263	.6166	.6127	2.658

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.498	.0005	13.26	12.53	12.50	1.2368	1.273	.5334
Stddev	.004	.0028	.11	.15	.06	.0090	.007	.0017
%RSD	.1483	514.2	.7922	1.203	.4934	.72481	.5932	.3208

#1	2.496	-.0014	13.19	12.42	12.55	1.2304	1.278	.5322
#2	2.501	.0025	13.33	12.64	12.46	1.2431	1.267	.5346

Check ?	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: ICV Acquired: 2/21/2018 11:57:56 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-14-D

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.255	.0021	12.70	2.488	.1860	.5887	12.85	.00024
Stddev	.003	.0002	.01	.000	.0012	.0045	.04	.00001
%RSD	.2547	11.54	.0751	.0103	.6545	.7586	.3137	4.6277

#1	1.252	.0022	12.71	2.488	.1852	.5855	12.87	.00024
#2	1.257	.0019	12.70	2.487	.1869	.5918	12.82	.00025

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.478	.0025	2.129	1.320	1.271	1.235	.0052	.0000
Stddev	.003	.0003	.001	.003	.005	.002	.0045	.002
%RSD	.1013	10.58	.0461	.2213	.3959	.1644	87.45	3271.

#1	2.476	.0024	2.130	1.322	1.267	1.237	.0020	.0010
#2	2.480	.0027	2.129	1.318	1.274	1.234	.0084	-.0011

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4160.3	139730.	7858.2
Stddev	9.4	786.	72.5
%RSD	.22624	.56277	.92214

#1	4167.0	140290.	7909.5
#2	4153.7	139170.	7807.0

Sample Name: ICB Acquired: 2/21/2018 12:00:15 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0006	.0066	-.0014	-.0005	-.00011	.0030	.0000
Stddev	.0000	.0007	.0016	.0061	.0002	.00008	.0005	.000
%RSD	31.81	120.1	23.79	448.4	40.73	70.504	14.98	151.1

#1	-.0001	-.0011	.0055	-.0057	-.0006	-.00006	.0034	-.0001
#2	-.0002	-.0001	.0077	.0030	-.0003	-.00017	.0027	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0020	-.0001	.0003	.0002	-.0003	-.0010	-.0044
Stddev	.0000	.0049	.0001	.0002	.0001	.0001	.0002	.0044
%RSD	9.733	250.0	160.8	74.60	43.51	26.88	21.85	99.52

#1	.0001	.0054	.0000	.0001	.0002	-.0003	-.0009	-.0013
#2	.0001	-.0015	-.0001	.0004	.0001	-.0004	-.0012	-.0075

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0016	.0098	.0001	-.0008	.00047	-.0013	.0015
Stddev	.0015	.0015	.0275	.0000	.0004	.00001	.0019	.0003
%RSD	1170.	96.94	280.2	4.732	56.21	2.3910	148.4	20.27

#1	-.0009	.0005	-.0096	.0002	-.0005	.00048	.0001	.0017
#2	.0012	.0026	.0292	.0001	-.0011	.00047	-.0027	.0012

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 2/21/2018 12:00:15 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0020	.0333	.0040	.0127	-.0005	-.0265	.00000
Stddev	.0001	.0008	.0056	.0015	.0058	.0000	.0004	.0001
%RSD	105.4	41.98	16.82	36.81	45.59	7.817	1.498	1737.2
#1	.0000	.0026	.0373	.0029	.0086	-.0005	-.0262	.00004
#2	.0002	.0014	.0294	.0050	.0168	-.0005	-.0268	-.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0008	.0003	-.0002	.0001	.0001	-.0019	-.0018
Stddev	.0007	.0005	.0003	.0000	.0001	.0000	.0002	.0007
%RSD	191.9	58.30	100.9	8.642	109.9	45.63	12.88	40.31
#1	.0008	.0005	.0001	-.0002	.0002	.0001	-.0017	-.0013
#2	-.0001	.0012	.0006	-.0002	.0000	.0001	-.0020	-.0023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4290.1	144180.	7921.3
Stddev	23.2	492.	16.9
%RSD	.53995	.34142	.21379
#1	4273.7	143830.	7933.3
#2	4306.4	144520.	7909.3

Sample Name: LLICV Acquired: 2/21/2018 12:02:44 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50ml

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097	.0125	.0185	.0094	.0036	.00091	.0217	.0010
Stddev	.0001	.0002	.0002	.0012	.0003	.00006	.0001	.0000
%RSD	1.530	1.315	1.315	13.09	7.787	6.3615	.5180	1.393

#1	.0098	.0126	.0187	.0103	.0038	.00095	.0218	.0010
#2	.0096	.0124	.0183	.0085	.0034	.00087	.0217	.0010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0172	.0197	.0041	.0018	.0036	.0041	.0175
Stddev	.0001	.0033	.0000	.0000	.0004	.0005	.0006	.0025
%RSD	8.133	19.17	.1172	1.009	20.33	13.75	14.66	14.46

#1	.0011	.0149	.0197	.0041	.0021	.0032	.0036	.0193
#2	.0012	.0195	.0197	.0040	.0016	.0039	.0045	.0157

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0091	.0211	.0381	.0046	F .0026	.00123	-.0008	.0042
Stddev	.0017	.0011	.0028	.0000	.0016	.00011	.0017	.0002
%RSD	18.69	5.017	7.394	.9380	63.29	8.6002	211.1	4.495

#1	.0079	.0203	.0401	.0046	.0014	.00131	.0004	.0041
#2	.0103	.0218	.0361	.0045	.0037	.00116	-.0020	.0044

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
Value					.0050			
Range					-30.00%			

Sample Name: LLICV Acquired: 2/21/2018 12:02:44 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50ml

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0038	.0387	.1842	.0203	.1905	.0037	.1920	.00100
Stddev	.0000	.0003	.0278	.0007	.0104	.0002	.0016	.00001
%RSD	.6061	.7131	15.11	3.342	5.439	5.633	.8579	1.4459

#1	.0038	.0389	.1646	.0208	.1978	.0038	.1932	.00101
#2	.0038	.0385	.2039	.0198	.1832	.0035	.1909	.00099

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086	.0195	.0022	.0040	.0038	.0039	.0191	.0391
Stddev	.0014	.0003	.0001	.0008	.0000	.0001	.0001	.0023
%RSD	16.00	1.540	5.911	21.17	.7978	1.406	.7279	5.989

#1	.0077	.0193	.0022	.0046	.0039	.0039	.0190	.0374
#2	.0096	.0197	.0021	.0034	.0038	.0040	.0192	.0408

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4268.4	138490.	7546.0
Stddev	13.2	671.	38.4
%RSD	.30807	.48452	.50929

#1	4259.1	138020.	7573.2
#2	4277.7	138970.	7518.8

Sample Name: LLICV Acquired: 2/21/2018 12:05:11 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50ml

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0102	.0114	.0184	.0073	F .0028	.00088	.0211	.0010
Stddev	.0002	.0006	.0016	.0008	.0003	.00006	.0005	.0000
%RSD	1.793	5.648	8.569	11.41	12.52	6.4794	2.154	4.231

#1	.0101	.0110	.0173	.0079	.0025	.00084	.0214	.0010
#2	.0103	.0119	.0195	.0067	.0030	.00093	.0208	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value					.0040			
Range					-30.00%			

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0207	.0185	.0038	.0020	.0041	.0039	.0195
Stddev	.0001	.0103	.0003	.0002	.0001	.0004	.0004	.0028
%RSD	9.769	49.76	1.615	5.144	5.648	8.655	9.486	14.56

#1	.0012	.0134	.0183	.0037	.0021	.0038	.0036	.0175
#2	.0011	.0279	.0187	.0040	.0020	.0043	.0042	.0215

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085	.0207	.0086	.0038	F .0011	.00111	.0003	.0042
Stddev	.0013	.0002	.0603	.0000	.0003	.00006	.0010	.0002
%RSD	15.78	.9665	702.3	.7807	26.84	5.8079	351.4	5.033

#1	.0094	.0208	.0513	.0038	.0009	.00106	.0004	.0044
#2	.0075	.0205	-.0341	.0038	.0013	.00115	-.0010	.0041

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
Value					.0050			
Range					-30.00%			

*2/21/18
 run
 not needed*

Sample Name: LLICV Acquired: 2/21/2018 12:05:11 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50ml

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0396	.2149	.0201	.1954	.0038	.1883	.00108
Stddev	.0001	.0007	.0147	.0004	.0032	.0000	.0017	.00012
%RSD	2.748	1.759	6.839	2.080	1.642	.7984	.9010	11.523

#1	.0040	.0401	.2253	.0204	.1931	.0038	.1895	.00099
#2	.0038	.0391	.2045	.0198	.1977	.0039	.1871	.00117

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	.0198	.0020	.0036	.0040	.0039	.0201	.0395
Stddev	.0008	.0013	.0000	.0009	.0003	.0000	.0008	.0109
%RSD	8.326	6.340	.9650	24.75	7.199	.5047	3.756	27.61

#1	.0100	.0207	.0020	.0042	.0042	.0039	.0207	.0472
#2	.0089	.0189	.0020	.0030	.0038	.0039	.0196	.0317

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4275.6	142560.	7835.8
Stddev	10.2	41.	40.3
%RSD	.23804	.02848	.51482

#1	4268.4	142530.	7864.4
#2	4282.8	142590.	7807.3

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Sample Name: LLICV,0.5 Acquired: 2/21/2018 12:07:38 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 1.0/50ml

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197	.0232	.0368	.0168	.0079	.00192	.0408	.0019
Stddev	.0000	.0009	.0021	.0000	.0000	.00004	.0016	.0001
%RSD	.2162	3.764	5.780	.2775	.5725	2.2733	3.897	3.475

#1	.0197	.0238	.0383	.0168	.0079	.00189	.0397	.0019
#2	.0197	.0225	.0353	.0168	.0079	.00195	.0420	.0020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	.0365	.0419	.0082	.0041	.0076	.0074	.0397
Stddev	.0000	.0073	.0000	.0007	.0001	.0002	.0006	.0008
%RSD	1.438	20.15	.0369	7.980	1.289	2.988	7.913	1.977

#1	.0021	.0313	.0419	.0087	.0041	.0078	.0078	.0403
#2	.0021	.0416	.0419	.0078	.0040	.0075	.0070	.0392

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0201	.0430	-.0044	.0104	.0079	.00241	.0012	.0080
Stddev	.0009	.0001	.0205	.0001	.0005	.00002	.0017	.0000
%RSD	4.683	.2690	464.7	1.389	6.641	.76807	144.0	.2666

#1	.0195	.0429	-.0189	.0103	.0083	.00243	.0000	.0080
#2	.0208	.0430	.0101	.0105	.0076	.00240	.0024	.0080

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value Range								

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not used

Sample Name: LLICV,0.5 Acquired: 2/21/2018 12:07:38 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 1.0/50ml

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0081	.0781	.4087	.0387	.3982	.0082	.3848	.00229
Stddev	.0004	.0030	.0209	.0017	.0027	.0004	.0099	.00000
%RSD	4.955	3.819	5.119	4.302	.6814	4.765	2.579	.15009

#1	.0084	.0802	.4235	.0399	.4001	.0079	.3918	.00228
#2	.0078	.0760	.3939	.0375	.3963	.0084	.3778	.00229

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0198	.0410	.0042	.0085	.0078	.0078	.0395	.0801
Stddev	.0012	.0002	.0003	.0004	.0002	.0002	.0000	.0012
%RSD	5.974	.4163	7.693	4.396	3.088	2.394	.1002	1.532

#1	.0206	.0411	.0039	.0087	.0080	.0079	.0395	.0792
#2	.0189	.0409	.0044	.0082	.0077	.0076	.0395	.0810

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4284.9	137460.	7546.2
Stddev	55.8	620.	18.0
%RSD	1.3026	.45137	.23801

#1	4245.4	137020.	7533.5
#2	4324.4	137900.	7558.9

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Sample Name: CCVB1 Acquired: 2/21/2018 12:10:05 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.776	10.82	-.0009	1.009	F 11.09	-.00017	.0026	-.0001
Stddev	.060	.06	.0023	.002	.04	.00001	.0004	.0000
%RSD	.7756	.5390	263.2	.1798	.3528	8.2885	17.01	58.16

#1	7.818	10.86	.0007	1.008	11.06	-.00018	.0023	-.0001
#2	7.733	10.78	-.0025	1.010	11.11	-.00016	.0029	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Fail	None	None	None
Value					10.00			
Range					10.44%			

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.97	10.41	-.0003	.0001	-.0001	-.0003	10.96
Stddev	.0001	.02	.04	.0002	.0003	.0003	.0002	.00
%RSD	233.5	.1772	.4311	49.32	242.3	223.1	90.66	.0355

#1	.0000	10.95	10.45	-.0002	-.0001	.0001	-.0001	10.96
#2	.0001	10.98	10.38	-.0005	.0003	-.0003	-.0004	10.97

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	1.033	10.98	10.74	10.31	1.0797	1.068	.0001
Stddev	.0010	.007	.01	.14	.05	.0015	.010	.0000
%RSD	53.53	.6817	.0853	1.298	.4557	.13584	.9488	16.62

#1	.0011	1.028	10.97	10.84	10.28	1.0787	1.061	.0001
#2	.0025	1.038	10.98	10.64	10.34	1.0807	1.075	.0001

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

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Sample Name: CCVB1 Acquired: 2/21/2018 12:10:05 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	10.66	10.12	.0004	10.15	-.0005	10.13	1.0975
Stddev	.0004	.06	.14	.0010	.05	.0004	.07	.0007
%RSD	60.29	.5582	1.355	283.7	.4744	68.66	.7183	.06335

#1	.0010	10.70	10.02	-.0004	10.12	-.0008	10.08	1.0970
#2	.0004	10.61	10.22	.0011	10.19	-.0003	10.18	1.0980

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0007	.0001	.0002	.0001	.0000	1.084	.9992
Stddev	.0008	.0008	.0000	.0004	.0001	.0001	.008	.0035
%RSD	46.44	114.3	31.55	210.5	71.07	274.8	.7526	.3455

#1	.0011	.0001	.0001	-.0001	.0001	.0001	1.089	1.002
#2	.0022	.0012	.0001	.0005	.0002	.0000	1.078	.9968

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4076.1	133590.	7532.7
Stddev	21.2	625.	51.8
%RSD	.51928	.46803	.68788

#1	4061.1	134040.	7496.1
#2	4091.1	133150.	7569.4

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Sample Name: CCVB1 Acquired: 2/21/2018 12:14:35 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.692	10.65	-.0017	1.006	10.72	-.00016	.0013	-.0001
Stddev	.026	.15	.0035	.001	.16	.00009	.0002	.0001
%RSD	.3351	1.387	203.1	.0686	1.537	53.365	13.02	63.32

#1	7.674	10.55	-.0042	1.005	10.60	-.00023	.0014	-.0002
#2	7.711	10.76	.0007	1.006	10.84	-.00010	.0012	-.0001

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.57	10.03	.0000	.0003	-.0004	-.0005	10.54
Stddev	.0000	.12	.15	.0006	.0000	.0004	.0002	.11
%RSD	40.81	1.115	1.487	3454.	7.923	93.42	33.40	1.059

#1	-.0001	10.49	9.920	-.0004	.0003	-.0007	-.0006	10.46
#2	-.0001	10.65	10.13	.0004	.0004	-.0001	-.0004	10.62

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	1.026	10.50	10.04	10.22	1.0461	1.030	.0001
Stddev	.0021	.001	.12	.06	.02	.0018	.007	.0002
%RSD	522.3	.1312	1.146	.6190	.1896	.17376	.6794	230.1

#1	-.0011	1.027	10.41	9.992	10.23	1.0474	1.035	-.0001
#2	.0019	1.025	10.58	10.08	10.20	1.0448	1.025	.0002

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB1 Acquired: 2/21/2018 12:14:35 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	10.50	10.15	-.0017	10.03	.0001	10.03	1.0535
Stddev	.0004	.05	.02	.0001	.05	.0002	.01	.0113
%RSD	60.76	.5018	.1989	8.019	.4624	202.6	.0993	1.0689

#1	.0010	10.46	10.16	-.0018	9.995	.0003	10.04	1.0455
#2	.0004	10.54	10.13	-.0016	10.06	.0000	10.02	1.0614

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
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Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	.0004	.0001	-.0001	.0002	.0001	1.066	.9936
Stddev	.0007	.0015	.0000	.0002	.0001	.0000	.001	.0042
%RSD	42.43	389.3	7.455	111.4	87.36	22.83	.0785	.4198

#1	-.0011	-.0007	.0001	-.0003	.0003	.0001	1.066	.9906
#2	-.0021	.0015	.0001	.0000	.0001	.0001	1.067	.9965

Check ? Value Range	None	None	None	None	None	None	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4120.3	136810.	7751.6
Stddev	14.4	243.	83.8
%RSD	.34847	.17748	1.0805

#1	4130.5	136640.	7810.9
#2	4110.2	136980.	7692.4

Sample Name: CCVA1 Acquired: 2/21/2018 12:17:22 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2619	.3011	.2595	.2632	.2805	.26117	.2596	.2639
Stddev	.0045	.0033	.0014	.0032	.0015	.00194	.0056	.0024
%RSD	1.731	1.108	.5345	1.203	.5280	.74222	2.140	.9254

#1	.2651	.2988	.2586	.2655	.2794	.25980	.2557	.2656
#2	.2587	.3035	.2605	.2610	.2815	.26254	.2636	.2621

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2647	.5557	.5317	.2679	.2623	.2626	.2632	.2732
Stddev	.0037	.0066	.0009	.0002	.0028	.0024	.0019	.0046
%RSD	1.416	1.193	.1631	.0917	1.079	.9326	.7303	1.699

#1	.2673	.5510	.5311	.2680	.2643	.2643	.2619	.2699
#2	.2621	.5604	.5323	.2677	.2603	.2608	.2646	.2765

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2628	.0029	.2738	.2674	.2616	.27049	.2611	.2616
Stddev	.0048	.0003	.0022	.0008	.0013	.00074	.0023	.0028
%RSD	1.836	10.60	.8101	.3004	.4993	.27357	.8984	1.075

#1	.2662	.0027	.2754	.2669	.2625	.27101	.2627	.2636
#2	.2594	.0031	.2723	.2680	.2606	.26997	.2594	.2596

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA1 Acquired: 2/21/2018 12:17:22 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2628	.0027	2.725	.2590	.1408	.2636	.2433	.00015
Stddev	.0030	.0010	.053	.0000	.0031	.0008	.0025	.00003
%RSD	1.152	36.82	1.944	.0160	2.227	.2901	1.019	19.742

#1	.2649	.0033	2.687	.2591	.1430	.2631	.2450	.00013
#2	.2607	.0020	2.762	.2590	.1385	.2642	.2415	.00017

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2606	.2632	.2672	.2663	.2624	.2625	-.0001	-.0012
Stddev	.0025	.0033	.0002	.0006	.0024	.0002	.0000	.0006
%RSD	.9605	1.256	.0669	.2315	.9263	.0741	47.16	48.29

#1	.2623	.2656	.2673	.2659	.2642	.2626	-.0001	-.0008
#2	.2588	.2609	.2670	.2667	.2607	.2623	-.0001	-.0016

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4256.1	140800.	7820.1
Stddev	36.0	707.	11.2
%RSD	.84538	.50204	.14298

#1	4230.6	140300.	7828.0
#2	4281.5	141300.	7812.2

Sample Name: CCB Acquired: 2/21/2018 12:19:42 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0006	-.0014	-.0006	-.0005	-.00011	.0005	-.0001
Stddev	.0006	.0014	.0005	.0007	.0003	.00001	.0004	.0000
%RSD	465.7	225.1	35.16	129.2	69.73	6.8019	93.02	23.69
#1	-.0005	-.0017	-.0010	.0000	-.0002	-.00011	.0008	-.0001
#2	.0003	.0004	-.0017	-.0011	-.0007	-.00012	.0002	-.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0068	-.0008	-.0008	.0001	-.0004	-.0003	-.0010
Stddev	.0001	.0015	.0001	.0001	.0004	.0003	.0002	.0001
%RSD	82.96	22.04	12.52	9.705	816.1	74.51	51.05	11.97
#1	.0002	-.0057	-.0009	-.0009	-.0003	-.0002	-.0002	-.0011
#2	.0001	-.0078	-.0008	-.0008	.0004	-.0006	-.0004	-.0009

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0001	-.0151	-.0007	-.0018	.00007	-.0012	.0006
Stddev	.0003	.0003	.0045	.0000	.0016	.00002	.0014	.0001
%RSD	73.22	492.3	29.64	2.889	87.14	22.755	116.0	15.24
#1	.0006	.0002	-.0183	-.0007	-.0007	.00008	-.0002	.0006
#2	.0002	-.0001	-.0119	-.0007	-.0030	.00006	-.0023	.0007

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 12:19:42 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0013	.0322	.0021	.0113	-.0002	-.0196	.00009
Stddev	.0004	.0006	.0484	.0008	.0083	.0001	.0159	.00005
%RSD	154.9	49.61	150.4	38.37	72.93	54.10	81.09	57.086
#1	.0000	.0008	.0664	.0026	.0172	-.0001	-.0084	.00012
#2	-.0005	.0017	-.0020	.0015	.0055	-.0002	-.0308	.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	-.0006	.0001	.0001	.0001	-.0001	-.0017	.0027
Stddev	.0020	.0004	.0000	.0005	.0001	.0001	.0010	.0002
%RSD	315.0	57.57	26.08	994.6	82.33	57.93	57.89	5.622
#1	.0008	-.0004	.0001	.0004	.0002	-.0001	-.0010	.0026
#2	-.0020	-.0009	.0002	-.0003	.0000	-.0001	-.0024	.0028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4262.0	144280.	8303.3
Stddev	13.9	979.	70.0
%RSD	.32511	.67848	.84351
#1	4271.8	144980.	8352.8
#2	4252.2	143590.	8253.8

Sample Name: ICSA Acquired: 2/21/2018 12:22:55 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-12-C

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.82	381.9	.0031	.0005	-.0003	-.00110	.0209	-.0020
Stddev	.05	2.8	.0035	.0036	.0001	.00012	.0024	.0000
%RSD	.2142	.7323	112.5	690.7	48.24	10.911	11.41	.9075

#1	21.86	383.9	.0055	.0031	-.0004	-.00119	.0226	-.0020
#2	21.79	380.0	.0006	-.0020	-.0002	-.00102	.0192	-.0020

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0034	524.8	*****	-.0045	-.0081	-.0071	-.0085	206.6
Stddev	.0001	.8	----	.0001	.0001	.0003	.0002	.6
%RSD	4.435	.1585	----	1.580	.9963	3.709	2.832	.2872

#1	-.0032	525.4	----	-.0045	-.0081	-.0069	-.0087	207.1
#2	-.0035	524.2	----	-.0044	-.0080	-.0073	-.0084	206.2

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0133	.0079	564.9	*****	400.3	-.01932	-.0115	-.0001
Stddev	.0006	.0016	.2	----	.6	.00007	.0020	.0005
%RSD	4.408	20.60	.0296	----	.1439	.34075	17.40	379.5

#1	-.0137	.0067	565.0	----	400.7	-.01928	-.0101	-.0005
#2	-.0129	.0090	564.8	----	399.9	-.01937	-.0129	.0002

Check ?	None	None	Chk Pass	None	None	None	None	None
Value								
Range								

Sample Name: ICSA Acquired: 2/21/2018 12:22:55 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-12-C

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0034	-.0081	.0105	-.0111	.0085	-.0007	-.0217	.00464
Stddev	.0003	.0001	.0097	.0008	.0021	.0005	.0120	.00012
%RSD	7.852	1.553	92.41	7.196	24.35	80.53	55.03	2.6100

#1	-.0032	-.0082	.0036	-.0106	.0071	-.0011	-.0133	.00455
#2	-.0036	-.0080	.0173	-.0117	.0100	-.0003	-.0302	.00473

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	.0011	-.0012	-.0018	.0006	-.0027	.0132	.0066
Stddev	.0004	.0021	.0000	.0004	.0000	.0001	.0007	.0025
%RSD	44.78	189.1	.6117	20.42	5.583	2.170	5.346	37.43

#1	-.0012	-.0004	-.0012	-.0015	.0006	-.0027	.0137	.0083
#2	-.0006	.0026	-.0011	-.0020	.0006	-.0027	.0127	.0048

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3629.6	117660.	7222.7
Stddev	7.7	602.	13.0
%RSD	.21169	.51175	.18062

#1	3624.2	117230.	7232.0
#2	3635.1	118080.	7213.5

Sample Name: ICSAB Acquired: 2/21/2018 12:25:34 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-13-A

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.42	375.4	.8418	-.0006	.5214	.44198	.0189	.8965
Stddev	.07	2.3	.0056	.0062	.0003	.00072	.0009	.0032
%RSD	.3443	.6140	.6644	991.6	.0617	.16247	5.011	.3617

#1	21.47	377.0	.8378	.0037	.5212	.44147	.0195	.8988
#2	21.37	373.7	.8457	-.0050	.5216	.44249	.0182	.8942

Check ?	None	None	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8908	495.6	*****	.4795	.4329	.4403	.4204	192.6
Stddev	.0012	.9	----	.0024	.0000	.0010	.0000	.1
%RSD	.1397	.1861	----	.5002	.0102	.2204	.0116	.0357

#1	.8917	495.0	----	.4812	.4330	.4396	.4204	192.6
#2	.8899	496.3	----	.4778	.4329	.4410	.4204	192.5

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8489	.0066	522.7	*****	388.5	.44804	.4948	.0000
Stddev	.0018	.0008	.0	----	.3	.00215	.0053	.0001
%RSD	.2109	11.59	.0068	----	.0893	.47925	1.074	748.8

#1	.8501	.0072	522.7	----	388.3	.44956	.4986	.0001
#2	.8476	.0061	522.7	----	388.8	.44652	.4911	-.0001

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
Value								
Range								

Sample Name: ICSAB Acquired: 2/21/2018 12:25:34 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-13-A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8630	-.0062	-.0190	-.0099	.0114	.8291	-.0019	.00463
Stddev	.0015	.0012	.0213	.0011	.0071	.0010	.0082	.00018
%RSD	.1792	18.81	112.2	11.60	62.50	.1187	432.8	3.7955

#1	.8641	-.0054	-.0341	-.0091	.0164	.8298	.0039	.00450
#2	.8619	-.0071	-.0039	-.0107	.0064	.8284	-.0077	.00475

Check ?	Chk Pass	None	None	None	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0011	-.0010	.5052	.8914	.8248	.0099	.0035
Stddev	.0005	.0008	.0004	.0013	.0017	.0011	.0022	.0004
%RSD	49.12	74.26	40.56	.2625	.1879	.1347	22.27	11.66

#1	.0014	.0017	-.0007	.5043	.8926	.8240	.0084	.0032
#2	.0007	.0005	-.0013	.5062	.8902	.8256	.0115	.0038

Check ?	None	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3739.0	122500.	7402.3
Stddev	3.8	39.	24.7
%RSD	.10286	.03212	.33384

#1	3736.3	122530.	7419.8
#2	3741.7	122480.	7384.9

Sample Name: 200ppm Fe Acquired: 2/21/2018 12:32:16 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A *0.2ml/10ml 10,000ppm Fe*

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0488	-.0026	.0000	-.0017	-.00086	.0093	.0000
Stddev	.003	.0022	.0011	.001	.0000	.00001	.0009	.0001
%RSD	533600.	4.552	42.20	518000.	.0859	1.7213	9.856	14e15

#1	-.0023	.0504	-.0018	.0005	-.0017	-.00085	.0099	-.0001
#2	.0023	.0472	-.0033	-.0005	-.0017	-.00087	.0086	.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0503	.0000	-.0008	.0001	.0000	-.0017	F 206.7
Stddev	.0003	.0073	.0006	.0013	.0006	.0003	.0001	.0
%RSD	4982000.	14.48	6163e12	161.7	411.4	4464.	5.060	.0130

#1	-.0002	.0554	.0004	-.0018	.0006	.0002	-.0017	206.7
#2	.0002	.0451	-.0004	.0001	-.0003	-.0002	-.0016	206.7

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit								.0200
Low Limit								-.0200

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0051	.0006	.0311	.0000	.0232	-.00026	-.0057	-.0003
Stddev	.0004	.0008	.0208	.0012	.0014	.00002	.0016	.0002
%RSD	8.715	132.6	66.76	12e15	5.901	6.0796	29.00	66.77

#1	-.0048	.0012	.0458	.0008	.0242	-.00027	-.0045	-.0004
#2	-.0054	.0000	.0164	-.0008	.0223	-.00025	-.0068	-.0002

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: 200ppm Fe Acquired: 2/21/2018 12:32:16 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	-.0023	-.0148	-.0142	-.0058	-.0002	-.0141	-.00001
Stddev	.0002	.0009	.0198	.0017	.0000	.0004	.0015	.00008
%RSD	18.90	38.02	133.7	11.84	.0462	155.0	10.52	1546.8
#1	.0008	-.0017	-.0289	-.0154	-.0058	.0000	-.0131	-.00006
#2	.0011	-.0029	-.0008	-.0130	-.0058	-.0005	-.0152	.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.0016	-.0001	-.0029	.0005	.0017	.0083	.0246
Stddev	.0004	.0007	.0002	.0007	.0001	.0001	.0002	.0036
%RSD	74.15	41.45	463.6	25.14	20.51	6.475	2.606	14.64
#1	-.0003	.0021	.0001	-.0035	.0004	.0016	.0084	.0221
#2	-.0008	.0012	-.0002	-.0024	.0006	.0018	.0081	.0272

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4109.9	137620.	7637.9
Stddev	5.8	102.	19.7
%RSD	.14145	.07389	.25729
#1	4105.8	137550.	7624.0
#2	4114.0	137690.	7651.8

Sample Name: Acid Check Acquired: 2/21/2018 12:42:38 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0151	-.0006	-.0001	-.0020	-.00004	-.0001	.0001	.0001
#1	.0153	-.0010	-.0013	-.0019	-.00005	.0002	.0001	.0001
#2	.0149	-.0001	.0012	-.0021	-.00003	-.0003	.0000	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0152	.0003	-.0001	.0000	-.0007	.0069	.0011	.0009
#1	.0158	.0002	-.0002	-.0001	-.0009	.0058	.0014	.0011
#2	.0145	.0003	.0001	.0002	-.0006	.0081	.0008	.0007
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0155	-.00011	.0001	.0001	-.0006	.0691	-.0012	-.0003
#1	.0160	-.00006	.0002	.0000	-.0014	.0644	-.0010	.0004
#2	.0150	-.00016	.0001	.0002	.0003	.0738	-.0014	-.0010
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	-.0229	-.00008	-.0002	-.0001	.0000	-.0002	.0001
#1	-.0011	-.0246	-.00012	.0007	.0007	-.0003	-.0001	-.0001
#2	-.0010	-.0212	-.00004	-.0011	-.0009	.0002	-.0002	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	-.0001	-.0019	.0040					
#1	-.0001	-.0010	.0033					
#2	-.0001	-.0028	.0047					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4271.8	143220.	7876.5					
#1	4276.4	143870.	7853.0					
#2	4267.1	142570.	7900.0					

Ann
2/23/18

Sample Name: KQ1802238-01 Acquired: 2/21/2018 12:45:25 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A K1801628-MB 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0190	-.0035	.0007	-.0017	-.00003	.0004	-.0001	.0001
#1	.0117	-.0065	-.0008	-.0017	.00003	.0000	-.0001	.0001
#2	.0262	-.0005	.0022	-.0017	-.00008	.0008	.0000	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0118	.0001	.0001	.0001	-.0002	.0065	.0013	.0006
#1	.0114	.0001	.0004	-.0007	-.0005	.0042	.0016	-.0014
#2	.0123	.0002	-.0001	.0008	.0002	.0087	.0010	.0027
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0111	-.00008	.0001	-.0002	-.0017	.0576	-.0012	.0073
#1	.0106	-.00013	.0002	.0000	-.0018	.0572	-.0026	.0043
#2	.0117	-.00004	.0000	-.0004	-.0016	.0580	.0003	.0104
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0212	-.00009	-.0006	.0009	.0000	.0001	-.0001
#1	-.0004	-.0183	-.00010	-.0009	.0009	.0001	.0002	.0000
#2	-.0005	-.0241	-.00007	-.0003	.0010	-.0001	.0001	-.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	-.0002	-.0027	-.0019					
#1	-.0003	-.0043	.0034					
#2	-.0001	-.0011	-.0072					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4245.5	141520.	7883.9					
#1	4238.0	142060.	7883.5					
#2	4253.0	140990.	7884.3					

Sample Name: K1801628-001 Acquired: 2/21/2018 12:47:51 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0155	-.0034	-.0010	-.0018	-.00001	.0014	-.0001	.0000
#1	.0158	-.0035	.0005	-.0019	.00003	.0010	-.0001	-.0001
#2	.0152	-.0033	-.0025	-.0017	-.00006	.0017	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0150	.0013	-.0001	.0002	.0001	.0125	-.0006	.0022
#1	.0150	.0013	.0000	.0001	.0003	.0114	.0009	.0007
#2	.0150	.0012	-.0002	.0002	-.0001	.0135	-.0021	.0038
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0139	.00000	.0003	.0009	.7137	1.247	-.0006	.0027
#1	.0138	-.00004	.0003	.0009	.7149	1.275	-.0022	.0004
#2	.0139	.00003	.0003	.0009	.7125	1.218	.0010	.0050
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.1766	-.00008	-.0010	.6481	.0002	.0000	.0005
#1	-.0003	.1836	-.00017	-.0002	.6483	.0001	-.0007	.0005
#2	-.0003	.1697	.00000	-.0018	.6478	.0002	.0007	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0004	-.0016	-.0035					
#1	.0004	-.0012	-.0043					
#2	.0004	-.0020	-.0027					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4188.6	139460.	7769.6					
#1	4177.9	138790.	7789.1					
#2	4199.3	140130.	7750.0					

Sample Name: KQ1802238-02 Acquired: 2/21/2018 12:50:19 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A K1801628-001D 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0135	-.0027	.0031	-.0019	-.00006	.0009	.0000	-.0001
#1	.0139	-.0032	.0040	-.0019	-.00009	.0005	-.0001	-.0001
#2	.0131	-.0022	.0023	-.0019	-.00003	.0013	.0000	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0127	.0010	.0000	-.0001	-.0001	.0081	.0002	.0013
#1	.0131	.0008	.0000	-.0001	.0001	.0076	-.0009	.0020
#2	.0123	.0012	.0001	-.0002	-.0003	.0087	.0013	.0006
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	-.00004	.0000	.0005	.7319	1.260	-.0004	.0132
#1	.0088	-.00006	-.0004	.0004	.7293	1.259	.0004	.0126
#2	.0079	-.00002	.0003	.0005	.7345	1.261	-.0012	.0137
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.1918	-.00019	.0010	.6711	.0001	.0000	.0006
#1	-.0007	.1879	-.00018	.0003	.6707	.0002	.0000	.0004
#2	-.0001	.1958	-.00020	.0017	.6714	-.0001	.0001	.0007
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	-.0033	.0007					
#1	.0005	-.0038	.0008					
#2	.0005	-.0029	.0006					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4183.8	144160.	7874.5					
#1	4168.5	145750.	7824.5					
#2	4199.1	142560.	7924.6					

Sample Name: K1801629-001 Acquired: 2/21/2018 12:52:46 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0148	-.0027	-.0006	-.0016	-.00009	.0025	.0000	.0001
#1	.0144	-.0035	.0010	-.0015	-.00017	.0034	.0000	.0001
#2	.0151	-.0020	-.0023	-.0016	-.00002	.0017	.0000	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0147	.0028	-.0001	-.0004	.0012	.0095	-.0009	.0015
#1	.0148	.0025	-.0001	-.0003	.0011	.0114	-.0008	.0009
#2	.0146	.0031	-.0001	-.0006	.0014	.0077	-.0011	.0020
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	.00012	.0001	.0013	2.494	.1500	.0006	.0770
#1	.0083	.00009	-.0001	.0011	2.488	.1206	.0006	.0803
#2	.0084	.00014	.0003	.0014	2.500	.1793	.0006	.0737
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	1.879	-.00006	-.0003	.0031	.0004	.0003	.0001
#1	-.0003	1.867	-.00002	.0002	.0028	.0003	.0004	.0001
#2	-.0007	1.891	-.00011	-.0007	.0034	.0005	.0003	.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0000	-.0008	.0085					
#1	.0001	-.0004	.0071					
#2	.0000	-.0011	.0099					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4192.0	139200.	7727.2					
#1	4200.1	139570.	7727.9					
#2	4184.0	138840.	7726.5					

Sample Name: K1801629-002 Acquired: 2/21/2018 12:55:12 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0147	-.0011	.0012	-.0019	-.00004	.0028	.0000	.0001
#1	.0149	-.0036	.0009	-.0018	-.00007	.0029	.0000	.0000
#2	.0144	.0013	.0014	-.0019	-.00001	.0027	.0000	.0002
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0138	.0038	.0000	-.0002	.0010	.0192	-.0018	.0015
#1	.0137	.0038	-.0003	-.0003	.0012	.0221	-.0022	.0008
#2	.0138	.0038	.0002	-.0002	.0008	.0163	-.0013	.0021
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078	.00023	.0003	.0012	2.229	.0392	.0010	.0718
#1	.0080	.00018	.0001	.0013	2.244	.0299	.0013	.0772
#2	.0076	.00028	.0005	.0012	2.215	.0486	.0007	.0664
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	1.614	-.00001	-.0001	.0020	.0003	.0008	.0004
#1	-.0003	1.619	.00000	.0008	.0020	.0003	.0005	.0002
#2	-.0005	1.608	-.00002	-.0010	.0020	.0003	.0010	.0005
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	-.0001	-.0025	.0044					
#1	.0000	-.0013	.0050					
#2	-.0001	-.0037	.0038					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4064.4	135010.	7398.6					
#1	4056.6	135580.	7382.8					
#2	4072.2	134440.	7414.5					

Sample Name: K1801629-003 Acquired: 2/21/2018 12:57:38 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0176	-.0018	.0010	-.0019	.00001	.0008	.0000	.0000
#1	.0177	-.0044	-.0008	-.0018	.00001	.0005	.0000	-.0001
#2	.0176	.0007	.0027	-.0020	.00001	.0010	.0000	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0264	.0032	-.0002	-.0004	.0009	.0178	.0017	.0014
#1	.0263	.0032	-.0001	-.0007	.0012	.0178	.0023	.0002
#2	.0264	.0032	-.0002	.0000	.0007	.0177	.0011	.0027
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	.00022	.0005	.0023	1.218	.0718	-.0002	.0472
#1	.0052	.00019	.0004	.0027	1.211	.0731	-.0001	.0442
#2	.0061	.00025	.0007	.0019	1.225	.0706	-.0002	.0501
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	.9658	-.00011	-.0008	.0016	.0009	.0003	.0004
#1	-.0011	.9528	-.00010	-.0003	.0019	.0010	.0002	.0005
#2	-.0008	.9788	-.00012	-.0014	.0013	.0009	.0003	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0007	.0045					
#1	.0002	-.0011	.0047					
#2	.0002	-.0002	.0044					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3951.9	136350.	7636.6					
#1	3970.7	137410.	7664.8					
#2	3933.2	135290.	7608.5					

Sample Name: K1801629-004 Acquired: 2/21/2018 13:00:05 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: RRM 022118A 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0165	-.0029	-.0004	-.0017	-.00007	.0003	-.0001	.0001
#1	.0158	-.0050	-.0015	-.0015	-.00013	.0002	.0000	.0001
#2	.0172	-.0007	.0008	-.0019	-.00001	.0004	-.0001	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0077	.0037	.0003	-.0001	.0013	.0154	.0000	.0025
#1	.0077	.0037	.0004	.0002	.0009	.0173	.0001	.0023
#2	.0076	.0037	.0002	-.0003	.0016	.0135	-.0001	.0026
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	.00024	.0002	.0018	3.479	.0032	.0014	.0426
#1	.0041	.00021	.0004	.0015	3.486	.0366	-.0004	.0535
#2	.0040	.00026	.0001	.0020	3.473	-.0303	.0031	.0317
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	2.652	-.00003	-.0007	.0008	.0003	.0000	.0004
#1	-.0003	2.635	.00000	-.0007	.0010	.0003	.0003	.0005
#2	-.0008	2.669	-.00007	-.0007	.0006	.0003	-.0004	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0000	-.0014	.0049					
#1	.0000	-.0013	.0041					
#2	.0001	-.0015	.0056					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4144.5	137470.	7462.0					
#1	4146.5	136820.	7433.1					
#2	4142.6	138120.	7490.9					

Sample Name: KQ1801834-03 Acquired: 2/21/2018 13:02:31 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0038	-.0022	-.0015	-.0019	-.00019	.0000	-.0002	-.0001
#1	.0040	-.0019	-.0009	-.0017	-.00013	.0006	-.0002	.0000
#2	.0037	-.0025	-.0022	-.0020	-.00024	-.0007	-.0001	-.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0052	.0001	.0000	-.0002	.0000	.0020	-.0007	.0003
#1	.0053	-.0001	-.0003	-.0007	.0005	.0028	-.0005	-.0006
#2	.0052	.0004	.0002	.0002	-.0004	.0011	-.0010	.0012
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	-.00010	.0003	-.0001	.0172	.0590	.0008	.0061
#1	.0027	-.00014	.0003	-.0002	.0163	.0708	-.0024	.0051
#2	.0023	-.00006	.0004	.0000	.0180	.0472	.0040	.0071
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	-.0255	-.00015	-.0010	.0185	-.0002	.0000	.0005
#1	-.0007	-.0378	-.00019	-.0015	.0187	-.0001	.0004	.0006
#2	-.0007	-.0133	-.00011	-.0004	.0183	-.0002	-.0005	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	-.0002	.0015					
#1	.0005	.0005	.0013					
#2	.0005	-.0010	.0018					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4323.7	145660.	7914.5					
#1	4327.9	145900.	7883.2					
#2	4319.4	145410.	7945.9					

Sample Name: CCVB Acquired: 2/21/2018 13:05:00 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.614	10.69	-.0039	.9876	10.70	-.00019	-.0002	-.0001
Stddev	.011	.00	.0016	.0059	.12	.00012	.0005	.0000
%RSD	.1463	.0120	40.51	.6019	1.098	62.859	248.6	54.78

#1	7.622	10.69	-.0028	.9918	10.78	-.00027	.0002	-.0001
#2	7.607	10.69	-.0051	.9834	10.61	-.00011	-.0006	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.62	10.20	-.0001	.0003	-.0005	-.0005	10.56
Stddev	.0002	.01	.06	.0004	.0001	.0003	.0000	.02
%RSD	127.7	.1315	.6291	465.1	17.22	53.22	6.750	.2233

#1	.0000	10.63	10.24	.0002	.0003	-.0003	-.0005	10.58
#2	-.0002	10.61	10.15	-.0004	.0003	-.0007	-.0006	10.55

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	1.009	10.62	10.24	10.04	1.0403	1.020	-.0001
Stddev	.0003	.008	.02	.07	.01	.0041	.002	.0002
%RSD	14.31	.8271	.1740	.6549	.1154	.39604	.2209	225.0

#1	.0021	1.015	10.63	10.28	10.05	1.0432	1.021	-.0002
#2	.0017	1.003	10.61	10.19	10.03	1.0374	1.018	.0000

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 2/21/2018 13:05:00 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	10.29	9.829	-.0030	9.858	-.0007	9.839	1.0579
Stddev	.0003	.01	.005	.0014	.001	.0002	.021	.0057
%RSD	49.49	.1091	.0520	47.19	.0137	25.73	.2121	.53908
#1	.0008	10.30	9.826	-.0040	9.857	-.0005	9.854	1.0620
#2	.0004	10.28	9.833	-.0020	9.859	-.0008	9.825	1.0539

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0009	.0001	.0001	.0002	.0001	1.047	.9882
Stddev	.0004	.0006	.0001	.0005	.0001	.0001	.002	.0052
%RSD	117.0	69.57	59.39	561.2	59.04	55.12	.1859	.5279
#1	-.0006	.0004	.0001	-.0003	.0001	.0001	1.049	.9919
#2	-.0001	.0013	.0002	.0005	.0003	.0001	1.046	.9845

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4147.1	136160.	7593.1
Stddev	3.2	37.	21.0
%RSD	.07837	.02717	.27701
#1	4149.4	136140.	7578.2
#2	4144.8	136190.	7608.0

Sample Name: CCVA Acquired: 2/21/2018 13:07:40 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2574	.3006	.2568	.2519	.2701	.25335	.2533	.2558
Stddev	.0009	.0018	.0005	.0029	.0000	.00037	.0021	.0002
%RSD	.3405	.5894	.1759	1.143	.0141	.14684	.8152	.0967

#1	.2580	.3018	.2571	.2539	.2701	.25362	.2548	.2560
#2	.2567	.2993	.2565	.2498	.2701	.25309	.2519	.2557

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2569	.5478	.5274	.2558	.2539	.2558	.2571	.2691
Stddev	.0009	.0056	.0001	.0010	.0004	.0011	.0009	.0040
%RSD	.3629	1.025	.0257	.4045	.1549	.4191	.3684	1.468

#1	.2576	.5517	.5273	.2551	.2537	.2566	.2577	.2663
#2	.2563	.5438	.5275	.2565	.2542	.2551	.2564	.2719

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2549	-.0005	.2552	.2640	.2563	.26177	.2486	.2539
Stddev	.0001	.0025	.0237	.0011	.0008	.00125	.0014	.0006
%RSD	.0524	511.2	9.273	.4245	.3182	.47684	.5647	.2238

#1	.2550	-.0023	.2720	.2648	.2568	.26266	.2476	.2543
#2	.2548	.0013	.2385	.2632	.2557	.26089	.2496	.2535

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: CCVA Acquired: 2/21/2018 13:07:40 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2547	.0002	2.526	.2523	.1374	.2606	.2561	-.00008
Stddev	.0009	.0006	.015	.0017	.0051	.0015	.0136	.00007
%RSD	.3560	347.1	.5993	.6708	3.720	.5913	5.308	89.433
#1	.2553	.0006	2.537	.2535	.1410	.2617	.2657	-.00013
#2	.2540	-.0002	2.516	.2511	.1337	.2595	.2465	-.00003

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2550	.2556	.2562	.2549	.2540	.2546	-.0015	-.0031
Stddev	.0002	.0000	.0005	.0005	.0002	.0007	.0019	.0005
%RSD	.0718	.0015	.1880	.2108	.0815	.2828	124.1	17.45
#1	.2549	.2556	.2559	.2545	.2538	.2541	-.0029	-.0034
#2	.2551	.2556	.2566	.2553	.2541	.2551	-.0002	-.0027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4222.7	141800.	7728.5
Stddev	13.9	80.	16.8
%RSD	.33006	.05675	.21799
#1	4212.8	141860.	7716.6
#2	4232.6	141740.	7740.5

Sample Name: CCB Acquired: 2/21/2018 13:09:55 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0015	-.0032	-.0009	-.0016	-.00011	.0012	.0000
Stddev	.0002	.0008	.0022	.0011	.0003	.00004	.0004	.0000
%RSD	103.2	54.23	68.98	123.5	17.42	34.513	30.34	35.02

#1	.0001	-.0021	-.0017	-.0016	-.0018	-.00008	.0010	.0000
#2	.0004	-.0009	-.0048	-.0001	-.0014	-.00014	.0015	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0024	-.0004	-.0004	-.0002	-.0001	-.0005	.0003
Stddev	.0000	.0058	.0002	.0000	.0002	.0000	.0001	.0022
%RSD	185.4	243.9	50.07	8.513	136.4	8.067	16.10	757.0

#1	.0000	.0064	-.0005	-.0005	-.0003	-.0001	-.0006	.0018
#2	.0001	-.0017	-.0002	-.0004	.0000	-.0001	-.0005	-.0012

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.0020	-.0059	-.0003	-.0010	-.00009	-.0009	.0007
Stddev	.0000	.0024	.0182	.0003	.0022	.00000	.0000	.0002
%RSD	3.413	123.6	309.1	97.44	219.3	4.3300	2.409	32.61

#1	-.0007	.0002	.0070	-.0005	-.0026	-.00010	-.0009	.0008
#2	-.0006	.0037	-.0188	-.0001	.0006	-.00009	-.0009	.0005

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 13:09:55 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0008	.0292	-.0006	-.0004	-.0004	-.0230	-.00019
Stddev	.0002	.0001	.0091	.0007	.0064	.0004	.0068	.00006
%RSD	101.0	13.50	31.11	111.6	1450.	91.09	29.61	30.066
#1	-.0001	.0009	.0356	-.0001	.0041	-.0007	-.0182	-.00023
#2	-.0004	.0007	.0228	-.0011	-.0050	-.0001	-.0279	-.00015

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0008	-.0001	.0000	-.0001	-.0002	-.0006	.0002
Stddev	.0012	.0018	.0000	.000	.0001	.0001	.0006	.0044
%RSD	1066.	231.6	35.19	208.0	146.9	64.26	94.72	2618.
#1	.0010	-.0005	-.0001	.0000	-.0001	-.0001	-.0010	.0033
#2	-.0008	.0020	.0000	-.0001	.0000	-.0002	-.0002	-.0030

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4243.2	142040.	7853.7
Stddev	.3	248.	49.1
%RSD	.00720	.17474	.62484
#1	4243.4	142210.	7819.0
#2	4242.9	141860.	7888.4

Sample Name: KQ1801834-04 Acquired: 2/21/2018 13:12:25 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.30	.3890	.4872	1.718	.32049	.6752	.7893	.7913
#1	34.32	.3896	.4901	1.720	.31993	.6762	.7909	.7939
#2	34.29	.3883	.4843	1.716	.32106	.6743	.7877	.7888
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.00	.9831	.8702	.5474	.5363	71.92	.6507	.0392
#1	35.94	.9856	.8706	.5489	.5360	71.67	.6526	.0385
#2	36.06	.9806	.8698	.5459	.5366	72.17	.6489	.0399
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.94	2.1503	.9416	.8116	2.994	12.36	.6943	8.677
#1	12.95	2.1563	.9435	.8137	3.002	12.32	.6939	8.653
#2	12.92	2.1442	.9398	.8095	2.986	12.41	.6947	8.701
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1906	14.11	.47723	.9338	.5487	2.264	.5353	.9761
#1	.1912	14.05	.47763	.9354	.5501	2.260	.5362	.9781
#2	.1901	14.16	.47683	.9321	.5472	2.268	.5344	.9741
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.9181	-.0108	.6038					
#1	.9197	-.0121	.6051					
#2	.9165	-.0094	.6024					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4081.6	135160.	7650.1					
#1	4076.3	134920.	7643.3					
#2	4086.8	135390.	7657.0					

Sample Name: K1800770-001 Acquired: 2/21/2018 13:14:44 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.49	-.0021	.0044	.0751	.00003	.0154	-.0001	-.0002

#1	11.57	-.0036	.0044	.0761	-.00003	.0152	-.0001	-.0002
#2	11.42	-.0006	.0045	.0741	.00009	.0156	.0000	-.0002

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	55.57	.0173	.0049	.0050	.0041	18.82	.0038	.0168

#1	56.30	.0167	.0043	.0052	.0039	19.09	.0044	.0161
#2	54.85	.0180	.0054	.0048	.0043	18.54	.0031	.0176

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.354	.17575	.0016	.0056	.4830	5.965	.0012	4.855

#1	6.449	.17535	.0014	.0055	.4790	5.949	.0005	4.877
#2	6.258	.17614	.0018	.0058	.4869	5.981	.0020	4.834

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	11.68	.24146	-.0013	.0190	1.554	.0457	.0394

#1	-.0003	11.69	.24399	-.0008	.0180	1.551	.0461	.0392
#2	-.0001	11.67	.23894	-.0017	.0201	1.557	.0453	.0396

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0375	.0011	.9008

#1	.0374	.0009	.8962
#2	.0377	.0014	.9053

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4067.8	136150.	7696.1

#1	4079.6	136510.	7573.4
#2	4056.0	135780.	7818.8

Sample Name: KQ1801834-01 Acquired: 2/21/2018 13:17:13 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.57	-.0023	.0033	.0734	.00003	.0146	-.0002	-.0004

#1	11.59	-.0026	.0038	.0727	.00009	.0140	-.0002	-.0003
#2	11.55	-.0020	.0028	.0741	-.00003	.0151	-.0002	-.0005

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.52	.0185	.0049	.0041	.0042	19.31	.0023	.0214

#1	53.07	.0188	.0049	.0043	.0046	19.11	.0034	.0200
#2	53.97	.0183	.0050	.0038	.0038	19.51	.0011	.0228

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.569	.17616	.0006	.0057	.4437	6.188	-.0001	5.191

#1	6.518	.17628	.0003	.0057	.4426	6.180	.0012	5.169
#2	6.621	.17603	.0010	.0057	.4447	6.196	-.0014	5.213

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	12.61	.24453	.0003	.0192	1.593	.0478	.0401

#1	-.0012	12.55	.24294	.0007	.0198	1.598	.0477	.0401
#2	-.0001	12.68	.24612	-.0001	.0186	1.589	.0478	.0401

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0391	-.0011	.9885

#1	.0389	-.0018	.9811
#2	.0392	-.0005	.9959

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4172.0	138950.	7766.7

#1	4165.8	138680.	7805.8
#2	4178.1	139230.	7727.5

Sample Name: KQ1801834-02 Acquired: 2/21/2018 13:19:41 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.83	.2986	.4782	1.097	.04671	.2393	.0473	.0469
#1	12.83	.2993	.4763	1.102	.04690	.2393	.0473	.0469
#2	12.84	.2980	.4801	1.091	.04653	.2394	.0474	.0469
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.13	.2142	.4838	.2363	.2407	17.91	.4722	.0161
#1	40.39	.2140	.4837	.2365	.2403	17.95	.4722	.0170
#2	39.87	.2144	.4839	.2361	.2410	17.86	.4723	.0151
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.35	.62049	.4953	.4802	.3858	10.05	.4212	5.577
#1	10.36	.62002	.4950	.4809	.3857	10.03	.4248	5.566
#2	10.33	.62097	.4956	.4794	.3858	10.07	.4176	5.588
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0434	16.23	.15177	.0910	.0186	1.311	.5515	.5037
#1	.0439	16.15	.15244	.0908	.0181	1.308	.5506	.5035
#2	.0430	16.31	.15110	.0911	.0191	1.315	.5523	.5038
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.4893	-.0008	.8805					
#1	.4894	-.0027	.8795					
#2	.4891	.0012	.8816					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4211.2	140440.	7962.1					
#1	4213.0	140670.	7924.4					
#2	4209.3	140220.	7999.9					

Sample Name: K1800770-001A Acquired: 2/21/2018 13:22:05 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2 +0.1/10ml CICV-1

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.37	-.0038	.0065	10.83	.24116	.0139	-.0003	-.0006
#1	20.46	-.0050	.0065	10.88	.24187	.0137	-.0003	-.0006
#2	20.29	-.0026	.0066	10.78	.24046	.0141	-.0003	-.0006
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	81.11	1.036	2.441	1.194	1.173	23.96	.0019	.0173
#1	81.54	1.037	2.448	1.193	1.176	24.04	.0029	.0170
#2	80.68	1.036	2.434	1.194	1.171	23.88	.0010	.0177
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.53	2.6015	.0016	2.415	.4757	31.01	-.0002	4.980
#1	30.59	2.5965	.0012	2.417	.4788	30.99	-.0004	4.965
#2	30.47	2.6066	.0020	2.413	.4725	31.04	.0001	4.994
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.090	37.70	.23690	-.0002	.0183	1.554	2.704	2.466
#1	1.091	37.59	.23786	.0003	.0189	1.552	2.702	2.468
#2	1.088	37.80	.23593	-.0007	.0178	1.557	2.707	2.464
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	2.332	.0032	.9214					
#1	2.330	.0054	.9218					
#2	2.334	.0010	.9211					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4100.0	136610.	7746.8					
#1	4090.2	136860.	7703.7					
#2	4109.9	136350.	7790.0					

Sample Name: K1800770-002 Acquired: 2/21/2018 13:24:33 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.92	-.0017	.0036	.0765	.00007	.0201	-.0001	-.0006

#1	12.99	-.0016	.0055	.0762	.00005	.0205	-.0001	-.0006
#2	12.84	-.0018	.0018	.0769	.00008	.0197	-.0002	-.0006

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.65	.0216	.0072	.0058	.0051	33.33	.0030	.0209

#1	54.68	.0220	.0073	.0057	.0052	33.39	.0025	.0193
#2	54.61	.0213	.0072	.0058	.0049	33.28	.0034	.0224

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.409	.20917	.0007	.0084	.4565	7.625	-.0033	5.730

#1	8.393	.20963	.0008	.0083	.4573	7.573	-.0027	5.773
#2	8.425	.20872	.0007	.0085	.4557	7.676	-.0038	5.687

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	21.09	.21753	-.0018	.0196	1.891	.0559	.0472

#1	-.0007	21.20	.21725	-.0019	.0196	1.892	.0556	.0472
#2	-.0002	20.98	.21782	-.0017	.0196	1.891	.0563	.0471

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0452	-.0002	7.889

#1	.0452	-.0013	7.896
#2	.0453	.0009	7.882

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4107.8	136860.	7662.9

#1	4104.1	137040.	7659.9
#2	4111.5	136680.	7665.9

Sample Name: K1800770-003 Acquired: 2/21/2018 13:27:04 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.60	-.0034	.0106	.1252	-.00007	.0387	.0011	.0003
#1	19.66	-.0043	.0113	.1247	-.00003	.0390	.0010	.0004
#2	19.54	-.0025	.0098	.1258	-.00011	.0383	.0011	.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.07	.0323	.0119	.0250	.0245	66.33	.0053	.0339
#1	68.05	.0321	.0118	.0248	.0246	66.35	.0050	.0341
#2	68.10	.0325	.0121	.0253	.0245	66.31	.0055	.0337
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.19	.33357	.0009	.0169	3.861	12.58	-.0044	7.270
#1	15.17	.33236	.0009	.0172	3.863	12.55	-.0043	7.268
#2	15.21	.33477	.0008	.0167	3.860	12.61	-.0045	7.272
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	51.04	.38689	.0000	.0187	2.793	.0857	.0978
#1	.0006	50.92	.38666	-.0017	.0189	2.787	.0861	.0977
#2	.0002	51.16	.38712	.0018	.0184	2.798	.0854	.0980
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0936	.0017	20.37					
#1	.0934	.0024	20.38					
#2	.0938	.0009	20.35					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4112.0	135900.	7736.0					
#1	4116.5	136770.	7726.2					
#2	4107.5	135020.	7745.9					

Sample Name: K1800770-004 Acquired: 2/21/2018 13:29:31 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.55	-.0004	.0149	.1206	-.00042	.0443	-.0004	-.0020
#1	17.61	.0026	.0154	.1208	-.00040	.0456	-.0004	-.0021
#2	17.48	-.0033	.0145	.1204	-.00044	.0429	-.0004	-.0018
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.35	.3393	.0170	.5729	.5640	174.3	.0321	.0300
#1	49.36	.3390	.0169	.5721	.5627	174.3	.0320	.0318
#2	49.34	.3397	.0172	.5737	.5652	174.3	.0323	.0281
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.35	1.2818	.1061	.1831	1.694	11.35	-.0111	7.236
#1	13.35	1.2817	.1057	.1831	1.691	11.30	-.0108	7.225
#2	13.35	1.2819	.1064	.1832	1.697	11.40	-.0114	7.247
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	41.54	.22353	-.0012	.1199	2.143	.0913	.1700
#1	-.0003	41.35	.22392	-.0020	.1199	2.140	.0910	.1703
#2	-.0012	41.73	.22314	-.0003	.1198	2.145	.0917	.1697
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.1635	.0100	18.02					
#1	.1632	.0121	17.97					
#2	.1638	.0079	18.06					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4160.5	138020.	7863.9					
#1	4160.6	137720.	7827.6					
#2	4160.4	138330.	7900.2					

Sample Name: K1800770-005 Acquired: 2/21/2018 13:31:57 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.80	-.0053	.0057	.1003	.00002	.0195	-.0002	-.0003

#1	15.94	-.0045	.0079	.1003	-.00003	.0182	-.0001	-.0003
#2	15.66	-.0061	.0035	.1003	.00008	.0208	-.0002	-.0002

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	53.52	.0231	.0076	.0075	.0073	26.98	.0038	.0271

#1	53.72	.0231	.0077	.0073	.0069	27.07	.0041	.0257
#2	53.32	.0230	.0075	.0077	.0078	26.89	.0035	.0284

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.685	.24736	.0007	.0077	.5234	8.459	-.0042	6.498

#1	8.717	.24707	.0009	.0081	.5259	8.509	-.0044	6.514
#2	8.653	.24765	.0006	.0073	.5209	8.410	-.0041	6.483

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	11.86	.19816	-.0005	.0184	2.165	.0672	.0554

#1	-.0004	11.93	.19900	-.0016	.0182	2.160	.0667	.0552
#2	-.0005	11.80	.19733	.0006	.0186	2.170	.0677	.0555

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0531	.0002	.8990

#1	.0531	.0009	.8999
#2	.0531	-.0006	.8981

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4101.1	136930.	7715.9

#1	4098.1	137560.	7726.5
#2	4104.1	136300.	7705.4

Sample Name: CCVB Acquired: 2/21/2018 13:34:32 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.496	10.63	-.0017	.9892	10.37	-.00006	.0011	-.0002
Stddev	.021	.12	.0007	.0021	.01	.00011	.0021	.0000
%RSD	.2777	1.147	39.32	.2124	.1007	178.41	199.2	29.20

#1	7.511	10.72	-.0021	.9907	10.38	.00002	.0026	-.0002
#2	7.481	10.55	-.0012	.9877	10.36	-.00014	-.0004	-.0001

Check ? Value Range	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	10.38	9.743	.0001	.0001	-.0001	-.0010	10.36
Stddev	.000	.03	.011	.0003	.0004	.0008	.0002	.02
%RSD	3103.	.2511	.1081	390.5	473.2	771.7	24.69	.2379

#1	-.0001	10.40	9.735	.0003	.0003	-.0006	-.0008	10.38
#2	.0001	10.36	9.750	-.0001	-.0002	.0004	-.0011	10.34

Check ? Value Range	None	Chk Pass	None	None	None	None	None	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	1.016	10.42	9.906	10.09	1.0127	1.012	.0000
Stddev	.0012	.002	.02	.064	.02	.0089	.002	.000
%RSD	90.03	.1894	.1783	.6503	.2031	.87611	.1650	282.7

#1	.0022	1.017	10.43	9.952	10.11	1.0190	1.013	.0000
#2	.0005	1.014	10.41	9.861	10.08	1.0065	1.010	-.0001

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
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Sample Name: CCVB Acquired: 2/21/2018 13:34:32 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	10.17	10.000	-.0016	9.994	-.0005	9.972	1.0313
Stddev	.0000	.05	.0324	.0031	.015	.0003	.010	.0012
%RSD	4.034	.4906	.3242	192.5	.1447	73.46	.0967	.11746
#1	.0007	10.20	10.02	-.0038	10.00	-.0002	9.965	1.0322
#2	.0006	10.13	9.977	.0006	9.984	-.0007	9.979	1.0305

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0000	.0011	-.0003	.0002	.0002	1.038	.9946
Stddev	.0019	.000	.0001	.0002	.0002	.0001	.001	.0004
%RSD	150.5	4626.	4.523	73.15	132.7	23.86	.1257	.0434
#1	.0026	-.0003	.0012	-.0001	.0000	.0003	1.037	.9943
#2	-.0001	.0002	.0011	-.0004	.0003	.0002	1.039	.9949

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4199.2	139210.	7822.6
Stddev	1.5	686.	7.6
%RSD	.03530	.49304	.09776
#1	4198.2	138720.	7828.0
#2	4200.3	139690.	7817.1

Sample Name: CCVA Acquired: 2/21/2018 13:37:11 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2642	.2952	.2523	.2556	.2740	.25152	.2512	.2592
Stddev	.0017	.0023	.0012	.0014	.0022	.00108	.0018	.0006
%RSD	.6280	.7902	.4787	.5643	.8072	.43045	.7308	.2167

#1	.2653	.2935	.2532	.2546	.2725	.25075	.2499	.2596
#2	.2630	.2968	.2515	.2566	.2756	.25228	.2524	.2588

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2606	.5591	.5360	.2619	.2577	.2600	.2538	.2803
Stddev	.0006	.0017	.0089	.0001	.0004	.0016	.0003	.0069
%RSD	.2358	.3040	1.660	.0471	.1686	.6257	.1211	2.471

#1	.2611	.5579	.5297	.2620	.2580	.2611	.2536	.2754
#2	.2602	.5603	.5423	.2618	.2574	.2588	.2541	.2852

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2593	.0016	.3094	.2650	.2539	.26638	.2572	.2584
Stddev	.0032	.0013	.0154	.0022	.0010	.00085	.0017	.0019
%RSD	1.223	78.67	4.963	.8137	.3756	.31908	.6602	.7342

#1	.2616	.0025	.2985	.2634	.2532	.26698	.2584	.2598
#2	.2571	.0007	.3203	.2665	.2546	.26578	.2560	.2571

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 2/21/2018 13:37:11 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2584	.0008	2.578	.2538	.1438	.2579	.2481	.00004
Stddev	.0007	.0004	.003	.0022	.0029	.0017	.0095	.00006
%RSD	.2850	49.24	.1213	.8792	2.040	.6772	3.820	150.21

#1	.2589	.0005	2.580	.2554	.1417	.2567	.2414	.00000
#2	.2579	.0011	2.576	.2523	.1459	.2592	.2548	.00009

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2589	.2589	.2605	.2578	.2575	.2538	-.0009	-.0032
Stddev	.0007	.0012	.0007	.0008	.0010	.0010	.0004	.0001
%RSD	.2838	.4726	.2512	.3107	.3870	.3880	49.04	4.504

#1	.2584	.2598	.2609	.2584	.2582	.2545	-.0012	-.0031
#2	.2594	.2580	.2600	.2573	.2568	.2531	-.0006	-.0033

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4170.3	138830.	7667.3
Stddev	4.3	395.	2.9
%RSD	.10252	.28468	.03809

#1	4173.3	138550.	7665.2
#2	4167.2	139110.	7669.4

Sample Name: CCB Acquired: 2/21/2018 13:39:27 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0012	-.0025	-.0004	-.0011	-.00007	.0005	-.0001
Stddev	.0002	.0006	.0023	.0030	.0003	.00003	.0010	.0001
%RSD	10.42	46.86	93.37	727.7	27.08	44.312	213.6	97.65

#1	.0021	.0016	-.0041	-.0025	-.0009	-.00009	.0012	-.0002
#2	.0018	.0008	-.0008	.0017	-.0013	-.00005	-.0002	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0112	.0062	-.0005	.0003	.0001	.0000	.0066
Stddev	.0001	.0022	.0004	.0007	.0001	.0004	.0002	.0008
%RSD	170.0	19.29	6.515	163.0	39.47	520.1	4265.	12.10

#1	.0001	.0097	.0065	.0001	.0004	-.0002	.0001	.0072
#2	.0000	.0127	.0059	-.0010	.0002	.0004	-.0001	.0060

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	-.0001	-.0339	.0002	-.0010	-.00005	-.0011	.0007
Stddev	.0002	.0004	.0387	.0001	.0012	.00005	.0005	.0004
%RSD	34.84	514.9	114.0	33.16	125.2	106.10	48.66	58.18

#1	.0006	.0002	-.0612	.0003	-.0001	-.00008	-.0014	.0009
#2	.0004	-.0004	-.0066	.0002	-.0018	-.00001	-.0007	.0004

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 13:39:27 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0017	.0598	.0023	.0025	.0000	-.0154	-.00008
Stddev	.000	.0037	.0087	.0020	.0062	.0001	.0179	.00006
%RSD	814.3	216.8	14.61	89.86	244.6	792.1	116.2	78.118
#1	-.0003	.0043	.0660	.0008	-.0018	.0000	-.0281	-.00012
#2	.0002	-.0009	.0536	.0037	.0069	.0001	-.0028	-.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	-.0008	.0003	.0002	.0002	.0001	-.0022	.0024
Stddev	.0015	.0006	.0002	.0005	.0002	.0000	.0025	.0008
%RSD	176.9	78.74	83.95	247.9	103.9	28.11	113.8	34.70
#1	-.0019	-.0012	.0001	.0005	.0003	.0001	-.0039	.0030
#2	.0002	-.0003	.0005	-.0001	.0000	.0001	-.0004	.0018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4186.3	139550.	7649.1
Stddev	11.0	188.	77.5
%RSD	.26161	.13438	1.0136
#1	4178.6	139410.	7594.3
#2	4194.1	139680.	7704.0

Sample Name: CCB Acquired: 2/21/2018 13:41:54 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0006	-.0019	-.0022	-.0013	-.00010	-.0005	.0000
Stddev	.0000	.0002	.0009	.0001	.0001	.00003	.0012	.000
%RSD	1.936	36.41	50.04	2.451	8.615	25.195	255.5	2469.

#1	.0021	.0005	-.0012	-.0021	-.0012	-.00009	.0004	.0000
#2	.0020	.0008	-.0025	-.0022	-.0014	-.00012	-.0013	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0090	.0045	.0002	.0000	-.0004	.0000	.0048
Stddev	.0000	.0048	.0003	.0001	.000	.0004	.000	.0001
%RSD	78.94	53.92	6.355	89.71	238.8	95.35	21680.	1.702

#1	.0001	.0124	.0047	.0001	.0000	-.0007	.0003	.0049
#2	.0000	.0056	.0043	.0003	.0000	-.0001	-.0003	.0048

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.0028	.0047	-.0002	-.0018	.00000	-.0015	.0003
Stddev	.0010	.0006	.0330	.0001	.0010	.00001	.0001	.0004
%RSD	183.8	22.60	698.2	41.45	53.38	651.67	9.606	128.6

#1	-.0013	.0033	-.0186	-.0002	-.0011	.00000	-.0016	.0000
#2	.0002	.0024	.0281	-.0001	-.0025	.00001	-.0014	.0007

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

2/21/18
RMR
checked
all is

Sample Name: CCB Acquired: 2/21/2018 13:41:54 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0024	.0489	.0019	.0036	-.0003	-.0214	-.00006
Stddev	.000	.0003	.0008	.0016	.0059	.0006	.0035	.00006
%RSD	2766.	11.91	1.655	88.30	165.8	238.0	16.16	97.457

#1	-.0002	-.0026	.0495	.0030	.0078	.0002	-.0239	-.00010
#2	.0002	-.0022	.0484	.0007	-.0006	-.0007	-.0190	-.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	-.0003	.0004	-.0001	.0004	.0000	-.0014	.0003
Stddev	.0000	.0008	.0001	.0007	.0002	.0001	.0005	.0001
%RSD	2.380	239.6	19.01	631.1	42.21	14290.	32.17	20.12

#1	-.0011	-.0009	.0004	-.0006	.0005	.0001	-.0011	.0003
#2	-.0011	.0002	.0003	.0004	.0003	-.0001	-.0017	.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4169.4	139690.	7672.9
Stddev	6.8	618.	54.0
%RSD	.16418	.44252	.70315

#1	4174.2	139250.	7634.8
#2	4164.5	140130.	7711.1

m 2/21/18

Sample Name: LLCCV Acquired: 2/21/2018 13:44:24 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0117	.0119	.0168	.0092	.0033	.00089	.0198	.0009
Stddev	.0012	.0019	.0003	.0017	.0004	.00001	.0000	.0000
%RSD	10.51	16.24	1.527	18.55	13.25	.73965	.0126	3.204

#1	.0108	.0133	.0166	.0080	.0036	.00089	.0198	.0009
#2	.0126	.0106	.0170	.0104	.0030	.00090	.0198	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0197	.0245	.0046	.0020	.0034	.0040	.0255
Stddev	.0001	.0024	.0000	.0005	.0004	.0003	.0003	.0027
%RSD	6.756	12.11	.1171	9.917	20.87	7.558	8.697	10.45

#1	.0011	.0214	.0245	.0043	.0017	.0032	.0042	.0236
#2	.0012	.0180	.0244	.0049	.0024	.0036	.0037	.0273

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0098	.0206	.0146	.0048	.0018	.00099	-.0012	.0040
Stddev	.0012	.0016	.0068	.0001	.0018	.00005	.0005	.0001
%RSD	12.04	7.977	46.27	2.022	100.5	4.8520	42.59	2.105

#1	.0107	.0217	.0098	.0049	.0031	.00102	-.0016	.0040
#2	.0090	.0194	.0194	.0047	.0005	.00096	-.0009	.0039

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: LLCCV Acquired: 2/21/2018 13:44:24 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	.0387	.2367	.0206	.1965	.0039	.1892	.00090
Stddev	.0005	.0033	.0033	.0024	.0053	.0001	.0096	.00004
%RSD	11.77	8.629	1.392	11.63	2.699	2.093	5.074	3.9596

#1	.0038	.0364	.2344	.0223	.1928	.0038	.1824	.00087
#2	.0044	.0411	.2391	.0189	.2003	.0040	.1960	.00092

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0100	.0211	.0021	.0039	.0041	.0039	.0206	.0386
Stddev	.0005	.0015	.0000	.0001	.0005	.0000	.0016	.0022
%RSD	5.089	7.111	1.149	2.589	12.02	.5409	7.770	5.682

#1	.0096	.0222	.0021	.0040	.0044	.0039	.0218	.0401
#2	.0103	.0200	.0020	.0039	.0037	.0039	.0195	.0370

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4143.2	136780.	7457.1
Stddev	19.2	261.	60.7
%RSD	.46317	.19074	.81358

#1	4129.6	136600.	7414.2
#2	4156.8	136960.	7500.0

Sample Name: LLCCV Acquired: 2/21/2018 13:46:51 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0115	F .0131	.0154	.0092	.0031	.00089	.0196	.0010
Stddev	.0001	.0013	.0010	.0018	.0000	.00003	.0004	.0000
%RSD	.7314	9.614	6.379	19.95	1.402	3.1086	1.889	2.314

#1	.0115	.0122	.0147	.0079	.0032	.00087	.0194	.0010
#2	.0116	.0140	.0161	.0105	.0031	.00091	.0199	.0010

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0100						
Range		30.00%						

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0257	F .0291	.0038	.0022	.0037	.0037	F .0284
Stddev	.0001	.0013	.0011	.0000	.0003	.0001	.0001	.0007
%RSD	5.437	4.900	3.766	.5771	13.06	3.834	3.074	2.508

#1	.0010	.0266	.0283	.0039	.0020	.0038	.0036	.0289
#2	.0009	.0248	.0298	.0038	.0024	.0036	.0038	.0279

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value			.0200					.0200
Range			30.00%					30.00%

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085	.0220	.0310	.0062	.0057	.00099	-.0006	.0041
Stddev	.0005	.0001	.0119	.0003	.0019	.00002	.0011	.0002
%RSD	6.350	.3627	38.52	5.502	32.75	2.1949	196.9	4.881

#1	.0089	.0219	.0225	.0060	.0070	.00098	-.0014	.0039
#2	.0081	.0220	.0394	.0065	.0044	.00101	.0002	.0042

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

*not needed
on 2/21/18*

Sample Name: LLCCV Acquired: 2/21/2018 13:46:51 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	.0387	F .2628	.0184	.2071	.0033	.2049	.00107
Stddev	.0000	.0021	.0104	.0018	.0111	.0003	.0056	.00004
%RSD	1.103	5.544	3.941	9.517	5.359	9.623	2.722	3.6621

#1	.0041	.0402	.2701	.0172	.1992	.0031	.2010	.00104
#2	.0041	.0372	.2555	.0197	.2149	.0035	.2089	.00110

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.2000					
Range			30.00%					

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0095	.0200	.0025	.0040	.0042	.0039	.0192	.0405
Stddev	.0006	.0005	.0001	.0001	.0002	.0001	.0026	.0011
%RSD	5.837	2.522	4.885	2.575	3.685	2.088	13.73	2.620

#1	.0091	.0197	.0026	.0040	.0041	.0039	.0211	.0398
#2	.0099	.0204	.0024	.0041	.0044	.0040	.0173	.0413

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4220.9	141230.	7809.5
Stddev	7.1	726.	76.4
%RSD	.16880	.51427	.97879

#1	4215.8	140710.	7863.5
#2	4225.9	141740.	7755.4

m 2/21/18

Sample Name: LLCCV,0.5 Acquired: 2/21/2018 13:49:19 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0217	.0235	.0377	.0171	.0074	.00208	.0415	.0021
Stddev	.0005	.0000	.0005	.0018	.0002	.00004	.0013	.0000
%RSD	2.473	.1193	1.454	10.69	2.444	1.8202	3.159	.8083

#1	.0213	.0235	.0373	.0158	.0073	.00211	.0425	.0021
#2	.0221	.0234	.0381	.0184	.0075	.00206	.0406	.0020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	.0487	.0443	.0088	.0044	.0080	.0079	.0456
Stddev	.0001	.0014	.0001	.0003	.0005	.0000	.0007	.0001
%RSD	5.199	2.954	.1887	3.895	10.39	.4148	8.401	.1600

#1	.0022	.0476	.0443	.0086	.0041	.0080	.0083	.0457
#2	.0021	.0497	.0444	.0091	.0047	.0080	.0074	.0456

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0219	.0453	.0486	.0101	.0091	.00196	.0006	.0081
Stddev	.0012	.0007	.0119	.0001	.0011	.00004	.0018	.0003
%RSD	5.276	1.630	24.41	1.324	12.44	1.9632	315.8	3.409

#1	.0211	.0448	.0570	.0102	.0099	.00193	.0019	.0079
#2	.0227	.0458	.0402	.0100	.0083	.00199	-.0007	.0083

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

*not
 all in can
 2/21/18*

Sample Name: LLCCV,0.5 Acquired: 2/21/2018 13:49:19 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0079	.0807	.4761	.0397	.4187	.0076	.4189	.00199
Stddev	.0006	.0007	.0113	.0017	.0110	.0001	.0065	.00005
%RSD	7.724	.8740	2.384	4.226	2.622	1.419	1.560	2.6083

#1	.0074	.0802	.4681	.0409	.4265	.0077	.4235	.00196
#2	.0083	.0812	.4841	.0385	.4110	.0076	.4142	.00203

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0207	.0427	.0043	.0085	.0082	.0082	.0433	.0812
Stddev	.0006	.0000	.0001	.0004	.0001	.0002	.0016	.0027
%RSD	2.708	.0874	1.377	4.680	1.192	2.295	3.787	3.372

#1	.0203	.0427	.0042	.0082	.0083	.0081	.0444	.0793
#2	.0211	.0427	.0043	.0088	.0082	.0084	.0421	.0832

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4245.7	143400.	7895.5
Stddev	6.1	451.	50.5
%RSD	.14264	.31425	.63989

#1	4241.4	143720.	7931.3
#2	4250.0	143080.	7859.8

sample

Sample Name: KQ1801650-03 Acquired: 2/21/2018 14:18:52 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2 K1801138-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0023	-.0013	-.0023	-.00021	-.0001	-.0001	.0000
#1	.0013	-.0041	.0008	-.0023	-.00016	-.0004	-.0002	.0000
#2	.0007	-.0006	-.0034	-.0022	-.00026	.0003	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022	.0000	.0000	-.0008	.0003	.0005	-.0007	.0019
#1	.0021	-.0002	.0000	-.0007	-.0002	-.0011	-.0001	.0011
#2	.0023	.0002	.0001	-.0010	.0007	.0022	-.0013	.0027
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0017	-.00015	.0003	-.0003	.0025	.0365	.0020	.0136
#1	-.0016	-.00015	.0001	.0000	.0008	.0650	.0028	.0116
#2	-.0017	-.00015	.0005	-.0005	.0041	.0080	.0013	.0156
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0178	-.00020	-.0012	-.0003	-.0003	-.0002	.0000
#1	-.0004	-.0173	-.00020	-.0020	-.0001	-.0003	-.0006	-.0002
#2	-.0003	-.0183	-.00021	-.0004	-.0005	-.0002	.0002	.0001
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	.0003	.0012					
#1	.0002	.0006	.0064					
#2	.0003	.0001	-.0041					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4317.7	146530.	7961.2					
#1	4312.2	146810.	7960.8					
#2	4323.2	146240.	7961.5					

Sample Name: KQ1801650-04 Acquired: 2/21/2018 14:21:18 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2 K1801138-LCS

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.02	.3909	.4649	1.653	.32058	.6615	.7680	.7610
#1	30.85	.3924	.4666	1.665	.32181	.6621	.7730	.7657
#2	31.19	.3895	.4633	1.642	.31935	.6609	.7630	.7563
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.50	.9411	.8674	.5300	.5264	66.18	.6113	.0345
#1	34.69	.9443	.8734	.5350	.5274	66.56	.6151	.0342
#2	34.31	.9378	.8614	.5250	.5255	65.79	.6076	.0347
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.15	2.1760	.9125	.7957	2.767	11.44	.6920	10.58
#1	12.16	2.1715	.9175	.8010	2.788	11.45	.6962	10.61
#2	12.14	2.1805	.9076	.7904	2.745	11.42	.6878	10.54
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1836	14.18	.46560	.8963	.5199	2.107	.5183	.9645
#1	.1839	14.22	.46848	.9018	.5220	2.112	.5206	.9710
#2	.1833	14.15	.46272	.8909	.5178	2.103	.5159	.9580
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.9115	-.0123	.6028					
#1	.9133	-.0141	.6057					
#2	.9096	-.0106	.5998					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4165.6	136280.	7591.1					
#1	4144.9	136400.	7555.5					
#2	4186.3	136160.	7626.6					

Sample Name: K1801138-001 Acquired: 2/21/2018 14:23:37 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	\Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	61.74	-.0012	.0298	.2061	.00024	.0333	-.0003	-.0007
#1	61.96	-.0020	.0280	.2013	.00029	.0325	-.0001	-.0002
#2	61.51	-.0004	.0316	.2110	.00019	.0341	-.0004	-.0012
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	\Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.80	.0780	.0375	.0641	.0623	108.6	.0146	.0625
#1	32.90	.0789	.0372	.0644	.0622	105.9	.0141	.0629
#2	34.71	.0770	.0379	.0638	.0624	111.2	.0150	.0621
Elem	Mg2852	Mn2576	Mo2020	\Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.36	1.9097	.0025	.0582	3.513	7.813	-.0048	8.806
#1	33.02	1.9243	.0024	.0584	3.513	7.772	-.0050	8.750
#2	33.70	1.8951	.0026	.0579	3.512	7.854	-.0046	8.861
Elem	Ag3280	Na5895	Sr4077	Tl1908	\Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	20.55	.37157	-.0007	.0010	4.548	.2863	.2185
#1	-.0010	20.45	.36168	.0000	.0005	4.562	.2878	.2176
#2	-.0002	20.65	.38145	-.0014	.0015	4.533	.2847	.2194
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.2063	.0053	1.976					
#1	.2068	.0049	1.970					
#2	.2059	.0056	1.982					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4096.8	135010.	7971.6					
#1	4105.6	134650.	8125.8					
#2	4088.1	135360.	7817.3					

Sample Name: KQ1801650-01 Acquired: 2/21/2018 14:26:12 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.68	-.0017	.0269	.2082	.00009	.0343	-.0005	-.0015
#1	58.29	-.0012	.0285	.2090	.00003	.0349	-.0005	-.0015
#2	59.07	-.0023	.0252	.2073	.00016	.0337	-.0005	-.0016
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.05	.0746	.0354	.0577	.0585	109.1	.0138	.0595
#1	34.11	.0745	.0356	.0577	.0580	109.2	.0145	.0586
#2	33.99	.0747	.0352	.0577	.0589	109.1	.0131	.0603
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	32.54	1.8264	.0014	.0548	3.338	7.639	-.0052	8.698
#1	32.39	1.8301	.0016	.0549	3.344	7.644	-.0022	8.652
#2	32.70	1.8227	.0013	.0547	3.333	7.634	-.0081	8.743
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	20.78	.37062	-.0018	.0012	4.358	.2732	.2084
#1	.0000	20.71	.37135	-.0019	-.0003	4.369	.2740	.2089
#2	-.0005	20.86	.36990	-.0017	.0026	4.348	.2725	.2079
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.1971	.0048	1.969					
#1	.1974	.0048	1.977					
#2	.1968	.0047	1.961					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4121.2	136680.	7748.4					
#1	4120.8	136680.	7713.5					
#2	4121.7	136690.	7783.4					

Sample Name: K1801138-001L Acquired: 2/21/2018 14:28:47 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 10 Test Type: Sample Type:
 Comment: RRM 022118A 1/10

Elem Units Avg	Al3944 ppm	Sb2068 ppm	As1890 ppm	Ba4554 ppm	Be2348 ppm	B_2496 ppm	Cd2144 ppm	Cd2265 ppm
	13.96	-.0022	.0055	.0430	.00002	.0078	-.0002	-.0002

#1	13.99	-.0028	.0055	.0434	-.00002	.0075	-.0001	-.0002
#2	13.92	-.0015	.0056	.0427	.00007	.0081	-.0002	-.0002

Elem Units Avg	Ca3933 ppm	Cr2677 ppm	Co2307 ppm	Cu2247 ppm	Cu3273 ppm	Fe2599 ppm	Pb2203 ppm	Li6707 ppm
	6.994	.0158	.0078	.0139	.0133	23.57	.0026	.0140

#1	6.989	.0160	.0078	.0143	.0132	23.59	.0021	.0138
#2	7.000	.0156	.0077	.0134	.0134	23.56	.0031	.0142

Elem Units Avg	Mg2795 ppm	Mn2576 ppm	Mo2020 ppm	Ni2216 ppm	P_1782 ppm	K_7664 ppm	Se1960 ppm	Si2516 ppm
	7.173	.39380	.0003	.0124	.7309	1.652	-.0011	1.816

#1	7.179	.39346	.0004	.0121	.7287	1.619	-.0010	1.813
#2	7.167	.39414	.0001	.0128	.7331	1.685	-.0012	1.819

Elem Units Avg	Ag3280 ppm	Na5895 ppm	Sr4077 ppm	Tl1908 ppm	Sn1899 ppm	Ti3361 ppm	V_2924 ppm	Zn2062 ppm
	-.0004	4.248	.07952	.0000	.0000	.9147	.0584	.0456

#1	-.0002	4.255	.07940	-.0008	-.0006	.9151	.0588	.0457
#2	-.0006	4.242	.07965	.0007	.0007	.9143	.0580	.0454

Elem Units Avg	Zn2138 ppm	Bi2230 ppm	S_1820 ppm
	.0442	.0009	.4222

#1	.0444	-.0004	.4299
#2	.0441	.0022	.4145

Int. Std. Units Avg	Y_2243 Cts/S	Y_3600 Cts/S	Y_3600-2 Cts/S
	4186.7	139720.	7725.8

#1	4189.4	139730.	7721.3
#2	4183.9	139710.	7730.4

Sample Name: K1801138-001A Acquired: 2/21/2018 14:31:15 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2 +0.05/10ml CICV-1,3, Sb, Sn

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.14	.4387	2.290	5.452	.11425	.0363	1.136	1.133
#1	62.77	.4391	2.287	5.269	.11435	.0353	1.138	1.136
#2	61.50	.4383	2.292	5.635	.11415	.0373	1.134	1.130
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.71	.5806	1.192	.6308	.6325	115.7	2.238	.0608
#1	46.19	.5871	1.196	.6341	.6348	111.9	2.243	.0600
#2	49.23	.5740	1.187	.6276	.6303	119.5	2.233	.0616
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.10	3.0864	.0014	1.205	3.415	20.02	2.008	8.893
#1	44.51	3.1259	.0012	1.209	3.424	19.71	1.999	8.794
#2	45.68	3.0470	.0015	1.201	3.405	20.34	2.017	8.992
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5361	33.09	.38343	2.105	4.585	4.505	1.574	1.361
#1	.5377	32.61	.37104	2.108	4.598	4.570	1.598	1.366
#2	.5344	33.56	.39582	2.102	4.572	4.441	1.549	1.357
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.301	.0041	1.931					
#1	1.303	.0031	1.928					
#2	1.300	.0050	1.933					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4148.3	134230.	7708.2					
#1	4136.9	132840.	7839.3					
#2	4159.8	135630.	7577.2					

*
 2
 NA
 2/21/18

Sample Name: KQ1801650-02 Acquired: 2/21/2018 14:33:38 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	61.01	.2603	.5014	1.260	.04546	.2485	.0469	.0458
#1	59.60	.2570	.5007	1.258	.04536	.2449	.0467	.0458
#2	62.42	.2635	.5021	1.262	.04555	.2520	.0471	.0459
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.37	.2717	.5113	.2906	.2880	109.1	.4822	.0579
#1	39.32	.2723	.5094	.2895	.2853	108.8	.4816	.0565
#2	39.43	.2712	.5132	.2916	.2907	109.4	.4827	.0593
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.27	2.2978	.4963	.5257	3.340	12.29	.4170	13.70
#1	37.26	2.2968	.4953	.5247	3.330	12.28	.4167	13.73
#2	37.28	2.2987	.4972	.5266	3.349	12.31	.4173	13.66
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0442	25.16	.36767	.0888	2.380	4.249	.7706	.6736
#1	.0435	25.13	.36660	.0879	2.377	4.242	.7705	.6728
#2	.0448	25.18	.36875	.0896	2.383	4.256	.7707	.6744
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.6502	.0050	1.989					
#1	.6477	.0035	1.985					
#2	.6526	.0065	1.992					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4185.2	137630.	7832.8					
#1	4182.4	137200.	7845.6					
#2	4188.1	138050.	7820.0					

Sample Name: K1801138-002 Acquired: 2/21/2018 14:36:04 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.37	-.0014	.0271	.2406	.00007	.0377	-.0004	-.0019
#1	50.87	-.0017	.0251	.2400	-.00003	.0367	-.0005	-.0018
#2	49.87	-.0010	.0291	.2411	.00016	.0387	-.0003	-.0020
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.00	.0864	.0367	.0489	.0500	108.3	.0162	.0610
#1	37.06	.0860	.0367	.0490	.0514	108.1	.0184	.0611
#2	36.93	.0868	.0366	.0487	.0487	108.4	.0140	.0610
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.67	1.6623	.0019	.0662	3.978	5.854	-.0030	7.547
#1	28.64	1.6661	.0018	.0665	3.991	5.856	-.0045	7.514
#2	28.69	1.6585	.0019	.0659	3.965	5.853	-.0015	7.579
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	17.22	.26166	-.0018	.0022	3.825	.2904	.1981
#1	-.0011	17.17	.26140	-.0033	.0035	3.825	.2905	.1984
#2	-.0009	17.26	.26192	-.0002	.0010	3.825	.2903	.1978
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.1944	.0021	1.636					
#1	.1945	.0025	1.639					
#2	.1943	.0017	1.633					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4232.6	140410.	7879.4					
#1	4225.0	140350.	7884.3					
#2	4240.3	140470.	7874.5					

Sample Name: KQ1802193-02 Acquired: 2/21/2018 14:38:39 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086	-.0009	-.0016	-.0016	-.00015	.0012	-.0002	-.0001
#1	.0084	.0007	-.0033	-.0018	-.00023	.0018	-.0001	.0000
#2	.0088	-.0026	.0002	-.0014	-.00008	.0006	-.0002	-.0002
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0060	.0007	-.0001	-.0001	-.0006	.0159	.0006	.0035
#1	.0060	.0012	.0000	-.0001	-.0008	.0132	-.0003	.0030
#2	.0059	.0001	-.0002	-.0002	-.0004	.0186	.0015	.0039
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.00028	.0003	-.0001	.0081	.0238	.0025	.0380
#1	.0042	.00030	.0002	-.0001	.0080	.0186	.0026	.0355
#2	.0042	.00026	.0004	-.0001	.0083	.0289	.0023	.0406
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	.0097	-.00008	-.0006	.0003	.0010	.0001	.0003
#1	-.0005	.0064	-.00001	-.0012	.0006	.0012	.0002	.0002
#2	-.0006	.0130	-.00014	.0001	.0000	.0009	.0001	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0003	-.0030	-.0008					
#1	.0004	-.0025	-.0019					
#2	.0003	-.0035	.0003					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4353.6	139920.	7574.7					
#1	4339.6	138640.	7543.0					
#2	4367.6	141200.	7606.5					

Sample Name: KQ1802193-03 Acquired: 2/21/2018 14:41:07 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-LCS1

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.254	1.675	2.038	4.303	F .09924	F .3864	1.014
#1	4.248	1.679	2.046	4.310	.09835	.3840	1.013
#2	4.261	1.671	2.030	4.297	.10012	.3888	1.015
Elem	Cd2265	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.004	10.74	.4121	1.011	F .4910	F .4956	2.141
#1	1.003	10.75	.4113	1.011	.4907	.4934	2.134
#2	1.005	10.74	.4130	1.012	.4913	.4978	2.148
Elem	Pb2203	Li6707	Mg2852	Mn2576	Mo2020	Ni2216	P_1782
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.990	7.913	10.15	1.0028	.8177	.9943	8.058
#1	1.992	7.901	10.14	1.0052	.8178	.9932	8.065
#2	1.989	7.925	10.15	1.0005	.8177	.9955	8.052
Elem	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.25	F 1.866	.0282	F .4696	10.23	8.1747	F 1.957
#1	10.25	1.873	.0289	.4694	10.21	8.1995	1.957
#2	10.24	1.859	.0275	.4698	10.26	8.1499	1.957
Elem	Sn1899	Ti3361	V_2924	Zn2062	*Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.005	8.323	1.056	1.005	F .9719	.0014	-.0044
#1	7.996	8.358	1.055	1.004	.9742	-.0010	-.0031
#2	8.014	8.289	1.057	1.005	.9695	.0039	-.0057
Int. Std.	Y_2243	Y_3600	Y_3600-2				
Units	Cts/S	Cts/S	Cts/S				
Avg	4240.7	141440.	7864.0				
#1	4249.6	141030.	7848.1				
#2	4231.7	141840.	7879.8				

** In control
 1.074 CF
 RRM 022118A*

Sample Name: CCVB Acquired: 2/21/2018 14:43:36 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.784	F 11.16	-.0009	1.014	10.76	-.00019	.0023	.0001
Stddev	.028	.12	.0010	.005	.04	.00001	.0005	.0001
%RSD	.3535	1.055	114.8	.4585	.3877	3.3930	22.00	95.18

#1	7.804	11.24	-.0016	1.017	10.73	-.00019	.0020	.0000
#2	7.765	11.08	-.0002	1.011	10.78	-.00018	.0027	.0001

Check ?	None	Chk Fail	None	Chk Pass	Chk Pass	None	None	None
Value		10.00						
Range		10.44%						

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.75	10.18	-.0001	.0004	-.0004	-.0010	10.65
Stddev	.0001	.02	.24	.0003	.0003	.0006	.0007	.02
%RSD	73.75	.1828	2.404	370.7	77.60	151.7	65.71	.1770

#1	.0002	10.74	10.00	-.0003	.0002	.0000	-.0015	10.64
#2	.0001	10.77	10.35	.0001	.0005	-.0008	-.0006	10.66

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	1.026	10.85	10.41	10.13	1.0492	1.032	.0012
Stddev	.0015	.003	.03	.10	.01	.0005	.004	.0002
%RSD	58.90	.2829	.3070	.9578	.0875	.04572	.3458	18.37

#1	.0015	1.028	10.88	10.33	10.14	1.0489	1.034	.0014
#2	.0035	1.024	10.83	10.48	10.13	1.0495	1.029	.0011

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

*Review
2/21/18*

Sample Name: CCVB Acquired: 2/21/2018 14:43:36 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	10.52	9.935	.0010	10.02	-.0003	9.985	1.0619
Stddev	.0003	.02	.010	.0009	.02	.0001	.017	.0032
%RSD	47.19	.2331	.1040	89.45	.1995	26.49	.1698	.30163

#1	.0009	10.53	9.928	.0004	10.04	-.0003	9.997	1.0596
#2	.0005	10.50	9.943	.0016	10.01	-.0004	9.973	1.0641

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.0036	.0023	.0001	.0003	.0003	1.080	1.021
Stddev	.0005	.0005	.0002	.0007	.0000	.0000	.005	.007
%RSD	88.08	14.77	9.453	706.2	12.72	4.008	.4497	.7071

#1	-.0009	.0040	.0024	-.0004	.0003	.0003	1.084	1.026
#2	-.0002	.0033	.0021	.0006	.0003	.0003	1.077	1.016

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4151.2	137550.	7608.1
Stddev	.0	93.	37.2
%RSD	.00010	.06725	.48907

#1	4151.2	137610.	7634.4
#2	4151.2	137480.	7581.8

m 2/21/18

Sample Name: CCVB Acquired: 2/21/2018 14:48:12 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.483	10.99	-.0011	.9867	10.18	-.00015	.0004	-.0001
Stddev	.018	.06	.0019	.0070	.01	.00003	.0004	.0000
%RSD	.2439	.5185	164.5	.7142	.1268	19.059	98.15	77.94

#1	7.471	10.95	.0002	.9817	10.17	-.00018	.0001	.0000
#2	7.496	11.03	-.0025	.9917	10.19	-.00013	.0007	-.0001

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.20	9.765	-.0003	.0001	-.0003	-.0009	10.05
Stddev	.0001	.07	.132	.0008	.0001	.0003	.0003	.02
%RSD	67.63	.7259	1.352	228.6	133.2	83.38	32.44	.1573

#1	.0002	10.15	9.672	-.0009	.0000	-.0005	-.0007	10.04
#2	.0001	10.26	9.859	.0002	.0002	-.0001	-.0011	10.06

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	1.005	10.16	9.916	9.935	1.0002	.9664	.0002
Stddev	.0013	.001	.08	.102	.025	.0003	.0122	.0002
%RSD	96.26	.1114	.8010	1.026	.2491	.03030	1.267	101.8

#1	.0004	1.006	10.22	9.844	9.918	1.0004	.9751	.0003
#2	.0023	1.004	10.11	9.988	9.953	.99997	.9578	.0001

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 2/21/2018 14:48:12 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	10.06	9.693	-.0008	9.685	-.0003	9.690	1.0150
Stddev	.0007	.04	.054	.0009	.090	.0000	.083	.0055
%RSD	345.7	.3610	.5545	115.0	.9292	15.52	.8538	.54119

#1	-.0003	10.03	9.731	-.0014	9.748	-.0003	9.749	1.0111
#2	.0007	10.09	9.655	-.0001	9.621	-.0003	9.632	1.0189

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0012	.0007	.0008	.0004	.0003	.0003	1.031	.9996
Stddev	.0008	.0001	.0003	.0001	.0000	.0001	.008	.0033
%RSD	63.53	21.19	30.30	21.35	4.506	31.55	.7904	.3336

#1	-.0018	.0006	.0007	.0004	.0003	.0002	1.026	.9972
#2	-.0007	.0008	.0010	.0003	.0003	.0003	1.037	1.002

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4246.3	140850.	7808.0
Stddev	4.1	116.	49.4
%RSD	.09667	.08256	.63234

#1	4249.2	140770.	7842.9
#2	4243.4	140930.	7773.1

Sample Name: CCVA Acquired: 2/21/2018 14:51:10 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2726	.3115	.2569	.2554	.2648	.25670	.2575	.2538
Stddev	.0122	.0034	.0006	.0023	.0009	.00165	.0005	.0002
%RSD	4.494	1.082	.2142	.9053	.3228	.64123	.1995	.0744

#1	.2639	.3091	.2573	.2570	.2654	.25554	.2572	.2539
#2	.2813	.3139	.2565	.2538	.2642	.25787	.2579	.2537

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2533	.5307	.5164	.2513	.2535	.2559	.2591	.2635
Stddev	.0001	.0122	.0002	.0018	.0011	.0001	.0011	.0003
%RSD	.0582	2.298	.0321	.7273	.4377	.0553	.4114	.1301

#1	.2531	.5221	.5165	.2500	.2543	.2560	.2584	.2633
#2	.2534	.5394	.5163	.2526	.2528	.2558	.2599	.2638

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2520	.0023	.2899	.2634	.2566	.25930	.2468	.2514
Stddev	.0008	.0012	.0229	.0002	.0001	.00013	.0008	.0002
%RSD	.3180	52.62	7.894	.0597	.0584	.05068	.3374	.0662

#1	.2525	.0032	.2737	.2633	.2567	.25940	.2474	.2515
#2	.2514	.0015	.3060	.2635	.2565	.25921	.2462	.2513

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 2/21/2018 14:51:10 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2514	.0072	2.593	.2618	.1379	.2619	.2284	.00031
Stddev	.0004	.0075	.078	.0002	.0028	.0031	.0067	.00005
%RSD	.1570	104.6	3.005	.0706	2.058	1.190	2.944	16.704

#1	.2517	.0019	2.648	.2619	.1359	.2597	.2332	.00028
#2	.2512	.0125	2.538	.2616	.1399	.2641	.2236	.00035

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2529	.2548	.2557	.2513	.2540	.2574	-.0005	.0006
Stddev	.0000	.0003	.0000	.0012	.0005	.0007	.0011	.0028
%RSD	.0120	.1340	.0081	.4853	.1871	.2583	203.9	470.7

#1	.2529	.2545	.2557	.2505	.2537	.2578	-.0013	-.0014
#2	.2529	.2550	.2557	.2522	.2544	.2569	.0002	.0025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4288.5	143490.	7865.2
Stddev	3.0	357.	51.3
%RSD	.06960	.24898	.65231

#1	4290.6	143240.	7828.9
#2	4286.4	143740.	7901.5

Sample Name: CCB Acquired: 2/21/2018 14:53:35 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0022	-.0044	-.0025	-.0011	-.00009	.0007	.0000
Stddev	.0001	.0016	.0017	.0018	.0002	.00006	.0001	.0000
%RSD	7.436	72.07	39.24	71.50	15.60	73.995	7.971	401.2
#1	.0016	.0034	-.0032	-.0037	-.0013	-.00004	.0008	.0000
#2	.0018	.0011	-.0056	-.0012	-.0010	-.00013	.0007	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0023	.0000	.0000	.0001	-.0004	-.0003	.0018
Stddev	.0001	.0008	.000	.000	.0003	.0004	.0002	.0038
%RSD	105.7	33.44	153.4	650.3	532.6	113.5	68.71	210.6
#1	.0001	-.0029	.0000	-.0001	.0003	-.0001	-.0001	.0045
#2	.0000	-.0018	.0000	.0001	-.0002	-.0007	-.0004	-.0009

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0038	.0250	.0000	-.0028	-.00010	-.0028	.0007
Stddev	.0013	.0012	.0294	.0000	.0024	.00001	.0004	.0002
%RSD	373.9	32.80	117.6	660.1	85.43	10.282	14.31	21.99
#1	-.0013	.0029	.0042	.0000	-.0045	-.00011	-.0031	.0008
#2	.0006	.0047	.0459	.0000	-.0011	-.00009	-.0025	.0006

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 14:53:35 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0010	.0673	-.0001	.0057	-.0001	-.0058	.00007
Stddev	.000	.0001	.0200	.0017	.0028	.0005	.0090	.00008
%RSD	1241.	11.57	29.71	1147.	49.36	413.6	155.5	117.11

#1	.0001	-.0011	.0531	-.0013	.0037	.0002	.0006	.00012
#2	-.0001	-.0009	.0814	.0010	.0078	-.0005	-.0122	.00001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	-.0002	.0004	.0002	.0001	.0000	-.0005	-.0021
Stddev	.0025	.0000	.0001	.0006	.0003	.000	.0014	.0001
%RSD	376.5	16.14	40.71	275.8	340.3	386.7	295.4	3.091

#1	.0011	-.0002	.0005	.0007	.0003	-.0001	.0005	-.0020
#2	-.0024	-.0002	.0003	-.0002	-.0001	.0000	-.0015	-.0021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4240.5	143480.	7898.0
Stddev	.6	202.	29.3
%RSD	.01416	.14055	.37155

#1	4240.9	143620.	7877.2
#2	4240.1	143330.	7918.7

Sample Name: LLCCV Acquired: 2/21/2018 14:56:26 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0125	F .0146	.0165	F .0067	.0036	.00088	.0209	.0010
Stddev	.0004	.0012	.0007	.0012	.0003	.00000	.0009	.0001
%RSD	3.525	8.264	4.029	18.02	7.887	.32795	4.500	7.467

#1	.0128	.0155	.0160	.0059	.0034	.00088	.0202	.0009
#2	.0122	.0138	.0169	.0076	.0039	.00088	.0216	.0010

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0100		.0100				
Range		30.00%		-30.00%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	F .0126	.0219	.0043	.0020	.0040	.0035	.0241
Stddev	.0000	.0051	.0001	.0001	.0004	.0001	.0003	.0019
%RSD	.1347	40.41	.5454	3.272	21.66	1.303	9.132	7.786

#1	.0011	.0162	.0220	.0044	.0023	.0040	.0037	.0228
#2	.0011	.0090	.0218	.0042	.0017	.0039	.0032	.0255

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0200						
Range		-30.00%						

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097	.0221	.0199	.0060	.0052	.00110	-.0009	.0045
Stddev	.0020	.0020	.0072	.0002	.0019	.00002	.0021	.0000
%RSD	20.95	9.226	36.41	4.141	35.75	1.8265	236.0	.3258

#1	.0111	.0235	.0148	.0062	.0066	.00112	-.0024	.0045
#2	.0082	.0206	.0250	.0058	.0039	.00109	.0006	.0045

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

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 on 2/21/18

Sample Name: LLCCV Acquired: 2/21/2018 14:56:26 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0418	.2498	.0203	.2007	.0039	.2053	.00121
Stddev	.0004	.0002	.0211	.0003	.0070	.0003	.0147	.00001
%RSD	10.16	.3712	8.429	1.609	3.503	6.596	7.172	.72658

#1	.0037	.0417	.2647	.0200	.1958	.0040	.1949	.00121
#2	.0042	.0419	.2349	.0205	.2057	.0037	.2158	.00120

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0091	.0221	.0022	.0040	.0040	.0040	.0200	.0399
Stddev	.0016	.0007	.0002	.0001	.0002	.0000	.0004	.0004
%RSD	17.28	3.214	9.130	2.128	5.137	.0680	1.838	.9519

#1	.0080	.0226	.0020	.0041	.0039	.0040	.0197	.0402
#2	.0102	.0216	.0023	.0040	.0042	.0040	.0202	.0396

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4181.6	140590.	7675.2
Stddev	.3	69.	57.2
%RSD	.00742	.04919	.74578

#1	4181.8	140640.	7715.7
#2	4181.4	140540.	7634.8

Sample Name: LLCCV Acquired: 2/21/2018 14:59:13 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: Rerun

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0112	F .0133	.0193	F .0059	.0033	.00093	.0219	.0009
Stddev	.0000	.0006	.0025	.0010	.0004	.00002	.0005	.0000
%RSD	.4003	4.600	13.05	16.49	12.39	2.0584	2.109	4.881

#1	.0112	.0129	.0211	.0053	.0030	.00094	.0216	.0009
#2	.0112	.0138	.0175	.0066	.0036	.00092	.0222	.0009

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0100		.0100				
Range		30.00%		-30.00%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0253	.0207	.0044	.0019	.0041	.0033	.0207
Stddev	.0000	.0004	.0002	.0003	.0000	.0001	.0001	.0028
%RSD	2.318	1.670	1.085	7.787	2.361	1.586	1.646	13.35

#1	.0011	.0256	.0205	.0047	.0019	.0040	.0032	.0187
#2	.0011	.0250	.0208	.0042	.0019	.0041	.0033	.0226

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097	.0249	.0148	.0049	.0037	.00098	-.0002	.0041
Stddev	.0025	.0018	.0257	.0001	.0000	.00004	.0010	.0000
%RSD	26.04	7.192	173.2	1.031	.7128	3.9438	546.0	.7267

#1	.0079	.0262	-.0033	.0049	.0037	.00095	.0005	.0041
#2	.0115	.0237	.0330	.0049	.0037	.00101	-.0009	.0041

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

*3 Contaminants
2/21/18*

Sample Name: LLCCV Acquired: 2/21/2018 14:59:13 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: Rerun

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036	.0393	.2276	.0202	.2053	.0041	.1941	.00112
Stddev	.0004	.0018	.0038	.0009	.0041	.0000	.0140	.00002
%RSD	9.954	4.613	1.659	4.326	1.983	1.104	7.214	1.4549

#1	.0034	.0405	.2249	.0208	.2024	.0040	.2041	.00114
#2	.0039	.0380	.2303	.0196	.2081	.0041	.1842	.00111

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0098	.0206	.0023	.0040	.0040	.0040	.0200	.0421
Stddev	.0002	.0003	.0003	.0000	.0000	.0000	.0014	.0042
%RSD	2.231	1.273	11.47	.3574	.1595	.8319	6.766	9.970

#1	.0100	.0205	.0021	.0040	.0040	.0040	.0190	.0451
#2	.0097	.0208	.0025	.0040	.0040	.0040	.0209	.0391

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4331.2	141660.	7650.3
Stddev	23.8	1016.	1.2
%RSD	.55036	.71731	.01617

#1	4314.4	142370.	7651.2
#2	4348.1	140940.	7649.5

2/21/18

Sample Name: LLCCV, 0.5 Acquired: 2/21/2018 15:02:14 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0211	.0242	.0404	.0204	.0073	.00201	.0411	.0020
Stddev	.0002	.0016	.0004	.0047	.0003	.00003	.0004	.0000
%RSD	.9291	6.435	.8860	23.33	3.965	1.6488	1.079	.6342
#1	.0209	.0231	.0406	.0170	.0075	.00198	.0414	.0020
#2	.0212	.0253	.0401	.0237	.0071	.00203	.0408	.0020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0487	.0401	.0086	.0043	.0078	.0076	.0430
Stddev	.0001	.0085	.0001	.0001	.0002	.0004	.0005	.0020
%RSD	4.051	17.37	.2387	.9373	3.706	5.151	6.628	4.748
#1	.0020	.0547	.0400	.0086	.0044	.0075	.0072	.0416
#2	.0021	.0427	.0402	.0087	.0042	.0081	.0079	.0445

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0202	.0439	.0089	.0096	.0091	.00198	.0012	.0086
Stddev	.0011	.0019	.0149	.0000	.0018	.00001	.0003	.0005
%RSD	5.425	4.283	167.4	.1840	20.08	.51996	28.10	5.924
#1	.0194	.0452	.0194	.0096	.0078	.00197	.0010	.0090
#2	.0210	.0426	-.0016	.0096	.0104	.00198	.0014	.0082

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value Range								

Sample Name: LLCCV, 0.5 Acquired: 2/21/2018 15:02:14 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0080	.0801	.4045	.0419	.4094	.0083	.4134	.00220
Stddev	.0001	.0008	.0121	.0034	.0106	.0004	.0044	.00013
%RSD	1.228	1.005	2.992	8.104	2.592	5.368	1.071	5.9635

#1	.0079	.0806	.3959	.0395	.4019	.0086	.4166	.00211
#2	.0081	.0795	.4130	.0443	.4169	.0080	.4103	.00229

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0203	.0426	.0041	.0081	.0081	.0082	.0429	.0854
Stddev	.0005	.0003	.0000	.0004	.0000	.0001	.0013	.0031
%RSD	2.495	.6581	.8224	4.682	.4086	.7585	2.964	3.612

#1	.0207	.0424	.0041	.0078	.0081	.0082	.0420	.0832
#2	.0199	.0428	.0041	.0083	.0081	.0083	.0438	.0876

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4285.5	143000.	7866.7
Stddev	.1	192.	11.1
%RSD	.00301	.13426	.14067

#1	4285.4	143140.	7858.9
#2	4285.6	142870.	7874.5

Sample Name: KQ1802193-04 Acquired: 2/21/2018 15:05:15 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-LCS2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.303	1.736	2.131	4.594	.10266	.4138	1.066	1.056
#1	4.302	1.730	2.129	4.621	.10286	.4164	1.065	1.053
#2	4.304	1.742	2.133	4.566	.10246	.4112	1.067	1.058
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.40	.4347	1.061	.5132	.5091	2.260	2.090	8.110
#1	11.44	.4356	1.059	.5111	.5082	2.277	2.083	8.096
#2	11.35	.4339	1.063	.5152	.5100	2.244	2.098	8.125
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.51	1.0452	.8925	1.044	8.301	10.71	F 1.946	.0301
#1	10.52	1.0444	.8909	1.042	8.290	10.74	1.937	.0337
#2	10.49	1.0461	.8942	1.045	8.312	10.67	1.954	.0265
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .4753	10.68	8.8891	2.044	8.288	8.884	1.118	1.050
#1	.4725	10.68	8.9763	2.040	8.279	8.884	1.122	1.050
#2	.4781	10.68	8.8019	2.049	8.298	8.885	1.115	1.050
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.009	.0001	-.0017					
#1	1.006	.0007	.0002					
#2	1.012	-.0006	-.0036					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4202.5	138850.	7720.6					
#1	4200.3	138470.	7706.9					
#2	4204.6	139220.	7734.3					

Sample Name: KQ1802193-05 Acquired: 2/21/2018 15:07:43 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-LCS1 Si

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	-.0014	-.0009	-.0013	-.00016	.0016	.0000	.0002
#1	.0023	-.0019	.0007	-.0011	-.00024	.0018	-.0001	.0002
#2	.0027	-.0009	-.0024	-.0015	-.00007	.0014	.0000	.0003
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	-.0001	.0000	-.0002	-.0003	.0021	.0010	.0029
#1	.0022	-.0002	-.0001	-.0001	.0000	.0027	.0003	.0014
#2	.0021	-.0001	.0001	-.0003	-.0006	.0015	.0016	.0043
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.00010	.0014	.0001	.0113	.0193	.0058	9.041
#1	-.0001	.00007	.0012	.0003	.0140	.0271	.0053	8.999
#2	-.0003	.00013	.0016	-.0002	.0087	.0115	.0062	9.084
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	15.14	.00033	.0001	.0039	.0024	-.0003	.0002
#1	-.0002	15.13	.00038	.0006	.0038	.0021	-.0001	.0001
#2	-.0008	15.15	.00028	-.0004	.0040	.0027	-.0005	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0004	-.0025	-.0031					
#1	.0004	-.0032	-.0017					
#2	.0005	-.0018	-.0045					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4211.3	142500.	7887.2					
#1	4208.1	142500.	7870.0					
#2	4214.4	142500.	7904.4					

Sample Name: KQ1802193-06 Acquired: 2/21/2018 15:10:11 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-LCS2 Si

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	-.0021	-.0026	-.0016	-.00024	.0008	.0000	.0000
#1	.0013	-.0024	-.0060	-.0017	-.00018	.0006	-.0001	-.0001
#2	.0015	-.0019	.0009	-.0014	-.00029	.0011	.0000	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	.0001	.0000	-.0002	.0001	.0004	.0010	.0033
#1	.0023	.0003	.0000	-.0003	.0000	.0010	.0003	.0033
#2	.0023	-.0002	.0001	-.0002	.0003	-.0001	.0017	.0033
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.00001	.0005	.0004	.0108	.0311	.0025	8.571
#1	-.0002	-.00001	.0005	.0004	.0102	.0574	.0015	8.589
#2	-.0002	.00003	.0005	.0005	.0115	.0048	.0034	8.553
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	14.38	.00040	-.0013	.0007	.0011	.0002	.0002
#1	-.0008	14.35	.00034	-.0010	.0006	.0012	.0004	.0000
#2	.0000	14.41	.00045	-.0016	.0008	.0010	.0001	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0004	-.0028	-.0007					
#1	.0004	-.0040	-.0013					
#2	.0003	-.0016	-.0002					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4197.3	140240.	7670.2					
#1	4187.6	140390.	7669.5					
#2	4207.0	140080.	7671.0					

Sample Name: K1801267-004 Acquired: 2/21/2018 15:12:39 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072	-.0005	-.0008	-.0012	-.00017	.0004	-.0001	.0000
#1	.0067	.0018	-.0020	-.0013	-.00016	.0002	-.0002	.0000
#2	.0077	-.0029	.0003	-.0012	-.00019	.0006	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0091	.0000	-.0002	-.0002	.0003	.0179	-.0002	.0024
#1	.0090	.0000	-.0001	-.0007	.0007	.0148	.0002	.0039
#2	.0091	-.0001	-.0003	.0003	-.0001	.0211	-.0005	.0009
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.00034	.0005	-.0004	.0067	.0307	.0024	.0390
#1	.0011	.00036	.0004	-.0003	.0074	-.0141	.0018	.0421
#2	.0012	.00032	.0006	-.0005	.0059	.0755	.0031	.0358
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0143	.00047	-.0015	.0004	.0018	.0006	.0003
#1	-.0009	.0040	.00048	-.0020	.0000	.0018	.0005	.0001
#2	.0001	-.0325	.00047	-.0010	.0008	.0018	.0006	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0004	-.0019	.0010					
#1	.0004	-.0015	.0014					
#2	.0005	-.0023	.0006					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4253.9	143170.	7751.3					
#1	4249.9	142890.	7718.2					
#2	4257.9	143460.	7784.4					

Sample Name: K1801267-004L Acquired: 2/21/2018 15:15:07 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: RRM 022118A 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0021	-.0005	-.0014	-.00012	.0009	-.0001	.0000
#1	.0007	-.0025	.0001	-.0014	-.00017	.0016	-.0001	.0000
#2	.0008	-.0017	-.0011	-.0014	-.00008	.0002	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0070	-.0001	-.0002	-.0001	-.0004	-.0007	-.0005	.0013
#1	.0070	.0002	-.0003	.0002	-.0004	-.0029	-.0012	.0017
#2	.0070	-.0003	-.0001	-.0003	-.0004	.0016	.0002	.0009
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	-.00004	.0002	.0000	.0017	.0359	.0006	.0289
#1	-.0006	.00000	.0005	-.0003	.0028	.0346	-.0015	.0360
#2	-.0006	-.00008	-.0001	.0003	.0007	.0372	.0026	.0217
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0149	.00014	-.0001	-.0002	.0002	.0001	.0004
#1	.0002	-.0187	.00004	-.0003	-.0007	.0003	-.0004	.0006
#2	.0002	-.0110	.00025	.0002	.0003	.0000	.0005	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0003	-.0025	-.0018					
#1	.0004	-.0031	.0011					
#2	.0003	-.0019	-.0047					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4305.4	143440.	7780.9					
#1	4309.6	143100.	7796.9					
#2	4301.2	143780.	7765.0					

Sample Name: K1801267-018 Acquired: 2/21/2018 15:17:35 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RRM 022118A

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	-.0019	-.0011	-.0006	-.00020	.0004	-.0001	.0000
#1	.0035	-.0006	-.0003	-.0005	-.00022	-.0008	.0000	.0001
#2	.0035	-.0032	-.0019	-.0006	-.00017	.0015	-.0003	-.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0173	.0001	-.0002	.0001	.0000	.0138	-.0010	.0024
#1	.0171	.0001	-.0003	.0003	.0003	.0164	-.0006	.0021
#2	.0174	.0001	-.0002	.0000	-.0004	.0113	-.0013	.0028
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.00002	.0004	.0000	.0095	.0475	.0030	.0334
#1	-.0004	-.00006	.0004	-.0001	.0102	.0351	.0045	.0308
#2	-.0003	.00002	.0004	.0000	.0087	.0600	.0015	.0360
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0017	.00014	-.0010	.0002	.0001	-.0002	.0154
#1	.0000	.0044	.00014	-.0007	.0004	.0001	-.0007	.0156
#2	-.0001	-.0078	.00013	-.0013	.0001	.0001	.0004	.0151
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0151	.0001	.0002					
#1	.0151	.0003	.0022					
#2	.0151	-.0001	-.0017					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4224.4	142200.	7783.1					
#1	4218.1	142720.	7772.7					
#2	4230.7	141680.	7793.5					

Sample Name: KQ1801937-03 Acquired: 2/21/2018 15:20:03 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-MB 1/2

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	-.0010	-.0021	-.0017	-.00020	-.0005	-.0002	.0000
#1	.0015	-.0002	-.0006	-.0021	-.00025	.0008	-.0002	.0000
#2	.0014	-.0017	-.0035	-.0013	-.00015	-.0017	-.0002	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032	-.0002	-.0001	-.0005	-.0005	-.0001	.0001	.0023
#1	.0032	-.0003	-.0004	-.0003	-.0008	.0009	.0011	.0027
#2	.0032	-.0001	.0001	-.0007	-.0003	-.0012	-.0010	.0018
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	-.00002	.0005	.0000	-.0013	.0303	-.0003	.0139
#1	-.0009	-.00001	.0002	.0002	-.0008	.0193	-.0008	.0102
#2	-.0008	-.00003	.0008	-.0001	-.0019	.0413	.0002	.0175
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0181	.00005	.0001	-.0007	-.0001	-.0001	.0001
#1	-.0005	-.0178	.00007	.0001	-.0005	-.0001	-.0002	.0003
#2	.0001	-.0184	.00003	.0001	-.0008	.0000	.0000	.0000
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0004	-.0033	.0001					
#1	.0005	-.0049	.0027					
#2	.0003	-.0018	-.0025					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4194.4	140330.	7606.5					
#1	4175.1	140310.	7585.9					
#2	4213.7	140340.	7627.2					

Sample Name: KQ1801937-04 Acquired: 2/21/2018 15:22:32 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-LCSS 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.40	.3882	.4890	1.658	.32125	.6763	.7649	.7598
#1	33.27	.3913	.4883	1.665	.32089	.6730	.7645	.7597
#2	33.53	.3852	.4898	1.651	.32162	.6795	.7654	.7599
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.36	.9392	.8464	.5321	.5347	70.59	.6219	.0372
#1	34.46	.9389	.8461	.5327	.5339	70.60	.6220	.0367
#2	34.27	.9395	.8467	.5315	.5355	70.58	.6218	.0377
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.75	2.0754	.9020	.7782	2.878	12.24	.7023	10.79
#1	12.78	2.0795	.9034	.7787	2.882	12.27	.7041	10.71
#2	12.71	2.0712	.9007	.7776	2.874	12.22	.7006	10.87
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1909	13.93	.45113	.9035	.5248	2.158	.5066	.9592
#1	.1914	13.88	.45270	.9031	.5252	2.154	.5061	.9597
#2	.1904	13.97	.44955	.9040	.5243	2.161	.5071	.9587
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.9253	-.0115	.6095					
#1	.9291	-.0116	.6174					
#2	.9215	-.0114	.6016					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4204.7	140580.	7910.4					
#1	4218.6	140360.	7907.4					
#2	4190.8	140810.	7913.4					

Sample Name: K1801267-009 Acquired: 2/21/2018 15:24:52 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	68.31	.0054	.0603	.5619	.00072	.0419	.0767	.0753
#1	68.91	.0050	.0602	.5708	.00075	.0434	.0765	.0746
#2	67.71	.0057	.0604	.5529	.00069	.0404	.0770	.0759
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.12	.1028	.0377	.4628	.4643	133.8	.6166	.0501
#1	47.87	.1029	.0376	.4617	.4653	135.8	.6165	.0514
#2	46.37	.1028	.0377	.4638	.4632	131.7	.6167	.0489
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.81	1.0128	.0127	.0725	3.967	7.638	-.0047	10.13
#1	22.84	1.0106	.0130	.0726	3.967	7.673	-.0057	10.15
#2	22.77	1.0151	.0124	.0723	3.967	7.603	-.0036	10.11
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	12.72	.42463	-.0009	.0100	6.119	.3528	16.64
#1	.0047	12.72	.43068	-.0001	.0097	6.118	.3534	16.62
#2	.0043	12.72	.41857	-.0017	.0103	6.120	.3523	16.65
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	>4.500	.0074	42.94					
#1	15.02	.0085	42.98					
#2	14.99	.0062	42.91					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4200.0	138830.	7856.0					
#1	4206.2	139110.	7766.3					
#2	4193.8	138540.	7945.7					

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 on 2/21/18

Sample Name: KQ1801937-01 Acquired: 2/21/2018 15:27:28 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-009D 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	65.41	.0062	.0712	.5930	.00069	.0843	.0910	.0901

#1	65.19	.0062	.0710	.5942	.00069	.0836	.0908	.0902
#2	65.63	.0061	.0713	.5918	.00070	.0850	.0911	.0900

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.89	.1331	.0358	.4707	.4712	140.2	.7822	.0517

#1	49.84	.1332	.0354	.4696	.4682	140.0	.7831	.0517
#2	49.94	.1329	.0362	.4718	.4741	140.5	.7813	.0517

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.31	1.0200	.0150	.0761	3.957	7.368	-.0093	10.87

#1	23.32	1.0209	.0150	.0763	3.955	7.409	-.0108	10.86
#2	23.30	1.0192	.0150	.0760	3.959	7.327	-.0078	10.87

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0051	13.38	.46286	-.0016	.0113	5.757	.3568	>18.00

#1	.0052	13.39	.46311	-.0008	.0119	5.785	.3570	19.57
#2	.0051	13.38	.46261	-.0024	.0107	5.728	.3566	19.59

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	>4.500	.0060	54.72

#1	17.54	.0063	54.48
#2	17.61	.0058	54.95

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4262.4	139760.	7998.1

#1	4254.9	139060.	8015.1
#2	4269.9	140460.	7981.1

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Sample Name: CCVB Acquired: 2/21/2018 15:30:06 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.404	10.84	-.0017	1.034	10.41	-.00015	.0021	-.0001
Stddev	.032	.05	.0009	.000	.16	.00006	.0007	.0000
%RSD	.4335	.5053	52.38	.0070	1.548	38.933	31.91	13.95

#1	7.426	10.87	-.0023	1.034	10.30	-.00019	.0026	-.0001
#2	7.381	10.80	-.0010	1.034	10.53	-.00011	.0016	-.0001

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	10.42	9.605	.0000	-.0001	-.0004	-.0002	10.51
Stddev	.0000	.02	.119	.000	.0003	.0001	.0001	.02
%RSD	706.2	.1586	1.240	567.3	237.2	20.71	79.63	.1943

#1	.0000	10.43	9.690	.0001	.0001	-.0004	-.0003	10.50
#2	.0000	10.40	9.521	-.0002	-.0003	-.0003	-.0001	10.53

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	1.024	10.55	9.930	10.26	1.0059	1.022	.0006
Stddev	.0003	.001	.03	.008	.00	.0046	.005	.0000
%RSD	73.16	.0835	.2950	.0770	.0006	.45285	.4519	.5454

#1	.0002	1.024	10.57	9.935	10.26	1.0027	1.025	.0006
#2	.0006	1.023	10.53	9.924	10.25	1.0092	1.018	.0006

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 2/21/2018 15:30:06 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	10.20	10.40	-.0012	10.37	-.0002	10.37	1.0326
Stddev	.0002	.06	.01	.0032	.07	.0008	.06	.0035
%RSD	39.20	.6352	.1174	274.0	.6843	440.5	.5995	.33676

#1	.0003	10.25	10.39	.0011	10.42	-.0007	10.41	1.0302
#2	.0005	10.15	10.41	-.0034	10.32	.0004	10.33	1.0351

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0002	.0019	.0000	.0023	.0024	1.034	1.047
Stddev	.0006	.0002	.0000	.000	.0001	.0000	.001	.004
%RSD	634.0	152.8	.0122	601.3	4.751	.6557	.0668	.4034

#1	.0005	.0000	.0019	.0000	.0023	.0024	1.034	1.044
#2	-.0003	.0003	.0019	.0000	.0024	.0023	1.035	1.050

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4320.9	143280.	8014.5
Stddev	5.6	373.	34.1
%RSD	.13060	.26003	.42531

#1	4316.9	143550.	8038.6
#2	4324.9	143020.	7990.4

Sample Name: CCVA Acquired: 2/21/2018 15:32:45 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2598	.3079	.2586	.2613	.2693	.26562	.2656	.2592
Stddev	.0003	.0017	.0008	.0000	.0004	.00035	.0003	.0002
%RSD	.1299	.5466	.3285	.0084	.1549	.13301	.0973	.0721

#1	.2596	.3067	.2580	.2613	.2696	.26587	.2658	.2594
#2	.2601	.3091	.2592	.2614	.2690	.26537	.2654	.2591

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2582	.5411	.5078	.2585	.2573	.2560	.2631	.2770
Stddev	.0006	.0034	.0007	.0000	.0014	.0003	.0000	.0029
%RSD	.2229	.6316	.1306	.0150	.5288	.1200	.0126	1.059

#1	.2586	.5387	.5083	.2585	.2583	.2562	.2631	.2791
#2	.2578	.5435	.5073	.2586	.2564	.2558	.2630	.2750

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2570	.0013	.2740	.2619	.2575	.25822	.2568	.2555
Stddev	.0006	.0007	.0275	.0008	.0023	.00054	.0029	.0009
%RSD	.2402	48.19	10.02	.2888	.9067	.20781	1.115	.3567

#1	.2575	.0009	.2935	.2624	.2559	.25784	.2548	.2561
#2	.2566	.0018	.2546	.2614	.2592	.25860	.2588	.2548

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 2/21/2018 15:32:45 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2569	.0015	2.626	.2635	.1489	.2604	.2393	.00002
Stddev	.0004	.0031	.029	.0037	.0067	.0002	.0040	.00008
%RSD	.1429	205.2	1.101	1.401	4.494	.0945	1.651	462.79

#1	.2571	.0037	2.646	.2661	.1536	.2606	.2365	-.00004
#2	.2566	-.0007	2.606	.2609	.1442	.2603	.2421	.00008

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2575	.2581	.2620	.2607	.2599	.2639	-.0020	.0055
Stddev	.0029	.0011	.0004	.0003	.0003	.0010	.0018	.0048
%RSD	1.133	.4112	.1646	.1214	.0971	.3742	88.41	87.60

#1	.2595	.2589	.2617	.2605	.2601	.2646	-.0007	.0021
#2	.2554	.2574	.2623	.2609	.2598	.2632	-.0032	.0089

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4336.2	145730.	7981.9
Stddev	2.0	332.	75.0
%RSD	.04631	.22776	.93943

#1	4337.7	145960.	7928.8
#2	4334.8	145490.	8034.9

Sample Name: CCB Acquired: 2/21/2018 15:39:29 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	.0038	-.0024	-.0008	-.0015	-.00002	.0005	-.0001
Stddev	.0003	.0009	.0002	.0026	.0003	.00003	.0011	.0000
%RSD	12.92	24.53	7.137	307.9	19.09	150.85	214.8	27.22

#1	.0028	.0045	-.0025	-.0026	-.0013	.00000	-.0003	-.0001
#2	.0024	.0032	-.0023	.0010	-.0017	-.00004	.0012	-.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0043	.0010	-.0004	-.0001	-.0004	.0000	.0066
Stddev	.0001	.0038	.0001	.0000	.0001	.0001	.0001	.0032
%RSD	99.91	90.19	12.67	2.951	203.0	31.97	266.4	49.00

#1	.0000	.0070	.0011	-.0004	.0000	-.0005	.0001	.0089
#2	.0001	.0015	.0009	-.0004	-.0002	-.0003	.0000	.0043

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0005	.0000	-.0004	-.0016	.00001	.0000	.0002
Stddev	.0007	.0004	.0204	.0001	.0014	.00005	.001	.0001
%RSD	121.1	75.29	2680000.	26.15	85.16	660.39	1934.	39.29

#1	.0011	.0007	-.0144	-.0003	-.0026	.00004	-.0007	.0002
#2	.0001	.0002	.0144	-.0005	-.0007	-.00003	.0006	.0003

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 15:39:29 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0001	.0337	.0008	.0002	-.0002	-.0210	.00000
Stddev	.0000	.0029	.0231	.0006	.0107	.0002	.0052	.00012
%RSD	21.46	2075.	68.54	68.98	6228.	97.65	24.88	2683.0

#1	.0001	.0022	.0500	.0004	.0078	-.0001	-.0247	-.00008
#2	.0001	-.0019	.0174	.0012	-.0074	-.0003	-.0173	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.0002	.0002	-.0003	.0007	.0008	-.0005	-.0022
Stddev	.0013	.0006	.0001	.0005	.0000	.0000	.0027	.0010
%RSD	224.0	331.9	85.34	154.1	3.961	4.095	511.2	43.95

#1	-.0014	.0006	.0003	-.0007	.0007	.0007	.0014	-.0015
#2	.0003	-.0003	.0001	.0000	.0007	.0008	-.0025	-.0029

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4225.9	141010.	7756.6
Stddev	5.3	428.	11.1
%RSD	.12645	.30325	.14267

#1	4229.7	141310.	7748.8
#2	4222.1	140710.	7764.4

Sample Name: K1801267-009L Acquired: 2/21/2018 15:42:00 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 10 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-009L 1/10

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.05	-.0006	.0092	.1149	.00008	.0086	.0167	.0167
#1	16.12	.0006	.0095	.1146	.00007	.0086	.0167	.0167
#2	15.99	-.0019	.0090	.1153	.00008	.0085	.0168	.0167
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.858	.0211	.0084	.1011	.1014	27.57	.1334	.0129
#1	9.823	.0218	.0085	.1009	.1009	27.53	.1335	.0132
#2	9.893	.0204	.0083	.1013	.1019	27.61	.1332	.0126
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.832	.21808	.0024	.0157	.8532	1.644	-.0038	2.088
#1	4.823	.21717	.0022	.0155	.8522	1.650	-.0027	2.102
#2	4.841	.21899	.0026	.0159	.8541	1.638	-.0049	2.073
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	2.618	.08853	-.0007	.0018	1.278	.0726	3.692
#1	.0005	2.633	.08825	-.0016	.0022	1.278	.0718	3.688
#2	.0005	2.603	.08882	.0002	.0014	1.278	.0734	3.697
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	3.633	.0027	9.522					
#1	3.633	.0026	9.504					
#2	3.634	.0028	9.541					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4288.8	142560.	7963.1					
#1	4288.1	142690.	7999.2					
#2	4289.5	142430.	7927.1					

Sample Name: K1801267-009A Acquired: 2/21/2018 15:44:25 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A +0.05/10ml CICV-1,3,Sb,Sn

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	69.61	.4501	2.359	5.655	.11473	.0390	1.221	1.218
#1	68.62	.4512	2.359	5.662	.11441	.0395	1.222	1.219
#2	70.60	.4491	2.359	5.648	.11505	.0386	1.220	1.218
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	58.47	.5841	1.202	1.033	1.019	131.1	2.847	.0499
#1	58.42	.5825	1.204	1.033	1.017	130.9	2.847	.0523
#2	58.53	.5857	1.201	1.034	1.021	131.2	2.847	.0475
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.64	2.1929	.0118	1.223	3.946	19.63	2.055	9.846
#1	34.67	2.1951	.0119	1.224	3.941	19.66	2.050	9.844
#2	34.61	2.1907	.0116	1.223	3.951	19.60	2.059	9.849
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5438	24.67	.41477	2.141	4.664	6.055	1.590	17.52
#1	.5433	24.68	.41506	2.138	4.663	6.072	1.590	17.55
#2	.5442	24.66	.41449	2.144	4.664	6.038	1.591	17.50
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	>4.500	.0060	42.56					
#1	15.61	.0048	42.61					
#2	15.59	.0072	42.52					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4150.0	137130.	7948.1					
#1	4150.5	136840.	7943.4					
#2	4149.5	137410.	7952.9					

** * *
 X, Y, Zn
 Run dilution
 2/21/18*

Sample Name: KQ1801937-02 Acquired: 2/21/2018 15:46:53 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A K1801267-009S 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.50	.2176	.5103	1.666	.04550	.3486	.1257	.1247
#1	85.07	.2199	.5108	1.661	.04563	.3488	.1258	.1254
#2	85.92	.2152	.5099	1.671	.04537	.3484	.1257	.1240
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.41	.2995	.5036	.6408	.6335	137.2	1.034	.0546
#1	62.43	.2995	.5036	.6406	.6326	137.2	1.036	.0532
#2	62.39	.2996	.5036	.6410	.6345	137.2	1.032	.0559
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.75	1.5375	.4919	.5370	3.978	12.22	.3975	13.80
#1	28.59	1.5355	.4933	.5377	3.999	12.08	.3993	13.76
#2	28.91	1.5395	.4905	.5362	3.958	12.35	.3958	13.84
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0475	20.65	.65419	.0855	.1067	6.568	.8660	17.48
#1	.0469	20.55	.65220	.0851	.1071	6.602	.8666	17.49
#2	.0481	20.76	.65618	.0860	.1064	6.534	.8654	17.48
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	>4.500	.1062	44.09					
#1	15.49	.1055	44.14					
#2	15.45	.1070	44.04					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4128.6	135800.	7860.5					
#1	4126.6	135560.	7832.8					
#2	4130.5	136030.	7888.2					

** Se dilution
in 2/21/18*

Sample Name: K1801267-001 Acquired: 2/21/2018 15:49:21 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	87.72	.0436	.2179	.9612	.00114	.2478	.1069	.1054
#1	88.27	.0393	.2169	.9635	.00108	.2502	.1071	.1053
#2	87.18	.0479	.2189	.9588	.00121	.2455	.1067	.1056
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.12	.2789	.0580	1.062	1.039	221.8	2.849	.0915
#1	47.16	.2787	.0581	1.062	1.041	222.2	2.854	.0905
#2	47.07	.2790	.0579	1.061	1.036	221.3	2.845	.0926
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.08	1.7486	.0380	.2690	4.365	13.93	-.0106	11.12
#1	52.25	1.7432	.0379	.2687	4.376	13.96	-.0100	11.16
#2	51.91	1.7540	.0380	.2692	4.353	13.90	-.0112	11.07
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0120	53.33	.53588	.0007	.0799	5.537	.4919	>18.00
#1	.0119	53.57	.53731	.0019	.0808	5.501	.4896	23.38
#2	.0122	53.09	.53446	-.0004	.0790	5.572	.4942	23.23
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	>4.500	.0127	84.84					
#1	19.83	.0120	84.88					
#2	19.87	.0134	84.81					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4097.9	136940.	7934.1					
#1	4089.5	137360.	7949.2					
#2	4106.3	136510.	7919.0					

* see dilution
m 2/21/18

Sample Name: K1801267-013 Acquired: 2/21/2018 15:51:54 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 2 Test Type: Sample Type:
 Comment: RRM 022118A 1/2

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	92.44	.0064	.0856	.6154	.00134	.1664	.0053	.0031
#1	94.46	.0070	.0889	.6161	.00136	.1657	.0053	.0032
#2	90.42	.0057	.0823	.6148	.00132	.1671	.0053	.0030
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	43.40	.2867	.0508	.6492	.6478	179.5	.5841	.0915
#1	43.39	.2862	.0508	.6496	.6473	179.2	.5845	.0904
#2	43.40	.2872	.0508	.6489	.6483	179.8	.5837	.0926
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	44.65	1.4760	.0113	.1463	4.420	14.33	-.0110	8.759
#1	44.64	1.4738	.0114	.1461	4.418	14.35	-.0128	8.782
#2	44.67	1.4781	.0113	.1466	4.423	14.32	-.0091	8.736
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0062	49.44	.48779	.0009	.0577	6.799	.4356	1.130
#1	.0058	49.45	.48810	-.0003	.0573	6.803	.4356	1.132
#2	.0066	49.44	.48749	.0020	.0582	6.794	.4357	1.128
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.094	.0086	66.99					
#1	1.093	.0094	67.12					
#2	1.094	.0079	66.86					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4177.8	137940.	8034.2					
#1	4176.9	137900.	8036.4					
#2	4178.6	137980.	8032.0					

Sample Name: KQ1801949-02 Acquired: 2/21/2018 15:54:31 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: RRM 022118A 1/5 K1801151-MBE

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0137	-.0003	-.0004	.0555	-.00013	.0465	.0000	.0000
#1	.0139	.0004	.0016	.0554	-.00012	.0469	.0000	-.0001
#2	.0136	-.0010	-.0024	.0556	-.00013	.0460	-.0001	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9779	.0000	.0000	.0000	.0000	.0366	-.0002	.0026
#1	.9746	.0004	-.0001	-.0004	.0001	.0391	-.0011	.0032
#2	.9811	-.0004	.0000	.0004	-.0001	.0342	.0006	.0021
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1102	.00032	.0003	.0013	.0014	.2170	.0014	.0848
#1	.1105	.00036	.0005	.0012	-.0029	.2438	.0034	.0884
#2	.1100	.00029	.0001	.0013	.0058	.1902	-.0005	.0811
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	291.3	.00152	-.0024	-.0001	.0008	.0002	.0147
#1	-.0002	295.9	.00161	-.0018	.0005	.0007	.0001	.0148
#2	.0000	286.7	.00143	-.0029	-.0007	.0010	.0003	.0145
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0135	-.0029	.0191					
#1	.0135	-.0044	.0186					
#2	.0134	-.0014	.0196					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3987.7	127820.	7300.0					
#1	3990.7	127180.	7347.6					
#2	3984.6	128460.	7252.3					

Sample Name: KQ1801949-01 Acquired: 2/21/2018 15:57:04 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: RRM 022118A 1/5 K1801151-LCSE

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0169	-.0061	.9970	2.267	-.00013	.0487	.2075	.2056
#1	.0184	-.0046	.9954	2.273	-.00014	.0480	.2077	.2055
#2	.0154	-.0077	.9986	2.260	-.00012	.0495	.2072	.2057
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9699	1.073	.0000	.1992	.1801	.0311	.9845	.0025
#1	.9725	1.070	.0000	.2003	.1809	.0248	.9858	.0006
#2	.9672	1.077	.0001	.1981	.1792	.0375	.9831	.0044
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1115	.00034	.0003	.2031	.0035	.2242	.1859	.0406
#1	.1103	.00041	.0003	.2032	.0031	.2086	.1860	.0454
#2	.1127	.00026	.0004	.2029	.0039	.2397	.1859	.0358
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1774	299.3	.00149	.0004	.0006	.0007	.0011	2.119
#1	.1778	299.9	.00151	.0006	.0002	.0005	.0013	2.127
#2	.1771	298.7	.00148	.0002	.0010	.0009	.0009	2.111
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.926	-.0006	.0206					
#1	1.929	-.0005	.0224					
#2	1.924	-.0008	.0187					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4014.9	129450.	7515.7					
#1	4008.0	129320.	7486.1					
#2	4021.8	129580.	7545.3					

Sample Name: K1801151-001 Acquired: 2/21/2018 15:59:29 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: RRM 022118A 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0222	.0020	.0102	.2582	-.00018	25.67	-.0001	-.0002
#1	.0223	.0013	.0113	.2571	-.00016	25.72	.0000	-.0003
#2	.0221	.0027	.0092	.2593	-.00019	25.61	-.0001	.0000
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.10	.2465	.0059	.0060	.0076	13.98	-.0019	.1085
#1	19.02	.2460	.0060	.0055	.0087	13.97	-.0008	.1102
#2	19.19	.2471	.0058	.0066	.0066	13.99	-.0030	.1069
Elem	Mg2795	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.852	7.543	.15586	.3951	.1134	1.184	182.8	.0094
#1	7.815	7.539	.15512	.3955	.1135	1.187	182.9	.0099
#2	7.889	7.546	.15660	.3947	.1132	1.182	182.7	.0090
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.486	-.0005	197.5	.09148	-.0009	.0105	.0013	.1331
#1	3.488	-.0004	198.1	.09106	-.0020	.0118	.0011	.1326
#2	3.485	-.0006	197.0	.09189	.0002	.0093	.0014	.1335
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.2996	.2693	-.0027	10.25				
#1	.2986	.2696	-.0010	10.25				
#2	.3006	.2690	-.0043	10.24				
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3988.3	130010.	7590.7					
#1	3985.1	130400.	7629.6					
#2	3991.6	129620.	7551.9					

Sample Name: KQ1801949-03 Acquired: 2/21/2018 16:01:54 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: RRM 022118A 1/5 K1801151-001D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0191	-.0009	.0115	.2706	-.00017	26.12	-.0001	-.0006
#1	.0186	.0008	.0105	.2705	-.00011	26.22	-.0001	-.0005
#2	.0195	-.0026	.0126	.2706	-.00024	26.02	-.0001	-.0006
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.07	.2544	.0061	.0064	.0072	15.02	-.0020	.1104
#1	20.15	.2558	.0064	.0065	.0072	15.02	-.0018	.1115
#2	20.00	.2530	.0059	.0063	.0073	15.01	-.0023	.1094
Elem	Mg2795	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.238	7.734	.16168	.3930	.1169	1.212	187.4	.0085
#1	8.269	7.755	.16183	.3945	.1181	1.213	187.4	.0100
#2	8.206	7.713	.16153	.3914	.1158	1.210	187.5	.0070
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.110	-.0006	202.8	.09589	-.0020	.0106	.0012	.1367
#1	4.084	-.0006	203.6	.09643	-.0034	.0108	.0011	.1375
#2	4.137	-.0006	201.9	.09534	-.0006	.0103	.0014	.1360
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.3101	.2751	-.0031	10.35				
#1	.3111	.2757	-.0030	10.38				
#2	.3092	.2744	-.0031	10.33				
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3961.3	128600.	7426.6					
#1	3958.8	128360.	7407.3					
#2	3963.8	128830.	7445.9					

Sample Name: KQ1801949-04 Acquired: 2/21/2018 16:04:24 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: RRM 022118A 1/5 K1801151-001S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0213	-.0027	.9542	2.444	-.00023	26.88	.2034	.2001
#1	.0214	-.0035	.9566	2.444	-.00027	26.76	.2036	.1993
#2	.0212	-.0019	.9517	2.445	-.00018	27.00	.2032	.2009
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.94	1.327	.0065	.1987	.1782	15.63	.9378	.1120
#1	20.99	1.327	.0069	.1997	.1777	15.65	.9371	.1119
#2	20.88	1.326	.0062	.1978	.1787	15.60	.9384	.1121
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.976	.17070	.4137	.3210	1.273	193.2	.1869	4.258
#1	7.961	.17122	.4133	.3203	1.273	191.9	.1850	4.222
#2	7.991	.17018	.4142	.3218	1.273	194.4	.1887	4.294
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0931	207.8	.09996	-.0007	.0118	.0009	.1436	2.401
#1	.0931	207.9	.10007	-.0018	.0121	.0009	.1438	2.405
#2	.0932	207.7	.09984	.0005	.0114	.0010	.1435	2.398
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	2.077	-.0010	10.66					
#1	2.074	-.0012	10.67					
#2	2.081	-.0008	10.64					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3878.9	126530.	7326.2					
#1	3876.9	126280.	7278.9					
#2	3880.9	126780.	7373.4					

Sample Name: CCVB Acquired: 2/21/2018 16:06:48 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.638	10.51	-.0021	.9884	10.54	-.00015	.0871	.0000
Stddev	.006	.02	.0003	.0022	.04	.00010	.0025	.000
%RSD	.0770	.1812	13.38	.2183	.3842	67.564	2.922	251.2

#1	7.634	10.52	-.0019	.9900	10.51	-.00022	.0889	-.0001
#2	7.642	10.49	-.0023	.9869	10.57	-.00008	.0853	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.57	10.03	.0001	-.0001	-.0001	-.0006	10.53
Stddev	.0001	.02	.14	.0005	.0002	.0001	.0003	.03
%RSD	177.8	.1751	1.370	379.6	147.5	114.9	45.52	.2506

#1	-.0001	10.55	9.937	.0005	.0000	.0000	-.0007	10.51
#2	.0000	10.58	10.13	-.0002	-.0003	-.0001	-.0004	10.54

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.9957	10.60	10.07	9.957	1.0299	1.015	.0008
Stddev	.0000	.0037	.01	.01	.003	.0058	.009	.0004
%RSD	2.540	.3706	.1187	.1176	.0276	.56453	.9007	49.23

#1	.0012	.9983	10.59	10.07	9.959	1.0340	1.021	.0005
#2	.0012	.9931	10.61	10.08	9.955	1.0258	1.009	.0011

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 2/21/2018 16:06:48 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	10.26	10.03	.0015	9.909	-.0002	9.966	1.0447
Stddev	.0001	.01	.01	.0013	.020	.0001	.020	.0041
%RSD	22.25	.0674	.1333	83.23	.2015	53.26	.1952	.39438

#1	.0003	10.26	10.02	.0006	9.924	-.0003	9.953	1.0418
#2	.0004	10.25	10.04	.0024	9.895	-.0001	9.980	1.0476

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0017	.0003	.0007	.0003	.0010	.0009	1.037	.9909
Stddev	.0001	.0000	.0000	.0004	.0002	.0001	.002	.0047
%RSD	7.475	2.273	2.525	127.2	17.53	10.77	.1896	.4738

#1	-.0018	.0003	.0007	.0000	.0008	.0010	1.038	.9876
#2	-.0016	.0003	.0007	.0006	.0011	.0008	1.036	.9942

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4139.5	136840.	7627.8
Stddev	2.1	604.	23.1
%RSD	.05021	.44131	.30316

#1	4141.0	136410.	7644.2
#2	4138.1	137270.	7611.4

Sample Name: CCVA Acquired: 2/21/2018 16:09:27 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2745	.3051	.2446	.2507	.2685	.25063	F .3083	.2597
Stddev	.0030	.0055	.0002	.0054	.0004	.00166	.0065	.0003
%RSD	1.096	1.801	.0782	2.168	.1345	.66041	2.118	.0996

#1	.2766	.3089	.2448	.2546	.2688	.25180	.3129	.2595
#2	.2724	.3012	.2445	.2469	.2683	.24946	.3036	.2599

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Fail	Chk Pass
Value							.2500	
Range							10.44%	

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2596	.5420	.5139	.2596	.2571	.2563	.2504	.2752
Stddev	.0001	.0142	.0006	.0001	.0003	.0015	.0018	.0038
%RSD	.0322	2.612	.1136	.0215	.0992	.5709	.7372	1.381

#1	.2597	.5320	.5135	.2596	.2572	.2553	.2517	.2725
#2	.2595	.5520	.5143	.2597	.2569	.2574	.2491	.2779

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2565	.0016	.2662	.2607	.2473	.26107	.2513	.2570
Stddev	.0005	.0012	.0197	.0008	.0009	.00101	.0013	.0006
%RSD	.1899	77.85	7.397	.3103	.3657	.38865	.5008	.2242

#1	.2562	.0007	.2802	.2601	.2467	.26036	.2504	.2574
#2	.2568	.0025	.2523	.2613	.2480	.26179	.2522	.2566

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: CCVA Acquired: 2/21/2018 16:09:27 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2572	.0020	2.553	.2493	.1306	.2515	.2926	.00004
Stddev	.0009	.0049	.008	.0032	.0018	.0025	.0059	.00010
%RSD	.3681	241.6	.3057	1.299	1.398	.9813	2.027	247.61

#1	.2565	-.0014	2.548	.2470	.1319	.2533	.2968	-.00003
#2	.2578	.0055	2.559	.2516	.1293	.2498	.2884	.00011

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2547	.2584	.2598	.2583	.2611	.2538	.0000	.0129
Stddev	.0009	.0014	.0010	.0003	.0002	.0006	.0002	.0013
%RSD	.3373	.5247	.3790	.1035	.0703	.2213	398.9	9.790

#1	.2553	.2594	.2591	.2585	.2612	.2542	-.0001	.0137
#2	.2541	.2575	.2605	.2581	.2610	.2534	.0002	.0120

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4153.8	139230.	7620.7
Stddev	2.4	398.	55.5
%RSD	.05679	.28619	.72866

#1	4155.5	139510.	7659.9
#2	4152.1	138950.	7581.4

Sample Name: CCB Acquired: 2/21/2018 16:12:32 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0028	-.0018	-.0012	-.0012	-.00006	F .0357	-.0001
Stddev	.0005	.0007	.0013	.0019	.0005	.00002	.0002	.0001
%RSD	27.82	24.98	72.07	155.9	43.06	27.275	.5627	68.49

#1	.0023	.0023	-.0009	.0001	-.0008	-.00007	.0359	-.0001
#2	.0015	.0033	-.0027	-.0026	-.0015	-.00005	.0356	-.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							.0200	
Low Limit							-.0200	

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0037	.0010	-.0002	-.0001	-.0001	.0004	.0065
Stddev	.000	.0136	.0004	.0005	.0003	.0002	.0003	.0050
%RSD	208.5	368.0	36.89	232.1	424.8	248.6	87.99	76.81

#1	.0000	-.0133	.0013	.0001	.0002	.0001	.0001	.0100
#2	.0000	.0059	.0007	-.0006	-.0003	-.0002	.0006	.0030

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0010	.0178	.0003	-.0017	-.00010	-.0021	.0006
Stddev	.0025	.0025	.0428	.0002	.0012	.00002	.0006	.0002
%RSD	581.8	238.6	241.0	55.99	72.24	14.642	29.34	31.07

#1	-.0014	.0028	-.0125	.0004	-.0008	-.00011	-.0016	.0005
#2	.0022	-.0007	.0481	.0002	-.0025	-.00009	-.0025	.0008

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 16:12:32 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0014	.0723	.0010	.0045	-.0008	.0293	-.00005
Stddev	.0004	.0019	.0312	.0033	.0004	.0003	.0046	.00012
%RSD	264.4	131.0	43.09	316.6	8.130	34.64	15.67	224.62

#1	.0001	.0028	.0503	-.0013	.0043	-.0010	.0261	.00003
#2	-.0004	.0001	.0944	.0033	.0048	-.0006	.0326	-.00014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	.0002	.0002	.0000	.0005	.0004	-.0033	.0027
Stddev	.0012	.0012	.0001	.0001	.0001	.0000	.0008	.0046
%RSD	88.86	602.4	41.22	262.8	15.06	4.164	24.80	170.0

#1	-.0005	-.0007	.0002	.0000	.0006	.0004	-.0027	.0059
#2	-.0022	.0011	.0001	.0001	.0005	.0004	-.0039	-.0005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4151.9	137570.	7485.8
Stddev	4.7	490.	3.6
%RSD	.11214	.35626	.04770

#1	4155.2	137920.	7483.3
#2	4148.6	137220.	7488.3

Sample Name: K1801151-001A Acquired: 2/21/2018 16:15:03 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: RRM 022118A 1/5 +0.1/10ml TCLP soln

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0187	-.0171	4.623	10.91	-.00016	24.13	.9903	.9871
#1	.0183	-.0172	4.638	10.88	-.00011	24.22	.9901	.9860
#2	.0190	-.0169	4.608	10.95	-.00021	24.05	.9906	.9881
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.74	5.444	.0067	.9612	.8476	13.62	4.697	.1042
#1	18.71	5.432	.0066	.9612	.8508	13.64	4.696	.1035
#2	18.78	5.456	.0068	.9612	.8445	13.60	4.697	.1049
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.634	.15454	.3888	1.084	1.169	175.7	.8915	3.293
#1	7.631	.15379	.3888	1.085	1.172	175.9	.8903	3.321
#2	7.638	.15528	.3888	1.083	1.166	175.4	.8928	3.265
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8261	188.3	.09040	-.0011	.0095	.0008	.1308	10.23
#1	.8254	189.1	.08995	-.0010	.0092	.0008	.1299	10.24
#2	.8268	187.4	.09085	-.0012	.0098	.0008	.1317	10.23
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	>4.500	-.0032	9.630					
#1	8.711	-.0020	9.622					
#2	8.711	-.0044	9.637					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3879.4	126900.	7399.4					
#1	3879.0	127190.	7431.2					
#2	3879.8	126620.	7367.6					

Sample Name: K1801267-009 Acquired: 2/21/2018 16:17:27 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: RRM 022118A 1/100

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.391	1.598	-.0019	.0030	.0107	-.00013	.0692	.0016
#1	1.391	1.596	-.0014	.0035	.0107	-.00007	.0710	.0017
#2	1.391	1.600	-.0025	.0025	.0106	-.00018	.0674	.0016
Elem	Cd2265	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	.9523	.0026	.0007	.0098	.0103	2.765	.0127
#1	.0017	.9530	.0028	.0009	.0101	.0100	2.776	.0131
#2	.0018	.9516	.0024	.0005	.0095	.0107	2.753	.0124
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0014	.4759	.02156	.0006	.0015	.0815	.3147	.0054
#1	.0013	.4773	.02149	.0003	.0015	.0838	.3251	.0059
#2	.0014	.4745	.02164	.0009	.0014	.0792	.3042	.0049
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2141	-.0002	.2980	.00870	-.0015	.0008	.1241	.0073
#1	.2162	-.0004	.2976	.00880	-.0028	.0004	.1241	.0075
#2	.2121	.0001	.2984	.00861	-.0002	.0011	.1240	.0072
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.3648	.3645	-.0010	.9109				
#1	.3644	.3649	-.0014	.9085				
#2	.3653	.3641	-.0006	.9133				
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4229.4	139790.	7638.3					
#1	4232.5	139480.	7594.7					
#2	4226.2	140100.	7681.9					

Sample Name: KQ1801937-01 Acquired: 2/21/2018 16:19:50 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: RRM 022118A 1/100

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.341	1.546	-.0022	.0014	.0110	-.00014	.0453	.0019
#1	1.341	1.547	-.0027	.0002	.0110	-.00014	.0465	.0019
#2	1.342	1.544	-.0017	.0025	.0111	-.00015	.0441	.0019
Elem	Cd2265	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	1.003	.0026	.0004	.0101	.0098	2.924	.0158
#1	.0020	1.008	.0026	.0005	.0100	.0098	2.921	.0155
#2	.0020	.9987	.0026	.0004	.0102	.0098	2.927	.0162
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	.4809	.02146	.0007	.0014	.0814	.2217	.0017
#1	.0047	.4801	.02146	.0006	.0016	.0827	.1866	.0023
#2	.0009	.4817	.02146	.0007	.0013	.0800	.2569	.0011
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2222	-.0003	.2864	.00950	-.0009	.0002	.1161	.0072
#1	.2335	-.0003	.2931	.00951	.0002	.0005	.1162	.0074
#2	.2109	-.0003	.2798	.00950	-.0019	-.0002	.1159	.0070
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.4306	.4304	-.0036	1.158				
#1	.4304	.4304	-.0039	1.163				
#2	.4309	.4304	-.0033	1.153				
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4245.3	140710.	7734.0					
#1	4242.6	140750.	7674.3					
#2	4248.0	140660.	7793.8					

Sample Name: K1801267-009L Acquired: 2/21/2018 16:22:13 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 500 Test Type: Sample Type:
 Comment: RRM 022118A 1/500

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2886	-.0008	.0011	.0011	-.00008	.0344	.0004	.0003
#1	.2897	-.0015	.0012	.0013	-.00009	.0343	.0004	.0003
#2	.2874	.0000	.0011	.0009	-.00006	.0345	.0004	.0002
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1937	.0008	.0000	.0018	.0016	.5838	.0018	.0024
#1	.1945	.0007	.0002	.0022	.0026	.5895	.0010	.0025
#2	.1930	.0009	-.0002	.0013	.0006	.5781	.0027	.0023
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0982	.00423	.0002	.0003	.0173	.1297	-.0022	.0523
#1	.0988	.00423	.0000	.0007	.0158	.1256	-.0020	.0502
#2	.0976	.00423	.0004	-.0001	.0188	.1338	-.0025	.0543
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0570	.00165	.0004	-.0002	.0256	.0017	.0747
#1	-.0002	.0566	.00171	.0006	-.0003	.0256	.0012	.0749
#2	-.0002	.0574	.00159	.0001	.0000	.0255	.0022	.0745
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0753	-.0018	.1926					
#1	.0753	-.0009	.1914					
#2	.0752	-.0027	.1937					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4295.6	141890.	7663.9					
#1	4287.2	141490.	7594.4					
#2	4304.0	142290.	7733.5					

Sample Name: K1801267-009A Acquired: 2/21/2018 16:24:39 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: RRM 022118A 1/100 +0.1/10ml CICV-1

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.84	-.0040	.0001	10.67	.25249	.0319	.0015	.0015

#1	11.90	-.0037	-.0007	10.88	.25268	.0317	.0015	.0015
#2	11.77	-.0044	.0009	10.45	.25230	.0321	.0015	.0016

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.00	1.038	2.477	1.224	1.208	7.924	.0134	.0003

#1	27.69	1.037	2.478	1.225	1.210	8.124	.0140	.0006
#2	26.32	1.040	2.476	1.223	1.206	7.725	.0128	.0000

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.00	2.5008	.0007	2.471	.0892	25.39	-.0001	.2144

#1	25.12	2.4974	.0006	2.470	.0879	25.43	.0000	.2117
#2	24.88	2.5042	.0008	2.473	.0905	25.34	-.0002	.2172

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.152	25.43	.00870	-.0002	.0001	.1290	2.663	2.863

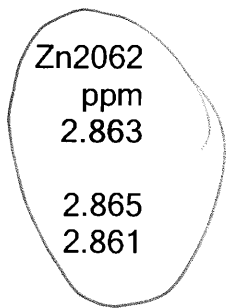
#1	1.154	25.49	.00889	.0000	.0004	.1288	2.663	2.865
#2	1.151	25.38	.00851	-.0003	-.0002	.1291	2.663	2.861

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	2.779	.0013	.9578

#1	2.779	.0026	.9646
#2	2.778	.0000	.9511

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4185.2	138250.	7896.9

#1	4187.2	138400.	7724.4
#2	4183.2	138110.	8069.5



Sample Name: KQ1801937-02 Acquired: 2/21/2018 16:27:11 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: RRM 022118A 1/100

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.815	2.154	.0046	.0097	.0350	.00097	.0378	.0027

#1	1.815	2.139	.0048	.0114	.0354	.00095	.0370	.0028
#2	1.815	2.169	.0044	.0080	.0347	.00099	.0385	.0027

Elem	Cd2265	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	1.262	.0063	.0114	.0138	.0133	2.928	.0227

#1	.0027	1.263	.0066	.0112	.0139	.0135	2.921	.0241
#2	.0029	1.261	.0060	.0116	.0138	.0131	2.935	.0213

Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.6120	.03284	.0104	.0116	.0837	.3340	.0092

#1	.0007	.6110	.03304	.0104	.0116	.0838	.3182	.0107
#2	.0015	.6129	.03263	.0105	.0116	.0836	.3497	.0077

Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3434	.0007	.4375	.01354	.0017	.0025	.1355	.0182

#1	.3272	.0011	.4293	.01343	.0016	.0032	.1351	.0183
#2	.3595	.0004	.4458	.01365	.0018	.0018	.1360	.0182

Elem	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm
Avg	.3942	.3937	.0023	.9879

#1	.3943	.3945	.0009	.9835
#2	.3940	.3930	.0037	.9924

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4261.1	141380.	7693.7

#1	4261.7	140910.	7692.1
#2	4260.5	141850.	7695.2

Sample Name: K1801267-001 Acquired: 2/21/2018 16:29:34 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: RRM 022118A 1/100

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.863	2.252	-.0007	.0013	.0196	-.00012	.0325	.0024
#1	1.863	2.270	-.0003	.0014	.0196	-.00015	.0330	.0024
#2	1.863	2.234	-.0012	.0012	.0195	-.00008	.0320	.0024
Elem	Cd2265	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	.9707	.0061	.0013	.0227	.0221	4.905	.0617
#1	.0023	.9786	.0061	.0013	.0232	.0224	4.942	.0622
#2	.0022	.9629	.0060	.0013	.0223	.0218	4.867	.0611
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	1.138	.03756	.0010	.0056	.0924	.3402	.0015
#1	.0026	1.146	.03783	.0011	.0056	.0896	.3308	.0010
#2	.0045	1.129	.03729	.0009	.0056	.0952	.3495	.0019
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2337	-.0001	1.065	.01116	.0001	.0018	.1157	.0104
#1	.2338	.0000	1.081	.01122	-.0008	.0018	.1159	.0104
#2	.2337	-.0002	1.049	.01110	.0009	.0019	.1155	.0103
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.5215	.5164	-.0025	1.880				
#1	.5224	.5158	-.0034	1.878				
#2	.5207	.5170	-.0016	1.881				
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4236.0	141350.	7540.1					
#1	4232.2	140970.	7516.6					
#2	4239.9	141730.	7563.6					

Sample Name: K1801267-013 Acquired: 2/21/2018 16:31:57 Type: Unk
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: RRM 022118A 1/100

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.986	2.360	-.0018	.0020	.0113	-.00011	.0275	.0000
#1	1.985	2.375	-.0003	.0013	.0113	-.00001	.0276	.0000
#2	1.988	2.345	-.0033	.0026	.0112	-.00020	.0273	.0000
Elem	Cd2265	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.8993	.0061	.0012	.0143	.0138	3.851	.0122
#1	.0001	.8972	.0057	.0013	.0139	.0139	3.842	.0119
#2	.0000	.9013	.0064	.0012	.0146	.0136	3.860	.0125
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	.9509	.03179	.0003	.0031	.0935	.3024	-.0002
#1	.0016	.9489	.03192	.0003	.0031	.0939	.3045	.0021
#2	.0033	.9530	.03165	.0003	.0031	.0930	.3004	-.0025
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1851	-.0002	.9780	.01023	-.0003	.0010	.1418	.0090
#1	.1823	-.0002	.9860	.01015	-.0003	.0016	.1415	.0092
#2	.1878	-.0002	.9700	.01031	-.0002	.0004	.1422	.0087
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.0272	.0270	-.0002	1.475				
#1	.0271	.0272	-.0016	1.474				
#2	.0273	.0267	.0012	1.475				
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4230.3	140620.	7693.5					
#1	4240.4	140640.	7700.7					
#2	4220.3	140610.	7686.2					

*not needed
on 2/21/18*

Sample Name: CCVB Acquired: 2/21/2018 16:34:23 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.632	10.71	.0003	.9974	10.58	-.00027	.0225	-.0001
Stddev	.003	.02	.0013	.0047	.24	.00007	.0013	.0000
%RSD	.0429	.2298	427.5	.4729	2.232	28.009	5.945	12.36

#1	7.634	10.69	-.0006	1.001	10.41	-.00032	.0234	-.0001
#2	7.630	10.73	.0012	.9941	10.74	-.00021	.0215	-.0001

Check ? Value Range	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.46	10.03	.0000	.0004	.0002	-.0005	10.40
Stddev	.0001	.02	.00	.0002	.0001	.0001	.0004	.01
%RSD	93.61	.1806	.0098	8854.	19.83	56.04	80.34	.0739

#1	-.0001	10.45	10.03	-.0001	.0005	.0001	-.0008	10.39
#2	.0000	10.48	10.03	.0001	.0004	.0002	-.0002	10.40

Check ? Value Range	None	Chk Pass	None	None	None	None	None	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	1.011	10.39	10.01	10.00	1.0395	1.003	.0002
Stddev	.0007	.001	.03	.16	.05	.0010	.000	.0002
%RSD	30.51	.1107	.2848	1.582	.5231	.09757	.0336	79.75

#1	.0019	1.012	10.41	10.12	9.968	1.0388	1.003	.0001
#2	.0029	1.010	10.37	9.901	10.04	1.0402	1.004	.0004

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
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Sample Name: CCVB Acquired: 2/21/2018 16:34:23 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	10.32	9.957	-.0015	9.801	-.0003	9.850	1.0445
Stddev	.0002	.01	.107	.0005	.015	.0000	.032	.0042
%RSD	46.56	.1259	1.073	33.38	.1549	9.024	.3288	.39930

#1	.0003	10.33	9.882	-.0011	9.812	-.0003	9.873	1.0416
#2	.0006	10.31	10.03	-.0018	9.790	-.0003	9.827	1.0475

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
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Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	.0004	.0001	-.0001	.0003	.0004	1.045	.9873
Stddev	.0018	.0012	.0001	.0006	.0001	.0001	.002	.0018
%RSD	196.1	264.2	119.6	652.7	41.88	32.82	.2164	.1840

#1	.0004	-.0004	.0000	.0003	.0004	.0003	1.043	.9885
#2	-.0022	.0013	.0002	-.0005	.0002	.0005	1.047	.9860

Check ? Value Range	None	None	None	None	None	None	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4167.7	137060.	7672.7
Stddev	22.9	219.	3.1
%RSD	.54919	.15993	.04002

#1	4183.9	137220.	7670.5
#2	4151.6	136910.	7674.8

Sample Name: CCVA Acquired: 2/21/2018 16:37:01 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2589	.2937	.2502	.2517	.2692	.24943	.2689	.2562
Stddev	.0005	.0012	.0024	.0031	.0009	.00007	.0012	.0005
%RSD	.1792	.4126	.9530	1.238	.3436	.02731	.4389	.1771

#1	.2586	.2928	.2518	.2539	.2699	.24938	.2680	.2559
#2	.2592	.2945	.2485	.2495	.2686	.24948	.2697	.2565

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2583	.5401	.5225	.2575	.2538	.2563	.2532	.2673
Stddev	.0002	.0056	.0018	.0006	.0003	.0001	.0006	.0029
%RSD	.0941	1.039	.3382	.2371	.1007	.0299	.2466	1.085

#1	.2582	.5362	.5238	.2579	.2536	.2563	.2537	.2652
#2	.2585	.5441	.5213	.2571	.2540	.2564	.2528	.2693

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2553	.0013	.2460	.2584	.2469	.26278	.2471	.2544
Stddev	.0002	.0010	.0110	.0002	.0014	.00017	.0018	.0006
%RSD	.0648	74.12	4.467	.0803	.5639	.06659	.7219	.2405

#1	.2554	.0020	.2382	.2586	.2479	.26266	.2484	.2548
#2	.2552	.0006	.2538	.2583	.2459	.26290	.2459	.2540

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 2/21/2018 16:37:01 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2555	.0002	2.555	.2523	.1313	.2597	.2451	-.00010
Stddev	.0001	.0006	.008	.0021	.0145	.0015	.0028	.00003
%RSD	.0270	260.3	.3098	.8186	11.03	.5828	1.133	27.033

#1	.2554	.0007	2.561	.2538	.1415	.2586	.2471	-.00008
#2	.2555	-.0002	2.549	.2509	.1210	.2607	.2432	-.00012

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2548	.2538	.2559	.2558	.2547	.2521	-.0004	-.0014
Stddev	.0039	.0008	.0009	.0008	.0008	.0006	.0001	.0011
%RSD	1.526	.3044	.3632	.3147	.3113	.2251	24.58	83.29

#1	.2576	.2533	.2565	.2564	.2542	.2525	-.0005	-.0022
#2	.2521	.2544	.2552	.2553	.2553	.2517	-.0003	-.0006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4183.5	140130.	7644.1
Stddev	3.7	307.	23.4
%RSD	.08738	.21887	.30611

#1	4186.1	139910.	7660.6
#2	4180.9	140350.	7627.5

Sample Name: CCB Acquired: 2/21/2018 16:39:16 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0003	-.0024	-.0025	-.0012	-.00006	.0162	-.0001
Stddev	.0000	.0012	.0010	.0024	.0003	.00002	.0008	.0000
%RSD	23.48	344.5	40.86	95.06	23.99	29.521	4.823	57.87

#1	.0001	.0005	-.0017	-.0041	-.0014	-.00005	.0157	.0000
#2	.0001	-.0011	-.0031	-.0008	-.0010	-.00007	.0168	-.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0044	-.0008	.0000	-.0003	-.0001	.0001	-.0014
Stddev	.0000	.0008	.0000	.000	.0001	.0003	.0002	.0029
%RSD	30.39	17.42	1.374	1328.	54.34	262.8	255.3	202.4

#1	.0001	-.0039	-.0008	.0003	-.0002	-.0004	-.0001	.0006
#2	.0000	-.0049	-.0008	-.0003	-.0004	.0001	.0002	-.0034

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0024	-.0088	-.0009	-.0021	-.00010	.0001	.0009
Stddev	.0006	.0025	.0314	.0000	.0005	.00002	.0010	.0000
%RSD	143.9	102.6	356.3	1.902	25.99	16.673	780.7	5.495

#1	.0000	.0042	-.0310	-.0009	-.0017	-.00009	-.0006	.0009
#2	-.0009	.0007	.0134	-.0009	-.0025	-.00011	.0008	.0008

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/21/2018 16:39:16 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0004	.0639	.0025	.0116	-.0007	-.0032	-.00011
Stddev	.0000	.0002	.0026	.0022	.0116	.0001	.0054	.00003
%RSD	48.39	35.45	4.042	89.21	100.0	14.97	166.9	24.301

#1	.0001	.0003	.0658	.0041	.0198	-.0008	.0006	-.00009
#2	.0000	.0006	.0621	.0009	.0034	-.0007	-.0070	-.00013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0001	-.0001	.0004	.0002	.0001	-.0022	-.0003
Stddev	.0000	.0003	.0003	.0000	.0001	.0001	.0015	.0023
%RSD	10.72	222.1	256.8	10.90	58.40	43.64	68.83	844.6

#1	-.0002	.0004	-.0003	.0004	.0003	.0002	-.0011	-.0019
#2	-.0002	-.0001	.0001	.0003	.0001	.0001	-.0033	.0014

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4171.4	138720.	7592.0
Stddev	4.6	431.	55.9
%RSD	.11054	.31067	.73626

#1	4174.7	138420.	7631.6
#2	4168.2	139030.	7552.5

Sample Name: CCB Acquired: 2/21/2018 16:41:45 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0018	-.0008	-.0014	-.0011	-.00003	.0154	-.0001
Stddev	.0001	.0010	.0017	.0001	.0000	.00006	.0004	.0000
%RSD	87.28	57.86	204.4	3.810	1.056	195.96	2.387	30.56

#1	.0000	-.0010	-.0020	-.0014	-.0011	.00001	.0156	-.0001
#2	.0002	-.0025	.0004	-.0014	-.0011	-.00008	.0151	-.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0007	-.0004	-.0006	.0001	-.0004	.0002	-.0003
Stddev	.000	.0023	.0003	.0004	.0000	.0001	.0001	.0022
%RSD	1396.	351.5	78.46	68.45	69.51	14.16	36.92	661.6

#1	-.0001	.0010	-.0007	-.0003	.0000	-.0004	.0002	.0012
#2	.0001	-.0023	-.0002	-.0009	.0001	-.0003	.0001	-.0019

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0020	.0208	-.0006	-.0026	.00004	-.0024	.0000
Stddev	.0006	.0004	.0242	.0003	.0004	.00008	.0006	.000
%RSD	138.2	19.31	116.4	54.15	14.49	217.39	26.27	21700.

#1	-.0009	.0023	.0379	-.0009	-.0024	.00009	-.0028	-.0001
#2	.0000	.0018	.0037	-.0004	-.0029	-.00002	-.0020	.0001

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

*all in concs
 2/21/18
 not needed*

Sample Name: CCB Acquired: 2/21/2018 16:41:45 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0002	.0025	.0434	-0.0010	.0185	-0.0006	-0.0092	-0.00011
Stddev	.0001	.0010	.0293	.0022	.0011	.0002	.0140	.00002
%RSD	32.68	41.44	67.70	221.7	5.994	29.98	151.8	21.946

#1	-0.0001	.0032	.0226	.0006	.0177	-0.0005	-0.0191	-0.00009
#2	-0.0002	.0017	.0641	-0.0025	.0193	-0.0008	.0007	-0.00012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0020	-0.0008	-0.0001	.0005	.0000	.0000	-0.0031	-0.0018
Stddev	.0008	.0002	.0001	.0001	.0001	.0000	.0016	.0005
%RSD	38.66	31.76	138.9	14.64	1023.	106.6	52.43	29.14

#1	-0.0025	-0.0009	-0.0002	.0004	-0.0001	.0000	-0.0019	-0.0014
#2	-0.0014	-0.0006	.0000	.0005	.0001	.0001	-0.0042	-0.0021

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4179.2	138890.	7605.6
Stddev	8.9	410.	90.6
%RSD	.21192	.29491	1.1910

#1	4185.4	139180.	7541.5
#2	4172.9	138600.	7669.6

2/21/18

Sample Name: LLCCV Acquired: 2/21/2018 16:44:13 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097	.0118	.0204	.0112	.0030	.00100	F .0320	.0010
Stddev	.0001	.0011	.0032	.0023	.0000	.00004	.0015	.0000
%RSD	.7874	9.735	15.47	20.78	.0021	3.5836	4.634	4.793

#1	.0097	.0126	.0182	.0095	.0030	.00103	.0309	.0010
#2	.0096	.0110	.0227	.0128	.0030	.00098	.0330	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							.0200	
Range							30.00%	

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0161	.0197	.0042	.0020	.0039	.0040	.0181
Stddev	.0001	.0049	.0001	.0002	.0003	.0001	.0003	.0021
%RSD	8.397	30.43	.4649	5.242	15.50	3.454	8.531	11.85

#1	.0010	.0126	.0198	.0043	.0023	.0038	.0042	.0166
#2	.0011	.0195	.0196	.0040	.0018	.0040	.0038	.0196

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0127	.0239	.0126	.0038	.0022	.00092	-.0002	.0044
Stddev	.0002	.0001	.0031	.0001	.0006	.00002	.0011	.0001
%RSD	1.646	.5900	24.16	1.679	25.67	2.6735	572.2	2.300

#1	.0125	.0240	.0105	.0038	.0018	.00094	-.0010	.0045
#2	.0128	.0238	.0148	.0039	.0026	.00090	.0006	.0044

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

* 2/21/18

Sample Name: LLCCV Acquired: 2/21/2018 16:44:13 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0414	.2486	.0194	.1977	.0039	.2028	.00096
Stddev	.0000	.0020	.0448	.0005	.0027	.0003	.0002	.00001
%RSD	.7858	4.857	18.01	2.330	1.373	8.797	.1010	.52608

#1	.0041	.0400	.2803	.0197	.1958	.0036	.2030	.00096
#2	.0040	.0429	.2170	.0190	.1996	.0041	.2027	.00097

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	.0209	.0018	.0043	.0042	.0041	.0198	.0368
Stddev	.0011	.0004	.0002	.0005	.0003	.0000	.0004	.0041
%RSD	12.15	1.878	8.824	10.98	6.771	.5219	1.959	11.20

#1	.0086	.0211	.0019	.0040	.0040	.0041	.0195	.0397
#2	.0102	.0206	.0017	.0046	.0044	.0041	.0201	.0339

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4193.5	139220.	7661.6
Stddev	23.4	30.	10.9
%RSD	.55770	.02167	.14167

#1	4176.9	139240.	7669.3
#2	4210.0	139200.	7653.9

Sample Name: LLCCV Acquired: 2/21/2018 16:46:43 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0097	.0104	.0171	.0090	F .0026	.00093	F .0318	.0008
Stddev	.0005	.0003	.0010	.0000	.0002	.00009	.0015	.0000
%RSD	5.334	2.915	6.042	.3751	6.452	9.6861	4.865	.9897

#1	.0100	.0106	.0164	.0090	.0025	.00099	.0329	.0008
#2	.0093	.0102	.0179	.0090	.0027	.00086	.0307	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass
Value					.0040		.0200	
Range					-30.00%		30.00%	

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0141	.0193	.0040	.0022	.0037	.0038	.0207
Stddev	.0001	.0016	.0001	.0005	.0002	.0001	.0004	.0033
%RSD	12.62	11.03	.5188	11.74	8.558	3.229	11.30	16.08

#1	.0011	.0130	.0192	.0037	.0023	.0036	.0035	.0230
#2	.0010	.0152	.0193	.0043	.0021	.0038	.0041	.0183

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0105	.0222	.0249	.0038	.0029	.00094	-.0007	.0043
Stddev	.0009	.0000	.0229	.0003	.0006	.00005	.0016	.0002
%RSD	8.118	.1838	91.84	7.165	20.21	5.2512	217.7	3.949

#1	.0111	.0222	.0411	.0036	.0033	.00098	.0004	.0042
#2	.0099	.0223	.0087	.0040	.0025	.00091	-.0019	.0044

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

not used in 2/21/18

Sample Name: LLCCV Acquired: 2/21/2018 16:46:43 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0410	.2301	.0211	.2079	.0041	.1952	.00098
Stddev	.0002	.0013	.0078	.0010	.0036	.0002	.0120	.00008
%RSD	4.957	3.126	3.386	4.613	1.721	4.290	6.169	8.0174

#1	.0041	.0419	.2245	.0204	.2104	.0042	.1867	.00104
#2	.0038	.0401	.2356	.0218	.2053	.0040	.2037	.00093

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0083	.0210	.0019	.0041	.0042	.0041	.0201	.0403
Stddev	.0006	.0000	.0001	.0000	.0001	.0001	.0005	.0009
%RSD	7.543	.0114	2.628	1.117	1.667	2.671	2.594	2.316

#1	.0087	.0210	.0019	.0040	.0042	.0040	.0205	.0397
#2	.0078	.0210	.0020	.0041	.0041	.0042	.0198	.0410

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4274.2	142080.	7820.3
Stddev	3.7	612.	61.6
%RSD	.08578	.43098	.78756

#1	4271.6	141640.	7776.7
#2	4276.8	142510.	7863.8

Handwritten signature/initials

Sample Name: LLCCV,0.5 Acquired: 2/21/2018 16:49:10 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0192	.0224	.0371	.0213	.0069	.00196	F .0522	.0020
Stddev	.0001	.0005	.0033	.0021	.0000	.00002	.0011	.0000
%RSD	.4018	2.040	8.834	9.934	.0320	1.0964	2.015	.1754
#1	.0192	.0227	.0395	.0198	.0069	.00195	.0530	.0020
#2	.0193	.0221	.0348	.0228	.0069	.00198	.0515	.0020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							.0400	
Range							30.00%	

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0398	.0390	.0084	.0041	.0076	.0078	.0428
Stddev	.0001	.0009	.0004	.0000	.0000	.0003	.0000	.0008
%RSD	5.153	2.162	1.118	.4392	.1097	4.559	.0815	1.879
#1	.0021	.0404	.0387	.0084	.0041	.0078	.0078	.0434
#2	.0019	.0391	.0393	.0083	.0041	.0073	.0078	.0422

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0211	.0430	.0215	.0084	.0075	.00187	.0007	.0081
Stddev	.0002	.0025	.0194	.0000	.0007	.00001	.0002	.0001
%RSD	.7884	5.778	90.52	.4860	9.642	.31835	24.12	1.613
#1	.0210	.0447	.0352	.0085	.0080	.00187	.0008	.0082
#2	.0212	.0412	.0077	.0084	.0070	.00188	.0006	.0080

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: LLCCV,0.5 Acquired: 2/21/2018 16:49:10 Type: QC
 Method: 2017B-6010-ICP-03(v113) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0080	.0805	.4539	.0434	.3988	.0081	.3937	.00191
Stddev	.0001	.0015	.0248	.0038	.0075	.0001	.0166	.00003
%RSD	.7894	1.891	5.471	8.761	1.886	1.314	4.224	1.4616
#1	.0080	.0816	.4364	.0461	.4042	.0082	.4054	.00193
#2	.0080	.0794	.4715	.0407	.3935	.0080	.3819	.00189

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0205	.0411	.0041	.0079	.0079	.0082	.0434	.0818
Stddev	.0004	.0002	.0000	.0006	.0001	.0000	.0007	.0021
%RSD	1.876	.5485	.5352	8.040	1.472	.0393	1.546	2.532
#1	.0202	.0409	.0041	.0084	.0078	.0082	.0430	.0803
#2	.0207	.0412	.0042	.0075	.0080	.0082	.0439	.0832

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4294.5	143580.	7829.6
Stddev	7.6	862.	79.0
%RSD	.17739	.60044	1.0088
#1	4299.9	144190.	7885.4
#2	4289.2	142970.	7773.7

Service Request #K1802138; K1802352; K1801267 #8,17,
K1802063, K1802153; K1801864 #11-15 T&D, K1801889,
K1801891; K1801864 #1-10 T&D

Instrument ID# K-ICP-AES-04

Calibration 031418BICP04

ALS LIMS Run # 583591

Pipette IDs: MU26922, V66550, V68260

Pipette Calibration Due: 4/22/18

ICP-OES Data Review Form

	Yes	No
1. Appropriate standardization completed	<u>X</u>	_____
2. ICV within control limits	<u>X</u>	_____
3. CCV's in control	<u>X</u>	_____
4. ICB/CCB's below MRL	<u>X</u>	_____
4. LLICV standard analyzed and in control	<u>X</u>	_____
5. ICS standards within 20% of true value	<u>X</u>	_____
6. All analytes within instrument linear range	<u>X</u>	_____
7. Adequate rinse out time allowed	<u>X</u>	_____
8. Was the run terminated? If so, why.	_____	<u>X</u>

See Benchsheet exception report for sample batch QC information.

Comments:

6010: MRL=2X for As.

After 11:54 MRL=2X for Na.

After 15:05 NR Mn2605.

Primary Review by am Date 3/14/18

Secondary Review by zl Date 3/15/18

Data Review Form

Instrument ID#: K-ICP-AES-04
DataFile Name: R:\ICP\WIP\DATA\K-ICP-AES-04\031418BICP04.txt
RUNNO: 583591

K1801267

No exceptions to report.

K1801864

K1801864-001PS - Metals T - 6010C

PS Recovery

6010C/Metals T - Mg2852 - Recovery: 78 Limits: 80 - 120

6010C/Metals D - Mg2852 - Recovery: 78 Limits: 80 - 120

ms + serial dilution okay

K1801889

No exceptions to report.

K1801891 *report K1801889 BQC*

K1801864-011DUP - Metals T - 6010C

DUP RPD

6010C/Metals T - Al1670 - RPD: 34 Limit: 20

6010C/Metals D - Al1670 - RPD: 34 Limit: 20

not requested analyte for this service request

K1801889-001DUP - Metals T - 6010C

DUP RPD

6010C/Metals T - Al1670 - RPD: 24 Limit: 20

6010C/Metals D - Al1670 - RPD: 24 Limit: 20

non-homogeneous sample, has particulate

K1802063

No exceptions to report.

K1802138

No exceptions to report.

K1802153

No exceptions to report.

K1802352

No exceptions to report.

Primary Approver: *ann 3/14/18*
Secondary Approver: *3c 3/15/18*

ALS Environmental - Laboratory Note Sheet

Service Request Number(s):

583591B

Sample Number						
dilute K1801267-008 + QC	for Mg, Na			#17	for Na	
SA: Ca, Mg, K, Na	N/A					
K1801889-001A:	Na N/A	non-homogeneous	sample	has	fine	particulate
K1801864-001A:	Ca, N/A					
K1802138	MS missing - removed from prep	mn		analyzed	post spike	
<i>am 3/14/18</i>						

Comments/Notes:

Analyst: <i>Elmabek Mckusov</i>	Date: <i>3/14/18</i>
Reviewed:	Date:

Sample Name: BLK Acquired: 3/14/2018 10:06:33 Type: Cal
 Method: 2017B-6010-ICP04(v30) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: INT. STD. ICP17-25-G

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0030	-41.67	1.391	-.4966	.0158	3.3480	-4.697
Stddev	.0004	4.24	.057	.6835	.0060	1.2014	.212
%RSD	13.19	10.17	4.066	137.6	37.89	35.883	4.513
#1	.0027	-44.67	1.431	-.0133	.0116	2.4985	-4.847
#2	.0032	-38.68	1.351	-.9799	.0201	4.1975	-4.547
Elem	Cd2144	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0010	.0000	.0013	.0151	.0002	-.0002	-.0003
Stddev	.0001	.000	.0008	.0000	.0000	.0000	.0003
%RSD	10.89	280.9	60.35	.2083	23.80	6.501	120.1
#1	.0011	-.0001	.0007	.0151	.0001	-.0002	-.0005
#2	.0009	.0000	.0018	.0151	.0002	-.0002	.0000
Elem	Cu3273	Fe2599	Pb2203	Li6707	Mg2790	Mg2795	Mg2852
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.123	.0001	-.0001	-19.06	-.0003	.0003	2.950
Stddev	2.862	.0006	.0001	20.62	.0005	.0008	3.323
%RSD	69.43	403.0	50.80	108.2	166.4	244.5	112.7
#1	6.146	-.0003	-.0001	-4.483	.0000	.0009	.6000
#2	2.099	.0006	-.0002	-33.64	-.0006	-.0002	5.300
Elem	Mn2576	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00002	.0001	-.0001	-.0006	.0004	-63.71	-.5166
Stddev	.00003	.0000	.0002	.0005	.0004	27.50	.3252
%RSD	144.36	66.42	264.7	87.65	102.6	43.17	62.96
#1	.00000	.0000	-.0002	-.0002	.0006	-44.26	-.2866
#2	-.00004	.0001	.0001	-.0010	.0001	-83.15	-.7466

Sample Name: BLK Acquired: 3/14/2018 10:06:33 Type: Cal
 Method: 2017B-6010-ICP04(v30) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: INT. STD. ICP17-25-G

Elem	Si2516	Ag3280	Na5895	Sr4077	Ti1908	Sn1899	Ti3361
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.052	-4.747	-78.60	-.00169	-.0003	.0002	.0018
Stddev	3.757	3.957	32.03	.00167	.0002	.0003	.0000
%RSD	183.1	83.36	40.75	98.547	70.80	203.6	1.298

#1	4.708	-1.949	-55.95	-.00287	-.0002	-.0001	.0018
#2	-.6042	-7.545	-101.3	-.00051	-.0005	.0004	.0019

Elem	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0000	.0000	.2411	.0002	12.10
Stddev	.000	.000	.0519	.0003	.00
%RSD	141.4	346.5	21.51	168.0	.0195

#1	.0000	-.0001	.2778	.0000	12.10
#2	-.0001	.0001	.2044	.0003	12.09

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2477.9	32527.	3240.5
Stddev	2.8	76.	28.3
%RSD	.11458	.23398	.87455

#1	2479.9	32581.	3260.6
#2	2475.9	32473.	3220.5

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3/14/18

Sample Name: STD A Acquired: 3/14/2018 10:09:02 Type: Cal
 Method: 2017B-6010-ICP04(v30) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-29-B

Elem	Al1670	Sb2068	Be2348	B_2496	Cd2144	Cd2265	Ca3933	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0559	96.47	7574.6	897.7	1.248	.9206	21.57	.0712
Stddev	.0001	1.01	10.2	9.9	.001	.0013	.05	.0003
%RSD	.1082	1.046	.13526	1.103	.0884	.1386	.2472	.4143

#1	.0559	97.18	7567.3	890.7	1.247	.9197	21.61	.0710
#2	.0559	95.76	7581.8	904.7	1.249	.9215	21.53	.0714

Elem	Co2307	Cu2247	Cu3273	Pb2203	Mg2795	Mn2576	Mo2020	Ni2216
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.3549	.2044	2411.	.0738	2.305	.42520	.2743	.3901
Stddev	.0005	.0005	18.	.0004	.003	.00351	.0000	.0000
%RSD	.1368	.2307	.7463	.4859	.1121	.82627	.0017	.0046

#1	.3546	.2040	2398.	.0741	2.306	.42272	.2743	.3901
#2	.3553	.2047	2423.	.0736	2.303	.42768	.2743	.3901

Elem	Se1960	Ag3280	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	59.84	3083.	.0417	.1025	.3263	.1010	.4836	1559.
Stddev	.77	9.	.0001	.0002	.0008	.0003	.0011	1.
%RSD	1.284	.2992	.2017	.2341	.2300	.2646	.2190	.0680

#1	60.38	3077.	.0417	.1023	.3258	.1008	.4844	1560.
#2	59.30	3090.	.0416	.1027	.3268	.1012	.4829	1558.

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2489.5	32733.	3255.2
Stddev	1.2	79.	17.3
%RSD	.04727	.24124	.53119

#1	2488.7	32789.	3242.9
#2	2490.3	32677.	3267.4

Sample Name: STD B Acquired: 3/14/2018 10:11:16 Type: Cal
 Method: 2017B-6010-ICP04(v30) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-29-A

Elem	Al3944	As1890	Ba4554	Ca3158	Fe2599	Li6707	Mg2790	Mg2852
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	58330.	364.5	191.9	1.743	2.337	19070.	.3763	29380.
Stddev	161.	1.4	1.8	.007	.011	150.	.0014	163.
%RSD	.2754	.3832	.9569	.4085	.4479	.7838	.3657	.5556

#1	58440.	363.5	190.6	1.748	2.344	19180.	.3753	29500.
#2	58210.	365.5	193.2	1.738	2.330	18970.	.3773	29270.

Elem	Mn2605	P_1782	K_7664	Si2516	Na5895	Sr4077	Bi2230	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1284	.8840	7028.	3332.	28770.	25.960	.2451	196.9
Stddev	.0001	.0021	50.	19.	166.	.016	.0010	.6
%RSD	.0455	.2384	.7091	.5592	.5764	.06130	.3916	.2958

#1	.1284	.8855	7063.	3345.	28880.	25.949	.2458	196.5
#2	.1283	.8825	6992.	3319.	28650.	25.972	.2444	197.3

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2439.2	31710.	3232.0
Stddev	4.7	44.	16.7
%RSD	.19438	.13798	.51627

#1	2435.9	31741.	3243.8
#2	2442.6	31679.	3220.2

Sample Name: ICVB Acquired: 3/14/2018 10:13:48 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-20-A

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9910	1.036	-.0043	.0024	.0006	-.00007	2.072	-.0002
Stddev	.0094	.004	.0012	.0043	.0005	.00031	.009	.0002
%RSD	.9480	.4106	27.66	182.2	84.10	447.86	.4508	76.63

#1	.9976	1.039	-.0035	-.0007	.0009	-.00029	2.078	-.0003
#2	.9843	1.033	-.0052	.0054	.0002	.00015	2.065	-.0001

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	5.155	5.034	-.0004	-.0002	-.0001	.0008	10.38
Stddev	.0002	.024	.023	.0008	.0002	.0005	.0029	.06
%RSD	230.7	.4638	.4500	210.9	134.0	385.9	363.5	.5806

#1	.0002	5.138	5.018	.0002	.0000	.0002	.0029	10.34
#2	-.0001	5.172	5.050	-.0009	-.0003	-.0005	-.0013	10.42

Check ?	None	None	Chk Pass	None	None	None	None	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	2.063	5.202	5.015	5.096	9.8737	10.09	.0003
Stddev	.0005	.014	.003	.012	.034	.0148	.08	.0001
%RSD	76.91	.6534	.0617	.2309	.6749	.14990	.8139	28.33

#1	.0009	2.053	5.200	5.007	5.072	9.8632	10.04	.0002
#2	.0003	2.072	5.204	5.024	5.121	9.8841	10.15	.0003

Check ?	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	None
Value								
Range								

Sample Name: ICVB Acquired: 3/14/2018 10:13:48 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-20-A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0003	4.989	-0.0185	.0009	5.195	.0005	14.27	2.0852
Stddev	.0000	.029	.0068	.0020	.021	.0001	.14	.0128
%RSD	6.426	.5711	36.52	213.1	.3939	17.43	.9532	.61580

#1	-0.0003	5.009	-0.0233	.0023	5.181	.0004	14.18	2.0761
#2	-0.0003	4.969	-0.0137	-0.0005	5.210	.0005	14.37	2.0943

Check ?	None	Chk Pass	None	None	Chk Pass	None	None	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022	4.983	.0002	-0.0004	.0001	.0003	5.137	5.014
Stddev	.0022	.015	.0003	.0006	.0001	.0000	.021	.012
%RSD	103.5	.3001	117.3	153.6	86.04	.3159	.4077	.2378

#1	.0038	4.993	.0000	.0000	.0000	.0003	5.152	5.022
#2	.0006	4.972	.0004	-0.0008	.0001	.0003	5.122	5.005

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2482.0	31970.	3234.5
Stddev	2.1	15.	14.9
%RSD	.08413	.04783	.46194

#1	2480.5	31980.	3223.9
#2	2483.5	31959.	3245.1

Sample Name: ICV Acquired: 3/14/2018 10:16:20 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-27-D

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.447	5.145	2.457	2.512	5.064	.12401	.0042	1.236
Stddev	.006	.038	.007	.000	.028	.00032	.0003	.001
%RSD	.1355	.7406	.2746	.0166	.5429	.25692	6.543	.0608

#1	4.442	5.118	2.452	2.513	5.045	.12424	.0040	1.236
#2	4.451	5.172	2.462	2.512	5.084	.12379	.0044	1.237

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.233	12.66	12.30	.5029	1.245	.6107	.6131	2.544
Stddev	.000	.05	.03	.0019	.000	.0027	.0004	.029
%RSD	.0242	.4329	.2086	.3725	.0078	.4423	.0632	1.135

#1	1.233	12.62	12.28	.5016	1.245	.6088	.6129	2.524
#2	1.233	12.70	12.32	.5042	1.245	.6126	.6134	2.565

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.453	-.0008	12.76	12.09	12.30	1.2269	1.241	.5062
Stddev	.000	.0006	.08	.05	.01	.0027	.008	.0005
%RSD	.0090	74.88	.6112	.4503	.1081	.22341	.6381	.1018

#1	2.453	-.0012	12.70	12.05	12.31	1.2250	1.235	.5059
#2	2.452	-.0004	12.81	12.13	12.29	1.2289	1.247	.5066

Check ?	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass
Value Range								

Sample Name: ICV Acquired: 3/14/2018 10:16:20 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-27-D

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.227	.0005	12.53	2.453	-.0035	.6050	12.54	.00042
Stddev	.002	.0068	.00	.001	.0203	.0064	.02	.00009
%RSD	.1244	1250.	.0281	.0423	571.3	1.056	.1927	21.334

#1	1.226	.0053	12.52	2.454	-.0179	.6005	12.52	.00036
#2	1.228	-.0043	12.53	2.453	.0108	.6095	12.56	.00049

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.457	-.0003	1.902	1.285	1.242	1.224	.0049	.0002
Stddev	.010	.0004	.007	.002	.000	.003	.0002	.0001
%RSD	.3928	134.2	.3591	.1907	.0213	.2337	4.112	37.97

#1	2.450	.0000	1.897	1.286	1.242	1.226	.0047	.0003
#2	2.463	-.0006	1.906	1.283	1.242	1.222	.0050	.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2459.4	31913.	3231.8
Stddev	5.6	40.	12.0
%RSD	.22607	.12570	.37114

#1	2463.3	31942.	3240.3
#2	2455.4	31885.	3223.3

Sample Name: ICB Acquired: 3/14/2018 10:19:47 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0007	.0042	.0004	-.0003	-.00016	.0022	-.0001
Stddev	.0025	.0012	.0029	.0007	.0001	.00002	.0006	.0000
%RSD	4276.	155.1	70.11	174.7	40.10	11.603	26.32	30.47

#1	.0018	.0016	.0062	.0009	-.0003	-.00018	.0018	-.0001
#2	-.0017	-.0001	.0021	-.0001	-.0002	-.00015	.0026	-.0002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0049	.0000	-.0004	.0005	-.0002	.0005	.0096
Stddev	.0002	.0083	.000	.0008	.0005	.0005	.0018	.0003
%RSD	332.9	168.0	618.7	178.7	96.59	238.0	329.1	2.869

#1	.0002	.0108	.0000	.0001	.0009	-.0005	-.0007	.0098
#2	-.0001	-.0009	.0000	-.0010	.0002	.0001	.0018	.0094

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	-.0002	.0205	.0000	-.0013	.00010	-.0005	.0005
Stddev	.0001	.0001	.0412	.000	.0037	.00012	.0010	.0003
%RSD	2.201	51.51	200.3	439.3	281.0	116.49	224.1	59.24

#1	.0029	-.0002	.0497	-.0001	-.0039	.00002	-.0012	.0003
#2	.0030	-.0001	-.0086	.0001	.0013	.00018	.0003	.0006

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 3/14/2018 10:19:47 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0023	-.0276	.0017	-.0073	.0000	-.0027	.00004
Stddev	.0000	.0002	.0589	.0001	.0080	.000	.0069	.00010
%RSD	265.0	7.862	213.4	6.818	109.7	791.0	256.4	226.02
#1	.0000	-.0021	-.0692	.0016	-.0130	.0002	-.0076	-.00003
#2	.0000	-.0024	.0140	.0018	-.0016	-.0003	.0022	.00011

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	-.0003	.0000	.0001	.0002	.0000	.0006	-.0052
Stddev	.0000	.0004	.0000	.0002	.0005	.000	.0043	.0023
%RSD	4.173	144.6	121.1	272.1	269.1	171.4	680.3	44.78
#1	-.0009	-.0006	.0001	-.0001	.0005	.0000	-.0024	-.0068
#2	-.0009	.0000	.0000	.0002	-.0002	.0000	.0037	-.0035

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2498.1	32612.	3219.4
Stddev	3.0	121.	29.5
%RSD	.12114	.37142	.91480
#1	2496.0	32527.	3240.2
#2	2500.3	32698.	3198.6

Sample Name: LLICV Acquired: 3/14/2018 10:22:15 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0103	.0100	.0176	F .0137	.0040	.00093	.0225
Stddev	.0005	.0028	.0002	.0008	.0000	.00003	.0001
%RSD	4.486	28.15	.8714	5.650	.7815	3.5462	.2436

#1	.0100	.0080	.0175	.0142	.0040	.00090	.0225
#2	.0107	.0120	.0177	.0131	.0040	.00095	.0224

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.0100			
Range				30.00%			

Elem	Cd2144	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0011	F -.0074	.0206	.0048	.0021	.0036
Stddev	.0000	.0002	.0064	.0001	.0012	.0003	.0002
%RSD	4.232	14.61	87.13	.2764	25.38	14.35	4.907

#1	.0008	.0010	-.0119	.0205	.0057	.0023	.0037
#2	.0008	.0012	-.0028	.0206	.0040	.0019	.0035

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.0200				
Range			-30.00%				

Elem	Cu3273	Fe2599	Pb2203	Li6707	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0057	F .0261	.0115	.0191	.0186	.0052	.0054
Stddev	.0001	.0029	.0009	.0021	.0174	.0002	.0002
%RSD	1.792	11.29	7.623	11.05	93.42	3.020	3.101

#1	.0058	.0240	.0121	.0205	.0309	.0051	.0053
#2	.0057	.0282	.0109	.0176	.0063	.0053	.0055

Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
Value	.0040	.0200					
Range	30.00%	30.00%					

*see rerun
am 3/14/18*

Sample Name: LLICV Acquired: 3/14/2018 10:22:15 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL

Elem	Mn2576	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.0017	.0043	.0037	.0392	.2292	.0234
Stddev	.00014	.0007	.0009	.0001	.0028	.0139	.0029
%RSD	11.595	40.44	19.61	2.593	7.191	6.059	12.20

#1	.00110	.0022	.0037	.0037	.0372	.2194	.0214
#2	.00129	.0012	.0049	.0038	.0411	.2390	.0254

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range							

Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1928	.0040	.2125	.00116	.0097	.0217	.0022
Stddev	.0010	.0002	.0072	.00000	.0035	.0005	.0004
%RSD	.5360	4.122	3.391	.02135	35.59	2.524	17.15

#1	.1935	.0041	.2176	.00116	.0122	.0221	.0019
#2	.1921	.0039	.2075	.00116	.0073	.0213	.0025

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range							

Elem	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm
Avg	.0046	.0045	.0040	.0257	.0383
Stddev	.0002	.0001	.0001	.0044	.0069
%RSD	4.724	1.524	2.010	17.11	17.90

#1	.0047	.0045	.0039	.0288	.0432
#2	.0044	.0044	.0040	.0226	.0335

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range					

*see rerun
am 3/14/18*

Sample Name: LLICV Acquired: 3/14/2018 10:22:15 Type: QC
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: ICP17-21-A 0.5/50mL

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2478.1	32131.	3221.7
Stddev	3.6	284.	7.2
%RSD	.14545	.88252	.22332
#1	2475.5	31930.	3216.6
#2	2480.6	32331.	3226.8

*see rerun
am 3/14/18*

Sample Name: LLICV Acquired: 3/14/2018 10:26:36 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092	.0087	.0184	F .0145	.0036	.00084	.0216	.0009
Stddev	.0006	.0029	.0050	.0026	.0008	.00006	.0004	.0001
%RSD	6.447	33.78	27.17	17.79	21.54	7.6890	1.653	9.608
#1	.0096	.0108	.0148	.0127	.0041	.00079	.0213	.0010
#2	.0087	.0066	.0219	.0163	.0030	.00089	.0218	.0009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0100				
Range				30.00%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0188	.0196	.0041	.0023	.0032	.0044	.0169
Stddev	.0002	.0033	.0001	.0000	.0002	.0012	.0006	.0037
%RSD	15.03	17.42	.4246	.9630	7.023	36.68	13.05	21.85
#1	.0012	.0165	.0196	.0041	.0022	.0024	.0040	.0196
#2	.0010	.0211	.0197	.0042	.0024	.0040	.0048	.0143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0116	.0188	-.0339	.0049	.0050	.00098	.0012	.0046
Stddev	.0026	.0006	.0283	.0003	.0018	.00001	.0008	.0004
%RSD	22.50	2.964	83.58	5.404	36.20	1.4483	65.80	7.886
#1	.0098	.0192	-.0139	.0051	.0037	.00099	.0018	.0044
#2	.0135	.0184	-.0539	.0047	.0063	.00097	.0006	.0049
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

*2x
 Ann 3/14/18

Sample Name: LLICV Acquired: 3/14/2018 10:26:36 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0038	.0381	.2032	.0201	.1884	.0028	.1989	.00105
Stddev	.0003	.0059	.0548	.0046	.0101	.0002	.0194	.00012
%RSD	6.553	15.55	26.98	22.79	5.344	8.785	9.763	11.378
#1	.0036	.0339	.2420	.0168	.1813	.0030	.1851	.00097
#2	.0040	.0423	.1645	.0233	.1955	.0027	.2126	.00114

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085	.0207	.0025	.0040	.0042	.0040	.0220	.0376
Stddev	.0005	.0004	.0000	.0004	.0002	.0000	.0021	.0004
%RSD	6.186	2.163	1.883	8.869	4.928	.8600	9.472	1.091
#1	.0089	.0204	.0025	.0043	.0040	.0040	.0206	.0373
#2	.0081	.0210	.0026	.0038	.0043	.0041	.0235	.0379

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2469.2	32300.	3159.5
Stddev	2.3	84.	5.7
%RSD	.09341	.26042	.18044
#1	2467.6	32240.	3163.6
#2	2470.8	32359.	3155.5

Sample Name: LLICV,0.5 Acquired: 3/14/2018 10:29:02 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 1/50mL

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0194	.0152	.0333	.0221	.0086	.00195	.0430	.0019
Stddev	.0001	.0025	.0008	.0009	.0013	.00004	.0004	.0000
%RSD	.6703	16.59	2.417	4.205	15.65	2.2601	.9430	2.150
#1	.0193	.0169	.0339	.0214	.0096	.00198	.0433	.0019
#2	.0195	.0134	.0327	.0227	.0077	.00192	.0427	.0019
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	.0441	.0430	.0082	.0042	.0075	.0091	.0459
Stddev	.0000	.0010	.0008	.0000	.0000	.0011	.0015	.0022
%RSD	.7052	2.238	1.892	.5617	.7690	15.15	16.32	4.714
#1	.0021	.0448	.0436	.0082	.0042	.0067	.0080	.0474
#2	.0021	.0434	.0425	.0082	.0043	.0083	.0101	.0444
Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0245	.0395	.0625	.0124	.0129	.00228	.0023	.0088
Stddev	.0018	.0007	.0218	.0014	.0010	.00010	.0002	.0001
%RSD	7.344	1.654	34.87	11.47	7.836	4.4308	7.617	.9737
#1	.0258	.0391	.0780	.0134	.0136	.00235	.0021	.0088
#2	.0232	.0400	.0471	.0114	.0122	.00221	.0024	.0087
Check ? Value Range	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass

Sample Name: LLICV,0.5 Acquired: 3/14/2018 10:29:02 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 1/50mL

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0083	.0751	.4008	.0399	.3816	.0081	.3960	.00237
Stddev	.0002	.0024	.0768	.0045	.0093	.0001	.0008	.00015
%RSD	2.912	3.148	19.17	11.26	2.439	1.808	.2043	6.2339

#1	.0082	.0734	.4552	.0367	.3882	.0082	.3954	.00227
#2	.0085	.0768	.3465	.0431	.3751	.0080	.3966	.00248

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0224	.0408	.0041	.0078	.0084	.0082	.0416	.0821
Stddev	.0085	.0003	.0003	.0004	.0001	.0000	.0077	.0025
%RSD	37.97	.7376	7.359	4.798	.7159	.3710	18.49	3.103

#1	.0284	.0410	.0044	.0081	.0084	.0082	.0361	.0839
#2	.0164	.0406	.0039	.0076	.0083	.0082	.0470	.0803

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2487.6	32328.	3158.2
Stddev	.2	16.	9.2
%RSD	.00726	.05033	.29041

#1	2487.7	32339.	3164.6
#2	2487.5	32316.	3151.7

Sample Name: CCVB1 Acquired: 3/14/2018 10:31:30 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.796	10.14	-.0013	1.011	10.05	-.00004	.0032	-.0002
Stddev	.008	.05	.0033	.005	.02	.00024	.0014	.0002
%RSD	.1033	.4482	255.0	.4701	.1763	659.84	43.78	114.1

#1	7.802	10.17	-.0036	1.014	10.06	.00013	.0041	.0000
#2	7.790	10.11	.0010	1.007	10.03	-.00021	.0022	-.0004

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.01	9.694	-.0002	-.0002	-.0006	.0005	10.05
Stddev	.0001	.02	.018	.0001	.0000	.0007	.0008	.03
%RSD	124.2	.2194	.1904	36.17	12.13	114.7	154.2	.2932

#1	-.0002	10.03	9.707	-.0002	-.0002	-.0001	.0011	10.07
#2	.0000	9.998	9.681	-.0001	-.0001	-.0012	.0000	10.03

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	1.007	10.36	9.808	10.06	.98634	.9913	.0004
Stddev	.0003	.000	.04	.028	.01	.00111	.0046	.0005
%RSD	157.3	.0413	.3506	.2834	.0527	.11255	.4686	125.7

#1	.0004	1.007	10.38	9.828	10.06	.98712	.9945	.0000
#2	.0000	1.006	10.33	9.789	10.06	.98555	.9880	.0007

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB1 Acquired: 3/14/2018 10:31:30 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	9.891	10.01	.0010	10.03	-.0009	10.05	1.0024
Stddev	.0002	.007	.06	.0041	.01	.0001	.00	.0025
%RSD	58.69	.0682	.6341	400.0	.0718	16.38	.0314	.24533

#1	-.0002	9.896	9.965	.0039	10.03	-.0010	10.04	1.0042
#2	-.0005	9.886	10.05	-.0019	10.02	-.0008	10.05	1.0007

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0000	.0004	-.0008	.0002	.0003	1.012	.9985
Stddev	.0000	.000	.0001	.0002	.0001	.0002	.002	.0027
%RSD	2.184	1528.	28.20	21.24	34.79	80.40	.2203	.2711

#1	.0016	.0001	.0004	-.0010	.0002	.0004	1.010	.9966
#2	.0016	-.0002	.0005	-.0007	.0001	.0001	1.013	1.000

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2488.2	32204.	3253.5
Stddev	10.0	30.	1.4
%RSD	.40144	.09201	.04399

#1	2495.2	32225.	3252.5
#2	2481.1	32184.	3254.5

Sample Name: CCVA1 Acquired: 3/14/2018 10:34:01 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2508	.2602	.2465	.2550	.2545	.24838	.2500	.2514
Stddev	.0017	.0032	.0093	.0008	.0009	.00048	.0047	.0004
%RSD	.6776	1.247	3.763	.3033	.3461	.19512	1.873	.1571

#1	.2496	.2579	.2399	.2555	.2539	.24803	.2467	.2517
#2	.2520	.2625	.2531	.2544	.2552	.24872	.2533	.2512

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2511	.5034	.4958	.2519	.2504	.2525	.2469	.2567
Stddev	.0009	.0118	.0019	.0003	.0008	.0004	.0032	.0039
%RSD	.3745	2.348	.3881	.1234	.3376	.1644	1.299	1.506

#1	.2505	.4950	.4944	.2521	.2498	.2522	.2446	.2540
#2	.2518	.5117	.4971	.2517	.2510	.2528	.2492	.2594

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2511	-.0001	.2446	.2491	.2499	.25609	.2465	.2515
Stddev	.0006	.0011	.0087	.0018	.0021	.00009	.0044	.0002
%RSD	.2340	1133.	3.551	.7235	.8454	.03583	1.804	.0885

#1	.2516	.0007	.2384	.2479	.2514	.25615	.2496	.2517
#2	.2507	-.0009	.2507	.2504	.2484	.25602	.2433	.2514

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA1 Acquired: 3/14/2018 10:34:01 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2497	-.0021	2.479	.2545	.1301	.2496	.2367	.00024
Stddev	.0005	.0013	.023	.0002	.0046	.0020	.0009	.00014
%RSD	.2170	63.51	.9232	.0608	3.532	.8058	.3732	57.133

#1	.2493	-.0031	2.496	.2546	.1334	.2482	.2373	.00034
#2	.2501	-.0012	2.463	.2544	.1269	.2510	.2361	.00014

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2531	.2520	.2542	.2506	.2511	.2503	-.0005	-.0038
Stddev	.0007	.0007	.0001	.0004	.0003	.0015	.0022	.0074
%RSD	.2787	.2775	.0361	.1698	.1374	.5907	463.9	195.2

#1	.2536	.2515	.2542	.2503	.2513	.2493	.0011	.0014
#2	.2526	.2525	.2543	.2509	.2508	.2514	-.0020	-.0091

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2485.3	32462.	3210.8
Stddev	11.3	241.	16.3
%RSD	.45526	.74180	.50672

#1	2477.3	32292.	3222.3
#2	2493.3	32633.	3199.3

Sample Name: CCB Acquired: 3/14/2018 10:36:18 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0025	-.0047	.0044	-.0004	-.00017	.0013	-.0001
Stddev	.0023	.0021	.0062	.0010	.0003	.00010	.0001	.0000
%RSD	216.5	85.01	130.5	21.63	71.25	57.451	4.738	10.85

#1	.0027	-.0010	-.0004	.0051	-.0002	-.00023	.0013	-.0001
#2	-.0006	-.0039	-.0091	.0037	-.0007	-.00010	.0012	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0134	-.0001	.0006	.0004	-.0002	.0003	.0065
Stddev	.0000	.0004	.0001	.0000	.0004	.0001	.0011	.0011
%RSD	69.78	2.743	94.93	8.850	93.19	44.67	366.5	17.55

#1	-.0001	.0131	.0000	.0006	.0001	-.0003	-.0005	.0073
#2	.0000	.0136	-.0001	.0005	.0007	-.0001	.0010	.0057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0003	.0579	.0000	-.0018	.00002	-.0004	.0007
Stddev	.0012	.0020	.0227	.000	.0011	.00005	.0010	.0000
%RSD	736.7	598.9	39.19	289.1	61.36	235.42	229.5	1.745

#1	-.0007	-.0017	.0418	.0000	-.0026	-.00001	.0003	.0007
#2	.0010	.0011	.0739	-.0001	-.0010	.00006	-.0011	.0007

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 10:36:18 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0017	.0060	-.0014	.0104	-.0003	.0076	-.00005
Stddev	.000	.0107	.0365	.0031	.0182	.0000	.0039	.00012
%RSD	3329.	638.6	606.0	223.6	175.4	4.562	51.43	224.81

#1	.0002	.0059	-.0198	-.0036	-.0025	-.0002	.0049	-.00014
#2	-.0003	-.0093	.0318	.0008	.0233	-.0003	.0104	.00003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	-.0004	.0002	-.0009	.0002	.0000	-.0004	-.0052
Stddev	.0007	.0005	.0000	.0003	.0003	.0001	.0025	.0047
%RSD	54.02	118.5	7.425	31.69	159.8	2559.	606.6	89.51

#1	-.0008	-.0008	.0002	-.0012	.0004	-.0001	-.0022	-.0019
#2	-.0018	-.0001	.0002	-.0007	.0000	.0001	.0014	-.0086

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2508.6	32750.	3227.7
Stddev	8.9	73.	44.6
%RSD	.35620	.22296	1.3822

#1	2514.9	32801.	3196.1
#2	2502.3	32698.	3259.2

Sample Name: ICSA Acquired: 3/14/2018 10:38:46 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-25-H

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.81	458.3	.0084	.0057	.0000	-.00032	.0168	-.0001
Stddev	.04	6.6	.0018	.0004	.0002	.00023	.0024	.0005
%RSD	.1392	1.435	21.04	7.646	1137.	72.103	14.11	339.0

#1	28.78	453.7	.0097	.0054	-.0001	-.00048	.0185	.0002
#2	28.84	463.0	.0072	.0060	.0002	-.00016	.0151	-.0005

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	501.6	*****	-.0022	-.0069	-.0043	-.0095	193.3
Stddev	.0004	1.9	-----	.0000	.0016	.0008	.0010	1.3
%RSD	26.16	.3838	-----	1.561	23.08	17.63	10.08	.6827

#1	-.0013	500.3	-----	-.0022	-.0058	-.0038	-.0101	192.4
#2	-.0019	503.0	-----	-.0022	-.0081	-.0048	-.0088	194.3

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0057	.0040	554.0	226.3	450.6	-.01859	.0030	-.0017
Stddev	.0055	.0017	2.6	.3	1.0	.00026	.0021	.0015
%RSD	96.55	43.17	.4718	.1462	.2136	1.3752	71.00	89.14

#1	.0018	.0052	552.2	226.5	449.9	-.01841	.0045	-.0006
#2	.0096	.0027	555.9	226.0	451.3	-.01877	.0015	-.0028

Check ?	None	None	Chk Pass	None	None	None	None	None
Value								
Range								

Sample Name: ICSA Acquired: 3/14/2018 10:38:46 Type: QC'
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-25-H

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0053	.0004	-.0119	.0087	.0092	-.0009	.0226	.00482
Stddev	.0011	.0007	.0148	.0023	.0135	.0004	.0120	.00006
%RSD	21.08	169.7	124.1	26.09	146.7	38.55	53.29	1.2932

#1	-.0061	.0010	-.0015	.0103	-.0003	-.0007	.0141	.00478
#2	-.0045	-.0001	-.0223	.0071	.0188	-.0012	.0311	.00487

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0165	.0028	.0001	.0027	-.0016	-.0011	-.0016	-.0107
Stddev	.0015	.0011	.0001	.0015	.0003	.0002	.0043	.0008
%RSD	8.952	40.12	285.3	54.56	20.99	20.13	267.0	7.515

#1	-.0176	.0020	.0002	.0037	-.0014	-.0009	.0014	-.0112
#2	-.0155	.0036	-.0001	.0016	-.0019	-.0012	-.0046	-.0101

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2203.0	27899.	3020.8
Stddev	4.3	44.	9.1
%RSD	.19686	.15666	.29986

#1	2199.9	27930.	3027.2
#2	2206.0	27868.	3014.4

Sample Name: ICSAB Acquired: 3/14/2018 10:41:29 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-30-A

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.89	443.8	.9029	.0041	.5071	.45601	.0147	.8857
Stddev	.04	3.4	.0051	.0046	.0035	.00247	.0029	.0017
%RSD	.1468	.7652	.5659	111.5	.6969	.54203	19.58	.1958

#1	28.86	446.2	.9065	.0074	.5046	.45776	.0167	.8869
#2	28.92	441.4	.8993	.0009	.5096	.45426	.0126	.8845

Check ? Value Range	None	None	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8800	481.9	*****	.4839	.4355	.4455	.4403	184.6
Stddev	.0039	2.0	-----	.0011	.0012	.0011	.0002	1.0
%RSD	.4384	.4161	-----	.2229	.2763	.2381	.0540	.5394

#1	.8828	480.5	-----	.4831	.4363	.4462	.4402	183.9
#2	.8773	483.3	-----	.4846	.4346	.4447	.4405	185.3

Check ? Value Range	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8703	.0033	530.5	222.6	433.7	.45255	.5102	-.0008
Stddev	.0104	.0010	2.5	.6	4.5	.00166	.0012	.0000
%RSD	1.201	29.81	.4772	.2821	1.031	.36597	.2309	4.354

#1	.8777	.0040	528.7	223.0	436.8	.45372	.5094	-.0008
#2	.8629	.0026	532.3	222.1	430.5	.45138	.5110	-.0009

Check ? Value Range	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
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Sample Name: ICSAB Acquired: 3/14/2018 10:41:29 Type: QC
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: ICP17-30-A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8552	.0043	-.0010	.0044	.0092	.8945	.0192	.00460
Stddev	.0015	.0060	.0228	.0036	.0184	.0034	.0103	.00022
%RSD	.1773	141.4	2176.	82.42	200.5	.3800	53.45	4.8729

#1	.8563	.0000	.0151	.0069	-.0038	.8920	.0120	.00476
#2	.8541	.0085	-.0172	.0018	.0222	.8969	.0265	.00444

Check ?	Chk Pass	None	None	None	None	Chk Pass	None	None
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0119	.0034	.0001	.5126	.8675	.8371	.0004	-.0130
Stddev	.0085	.0009	.0000	.0008	.0039	.0060	.0006	.0021
%RSD	71.19	25.21	4.109	.1483	.4547	.7142	151.5	15.86

#1	-.0059	.0028	.0001	.5131	.8703	.8413	.0000	-.0116
#2	-.0179	.0040	.0002	.5120	.8647	.8328	.0008	-.0145

Check ?	None	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2196.6	28029.	3036.0
Stddev	2.9	75.	7.4
%RSD	.13229	.26600	.24346

#1	2198.7	27976.	3030.8
#2	2194.6	28082.	3041.2

Sample Name: 200ppm FeSTD Acquired: 3/14/2018 10:52:45 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: 0.2/10ml Fe 10,000ppm MET2-94-L

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0000	.0014	.0000	.0004	.00027	.0056	.0000
Stddev	.003	.0009	.0023	.0077	.0009	.00021	.0003	.0001
%RSD	1879000.	1366000.	167.8	43670.	249.1	80.717	5.516	606e6
#1	.0022	-.0006	-.0003	.0055	-.0003	.00042	.0059	-.0001
#2	-.0022	.0006	.0030	-.0054	.0010	.00011	.0054	.0001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	-.0162	-.0196	-.0002	.0009	.0000	-.0023	F 196.5
Stddev	.0002	.0006	.0003	.0008	.0002	.000	.0003	.6
%RSD	32.43	3.894	1.784	422.3	17.12	693.5	12.14	.2971
#1	-.0006	-.0157	-.0193	.0004	.0010	.0001	-.0021	196.1
#2	-.0004	-.0166	-.0198	-.0008	.0008	-.0001	-.0025	197.0

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Fail
 High Limit
 Low Limit .0200
 -.0200

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0046	-.0011	.0126	.0000	.0000	-.00025	.0044	-.0006
Stddev	.0019	.0008	.0026	.0002	.001	.00005	.0004	.0002
%RSD	42.15	73.16	20.39	2182e6	614200.	18.165	8.253	42.10
#1	.0032	-.0006	.0108	.0001	.0005	-.00022	.0042	-.0004
#2	.0059	-.0017	.0145	-.0001	-.0005	-.00029	.0047	-.0007

Check ? Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass None Chk Pass
 High Limit
 Low Limit

Sample Name: 200ppm FeSTD Acquired: 3/14/2018 10:52:45 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: 0.2/10ml Fe 10,000ppm MET2-94-L

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0124	.0147	-.0030	-.0014	-.0008	.0127	.00017
Stddev	.0001	.0085	.0037	.0014	.0010	.0001	.0068	.00012
%RSD	20.63	69.00	25.14	45.29	72.01	9.545	53.20	67.592

#1	.0004	.0063	.0173	-.0039	-.0021	-.0008	.0175	.00026
#2	.0003	.0184	.0121	-.0020	-.0007	-.0007	.0079	.00009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0021	.0014	.0000	.0002	.0000	.0030	-.0043	-.0098
Stddev	.0020	.0004	.0000	.0007	.0001	.0004	.0038	.0022
%RSD	94.37	28.23	75.61	447.6	93070.	14.69	88.07	22.60

#1	-.0007	.0017	.0001	.0007	.0000	.0033	-.0070	-.0114
#2	-.0036	.0011	.0000	-.0004	.0000	.0027	-.0016	-.0083

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2427.1	31891.	3134.0
Stddev	5.3	7.	11.6
%RSD	.21907	.02135	.36998

#1	2423.4	31895.	3142.2
#2	2430.9	31886.	3125.8

Sample Name: KQ1803105-02 Acquired: 3/14/2018 11:16:12 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1802138-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063	.0001	.0006	.0012	-.00026	.0022	-.0002	-.0001
#1	.0079	-.0008	-.0007	.0017	-.00034	.0018	-.0003	-.0001
#2	.0046	.0010	.0020	.0006	-.00019	.0025	-.0002	-.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .1454	.0002	.0006	-.0002	.0020	.0104	-.0002	-.0004
#1	.1453	.0012	.0008	-.0003	.0028	.0134	.0011	-.0008
#2	.1455	-.0007	.0003	.0000	.0011	.0074	-.0014	-.0001
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0265	.00005	.0006	-.0003	.0004	.0439	.0002	.0681
#1	.0268	.00010	.0010	.0001	.0043	-.0024	.0032	.0816
#2	.0263	.00001	.0002	-.0006	-.0036	.0902	-.0028	.0545
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0043	.00062	-.0031	-.0008	.0005	.0004	.0001
#1	.0000	.0144	.00061	-.0038	-.0011	.0005	.0005	-.0001
#2	-.0004	-.0057	.00063	-.0023	-.0005	.0005	.0003	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0009	.0008	-.0076					
#1	.0008	.0011	-.0020					
#2	.0010	.0006	-.0133					

Sample Name: KQ1803105-02 Acquired: 3/14/2018 11:16:12 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1802138-MB

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2367.8	31994.	3126.9
#1	2362.0	31893.	3146.4
#2	2373.6	32094.	3107.4

Sample Name: KQ1803105-01 Acquired: 3/14/2018 11:18:39 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1802138-LCSW

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.744	.8606	1.829	2.009	.08727	.8581	.0917	.0921

#1	3.728	.8595	1.832	2.016	.08609	.8520	.0917	.0918
#2	3.760	.8617	1.826	2.002	.08844	.8642	.0918	.0924

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.12	.3909	.9674	.4629	.4685	1.966	.9333	.0008

#1	20.15	.3875	.9694	.4635	.4609	1.967	.9333	-.0008
#2	20.10	.3944	.9654	.4623	.4761	1.965	.9333	.0024

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.61	.92927	2.112	.9497	.0072	19.09	1.593	.2506

#1	18.59	.91981	2.113	.9521	.0089	19.07	1.589	.2576
#2	18.62	.93872	2.111	.9474	.0055	19.11	1.598	.2436

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0878	19.22	.00312	.3684	-.0007	.0007	1.000	.9090

#1	.0866	19.18	.00326	.3686	-.0005	.0005	.9870	.9107
#2	.0889	19.27	.00298	.3683	-.0010	.0008	1.014	.9074

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.8591	.0028	.0146

#1	.8589	.0047	.0147
#2	.8593	.0008	.0144

Sample Name: KQ1803105-01 Acquired: 3/14/2018 11:18:39 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1802138-LCSW

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2377.5	31946.	3154.2
#1	2376.1	31900.	3135.2
#2	2378.9	31992.	3173.2

Sample Name: K1802138-001 Acquired: 3/14/2018 11:20:57 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072	.0029	.0053	.0102	-.00039	-.0048	-.0001	-.0005
#1	.0081	.0026	.0037	.0098	-.00052	-.0044	-.0001	-.0005
#2	.0063	.0032	.0070	.0105	-.00026	-.0053	-.0001	-.0004
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1206	.0006	.0002	.0069	.0073	.0075	.0039	.0001
#1	.1203	.0012	.0001	.0059	.0067	.0059	.0030	-.0005
#2	.1208	.0000	.0003	.0078	.0078	.0091	.0049	.0007
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0156	.00028	.0020	.0009	.0869	.0829	.0147	.2620
#1	.0157	.00030	.0021	.0011	.0804	.0942	.0134	.2599
#2	.0155	.00026	.0018	.0006	.0934	.0716	.0159	.2641
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.2429	.00073	-.0102	.0379	.0006	.0000	.0011
#1	.0002	.2383	.00084	-.0103	.0386	.0006	.0001	.0011
#2	-.0006	.2475	.00063	-.0101	.0372	.0007	.0000	.0010
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0013	.0018	.0607					
#1	.0014	.0001	.0625					
#2	.0013	.0035	.0589					

Sample Name: K1802138-001 Acquired: 3/14/2018 11:20:57 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2432.3	32966.	3459.4
#1	2426.6	33992.	3445.9
#2	2438.0	31940.	3473.0

Sample Name: KQ1803105-03 Acquired: 3/14/2018 11:23:24 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1802138-001D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096	-.0023	.0063	.0107	-.00036	-.0052	-.0002	-.0001
#1	.0092	-.0010	.0074	.0102	-.00044	-.0046	-.0002	-.0002
#2	.0100	-.0037	.0053	.0111	-.00027	-.0058	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5474	.0004	-.0004	.0087	.0093	.0089	.0026	.0009
#1	.5475	.0009	-.0001	.0076	.0099	.0063	.0055	.0000
#2	.5474	.0000	-.0007	.0097	.0087	.0115	-.0003	.0017
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0779	.00042	.0009	.0004	.0822	.0820	.0137	.2571
#1	.0782	.00043	.0006	.0005	.0815	.0305	.0112	.2503
#2	.0777	.00041	.0011	.0004	.0829	.1334	.0162	.2638
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.2464	.00219	-.0111	.0332	.0008	-.0002	.0015
#1	.0006	.2394	.00231	-.0110	.0339	.0006	.0002	.0014
#2	-.0004	.2534	.00207	-.0111	.0325	.0009	-.0005	.0016
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0016	.0030	.0861					
#1	.0016	.0015	.0870					
#2	.0016	.0045	.0852					

Sample Name: KQ1803105-03 Acquired: 3/14/2018 11:23:24 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1802138-001D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2446.5	34410.	3453.6
#1	2442.0	34266.	3422.3
#2	2451.0	34553.	3485.0

Sample Name: K1802138-001A Acquired: 3/14/2018 11:25:51 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B A=0.03/6mL CICV-1,3 + Sb 100ppm

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.380	.4583	2.434	5.025	.10586	-.0042	1.147	1.159
#1	4.416	.4636	2.446	5.024	.10623	-.0021	1.150	1.164
#2	4.345	.4530	2.423	5.027	.10549	-.0063	1.145	1.155
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.94	.4801	1.217	.5786	.6083	2.374	2.266	.0006
#1	11.91	.4819	1.220	.5807	.6123	2.386	2.278	-.0017
#2	11.97	.4784	1.213	.5764	.6043	2.361	2.253	.0028
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.19	1.1526	.0004	1.195	.0861	12.51	2.449	.2564
#1	12.18	1.1530	.0002	1.202	.0860	12.49	2.449	.2572
#2	12.21	1.1522	.0006	1.187	.0861	12.52	2.449	.2557
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5467	12.81	.00096	2.212	.0376	.0007	1.252	1.145
#1	.5481	12.77	.00092	2.219	.0383	.0006	1.256	1.149
#2	.5452	12.84	.00100	2.205	.0369	.0008	1.248	1.141
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.047	.0019	.0611					
#1	1.049	.0005	.0598					
#2	1.046	.0034	.0624					

Sample Name: K1802138-001A Acquired: 3/14/2018 11:25:51 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B A=0.03/6mL CICV-1,3 + Sb 100ppm

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2370.1	33029.	3418.4
#1	2366.5	33068.	3413.0
#2	2373.7	32990.	3423.8

Sample Name: KQ1803243-01 Acquired: 3/14/2018 11:28:07 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 031418B 9/10 K1802352-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0007	.0017	.0000	-.00004	.0027	.0000	.0000
#1	-.0015	-.0028	.0044	.0001	-.00009	.0006	-.0001	.0000
#2	.0017	.0014	-.0011	-.0001	.00002	.0048	.0001	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	.0007	-.0002	-.0007	.0008	.0041	.0027	-.0009
#1	.0033	.0006	-.0004	-.0005	.0001	.0074	.0019	.0004
#2	.0029	.0008	-.0001	-.0009	.0015	.0008	.0036	-.0021
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.00005	-.0001	.0005	-.0013	.0421	-.0017	-.0114
#1	.0010	.00002	-.0003	.0005	-.0010	.0083	-.0004	-.0033
#2	.0010	.00007	.0001	.0005	-.0016	.0758	-.0031	-.0196
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0019	-.00003	-.0007	.0003	.0002	.0002	.0004
#1	.0000	.0082	-.00009	-.0050	.0006	.0003	.0004	.0006
#2	-.0008	-.0045	.00003	.0036	.0000	.0002	-.0001	.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	.0001	.0078					
#1	.0000	-.0050	.0099					
#2	.0004	.0053	.0058					

Sample Name: KQ1803243-01 Acquired: 3/14/2018 11:28:07 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1.111 Test Type: Sample Type:
Comment: EM 031418B 9/10 K1802352-MB

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2619.9	35297.	3587.1
#1	2630.1	35300.	3606.1
#2	2609.7	35295.	3568.0

Sample Name: K1802352-001 Acquired: 3/14/2018 11:30:34 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 031418B 9/10

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0049	-.0065	.0063	.0013	-.00001	.0026	-.0002	.0001
#1	.0048	-.0099	.0090	.0021	-.00012	.0018	-.0002	.0001
#2	.0049	-.0030	.0037	.0006	.00010	.0034	-.0002	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0015	-.0002	.0008	-.0003	.0099	.0003	-.0008
#1	.0039	.0017	-.0002	.0010	.0003	.0110	.0002	-.0012
#2	.0042	.0013	-.0001	.0006	-.0008	.0088	.0004	-.0004
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.00020	.0010	.0012	.5337	.7245	.0023	-.0012
#1	.0009	.00031	.0008	.0009	.5368	.7054	.0012	-.0020
#2	.0010	.00009	.0011	.0016	.5306	.7437	.0033	-.0004
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	.2087	.00026	.0020	.4177	.0004	-.0001	.0002
#1	-.0017	.1961	.00022	.0042	.4179	.0003	-.0005	-.0001
#2	-.0009	.2214	.00029	-.0002	.4175	.0005	.0003	.0006
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0003	-.0002	-.0061					
#1	.0002	-.0004	-.0085					
#2	.0004	.0001	-.0038					

Sample Name: K1802352-001 Acquired: 3/14/2018 11:30:34 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1.111 Test Type: Sample Type:
Comment: EM 031418B 9/10

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2537.2	33590.	3353.3
#1	2541.7	33687.	3347.3
#2	2532.7	33492.	3359.3

Sample Name: KQ1803243-02 Acquired: 3/14/2018 11:33:02 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 031418B 9/10 K1802352-001D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034	-.0027	.0012	-.0003	-.00016	.0032	-.0002	.0002
#1	.0030	-.0041	.0008	.0000	-.00017	.0037	-.0001	.0002
#2	.0039	-.0013	.0016	-.0007	-.00016	.0028	-.0002	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	.0020	.0000	.0004	.0007	.0122	.0009	.0001
#1	.0024	.0014	.0003	.0000	.0004	.0057	.0000	.0003
#2	.0024	.0026	-.0002	.0008	.0010	.0188	.0019	-.0001
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.00014	.0003	.0006	.5353	.7505	-.0002	.0022
#1	.0006	.00027	.0003	.0008	.5339	.7503	.0017	.0022
#2	.0005	.00002	.0004	.0004	.5367	.7506	-.0022	.0023
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	.2020	.00021	-.0003	.4148	.0002	-.0005	.0001
#1	-.0008	.2017	.00034	-.0012	.4155	.0003	-.0006	.0001
#2	-.0006	.2022	.00009	.0006	.4141	.0001	-.0005	.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0001	-.0022	-.0037					
#1	.0002	-.0013	-.0050					
#2	.0001	-.0030	-.0024					

Sample Name: KQ1803243-02 Acquired: 3/14/2018 11:33:02 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1.111 Test Type: Sample Type:
Comment: EM 031418B 9/10 K1802352-001D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2540.8	33456.	3315.2
#1	2550.5	33370.	3323.9
#2	2531.1	33542.	3306.5

Sample Name: KQ1803087-02 Acquired: 3/14/2018 11:35:30 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801267-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0027	.0036	-.0001	-.00028	.0022	-.0001	.0001

#1	.0000	-.0055	.0054	-.0002	-.00036	.0023	.0000	-.0001
#2	.0009	.0001	.0018	.0000	-.00020	.0021	-.0001	.0002

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054	.0008	.0003	.0006	.0005	.0026	.0007	-.0026

#1	.0055	.0002	.0002	.0017	.0010	.0035	.0011	-.0018
#2	.0052	.0013	.0004	-.0006	.0001	.0017	.0004	-.0034

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0024	.00017	.0001	-.0002	.0187	.0078	.0025	.0342

#1	.0025	.00019	-.0001	-.0003	.0150	.0060	.0005	.0347
#2	.0022	.00014	.0002	.0000	.0223	.0097	.0046	.0336

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0157	-.00010	.0002	.0011	.0004	.0000	.0005

#1	.0013	.0155	.00000	-.0009	.0011	.0001	-.0002	.0005
#2	.0008	.0159	-.00020	.0013	.0012	.0007	.0001	.0006

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0003	.0022	.0007

#1	.0001	.0035	.0013
#2	.0004	.0010	.0001

Sample Name: KQ1803087-02 Acquired: 3/14/2018 11:35:30 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801267-MB

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2516.6	33535.	3247.9
#1	2511.8	33518.	3215.1
#2	2521.4	33551.	3280.7

Sample Name: KQ1803087-01 Acquired: 3/14/2018 11:37:57 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801267-LCSW

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.448	1.839	2.139	4.211	.10217	.4445	1.030	1.040
#1	4.431	1.846	2.149	4.205	.10194	.4456	1.033	1.044
#2	4.464	1.831	2.128	4.216	.10239	.4434	1.027	1.037
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.45	.4078	1.023	F .4958	.5242	2.059	2.103	-.0013
#1	10.43	.4080	1.026	.4978	.5249	2.063	2.107	-.0014
#2	10.46	.4076	1.020	.4937	.5234	2.055	2.100	-.0011
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.55	.99401	.9169	1.018	8.535	10.80	1.988	.0204
#1	10.55	.99275	.9191	1.019	8.557	10.83	1.997	.0146
#2	10.55	.99528	.9148	1.017	8.512	10.77	1.978	.0263
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5178	10.81	.00040	2.093	8.345	.0000	1.046	F .9871
#1	.5153	10.80	.00043	2.091	8.370	-.0002	1.048	.9877
#2	.5203	10.82	.00037	2.096	8.319	.0001	1.044	.9865
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	F .9888	.0031	-.0055					
#1	.9923	.0024	-.0104					
#2	.9852	.0037	-.0007					

Sample Name: KQ1803087-01 Acquired: 3/14/2018 11:37:57 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801267-LCSW

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2491.5	33337.	3311.9
#1	2492.9	33250.	3316.1
#2	2490.1	33424.	3307.7

Sample Name: CCVB Acquired: 3/14/2018 11:40:10 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.948	10.30	-.0026	1.024	9.977	-.00015	.0031	-.0001
Stddev	.008	.03	.0020	.008	.173	.00009	.0010	.0000
%RSD	.0964	.2684	76.92	.8010	1.734	62.192	31.08	3.451

#1	7.953	10.28	-.0040	1.030	9.855	-.00022	.0024	-.0001
#2	7.943	10.32	-.0012	1.018	10.10	-.00009	.0037	-.0001

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	10.15	9.746	.0003	-.0003	-.0006	.0000	10.02
Stddev	.0000	.05	.133	.0008	.0003	.0013	.002	.04
%RSD	7.499	.4555	1.367	295.7	95.36	206.6	33750.	.3881

#1	-.0002	10.12	9.652	-.0003	-.0005	-.0016	.0012	9.993
#2	-.0003	10.18	9.840	.0008	-.0001	.0003	-.0012	10.05

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	1.037	10.39	9.891	10.27	.99426	.9859	.0010
Stddev	.0008	.003	.00	.015	.05	.00113	.0010	.0003
%RSD	220.4	.3320	.0333	.1528	.4696	.11317	.1021	28.25

#1	-.0002	1.039	10.39	9.880	10.30	.99506	.9852	.0012
#2	.0009	1.035	10.39	9.902	10.24	.99347	.9866	.0008

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 3/14/2018 11:40:10 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	10.10	10.23	.0006	10.21	.0002	10.20	1.0063
Stddev	.0003	.05	.04	.0025	.13	.0005	.06	.0000
%RSD	73.50	.4620	.3849	431.4	1.305	203.3	.6022	.00137
#1	-.0007	10.14	10.26	.0023	10.30	-.0001	10.25	1.0063
#2	-.0002	10.07	10.20	-.0012	10.12	.0005	10.16	1.0063

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
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Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	.0005	.0005	.0001	.0003	.0003	1.027	1.032
Stddev	.0019	.0001	.0003	.0001	.0001	.0001	.000	.024
%RSD	73.45	14.22	69.90	122.0	43.48	41.88	.0223	2.331
#1	.0039	.0004	.0002	.0000	.0002	.0002	1.027	1.049
#2	.0012	.0005	.0007	.0002	.0004	.0004	1.028	1.015

Check ? Value Range	None	None	None	None	None	None	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2475.7	32674.	3281.3
Stddev	9.4	20.	24.1
%RSD	.37795	.05981	.73494
#1	2482.3	32688.	3298.4
#2	2469.0	32661.	3264.3

Sample Name: CCVA Acquired: 3/14/2018 11:42:42 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2484	.2601	.2550	.2574	.2478	.25248	.2549	.2481
Stddev	.0030	.0036	.0014	.0045	.0005	.00271	.0008	.0003
%RSD	1.195	1.396	.5434	1.735	.2007	1.0744	.3212	.1259

#1	.2505	.2626	.2540	.2542	.2474	.25440	.2543	.2483
#2	.2463	.2575	.2560	.2605	.2482	.25056	.2555	.2479

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2499	.4863	.4892	.2498	.2477	.2498	.2512	.2543
Stddev	.0009	.0010	.0004	.0016	.0002	.0013	.0040	.0014
%RSD	.3474	.2030	.0884	.6483	.0809	.5195	1.604	.5653

#1	.2505	.4870	.4895	.2509	.2476	.2507	.2540	.2553
#2	.2492	.4856	.4889	.2486	.2479	.2488	.2483	.2533

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2499	-.0001	.2497	.2458	.2519	.25135	.2440	.2503
Stddev	.0005	.0013	.0358	.0007	.0002	.00005	.0011	.0004
%RSD	.2101	1289.	14.33	.3024	.0779	.01945	.4597	.1436

#1	.2503	.0008	.2750	.2453	.2520	.25138	.2448	.2505
#2	.2495	-.0010	.2244	.2464	.2517	.25132	.2432	.2500

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 11:42:42 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2497	.0003	2.562	.2578	.1387	.2532	.2586	.00015
Stddev	.0003	.0028	.007	.0005	.0078	.0040	.0010	.00012
%RSD	.1358	1085.	.2628	.1970	5.625	1.574	.3897	80.485

#1	.2495	-.0017	2.557	.2581	.1442	.2560	.2578	.00007
#2	.2500	.0022	2.567	.2574	.1332	.2504	.2593	.00024

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2500	.2483	.2518	.2479	.2491	.2530	.0030	-.0068
Stddev	.0038	.0006	.0003	.0023	.0002	.0008	.0057	.0020
%RSD	1.508	.2489	.1148	.9110	.0944	.3228	187.7	29.63

#1	.2473	.2487	.2520	.2495	.2490	.2536	-.0010	-.0082
#2	.2526	.2478	.2516	.2463	.2493	.2524	.0071	-.0054

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2536.7	33352.	3315.8
Stddev	1.7	138.	3.7
%RSD	.06721	.41231	.11024

#1	2537.9	33449.	3318.4
#2	2535.5	33255.	3313.2

Sample Name: CCB Acquired: 3/14/2018 11:45:00 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0001	-.0002	.0034	.0002	.00002	.0021	-.0002
Stddev	.0014	.0040	.0018	.0048	.0009	.00003	.0024	.0002
%RSD	425.9	3768.	856.3	139.2	361.6	169.53	113.8	63.85

#1	.0007	-.0027	-.0015	.0001	-.0004	.00000	.0039	-.0001
#2	-.0013	.0029	.0011	.0068	.0009	.00003	.0004	-.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0095	-.0001	.0008	.0000	-.0001	.0010	.0047
Stddev	.0003	.0047	.0000	.0016	.000	.0002	.0023	.0133
%RSD	404.3	49.56	24.37	187.6	2670.	333.7	230.5	281.4

#1	.0002	-.0128	.0000	-.0003	.0000	.0001	-.0006	.0141
#2	-.0001	-.0062	-.0001	.0019	.0000	-.0002	.0027	-.0047

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0019	-.0012	.0105	.0001	.0007	.00024	.0003	.0013
Stddev	.0005	.0006	.0278	.0000	.0014	.00015	.0000	.0002
%RSD	25.82	46.52	263.4	25.92	205.1	65.433	1.142	14.16

#1	-.0023	-.0008	.0302	.0002	-.0003	.00013	.0003	.0014
#2	-.0016	-.0016	-.0091	.0001	.0017	.00035	.0003	.0012

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 11:45:00 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0041	-.0375	-.0028	.0024	.0004	.0098	-.00007
Stddev	.0001	.0058	.0090	.0007	.0018	.0007	.0024	.00004
%RSD	52.40	140.7	23.96	24.10	73.12	167.1	24.87	61.173

#1	-.0002	-.0082	-.0311	-.0023	.0037	-.0001	.0080	-.00004
#2	-.0004	.0000	-.0438	-.0032	.0012	.0010	.0115	-.00010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0010	.0002	.0004	.0001	.0000	.0002	-.0070
Stddev	.0007	.0019	.0002	.0006	.0004	.000	.0014	.0012
%RSD	312.4	178.5	93.61	147.0	483.5	3104.	563.1	16.64

#1	-.0003	-.0003	.0001	.0000	.0004	-.0003	.0012	-.0078
#2	.0007	.0023	.0004	.0009	-.0002	.0002	-.0007	-.0062

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2511.7	33524.	3298.9
Stddev	.6	94.	21.5
%RSD	.02227	.28045	.65198

#1	2511.3	33591.	3314.1
#2	2512.1	33458.	3283.7

Sample Name: LLCCV Acquired: 3/14/2018 11:47:37 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As ²⁷ 1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0090	.0072	.0177	F .0143	.0037	.00088	.0215	.0009
Stddev	.0014	.0036	.0020	.0001	.0000	.00014	.0014	.0001
%RSD	15.77	50.33	11.48	.9022	.7090	15.379	6.437	6.240

#1	.0100	.0098	.0162	.0144	.0037	.00097	.0225	.0009
#2	.0080	.0046	.0191	.0142	.0037	.00078	.0206	.0010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0100				
Range				30.00%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307 [*]	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	F .0263	.0198	.0046	F .0027	.0035	.0048	.0178
Stddev	.0001	.0046	.0000	.0003	.0001	.0002	.0004	.0027
%RSD	12.98	17.61	.1313	6.360	3.883	4.269	8.185	15.44

#1	.0008	.0296	.0198	.0044	.0027	.0036	.0050	.0158
#2	.0010	.0230	.0198	.0048	.0026	.0034	.0045	.0197

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value		.0200			.0020			
Range		30.00%			30.00%			

Elem	Pb2203 [*]	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0133	.0195	.0631	.0047	.0053	.00106	.0014	.0046
Stddev	.0020	.0013	.0226	.0002	.0019	.00006	.0006	.0005
%RSD	14.87	6.901	35.78	3.424	35.35	5.5225	47.37	10.08

#1	.0147	.0205	.0471	.0048	.0066	.00102	.0018	.0042
#2	.0119	.0186	.0791	.0046	.0040	.00110	.0009	.0049

Check ?	Chk Fail	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value	.0100							
Range	30.00%							

*rerun
 am 3/14/18

Sample Name: LLCCV Acquired: 3/14/2018 11:47:37 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0039	.0366	.2194	.0241	.1989	.0036	.1968	.00114
Stddev	.0000	.0027	.0298	.0014	.0034	.0007	.0065	.00003
%RSD	.0505	7.489	13.60	5.833	1.719	17.95	3.288	2.5746

#1	.0039	.0346	.2405	.0231	.2013	.0041	.2014	.00112
#2	.0039	.0385	.1983	.0251	.1964	.0032	.1922	.00116

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0087	.0204	.0024	.0042	.0038	.0043	.0230	.0368
Stddev	.0034	.0004	.0002	.0009	.0002	.0001	.0023	.0088
%RSD	39.19	1.927	7.415	20.33	4.912	2.128	9.838	23.82

#1	.0063	.0207	.0023	.0036	.0040	.0042	.0246	.0430
#2	.0111	.0201	.0025	.0048	.0037	.0043	.0214	.0306

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2518.7	33176.	3282.5
Stddev	3.2	6.	4.1
%RSD	.12882	.01767	.12449

#1	2516.4	33180.	3279.6
#2	2521.0	33172.	3285.4

Sample Name: LLCCV Acquired: 3/14/2018 11:51:32 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0101	.0082	.0159	.0123	.0039	.00091	.0248	.0009
Stddev	.0008	.0011	.0017	.0006	.0007	.00015	.0017	.0000
%RSD	7.758	13.90	10.48	4.623	18.78	15.973	6.728	2.726

#1	.0107	.0090	.0170	.0127	.0044	.00081	.0260	.0008
#2	.0095	.0074	.0147	.0119	.0033	.00102	.0236	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	F .0270	.0213	.0042	.0023	.0037	.0045	F .0282
Stddev	.0001	.0063	.0000	.0001	.0003	.0004	.0013	.0002
%RSD	6.368	23.26	.0623	1.999	13.87	10.41	28.89	.7906

#1	.0011	.0315	.0213	.0043	.0021	.0040	.0054	.0281
#2	.0010	.0226	.0212	.0041	.0025	.0034	.0036	.0284

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value		.0200						.0200
Range		30.00%						30.00%

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0114	.0194	.0293	.0050	F .0029	.00105	.0018	.0042
Stddev	.0020	.0034	.0097	.0001	.0019	.00003	.0013	.0001
%RSD	17.31	17.29	32.95	2.039	64.57	2.5504	69.69	3.429

#1	.0100	.0218	.0225	.0051	.0043	.00107	.0027	.0043
#2	.0128	.0170	.0361	.0049	.0016	.00103	.0009	.0041

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
Value					.0050			
Range					-30.00%			

Sample Name: LLCCV Acquired: 3/14/2018 11:51:32 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0434	.2452	.0195	.1883	.0040	.2171	.00111
Stddev	.0002	.0047	.0399	.0005	.0005	.0015	.0049	.00005
%RSD	5.551	10.90	16.29	2.809	.2907	36.52	2.247	4.4183

#1	.0041	.0467	.2170	.0191	.1887	.0051	.2137	.00114
#2	.0038	.0400	.2735	.0199	.1880	.0030	.2206	.00107

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078	.0204	.0023	.0036	.0038	.0041	.0249	.0332
Stddev	.0012	.0002	.0002	.0016	.0002	.0001	.0018	.0015
%RSD	15.07	.8638	6.889	44.11	4.404	2.054	7.302	4.382

#1	.0070	.0205	.0022	.0025	.0039	.0040	.0262	.0322
#2	.0087	.0203	.0024	.0048	.0036	.0042	.0236	.0342

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2526.1	33047.	3262.8
Stddev	12.3	56.	4.2
%RSD	.48666	.17011	.12831

#1	2517.4	33007.	3265.8
#2	2534.8	33086.	3259.9

Sample Name: LLCCV,0.5 Acquired: 3/14/2018 11:54:09 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078	.0741	.4261	.0450	.4062	.0079	.4178	.00214
Stddev	.0000	.0003	.0456	.0011	.0153	.0006	.0139	.00018
%RSD	.1550	.4016	10.70	2.343	3.759	7.132	3.333	8.3355
#1	.0078	.0743	.4583	.0443	.4170	.0083	.4276	.00226
#2	.0078	.0739	.3939	.0458	.3954	.0075	.4079	.00201

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197	.0415	.0041	.0090	.0084	.0083	.0405	.0811
Stddev	.0004	.0005	.0000	.0005	.0003	.0003	.0014	.0030
%RSD	2.189	1.190	.5583	5.612	4.150	3.742	3.368	3.758
#1	.0200	.0418	.0041	.0086	.0086	.0080	.0415	.0832
#2	.0194	.0412	.0041	.0093	.0081	.0085	.0396	.0789

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2521.9	33098.	3272.2
Stddev	1.3	101.	16.3
%RSD	.05321	.30655	.49855
#1	2521.0	33170.	3283.7
#2	2522.9	33027.	3260.6

Sample Name: K1801267-008 Acquired: 3/14/2018 11:56:46 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2742	.0794	.0759	.0858	.00002	3.151	-.0001	-.0004
#1	.2768	.0771	.0770	.0867	.00015	3.091	.0001	-.0004
#2	.2715	.0816	.0748	.0848	-.00010	3.211	-.0002	-.0004
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	233.4	.0040	.0004	.0011	.0004	1.358	.0084	.0837
#1	234.6	.0041	.0007	.0008	.0022	1.362	.0044	.0832
#2	232.3	.0039	.0002	.0013	-.0013	1.353	.0123	.0843
Elem	Mg2790	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>450.0	.30284	.2102	.0039	2.031	308.0	.0030	8.989
#1	781.6	.30369	.2109	.0048	2.035	304.2	.0070	8.898
#2	772.7	.30198	.2096	.0030	2.026	311.8	-.0010	9.080
Elem	Ag3280	Na5895	Sr4077	Ti1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0015	*****	4.5005	-.0025	-.0008	.0160	.0111	.0119
#1	-.0012	-----	4.5189	-.0078	.0003	.0165	.0120	.0116
#2	-.0017	-----	4.4820	.0029	-.0018	.0156	.0102	.0123
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0109	.0038	409.5					
#1	.0108	.0053	414.8					
#2	.0109	.0023	404.3					

* 1/100
 Ann 3/14/18

Sample Name: K1801267-008 Acquired: 3/14/2018 11:56:46 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1894.6	23574.	2923.6
#1	1906.7	23133.	2880.7
#2	1882.6	24014.	2966.5

Sample Name: K1801267-008L Acquired: 3/14/2018 11:59:25 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 031418B 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0553	.0146	.0181	.0163	-.00019	.7142	-.0001	.0000
#1	.0560	.0183	.0161	.0161	-.00032	.7223	-.0002	.0002
#2	.0546	.0110	.0201	.0165	-.00006	.7061	.0000	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.63	.0006	.0001	.0004	-.0005	.2841	.0020	.0180
#1	46.73	.0014	-.0002	.0001	-.0007	.2829	-.0006	.0185
#2	46.52	-.0003	.0004	.0008	-.0003	.2853	.0045	.0175
Elem	Mg2790 *	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	147.1	.05938	.0426	.0005	.3761	62.27	-.0045	1.800
#1	147.4	.05948	.0425	.0005	.3690	62.02	-.0010	1.783
#2	146.7	.05928	.0426	.0005	.3832	62.52	-.0080	1.817
Elem	Ag3280	Na5895 *	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	>450.0	.87326	-.0019	.0008	.0007	.0032	.0029
#1	-.0001	1281.	.87639	.0017	.0018	.0003	.0033	.0027
#2	-.0004	1286.	.87013	-.0054	-.0002	.0012	.0032	.0031
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0028	.0009	88.54					
#1	.0027	.0020	87.62					
#2	.0028	-.0003	89.46					

*1/500
 Ann 3/14/18

Sample Name: K1801267-008L Acquired: 3/14/2018 11:59:25 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 5 Test Type: Sample Type:
Comment: EM 031418B 1/5

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2242.9	28433.	3108.7
#1	2216.4	28544.	3084.9
#2	2269.4	28322.	3132.4

Sample Name: KQ1803087-03 Acquired: 3/14/2018 12:02:05 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801267-008D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2762	.0822	.0747	.0848	-.00012	3.131	.0000	.0001
#1	.2798	.0834	.0808	.0844	-.00005	3.101	-.0001	.0000
#2	.2726	.0809	.0685	.0853	-.00018	3.161	.0001	.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	229.3	.0030	.0001	.0028	.0003	1.345	.0103	.0828
#1	228.4	.0025	.0006	.0019	.0007	1.341	.0120	.0812
#2	230.2	.0035	-.0003	.0037	-.0001	1.348	.0087	.0843
Elem	Mg2790	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>450.0	.30410	.2121	.0038	2.026	312.8	-.0042	8.922
#1	759.2	.30371	.2126	.0035	2.028	306.4	-.0035	8.789
#2	762.6	.30449	.2116	.0041	2.023	319.2	-.0049	9.055
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	*****	4.4686	-.0093	.0001	.0154	.0118	.0115
#1	-.0010	-----	4.4390	-.0050	.0000	.0153	.0115	.0112
#2	-.0013	-----	4.4981	-.0137	.0003	.0155	.0121	.0117
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0109	.0133	407.7					
#1	.0108	.0129	405.7					
#2	.0111	.0137	409.7					

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 am 3/14/18

Sample Name: KQ1803087-03 Acquired: 3/14/2018 12:02:05 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801267-008D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1892.7	23483.	2960.2
#1	1881.8	23336.	2921.9
#2	1903.7	23630.	2998.6

Sample Name: KQ1803087-04 Acquired: 3/14/2018 12:04:43 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801267-008S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.685	.4406	.8265	.9343	.03889	3.322	.0381	.0376

#1	1.700	.4456	.8366	.9303	.03885	3.327	.0385	.0379
#2	1.670	.4357	.8164	.9383	.03894	3.318	.0377	.0373

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	223.0	.1673	.3721	.1905	.1686	2.060	.3657	.0796

#1	223.2	.1673	.3733	.1927	.1701	2.060	.3660	.0769
#2	222.8	.1672	.3709	.1882	.1672	2.060	.3655	.0822

Elem	Mg2790	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>450.0	.68504	1.092	.3709	12.20	309.1	.6688	8.384

#1	719.4	.68267	1.098	.3736	12.25	302.4	.6698	8.260
#2	716.2	.68742	1.085	.3681	12.14	315.8	.6679	8.508

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0363	*****	4.2359	.1258	8.054	.0150	.4560	.3949

#1	.0364	----	4.2120	.1246	8.099	.0150	.4567	.3981
#2	.0362	----	4.2599	.1270	8.009	.0149	.4553	.3917

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.3578	.0112	387.5

#1	.3604	.0123	389.3
#2	.3552	.0100	385.6

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 Ann 3/14/18

Sample Name: KQ1803087-04 Acquired: 3/14/2018 12:04:43 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801267-008S

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1911.1	23988.	2986.2
#1	1913.7	24035.	2944.9
#2	1908.5	23941.	3027.5

Sample Name: K1801267-008A Acquired: 3/14/2018 12:07:14 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, P, Sn

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.317	.4956	2.251	5.181	.11425	3.035	1.102	1.086
#1	4.331	.4950	2.239	5.148	.11401	3.016	1.107	1.087
#2	4.304	.4963	2.263	5.213	.11450	3.053	1.098	1.084
	*							
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	232.3	.4859	1.085	.5419	.4984	3.618	2.087	.0812
#1	231.9	.4852	1.091	.5419	.4983	3.589	2.092	.0793
#2	232.6	.4865	1.080	.5418	.4986	3.648	2.081	.0831
	*					*		
Elem	Mg2790	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	>450.0	1.4625	.2026	1.076	7.813	323.5	1.925	8.499
#1	735.3	1.4663	.2046	1.081	7.859	319.1	1.912	8.445
#2	737.5	1.4587	.2006	1.070	7.767	328.0	1.938	8.554
		*						
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5477	*****	4.3627	1.805	4.469	.0148	1.318	1.130
#1	.5456	-----	4.3389	1.815	4.485	.0148	1.321	1.135
#2	.5498	-----	4.3865	1.795	4.454	.0149	1.316	1.126
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.017	.0059	389.5					
#1	1.013	.0021	387.5					
#2	1.022	.0097	391.4					

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 am 3/14/18

Sample Name: K1801267-008A Acquired: 3/14/2018 12:07:14 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, P, Sn

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	1895.1	24050.	2979.2
#1	1880.7	23917.	2954.1
#2	1909.5	24183.	3004.4

Sample Name: K1801267-017 Acquired: 3/14/2018 12:10:32 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1742	.2440	.2897	.0565	-.00019	2.013	-.0001	-.0003
#1	.1763	.2481	.2932	.0567	-.00002	2.019	.0000	-.0002
#2	.1721	.2399	.2861	.0563	-.00036	2.007	-.0002	-.0005
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	120.4	.0010	.0010	.0022	.0015	.7177	.0092	.0298
#1	120.4	.0025	.0011	.0017	.0012	.7123	.0088	.0296
#2	120.3	-.0004	.0008	.0027	.0018	.7230	.0095	.0299
Elem	Mg2790	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	298.2	.11473	.6199	.0023	1.451	172.7	.0003	8.369
#1	298.7	.11410	.6210	.0023	1.447	171.4	.0029	8.326
#2	297.8	.11537	.6187	.0024	1.455	174.1	-.0024	8.411
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	>450.0	2.0513	-.0029	.0022	.0073	.0079	.0125
#1	.0000	2950.	2.0510	-.0003	.0026	.0071	.0071	.0125
#2	-.0008	2979.	2.0516	-.0055	.0017	.0076	.0087	.0124
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0108	.0023	64.76					
#1	.0108	.0011	65.14					
#2	.0108	.0036	64.38					

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 am 3/14/18

Sample Name: K1801267-017 Acquired: 3/14/2018 12:10:32 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2012.7	25470.	2933.9
#1	2018.3	25586.	2916.2
#2	2007.0	25355.	2951.5

Sample Name: K1801267-008 Acquired: 3/14/2018 12:15:00 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: EM 031418B 1/100

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027	-.0015	.0021	.0009	-.00014	.0472	-.0002	-.0003
#1	.0026	.0007	.0025	.0010	-.00033	.0475	-.0003	-.0002
#2	.0029	-.0037	.0017	.0008	.00005	.0470	.0000	-.0003
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.315	-.0002	.0004	.0001	-.0005	.0143	.0010	.0019
#1	2.315	-.0004	.0004	.0008	.0001	.0126	-.0008	.0018
#2	2.315	.0001	.0003	-.0007	-.0012	.0161	.0028	.0020
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.479	.00303	.0031	.0002	.0180	3.458	.0021	.0828
#1	6.477	.00297	.0033	.0003	.0173	3.446	.0058	.0850
#2	6.480	.00309	.0030	.0001	.0188	3.471	-.0016	.0806
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	73.58	.04435	-.0011	-.0003	-.0004	.0004	.0005
#1	-.0006	73.83	.04408	-.0010	-.0002	-.0005	-.0003	.0004
#2	-.0002	73.34	.04463	-.0011	-.0004	-.0003	.0011	.0005
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0000	-.0002	4.754					
#1	.0002	.0013	4.788					
#2	-.0002	-.0016	4.720					

Sample Name: K1801267-008 Acquired: 3/14/2018 12:15:00 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 100 Test Type: Sample Type:
Comment: EM 031418B 1/100

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2517.3	32983.	3353.2
#1	2527.2	33100.	3361.9
#2	2507.4	32866.	3344.6

Sample Name: K1801267-008L Acquired: 3/14/2018 12:17:25 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: ^{on 3/14/18} 100 500 Test Type: Sample Type:
 Comment: EM 031418B 1/500

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0059	.0002	-.0001	-.00012	.0124	-.0001	.0001
#1	.0010	-.0056	.0012	-.0001	-.00002	.0134	-.0002	.0001
#2	-.0006	-.0061	-.0009	-.0001	-.00021	.0115	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4545	-.0002	.0000	.0004	.0008	.0083	.0020	.0004
#1	.4549	-.0008	-.0004	.0015	.0010	.0104	.0026	-.0002
#2	.4541	.0005	.0004	-.0007	.0006	.0062	.0013	.0010
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.303	.00057	.0014	.0000	.0032	.7856	.0002	.0125
#1	1.304	.00058	.0014	.0001	-.0001	.7829	.0030	.0029
#2	1.303	.00057	.0013	-.0002	.0066	.7883	-.0027	.0220
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	14.57	.00878	-.0025	-.0004	.0004	.0008	.0005
#1	.0005	14.71	.00871	-.0030	-.0010	.0004	.0005	.0006
#2	-.0003	14.42	.00885	-.0019	.0002	.0004	.0012	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0010	.9380					
#1	.0002	-.0035	.9449					
#2	.0001	.0015	.9311					

Sample Name: K1801267-008L Acquired: 3/14/2018 12:17:25 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 100 Test Type: Sample Type:
Comment: EM 031418B 1/500

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2570.0	34072.	3337.7
#1	2566.0	33961.	3359.9
#2	2573.9	34182.	3315.5

Sample Name: KQ1803087-03 Acquired: 3/14/2018 12:19:51 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: EM 031418B 1/100 K1801267-008D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0028	-.0030	.0008	.0006	-.00007	.0436	-.0001	.0001
#1	.0021	-.0013	-.0001	.0004	-.00012	.0430	-.0001	.0001
#2	.0036	-.0047	.0016	.0008	-.00003	.0442	-.0002	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.288	.0000	-.0004	-.0004	.0021	.0155	.0000	.0012
#1	2.280	-.0010	-.0011	-.0013	.0028	.0174	.0003	.0017
#2	2.296	.0010	.0002	.0005	.0014	.0136	-.0004	.0007
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.407	.00299	.0028	.0005	.0147	3.198	.0051	.0775
#1	6.384	.00296	.0030	.0008	.0116	3.183	.0058	.0675
#2	6.429	.00303	.0026	.0002	.0178	3.213	.0043	.0874
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	71.09	.04365	-.0017	.0007	-.0001	.0005	.0004
#1	-.0010	71.26	.04363	-.0027	.0008	-.0004	.0000	.0004
#2	-.0002	70.91	.04366	-.0007	.0005	.0001	.0010	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0007	4.606					
#1	.0002	-.0006	4.599					
#2	.0002	-.0008	4.613					

Sample Name: KQ1803087-03 Acquired: 3/14/2018 12:19:51 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 100 Test Type: Sample Type:
Comment: EM 031418B 1/100 K1801267-008D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2485.3	32779.	3295.3
#1	2483.0	32673.	3313.4
#2	2487.7	32886.	3277.3

Sample Name: KQ1803087-04 Acquired: 3/14/2018 12:22:16 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: EM 031418B 1/100 K1801267-008S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0180	.0068	.0109	.0092	.00033	.0458	.0002	.0005
#1	.0174	.0087	.0087	.0094	.00034	.0443	.0002	.0005
#2	.0186	.0049	.0131	.0089	.00031	.0472	.0002	.0006
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.220	.0022	.0042	.0018	.0017	.0205	.0046	.0011
#1	2.214	.0021	.0041	.0010	.0017	.0161	.0054	.0014
#2	2.226	.0024	.0043	.0027	.0017	.0250	.0038	.0007
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.081	.00669	.0107	.0038	.1013	2.996	.0073	.0713
#1	6.075	.00662	.0106	.0039	.1019	3.030	.0095	.0709
#2	6.086	.00675	.0108	.0037	.1006	2.962	.0051	.0717
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	65.28	.04073	-.0017	.0861	.0002	.0044	.0043
#1	.0001	65.09	.04079	-.0017	.0863	.0002	.0043	.0047
#2	-.0008	65.48	.04066	-.0017	.0859	.0002	.0045	.0040
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0042	.0019	4.336					
#1	.0041	.0026	4.328					
#2	.0043	.0012	4.344					

Sample Name: KQ1803087-04 Acquired: 3/14/2018 12:22:16 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 100 Test Type: Sample Type:
Comment: EM 031418B 1/100 K1801267-008S

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2515.2	32956.	3240.7
#1	2512.4	33042.	3244.2
#2	2517.9	32869.	3237.3

Sample Name: CCVB Acquired: 3/14/2018 12:24:43 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.815	10.46	-.0011	1.040	10.25	-.00006	.0067	.0000
Stddev	.015	.07	.0004	.004	.18	.00000	.0000	.000
%RSD	.1877	.6853	41.77	.4208	1.722	5.8347	.7260	971.8

#1	7.826	10.51	-.0014	1.043	10.12	-.00006	.0068	-.0001
#2	7.805	10.41	-.0008	1.037	10.37	-.00006	.0067	.0001

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	9.805	9.758	-.0001	-.0001	.0000	.0007	9.482
Stddev	.0001	.119	.160	.0005	.0005	.0017	.0008	.088
%RSD	61.63	1.212	1.642	731.2	352.4	7590.	110.9	.9258

#1	.0003	9.721	9.645	-.0004	.0002	-.0012	.0013	9.419
#2	.0001	9.889	9.871	.0003	-.0005	.0012	.0002	9.544

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	1.089	9.910	9.535	9.972	.98470	.9360	.0000
Stddev	.0014	.016	.095	.053	.082	.00011	.0029	.0010
%RSD	2640.	1.472	.9557	.5613	.8197	.01092	.3077	9349.

#1	.0010	1.101	9.843	9.497	10.03	.98477	.9380	-.0007
#2	-.0011	1.078	9.977	9.573	9.914	.98462	.9339	.0007

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 3/14/2018 12:24:43 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	10.04	10.74	.0041	9.626	-.0007	10.85	1.0179
Stddev	.0003	.04	.09	.0000	.046	.0003	.09	.0060
%RSD	100.9	.4227	.8179	.1681	.4797	37.47	.7925	.58855
#1	-.0006	10.07	10.80	.0041	9.659	-.0005	10.91	1.0137
#2	-.0001	10.01	10.68	.0041	9.593	-.0009	10.79	1.0222

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0009	.0003	.0006	.0004	.0005	1.031	1.040
Stddev	.0022	.0005	.0000	.0001	.0001	.0003	.004	.005
%RSD	4054.	59.03	13.03	25.59	35.05	51.52	.4077	.4448
#1	.0015	.0005	.0004	.0007	.0005	.0003	1.034	1.044
#2	-.0016	.0013	.0003	.0005	.0003	.0007	1.028	1.037

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2516.5	32928.	3280.5
Stddev	2.5	33.	48.4
%RSD	.09915	.10025	1.4768
#1	2514.7	32952.	3314.7
#2	2518.2	32905.	3246.2

Sample Name: CCVA Acquired: 3/14/2018 12:27:15 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2531	.2756	.2609	.2649	.2575	.25986	.2671	.2501
Stddev	.0002	.0068	.0017	.0023	.0000	.00010	.0003	.0007
%RSD	.0782	2.477	.6658	.8677	.0015	.03767	.1159	.2629

#1	.2530	.2708	.2621	.2632	.2575	.25979	.2674	.2506
#2	.2532	.2804	.2597	.2665	.2575	.25993	.2669	.2496

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2524	.4808	.5029	.2501	.2522	.2534	.2625	.2407
Stddev	.0006	.0039	.0026	.0006	.0004	.0013	.0015	.0064
%RSD	.2399	.8129	.5179	.2404	.1752	.4996	.5663	2.658

#1	.2529	.4836	.5010	.2506	.2525	.2543	.2615	.2362
#2	.2520	.4781	.5047	.2497	.2519	.2525	.2636	.2453

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2552	.0003	.2155	.2423	.2517	.25383	.2309	.2547
Stddev	.0016	.0002	.0604	.0018	.0050	.00086	.0021	.0011
%RSD	.6175	62.32	28.02	.7257	1.994	.33716	.9029	.4334

#1	.2563	.0002	.2582	.2411	.2552	.25444	.2324	.2555
#2	.2541	.0005	.1728	.2435	.2481	.25323	.2294	.2539

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 12:27:15 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2527	-.0008	2.743	.2627	.1241	.2630	.5066	.00016
Stddev	.0003	.0059	.049	.0019	.0048	.0018	.0104	.00001
%RSD	.1314	764.1	1.802	.7133	3.866	.6869	2.054	6.3454

#1	.2524	.0034	2.778	.2640	.1275	.2617	.5139	.00015
#2	.2529	-.0049	2.708	.2613	.1207	.2643	.4992	.00016

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2571	.2550	.2555	.2514	.2503	.2597	-.0013	-.0047
Stddev	.0013	.0015	.0004	.0008	.0000	.0004	.0002	.0026
%RSD	.5191	.5821	.1512	.3118	.0128	.1472	17.69	54.47

#1	.2581	.2560	.2558	.2509	.2503	.2599	-.0011	-.0029
#2	.2562	.2539	.2552	.2520	.2504	.2594	-.0014	-.0066

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2554.1	34011.	3301.2
Stddev	4.8	166.	10.9
%RSD	.18886	.48738	.32937

#1	2550.7	33894.	3308.9
#2	2557.5	34128.	3293.5

Sample Name: CCB Acquired: 3/14/2018 12:29:33 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0025	-.0036	-.0038	.0013	-.0001	-.00012	.0032	-.0002
Stddev	.0013	.0060	.0020	.0036	.0007	.00004	.0013	.0001
%RSD	50.36	163.6	52.16	265.7	504.0	33.167	42.50	68.39
#1	-.0034	.0006	-.0024	.0039	-.0007	-.00009	.0022	-.0001
#2	-.0016	-.0079	-.0052	-.0012	.0004	-.00015	.0041	-.0003
Check ? High Limit Low Limit	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0036	.0006	.0004	.0001	-.0002	.0011	.0040
Stddev	.0000	.0058	.0000	.0002	.0001	.0005	.0020	.0004
%RSD	82.54	163.3	4.430	59.46	49.34	227.0	189.4	9.433
#1	.0000	-.0077	.0006	.0002	.0001	.0001	-.0004	.0037
#2	.0001	.0006	.0006	.0006	.0001	-.0006	.0025	.0042
Check ? High Limit Low Limit	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0012	-.0068	.0014	.0030	.00008	-.0018	.0007
Stddev	.0019	.0013	.0103	.0000	.0013	.00002	.0012	.0006
%RSD	176.4	109.4	151.3	1.036	42.90	26.372	69.99	84.28
#1	-.0003	-.0003	.0005	.0014	.0021	.00010	-.0009	.0011
#2	.0024	-.0021	-.0140	.0014	.0039	.00007	-.0027	.0003
Check ? High Limit Low Limit	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass

*see return
am 3/14/18*

Sample Name: CCB Acquired: 3/14/2018 12:29:33 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0006	.0745	.0048	.0138	.0003	F .2095	.00012
Stddev	.0000	.0020	.0410	.0033	.0101	.0001	.0176	.00008
%RSD	6.164	315.3	54.98	69.08	72.89	57.35	8.426	65.192

#1	.0007	-.0020	.0455	.0025	.0067	.0004	.1970	.00017
#2	.0006	.0008	.1035	.0072	.0209	.0002	.2219	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit							.2000	
Low Limit							-.2000	

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	-.0010	.0001	-.0003	.0002	.0000	.0006	-.0120
Stddev	.0014	.0004	.0000	.0008	.0002	.0001	.0018	.0035
%RSD	218.5	38.74	38.27	256.3	118.2	1119.	311.6	29.36

#1	.0004	-.0007	.0001	.0002	.0003	-.0001	-.0007	-.0145
#2	-.0017	-.0013	.0001	-.0008	.0000	.0001	.0019	-.0095

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2513.9	33571.	3266.6
Stddev	14.5	25.	2.4
%RSD	.57621	.07527	.07351

#1	2503.7	33589.	3268.3
#2	2524.1	33553.	3264.9

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3/14/18

Sample Name: CCB Acquired: 3/14/2018 12:33:35 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	-.0014	-.0076	.0028	.0002	-.00003	.0022	.0000
Stddev	.0004	.0047	.0020	.0014	.0000	.00013	.0018	.000
%RSD	45.96	336.3	26.48	50.60	14.63	380.91	80.06	82.16

#1	-.0006	-.0048	-.0090	.0018	.0002	.00006	.0010	-.0001
#2	-.0011	.0019	-.0062	.0037	.0002	-.00012	.0035	.0000

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0036	.0002	.0001	.0002	-.0002	.0006	.0098
Stddev	.0001	.0013	.0001	.0001	.0002	.0003	.0012	.0032
%RSD	147.4	35.15	24.52	102.7	106.2	108.2	186.8	33.04

#1	.0000	-.0045	.0003	.0000	.0000	-.0001	-.0002	.0075
#2	.0002	-.0027	.0002	.0002	.0003	-.0004	.0015	.0121

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	.0015	.0132	.0004	.0011	.00007	-.0015	.0002
Stddev	.0000	.0001	.0205	.0001	.0006	.00002	.0003	.0008
%RSD	1.769	4.244	155.1	19.08	59.33	33.173	20.87	330.4

#1	.0021	.0015	.0277	.0004	.0015	.00009	-.0018	.0008
#2	.0020	.0015	-.0013	.0005	.0006	.00005	-.0013	-.0003

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 12:33:35 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0003	.0301	.0002	-.0069	-.0008	.1653	-.00001
Stddev	.0003	.0014	.0775	.0016	.0263	.0017	.0109	.00010
%RSD	103.7	467.8	257.3	656.3	379.9	214.2	6.614	937.40

#1	.0005	.0007	-.0247	.0014	-.0255	.0004	.1576	-.00008
#2	.0001	-.0013	.0850	-.0009	.0117	-.0020	.1730	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0009	.0003	-.0003	.0002	.0001	-.0002	-.0083
Stddev	.0026	.0005	.0002	.0001	.0005	.0001	.0034	.0037
%RSD	274.5	50.81	71.89	46.21	250.5	81.91	1568.	44.53

#1	-.0009	.0012	.0001	-.0004	-.0001	.0001	-.0026	-.0109
#2	.0028	.0006	.0004	-.0002	.0005	.0000	.0022	-.0057

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2525.2	33638.	3280.6
Stddev	4.6	250.	24.4
%RSD	.18368	.74387	.74345

#1	2528.5	33815.	3263.3
#2	2522.0	33461.	3297.8

Sample Name: K1801267-017 Acquired: 3/14/2018 12:36:33 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 100 Test Type: Sample Type:
 Comment: EM 031418B 1/100

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0009	.0026	.0003	.00000	.0273	-.0001	.0000
#1	.0002	-.0016	.0010	.0002	.00015	.0268	-.0001	.0001
#2	.0003	-.0002	.0042	.0003	-.00014	.0278	-.0001	-.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.200	.0004	.0001	-.0001	-.0003	.0074	.0011	.0008
#1	1.197	.0008	.0007	.0005	.0000	.0052	.0025	.0027
#2	1.203	.0000	-.0006	-.0008	-.0006	.0095	-.0003	-.0010
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.643	.00115	.0066	.0003	.0149	1.767	.0013	.0786
#1	2.642	.00111	.0064	.0001	.0122	1.747	-.0001	.0840
#2	2.643	.00119	.0067	.0005	.0176	1.786	.0027	.0733
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	36.18	.02029	.0016	-.0006	-.0003	.0000	.0004
#1	-.0006	36.15	.02036	-.0002	-.0004	-.0006	-.0001	.0001
#2	-.0010	36.21	.02023	.0033	-.0007	.0000	.0000	.0007
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0016	.7014					
#1	.0001	-.0019	.7102					
#2	.0002	-.0014	.6926					

Sample Name: K1801267-017 Acquired: 3/14/2018 12:36:33 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 100 Test Type: Sample Type:
Comment: EM 031418B 1/100

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2507.5	33032.	3245.4
#1	2502.8	33011.	3243.2
#2	2512.3	33052.	3247.7

Sample Name: K1802063-001 Acquired: 3/14/2018 12:38:59 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	-.0026	.0035	-.0005	-.00019	.0045	-.0001	-.0001
#1	.0025	-.0024	.0086	-.0008	-.00018	.0039	-.0001	-.0001
#2	.0045	-.0028	-.0016	-.0001	-.00021	.0050	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0400	.0003	.0005	.0004	.0006	.0089	-.0006	-.0008
#1	.0400	.0005	.0008	.0001	.0024	.0056	-.0010	-.0015
#2	.0401	.0000	.0001	.0008	-.0013	.0122	-.0002	-.0002
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0061	.00005	.0008	.0008	.0062	.0609	.0005	.0323
#1	.0062	.00008	.0009	.0005	.0033	.0848	-.0009	.0339
#2	.0059	.00001	.0007	.0011	.0091	.0370	.0019	.0306
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	.1621	.00018	-.0022	-.0010	.0002	.0001	.0051
#1	-.0002	.1562	.00015	-.0004	-.0012	.0001	.0000	.0054
#2	-.0009	.1679	.00021	-.0040	-.0007	.0004	.0002	.0049
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0054	.0021	.0000					
#1	.0053	-.0014	.0037					
#2	.0056	.0056	-.0038					

Sample Name: K1802063-001 Acquired: 3/14/2018 12:38:59 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2526.8	33659.	3221.5
#1	2520.0	33552.	3230.2
#2	2533.5	33767.	3212.7

Sample Name: K1802063-002 Acquired: 3/14/2018 12:41:26 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032	-.0062	.0017	.0002	-.00020	.0047	-.0002	.0001
#1	.0037	-.0046	.0016	.0003	-.00012	.0053	-.0002	.0002
#2	.0027	-.0078	.0017	.0001	-.00028	.0042	-.0001	-.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0536	-.0004	.0000	.0000	.0003	.0127	.0008	-.0001
#1	.0540	.0000	.0000	.0000	.0016	.0103	.0004	-.0005
#2	.0533	-.0009	-.0001	-.0001	-.0010	.0151	.0012	.0003
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0134	.00028	.0008	.0004	.0166	.0326	.0016	.0435
#1	.0133	.00028	.0007	.0003	.0150	.0577	.0045	.0480
#2	.0135	.00028	.0009	.0006	.0183	.0076	-.0012	.0390
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	.1583	.00027	-.0013	-.0006	.0002	.0000	.0043
#1	-.0011	.1558	.00024	-.0021	.0000	.0003	.0000	.0047
#2	-.0005	.1609	.00029	-.0005	-.0013	.0002	-.0001	.0039
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0045	.0028	.0107					
#1	.0043	.0031	.0121					
#2	.0046	.0026	.0094					

Sample Name: K1802063-002 Acquired: 3/14/2018 12:41:26 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2534.7	33975.	3247.1
#1	2527.4	33927.	3228.5
#2	2542.0	34022.	3265.7

Sample Name: K1802063-003 Acquired: 3/14/2018 12:43:53 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	-.0038	.0043	-.0005	-.00015	.0040	-.0001	-.0001
#1	.0012	-.0010	.0043	-.0004	-.00010	.0036	-.0001	-.0001
#2	.0026	-.0067	.0043	-.0005	-.00020	.0045	-.0002	-.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0327	-.0007	.0002	-.0003	.0001	-.0004	-.0011	.0004
#1	.0329	-.0007	.0003	-.0003	.0008	-.0025	-.0018	-.0009
#2	.0324	-.0007	.0002	-.0003	-.0005	.0016	-.0003	.0017
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0054	.00004	.0010	-.0002	.0214	.0658	-.0002	.0331
#1	.0055	.00005	.0012	.0001	.0233	.0002	-.0026	.0222
#2	.0053	.00003	.0008	-.0005	.0195	.1315	.0022	.0440
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	.1689	.00014	.0002	-.0010	.0001	-.0006	.0025
#1	-.0023	.1587	.00014	.0001	-.0017	.0001	-.0007	.0024
#2	.0002	.1791	.00015	.0003	-.0003	.0001	-.0004	.0027
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0027	.0013	.0117					
#1	.0028	-.0007	.0128					
#2	.0026	.0032	.0106					

Sample Name: K1802063-003 Acquired: 3/14/2018 12:43:53 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2553.5	34153.	3277.9
#1	2559.1	34024.	3272.6
#2	2547.8	34281.	3283.3

Sample Name: K1802063-004 Acquired: 3/14/2018 12:46:20 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	.0016	-.0007	-.0006	-.00019	.0015	-.0002	.0000

#1	.0110	.0058	-.0014	-.0005	-.00038	.0026	-.0003	-.0001
#2	.0077	-.0026	-.0001	-.0007	.00000	.0005	-.0001	.0000

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0715	.0000	.0000	.0001	.0014	.0086	.0023	-.0002

#1	.0714	-.0011	-.0002	.0005	.0018	.0086	.0004	.0008
#2	.0715	.0011	.0002	-.0003	.0010	.0086	.0042	-.0013

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0111	.00031	.0002	.0014	.0259	.1116	.0015	.0224

#1	.0113	.00033	.0004	.0017	.0259	.0508	.0022	.0203
#2	.0109	.00029	.0001	.0011	.0259	.1723	.0007	.0245

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	.1392	.00036	-.0006	-.0020	.0001	.0001	.0028

#1	-.0013	.1271	.00042	-.0010	-.0021	.0001	.0009	.0030
#2	-.0013	.1514	.00029	-.0001	-.0019	.0002	-.0006	.0026

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0031	.0002	.0130

#1	.0030	.0013	.0136
#2	.0031	-.0009	.0124

Sample Name: K1802063-004 Acquired: 3/14/2018 12:46:20 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2555.2	34208.	3289.1
#1	2554.5	34222.	3300.3
#2	2555.9	34193.	3277.8

Sample Name: K1802063-005 Acquired: 3/14/2018 12:48:46 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0167	-.0015	-.0017	-.0001	-.00017	.0036	-.0002	.0000
#1	.0181	-.0032	-.0042	-.0003	-.00015	.0027	-.0002	.0000
#2	.0152	.0002	.0008	.0002	-.00019	.0045	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0934	.0014	-.0002	.0005	.0011	.0174	-.0004	-.0002
#1	.0934	.0008	-.0010	.0005	.0002	.0137	.0007	-.0002
#2	.0933	.0019	.0005	.0005	.0019	.0212	-.0016	-.0003
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0174	.00021	.0007	.0014	.0175	.1136	.0001	.0250
#1	.0175	.00012	.0011	.0011	.0149	.1818	.0015	.0203
#2	.0173	.00031	.0003	.0016	.0202	.0455	-.0013	.0296
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	.1534	.00056	-.0017	-.0016	.0000	.0003	.0052
#1	-.0005	.1654	.00063	-.0007	-.0022	.0003	.0005	.0054
#2	-.0010	.1415	.00048	-.0028	-.0011	-.0003	.0002	.0051
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0055	.0004	.0154					
#1	.0054	.0013	.0139					
#2	.0055	-.0005	.0169					

Sample Name: K1802063-005 Acquired: 3/14/2018 12:48:46 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2547.6	34093.	3260.7
#1	2544.1	34051.	3264.5
#2	2551.1	34135.	3256.8

Sample Name: K1802063-006 Acquired: 3/14/2018 12:51:13 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0266	-.0017	.0019	-.0002	-.00003	.0047	-.0001	-.0001
#1	.0262	-.0018	.0007	-.0004	-.00007	.0043	-.0003	-.0003
#2	.0269	-.0016	.0030	-.0001	.00001	.0050	.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0722	.0004	.0003	-.0004	.0008	.0162	.0016	-.0003
#1	.0720	.0002	-.0002	-.0002	.0004	.0201	.0042	-.0011
#2	.0723	.0007	.0007	-.0006	.0012	.0123	-.0009	.0006
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0051	.00005	.0002	.0004	.0182	.0386	.0041	.0276
#1	.0051	.00006	.0002	.0008	.0194	.0726	.0074	.0238
#2	.0050	.00004	.0002	.0000	.0170	.0047	.0007	.0314
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0019	.1206	.00068	.0007	-.0012	.0001	-.0002	.0015
#1	-.0011	.1292	.00066	.0010	-.0008	.0001	.0000	.0017
#2	-.0027	.1119	.00070	.0005	-.0015	.0001	-.0004	.0014
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0015	-.0002	.0066					
#1	.0017	-.0020	.0077					
#2	.0014	.0017	.0055					

Sample Name: K1802063-006 Acquired: 3/14/2018 12:51:13 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2553.8	34349.	3299.6
#1	2544.9	34165.	3299.0
#2	2562.6	34534.	3300.2

Sample Name: K1802153-001 Acquired: 3/14/2018 12:53:40 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.098	-.0040	.0038	.0451	-.00010	.0195	.0000	.0001
#1	1.106	-.0007	.0042	.0452	.00005	.0184	.0000	.0001
#2	1.091	-.0074	.0035	.0450	-.00025	.0207	.0000	.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.38	.0020	.0033	.0092	.0096	9.827	.0325	.0027
#1	25.37	.0025	.0030	.0094	.0096	9.835	.0316	.0020
#2	25.39	.0014	.0036	.0090	.0096	9.819	.0335	.0035
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.296	.50836	.0034	.0030	.3770	2.303	-.0010	14.46
#1	9.312	.50727	.0032	.0029	.3782	2.312	.0008	14.50
#2	9.280	.50944	.0036	.0031	.3757	2.294	-.0028	14.42
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	7.774	.12676	-.0059	-.0001	.1492	.0073	.1075
#1	-.0002	7.758	.12675	-.0097	-.0001	.1501	.0074	.1077
#2	-.0005	7.790	.12677	-.0022	-.0001	.1484	.0072	.1073
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.1112	.0017	1.369					
#1	.1118	.0027	1.370					
#2	.1106	.0006	1.369					

Sample Name: K1802153-001 Acquired: 3/14/2018 12:53:40 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2513.9	33557.	3316.9
#1	2511.0	33793.	3315.9
#2	2516.8	33321.	3317.8

Sample Name: KQ1802836-02 Acquired: 3/14/2018 12:56:09 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801864-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	-.0007	-.0010	-.0004	-.00026	.0024	.0000	-.0003
#1	-.0011	-.0020	.0014	.0002	-.00002	.0041	.0000	-.0002
#2	-.0009	.0007	-.0035	-.0009	-.00049	.0006	-.0001	-.0004
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0077	.0000	-.0002	-.0006	-.0005	.0073	.0010	.0004
#1	.0083	.0002	-.0003	-.0005	-.0005	.0086	-.0001	-.0008
#2	.0071	-.0001	.0000	-.0006	-.0005	.0060	.0020	.0015
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0046	.00010	.0007	.0003	.0126	.0086	.0029	.0237
#1	.0053	.00012	.0004	.0000	.0109	.0184	.0057	.0274
#2	.0040	.00007	.0009	.0006	.0143	-.0011	.0001	.0200
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.1384	.00007	-.0009	-.0004	.0005	-.0005	.0004
#1	.0000	.1385	.00008	-.0005	-.0006	.0005	-.0003	.0001
#2	-.0001	.1384	.00006	-.0013	-.0003	.0005	-.0007	.0007
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0004	-.0014	-.0052					
#1	.0004	-.0019	-.0092					
#2	.0005	-.0009	-.0011					

Sample Name: KQ1802836-02 Acquired: 3/14/2018 12:56:09 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-MB

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2567.7	34181.	3286.6
#1	2571.2	34132.	3298.2
#2	2564.3	34230.	3275.1

Sample Name: KQ1802836-01 Acquired: 3/14/2018 12:58:36 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-LCSW

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.100	1.768	2.293	4.880	.11702	.4624	1.061	1.073
#1	5.110	1.777	2.297	4.892	.11689	.4605	1.064	1.075
#2	5.091	1.759	2.289	4.869	.11715	.4643	1.059	1.070
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.45	.4599	1.152	.5595	.6038	2.208	2.195	.0003
#1	11.47	.4588	1.154	.5596	.6033	2.210	2.202	.0004
#2	11.43	.4610	1.151	.5594	.6044	2.206	2.189	.0002
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.45	1.1215	.9327	1.143	9.152	12.78	2.141	.0239
#1	11.45	1.1233	.9358	1.143	9.182	12.80	2.134	.0247
#2	11.45	1.1198	.9296	1.142	9.122	12.76	2.148	.0232
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5560	12.77	.00042	2.167	.0008	.0003	1.182	1.098
#1	.5555	12.79	.00038	2.168	.0017	.0004	1.183	1.100
#2	.5566	12.75	.00045	2.166	-.0002	.0002	1.181	1.096
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.119	-.0007	-.0107					
#1	1.120	.0003	-.0132					
#2	1.118	-.0017	-.0082					

Sample Name: KQ1802836-01 Acquired: 3/14/2018 12:58:36 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-LCSW

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2524.6	33609.	3306.7
#1	2523.0	33569.	3301.3
#2	2526.1	33648.	3312.0

Sample Name: CCVB Acquired: 3/14/2018 13:00:50 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.729	10.90	-.0021	1.065	10.38	-.00006	.0036	.0000
Stddev	.003	.05	.0007	.009	.15	.00003	.0026	.0000
%RSD	.0369	.4285	33.19	.8775	1.427	45.356	72.33	66.79

#1	7.731	10.87	-.0016	1.071	10.48	-.00008	.0018	.0000
#2	7.727	10.94	-.0026	1.058	10.27	-.00004	.0054	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	9.903	9.913	.0000	-.0003	-.0007	-.0006	9.560
Stddev	.000	.016	.083	.001	.0000	.0008	.0002	.013
%RSD	1376.	.1596	.8334	4930.	5.984	104.4	33.20	.1403

#1	.0001	9.914	9.972	.0006	-.0003	-.0013	-.0007	9.569
#2	-.0001	9.891	9.855	-.0006	-.0003	-.0002	-.0005	9.550

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	1.101	10.02	9.557	10.11	.98511	.9204	.0010
Stddev	.0014	.002	.13	.017	.04	.00357	.0012	.0003
%RSD	368.9	.2224	1.304	.1734	.3788	.36204	.1271	29.51

#1	-.0006	1.099	9.924	9.569	10.08	.98763	.9195	.0008
#2	.0013	1.102	10.11	9.545	10.13	.98259	.9212	.0013

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 3/14/2018 13:00:50 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.12	10.96	.0024	9.753	-.0016	10.87	1.0255
Stddev	.0003	.03	.07	.0046	.011	.0009	.04	.0001
%RSD	301.3	.2492	.6793	192.0	.1107	52.62	.3298	.01080
#1	-.0003	10.13	10.90	-.0009	9.746	-.0022	10.85	1.0256
#2	.0001	10.10	11.01	.0057	9.761	-.0010	10.90	1.0254

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0006	.0003	.0003	.0002	.0006	1.044	1.058
Stddev	.0009	.0004	.0000	.0004	.0000	.0001	.006	.003
%RSD	242.3	65.10	15.15	111.3	3.853	10.61	.5713	.2834
#1	-.0003	-.0003	.0003	.0006	.0002	.0005	1.048	1.060
#2	.0010	-.0008	.0004	.0001	.0002	.0006	1.040	1.055

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2560.0	33849.	3312.6
Stddev	4.5	46.	13.5
%RSD	.17744	.13582	.40756
#1	2563.2	33882.	3303.1
#2	2556.8	33817.	3322.2

Sample Name: CCVA Acquired: 3/14/2018 13:03:22 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2535	.2825	.2665	.2679	.2601	.26218	.2677	.2514
Stddev	.0011	.0061	.0026	.0041	.0010	.00013	.0002	.0011
%RSD	.4389	2.148	.9628	1.531	.3784	.04859	.0777	.4241

#1	.2543	.2867	.2647	.2708	.2608	.26209	.2676	.2521
#2	.2528	.2782	.2683	.2650	.2594	.26227	.2679	.2506

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2532	.5031	.5072	.2532	.2530	.2545	.2637	.2467
Stddev	.0009	.0274	.0023	.0008	.0005	.0009	.0019	.0007
%RSD	.3475	5.437	.4594	.3281	.2049	.3398	.7302	.2832

#1	.2539	.5224	.5089	.2538	.2534	.2551	.2651	.2462
#2	.2526	.4838	.5056	.2526	.2526	.2538	.2624	.2472

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2558	.0018	.2343	.2415	.2473	.25477	.2309	.2561
Stddev	.0000	.0026	.0078	.0003	.0008	.00023	.0008	.0008
%RSD	.0182	144.7	3.331	.1307	.3265	.09156	.3551	.3003

#1	.2557	.0000	.2398	.2417	.2467	.25493	.2315	.2566
#2	.2558	.0036	.2288	.2413	.2478	.25460	.2303	.2556

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 13:03:22 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2539	-.0036	2.719	.2686	.1106	.2649	.3716	.00011
Stddev	.0002	.0065	.004	.0041	.0057	.0002	.0127	.00012
%RSD	.0633	180.7	.1658	1.512	5.118	.0630	3.408	112.45

#1	.2541	-.0082	2.715	.2657	.1066	.2650	.3805	.00019
#2	.2538	.0010	2.722	.2715	.1146	.2648	.3626	.00002

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2588	.2547	.2567	.2517	.2509	.2621	.0030	-.0206
Stddev	.0024	.0005	.0003	.0007	.0003	.0007	.0006	.0101
%RSD	.9247	.1985	.1314	.2644	.1226	.2742	19.46	48.92

#1	.2604	.2544	.2569	.2522	.2511	.2626	.0026	-.0135
#2	.2571	.2551	.2565	.2512	.2506	.2616	.0034	-.0278

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2561.7	34021.	3274.7
Stddev	1.3	15.	4.5
%RSD	.04901	.04445	.13846

#1	2562.6	34031.	3277.9
#2	2560.8	34010.	3271.5

Sample Name: CCB Acquired: 3/14/2018 13:05:39 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0017	.0000	-.0048	.0012	-.0005	-.00012	.0040	.0000
Stddev	.0023	.004	.0014	.0008	.0005	.00010	.0007	.000
%RSD	133.7	7816.	29.50	68.61	86.78	83.223	17.19	128.6

#1	-.0033	-.0028	-.0038	.0017	-.0002	-.00019	.0035	.0000
#2	-.0001	.0027	-.0058	.0006	-.0009	-.00005	.0044	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0021	.0000	.0001	.0000	-.0003	.0006	.0073
Stddev	.0000	.0007	.000	.0001	.0002	.0005	.0004	.0059
%RSD	21.12	36.40	334.5	60.02	730.2	137.7	68.23	81.85

#1	.0001	-.0015	-.0002	.0001	-.0001	-.0007	.0003	.0115
#2	.0002	-.0026	.0001	.0001	.0002	.0000	.0009	.0031

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0004	.0517	-.0001	.0011	-.00004	-.0023	.0010
Stddev	.0033	.0016	.0304	.0000	.0019	.00013	.0012	.0002
%RSD	315.4	391.0	58.71	.9712	181.8	291.94	49.80	18.81

#1	.0034	-.0016	.0732	-.0001	.0025	.00005	-.0015	.0008
#2	-.0013	.0007	.0303	-.0001	-.0003	-.00014	-.0031	.0011

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 13:05:39 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0005	.0025	.0016	-.0003	.0088	-.0003	.0860	.00017
Stddev	.0005	.0009	.0135	.0032	.0006	.0006	.0029	.00013
%RSD	91.34	36.83	842.3	963.8	7.191	184.2	3.335	76.261

#1	.0009	.0031	.0111	-.0026	.0084	-.0007	.0840	.00027
#2	.0002	.0018	-.0079	.0019	.0093	.0001	.0880	.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0017	-.0008	-.0001	-.0003	.0003	.0000	-.0020	-.0131
Stddev	.0027	.0001	.0001	.0005	.0003	.000	.0004	.0030
%RSD	157.4	8.440	159.0	203.7	114.8	2663.	17.15	23.21

#1	-.0036	-.0008	-.0001	-.0007	.0001	.0001	-.0023	-.0110
#2	.0002	-.0008	.0000	.0001	.0005	-.0001	-.0018	-.0153

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2553.1	33806.	3256.7
Stddev	9.0	80.	.1
%RSD	.35418	.23807	.00181

#1	2546.7	33749.	3256.6
#2	2559.5	33863.	3256.7

Sample Name: LLCCV Acquired: 3/14/2018 13:08:14 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0085	.0117	.0169	F .0142	.0040	.00082	.0229	.0009
Stddev	.0005	.0031	.0026	.0018	.0011	.00012	.0010	.0001
%RSD	5.612	26.19	15.67	12.35	26.29	14.992	4.570	10.55

#1	.0082	.0095	.0150	.0130	.0033	.00091	.0222	.0008
#2	.0088	.0138	.0188	.0154	.0047	.00073	.0237	.0010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0100				
Range				30.00%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0158	.0207	.0042	.0024	.0042	.0043	.0232
Stddev	.0002	.0101	.0000	.0005	.0004	.0010	.0010	.0028
%RSD	15.20	63.69	.2064	13.07	17.19	25.14	22.25	12.19

#1	.0010	.0229	.0206	.0046	.0021	.0034	.0050	.0212
#2	.0012	.0087	.0207	.0038	.0027	.0049	.0036	.0252

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0123	.0207	.0412	.0048	.0060	.00104	.0011	.0047
Stddev	.0011	.0013	.0269	.0000	.0007	.00019	.0018	.0000
%RSD	9.078	6.192	65.47	.0448	11.55	17.830	163.2	.6775

#1	.0130	.0198	.0602	.0048	.0065	.00117	.0023	.0047
#2	.0115	.0216	.0221	.0048	.0055	.00091	-.0002	.0047

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

*See rerun
am 3/14/18*

Sample Name: LLCCV Acquired: 3/14/2018 13:08:14 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0044	.0449	F .2832	.0223	.1933	.0042	F .2994	.00102
Stddev	.0002	.0046	.0236	.0003	.0087	.0005	.0081	.00023
%RSD	5.343	10.20	8.320	1.222	4.514	12.43	2.710	22.160

#1	.0045	.0417	.2998	.0225	.1994	.0046	.3052	.00118
#2	.0042	.0481	.2665	.0221	.1871	.0039	.2937	.00086

Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			.2000				.2000	
Range			30.00%				30.00%	

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0100	.0211	.0022	.0039	.0042	.0044	.0240	F .0257
Stddev	.0011	.0013	.0001	.0005	.0001	.0003	.0011	.0024
%RSD	11.15	5.979	3.704	11.47	2.887	5.783	4.401	9.323

#1	.0108	.0202	.0023	.0043	.0041	.0042	.0233	.0273
#2	.0092	.0220	.0021	.0036	.0043	.0046	.0248	.0240

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value								.0400
Range								-30.00%

Int. Std.	Y_2243	Y_3600	Y_3600.2
Units	Cts/S	Cts/S	Cts/S
Avg	2563.6	33890.	3279.6
Stddev	8.0	25.	4.5
%RSD	.31326	.07449	.13826

#1	2569.2	33872.	3276.4
#2	2557.9	33908.	3282.8

*see rerun
 am 3/14/18*

Sample Name: LLCCV Acquired: 3/14/2018 13:13:42 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	.0078	.0180	.0116	.0038	.00094	.0230	.0010
Stddev	.0001	.0021	.0054	.0017	.0002	.00024	.0013	.0000
%RSD	1.186	26.41	30.03	14.47	6.378	25.093	5.696	1.652

#1	.0094	.0093	.0142	.0104	.0037	.00077	.0240	.0010
#2	.0095	.0064	.0219	.0128	.0040	.00111	.0221	.0010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0180	.0206	.0044	.0018	.0041	.0051	.0255
Stddev	.0003	.0023	.0000	.0005	.0005	.0002	.0006	.0104
%RSD	29.73	12.64	.0898	11.14	26.53	5.150	12.68	40.67

#1	.0012	.0196	.0206	.0041	.0015	.0040	.0056	.0182
#2	.0008	.0164	.0206	.0048	.0022	.0043	.0046	.0329

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0106	.0211	.0269	.0049	F .0071	.00100	-.0006	.0047
Stddev	.0021	.0026	.0326	.0002	.0026	.00003	.0010	.0001
%RSD	20.01	12.38	120.9	3.244	35.69	2.8963	174.9	1.215

#1	.0121	.0229	.0500	.0048	.0090	.00098	-.0013	.0046
#2	.0091	.0192	.0039	.0050	.0053	.00102	.0001	.0047

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
Value					.0050			
Range					30.00%			

Sample Name: LLCCV Acquired: 3/14/2018 13:13:42 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0043	.0407	.2351	.0184	.1830	.0033	F .3022	.00124
Stddev	.0002	.0036	.0533	.0080	.0098	.0007	.0052	.00008
%RSD	5.540	8.751	22.67	43.52	5.379	20.01	1.712	6.1624
#1	.0041	.0432	.1974	.0241	.1899	.0038	.2985	.00129
#2	.0045	.0381	.2728	.0127	.1760	.0028	.3058	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							.2000	
Range							30.00%	

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0107	.0215	.0022	.0041	.0041	.0041	.0225	.0320
Stddev	.0026	.0015	.0000	.0000	.0002	.0004	.0005	.0053
%RSD	24.33	7.037	1.920	.1445	5.052	8.556	2.390	16.61
#1	.0125	.0204	.0022	.0041	.0040	.0044	.0229	.0357
#2	.0088	.0226	.0022	.0041	.0043	.0039	.0221	.0282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2543.1	33709.	3260.5
Stddev	9.1	4.	21.5
%RSD	.35779	.01321	.66082
#1	2549.5	33706.	3275.7
#2	2536.7	33713.	3245.3

*2X
 am 3/14/18

Sample Name: LLCCV,0.5 Acquired: 3/14/2018 13:16:12 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0191	.0171	.0368	.0228	.0077	.00183	.0433	.0020
Stddev	.0009	.0024	.0000	.0016	.0009	.00001	.0012	.0000
%RSD	4.913	13.94	.0629	6.905	11.13	.39061	2.843	.1080

#1	.0198	.0188	.0369	.0217	.0083	.00182	.0425	.0020
#2	.0185	.0154	.0368	.0239	.0071	.00183	.0442	.0020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0454	.0416	.0083	.0042	.0084	.0087	.0390
Stddev	.0001	.0018	.0003	.0007	.0004	.0012	.0007	.0004
%RSD	3.288	4.009	.6081	8.163	8.896	14.47	8.485	1.005

#1	.0020	.0467	.0418	.0088	.0039	.0093	.0092	.0392
#2	.0021	.0441	.0415	.0079	.0045	.0075	.0081	.0387

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0220	.0431	.0112	.0099	.0101	.00206	F .0027	.0088
Stddev	.0001	.0012	.0408	.0002	.0025	.00009	.0033	.0001
%RSD	.3410	2.842	364.0	2.219	24.95	4.4975	120.8	1.183

#1	.0219	.0423	-.0176	.0097	.0083	.00199	.0004	.0088
#2	.0220	.0440	.0400	.0100	.0119	.00212	.0050	.0089

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							.0020	
Range							30.00%	

Sample Name: LLCCV,0.5 Acquired: 3/14/2018 13:16:12 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0083	.0805	.4355	.0398	.3931	.0089	.5109	.00210
Stddev	.0008	.0007	.0204	.0027	.0186	.0002	.0202	.00019
%RSD	9.587	.8341	4.680	6.671	4.723	2.513	3.948	9.2219
#1	.0078	.0800	.4211	.0379	.3799	.0090	.4967	.00196
#2	.0089	.0810	.4500	.0417	.4062	.0087	.5252	.00223

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0199	.0418	.0043	.0079	.0082	.0082	.0411	.0752
Stddev	.0015	.0004	.0002	.0004	.0001	.0006	.0003	.0058
%RSD	7.787	.8933	3.603	4.572	1.079	7.053	.7267	7.747
#1	.0188	.0420	.0042	.0082	.0083	.0086	.0413	.0794
#2	.0210	.0415	.0044	.0077	.0082	.0078	.0409	.0711

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2550.0	33679.	3249.1
Stddev	4.9	98.	24.1
%RSD	.19046	.29131	.74167
#1	2553.5	33748.	3232.1
#2	2546.6	33609.	3266.1

Sample Name: K1801864-011 Acquired: 3/14/2018 13:18:51 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3850	.0485	.6144	.0113	-.00005	.0089	-.0001	.0000
#1	.3801	.0475	.6195	.0113	-.00013	.0078	-.0001	.0002
#2	.3899	.0495	.6092	.0114	.00003	.0101	-.0001	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.56	.0006	.0004	.0005	.0021	2.311	.0028	.0015
#1	12.56	.0006	.0004	.0003	.0008	2.299	.0036	.0025
#2	12.57	.0005	.0005	.0007	.0034	2.322	.0020	.0005
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.024	.08803	.0017	.0004	.1165	1.240	.0018	7.161
#1	2.025	.08764	.0018	.0007	.1182	1.244	.0069	7.195
#2	2.024	.08842	.0016	.0000	.1149	1.235	-.0033	7.128
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	4.004	.07600	-.0014	.0001	.0120	.0016	.0021
#1	-.0004	4.029	.07617	-.0015	-.0007	.0116	.0014	.0020
#2	.0001	3.979	.07583	-.0014	.0009	.0124	.0018	.0021
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0024	.0020	4.628					
#1	.0023	.0027	4.632					
#2	.0024	.0013	4.624					

Sample Name: K1801864-011 Acquired: 3/14/2018 13:18:51 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2512.9	33374.	3231.4
#1	2511.2	33421.	3245.2
#2	2514.7	33327.	3217.6

Sample Name: K1801864-011L Acquired: 3/14/2018 13:21:21 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 031418B 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0271	.0044	.1215	.0017	-.00010	.0015	-.0002	.0001
#1	.0275	.0059	.1213	.0020	-.00022	.0012	-.0001	.0001
#2	.0268	.0028	.1217	.0015	.00002	.0019	-.0002	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.592	.0004	.0004	.0002	.0020	.4192	.0018	.0013
#1	2.609	.0008	.0004	-.0006	.0024	.4237	.0021	.0023
#2	2.574	.0000	.0004	.0010	.0017	.4147	.0016	.0003
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4146	.01773	.0008	-.0001	.0202	.2919	-.0010	1.409
#1	.4184	.01770	.0007	-.0002	.0213	.2568	-.0026	1.409
#2	.4109	.01776	.0010	.0001	.0191	.3269	.0006	1.408
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.9056	.01511	-.0018	-.0007	.0012	.0006	.0006
#1	-.0002	.9092	.01529	-.0024	-.0003	.0012	.0002	.0004
#2	.0001	.9020	.01493	-.0011	-.0011	.0012	.0010	.0007
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	.0009	.9765					
#1	.0004	.0022	.9776					
#2	.0006	-.0003	.9753					

Sample Name: K1801864-011L Acquired: 3/14/2018 13:21:21 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 5 Test Type: Sample Type:
Comment: EM 031418B 1/5

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2567.6	33996.	3265.9
#1	2560.1	33905.	3236.6
#2	2575.1	34087.	3295.2

Sample Name: KQ1802836-03 Acquired: 3/14/2018 13:23:47 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801864-011D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2723	.0431	.6232	.0115	.00003	.0072	-.0001	-.0001
#1	.2716	.0431	.6258	.0115	.00007	.0072	-.0001	.0000
#2	.2729	.0430	.6205	.0116	-.00001	.0072	-.0001	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.67	-.0002	.0000	.0000	.0009	2.231	.0012	.0015
#1	12.67	.0002	.0000	.0003	.0013	2.235	.0015	.0015
#2	12.67	-.0006	.0000	-.0003	.0005	2.226	.0010	.0016
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.033	.08833	.0014	.0002	.1107	1.357	-.0048	7.301
#1	2.037	.08826	.0016	.0004	.1103	1.346	-.0031	7.249
#2	2.029	.08841	.0013	.0000	.1111	1.368	-.0065	7.353
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	4.112	.07708	-.0006	-.0010	.0099	.0010	.0023
#1	-.0003	4.077	.07717	-.0013	.0005	.0098	.0012	.0027
#2	-.0004	4.148	.07699	.0002	-.0025	.0100	.0008	.0020
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0021	-.0001	4.785					
#1	.0020	.0000	4.791					
#2	.0022	-.0001	4.779					

Sample Name: KQ1802836-03 Acquired: 3/14/2018 13:23:47 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-011D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2534.3	34119.	3289.3
#1	2530.6	33932.	3263.1
#2	2538.0	34306.	3315.5

Sample Name: KQ1802836-04 Acquired: 3/14/2018 13:26:17 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801864-011S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.825	.4851	1.487	.9030	.04332	.4440	.0417	.0422
#1	1.826	.4865	1.486	.9019	.04294	.4392	.0417	.0420
#2	1.824	.4836	1.488	.9041	.04370	.4489	.0417	.0423
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.50	.1733	.4293	.2138	.2204	2.916	.4243	.0014
#1	20.51	.1738	.4299	.2134	.2194	2.908	.4235	.0013
#2	20.50	.1727	.4287	.2141	.2214	2.924	.4250	.0016
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.33	.50223	.9076	.4274	8.732	10.20	.8228	6.893
#1	10.35	.50382	.9095	.4274	8.754	10.19	.8270	6.910
#2	10.30	.50064	.9056	.4275	8.711	10.21	.8186	6.876
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0424	12.90	.07312	.1733	.0001	.0094	.4431	.4190
#1	.0419	12.97	.07282	.1722	.0004	.0093	.4443	.4195
#2	.0428	12.82	.07341	.1744	-.0003	.0094	.4418	.4185
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.4217	.0059	4.509					
#1	.4204	.0034	4.504					
#2	.4231	.0083	4.513					

Sample Name: KQ1802836-04 Acquired: 3/14/2018 13:26:17 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-011S

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2511.5	33590.	3264.5
#1	2506.8	33297.	3279.8
#2	2516.2	33884.	3249.2

Sample Name: K1801864-011A Acquired: 3/14/2018 13:28:38 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, B, P

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.191	.5285	3.065	5.128	.12274	4.963	1.179	1.190
#1	5.179	.5252	3.055	5.108	.12287	4.981	1.180	1.191
#2	5.204	.5319	3.074	5.147	.12261	4.944	1.178	1.189
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.46	.4924	1.210	.5938	.6182	4.487	2.387	.0009
#1	24.30	.4929	1.211	.5919	.6205	4.466	2.389	.0012
#2	24.61	.4919	1.209	.5956	.6159	4.508	2.385	.0007
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.86	1.2714	.0016	1.200	5.089	14.16	2.265	7.054
#1	13.84	1.2780	.0016	1.201	5.101	14.19	2.268	7.091
#2	13.87	1.2648	.0016	1.199	5.077	14.13	2.262	7.017
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6002	16.75	.07460	2.363	-.0005	.0098	1.269	1.174
#1	.6003	16.75	.07436	2.363	-.0005	.0098	1.270	1.174
#2	.6000	16.76	.07485	2.363	-.0005	.0097	1.269	1.174
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.178	.0015	4.556					
#1	1.177	.0013	4.556					
#2	1.178	.0018	4.555					

Sample Name: K1801864-011A Acquired: 3/14/2018 13:28:38 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, B, P

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2494.0	33088.	3227.0
#1	2494.4	33055.	3239.0
#2	2493.5	33120.	3215.1

Sample Name: K1801864-012 Acquired: 3/14/2018 13:30:50 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0138	.0056	.0308	.0057	-.00005	.0108	-.0001	.0000
#1	.0151	.0018	.0286	.0055	-.00009	.0140	.0000	-.0002
#2	.0126	.0094	.0330	.0059	-.00001	.0075	-.0001	.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.69	-.0003	.0002	-.0007	.0008	.0974	.0023	.0002
#1	10.71	-.0003	-.0001	-.0005	-.0007	.0979	.0020	.0003
#2	10.67	-.0002	.0005	-.0009	.0023	.0968	.0026	.0000
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.818	.02196	.0016	-.0003	.0132	.7827	.0012	5.160
#1	1.817	.02199	.0018	-.0002	.0120	.7842	-.0009	5.187
#2	1.818	.02192	.0015	-.0005	.0143	.7812	.0034	5.134
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	2.222	.05464	.0008	-.0004	.0005	.0012	.0005
#1	.0002	2.225	.05455	.0001	-.0009	.0004	.0013	.0007
#2	-.0003	2.220	.05474	.0014	.0000	.0007	.0010	.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0006	.0027	1.924					
#1	.0007	.0025	1.935					
#2	.0005	.0028	1.912					

Sample Name: K1801864-012 Acquired: 3/14/2018 13:30:50 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2510.5	33516.	3248.2
#1	2502.1	33523.	3247.8
#2	2518.8	33508.	3248.6

Sample Name: K1801864-013 Acquired: 3/14/2018 13:33:21 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0154	-.0068	.0025	.0037	-.00005	.0096	.0000	.0000
#1	.0148	-.0074	.0010	.0036	-.00003	.0107	.0000	.0001
#2	.0160	-.0062	.0040	.0038	-.00007	.0085	.0000	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.562	-.0002	.0004	-.0001	.0018	.0147	.0002	.0003
#1	8.582	-.0007	.0008	-.0007	.0025	.0177	.0001	.0004
#2	8.542	.0003	-.0001	.0004	.0011	.0117	.0004	.0003
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.411	.00127	.0016	-.0005	.0086	.6891	.0046	4.860
#1	1.411	.00129	.0020	-.0003	.0073	.7049	.0072	4.900
#2	1.410	.00125	.0012	-.0007	.0100	.6732	.0021	4.819
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	1.846	.04783	-.0018	-.0005	.0005	.0005	.0002
#1	-.0016	1.846	.04769	.0007	-.0006	.0006	-.0002	.0004
#2	.0003	1.846	.04797	-.0042	-.0004	.0004	.0012	.0000
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	.0012	.9118					
#1	.0005	.0013	.9167					
#2	.0005	.0010	.9068					

Sample Name: K1801864-013 Acquired: 3/14/2018 13:33:21 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2539.1	33435.	3231.7
#1	2528.0	33401.	3225.0
#2	2550.1	33469.	3238.4

Sample Name: K1801864-014 Acquired: 3/14/2018 13:35:51 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0080	.9701	3.154	.0252	-.00014	.0248	-.0002	-.0002
#1	.0090	.9695	3.161	.0250	-.00014	.0233	-.0002	-.0003
#2	.0071	.9707	3.147	.0255	-.00014	.0264	-.0001	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	114.2	.0005	.0128	-.0015	.0010	.1399	-.0021	.0018
#1	113.6	.0006	.0132	-.0012	.0005	.1397	-.0014	.0023
#2	114.8	.0005	.0124	-.0018	.0015	.1401	-.0027	.0012
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.943	.00047	.0299	.0022	.0801	8.953	.0078	5.499
#1	3.929	.00037	.0300	.0026	.0744	9.036	.0127	5.522
#2	3.958	.00057	.0297	.0019	.0858	8.869	.0030	5.475
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	42.95	.28199	-.0029	.0013	.0006	.0008	.0012
#1	-.0010	43.18	.28195	-.0030	.0011	.0005	.0011	.0011
#2	-.0011	42.72	.28204	-.0028	.0015	.0008	.0004	.0013
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0013	-.0008	108.3					
#1	.0014	-.0028	108.5					
#2	.0013	.0011	108.2					

Sample Name: K1801864-014 Acquired: 3/14/2018 13:35:51 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2441.5	31999.	3187.7
#1	2443.7	31968.	3201.7
#2	2439.3	32030.	3173.8

Sample Name: K1801864-015 Acquired: 3/14/2018 13:38:17 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	.9607	3.152	.0250	-.00028	.0271	-.0001	.0000
#1	.0094	.9638	3.150	.0252	-.00030	.0255	-.0001	.0000
#2	.0081	.9577	3.154	.0247	-.00027	.0288	-.0002	.0000
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	114.3	.0003	.0131	-.0021	.0024	.1346	-.0036	.0008
#1	114.4	.0010	.0132	-.0016	.0017	.1342	-.0041	.0010
#2	114.2	-.0004	.0129	-.0026	.0032	.1350	-.0031	.0007
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.946	.00034	.0305	.0026	.0913	8.929	.0080	5.503
#1	3.951	.00023	.0303	.0029	.0925	8.984	.0050	5.508
#2	3.942	.00045	.0308	.0022	.0901	8.874	.0110	5.498
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	42.85	.28185	-.0029	.0005	.0009	.0007	.0015
#1	-.0017	43.00	.28193	-.0052	-.0004	.0010	.0016	.0013
#2	-.0010	42.69	.28177	-.0006	.0014	.0008	-.0001	.0018
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0012	.0026	108.7					
#1	.0010	-.0010	108.8					
#2	.0013	.0062	108.7					

Sample Name: K1801864-015 Acquired: 3/14/2018 13:38:17 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2428.7	32060.	3182.2
#1	2429.1	32125.	3182.7
#2	2428.3	31994.	3181.7

Sample Name: K1801864-011 Acquired: 3/14/2018 13:40:43 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	.0249	.1403	.0059	-.00019	.0074	-.0001	-.0002
#1	.0032	.0250	.1369	.0061	-.00011	.0066	.0000	-.0002
#2	.0017	.0247	.1438	.0057	-.00028	.0082	-.0003	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.52	.0010	.0000	.0002	.0018	.1545	-.0006	.0013
#1	13.51	.0003	-.0007	.0002	.0012	.1623	-.0010	.0004
#2	13.53	.0016	.0006	.0001	.0024	.1466	-.0001	.0022
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.167	.06241	.0014	.0002	.0243	1.198	.0002	6.655
#1	2.175	.06246	.0015	.0001	.0257	1.240	-.0024	6.622
#2	2.159	.06235	.0013	.0002	.0230	1.156	.0028	6.688
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0014	4.197	.08026	-.0026	-.0016	.0005	.0006	.0011
#1	-.0009	4.200	.08055	-.0030	-.0013	.0004	.0006	.0011
#2	-.0019	4.194	.07996	-.0022	-.0019	.0005	.0006	.0011
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0011	-.0020	5.039					
#1	.0008	-.0024	5.052					
#2	.0013	-.0016	5.026					

Sample Name: K1801864-011 Acquired: 3/14/2018 13:40:43 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2521.2	33191.	3218.3
#1	2513.9	33075.	3210.0
#2	2528.6	33308.	3226.6

Sample Name: CCVB Acquired: 3/14/2018 13:43:13 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.868	10.08	-.0022	1.041	10.31	-.00008	.0029	-.0001
Stddev	.005	.01	.0012	.000	.03	.00010	.0011	.0001
%RSD	.0657	.1380	54.84	.0331	.2424	128.81	36.08	70.01

#1	7.872	10.07	-.0030	1.041	10.33	-.00014	.0037	-.0001
#2	7.864	10.09	-.0013	1.042	10.29	-.00001	.0022	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	9.927	9.955	.0012	-.0001	-.0006	.0003	9.702
Stddev	.000	.002	.038	.0007	.0001	.0006	.0003	.035
%RSD	893.7	.0244	.3790	56.75	38.00	95.39	116.0	.3563

#1	.0000	9.928	9.928	.0007	-.0001	-.0002	.0005	9.678
#2	.0000	9.925	9.981	.0016	-.0002	-.0010	.0001	9.726

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	1.052	10.12	9.662	9.811	.99882	.9220	.0003
Stddev	.0007	.005	.04	.014	.023	.00148	.0033	.0000
%RSD	37.16	.5031	.3983	.1453	.2329	.14854	.3561	15.31

#1	.0022	1.056	10.10	9.672	9.828	.99987	.9243	.0002
#2	.0013	1.048	10.15	9.652	9.795	.99777	.9197	.0003

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 3/14/2018 13:43:13 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	10.08	10.37	.0037	9.568	-.0005	10.46	1.0279
Stddev	.000	.05	.03	.0016	.091	.0001	.02	.0014
%RSD	12900.	.4833	.2437	43.74	.9527	22.81	.1518	.13779

#1	-.0002	10.11	10.35	.0025	9.633	-.0006	10.47	1.0289
#2	.0002	10.05	10.39	.0048	9.504	-.0005	10.45	1.0269

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0031	-.0010	.0004	.0001	.0001	.0005	1.020	1.050
Stddev	.0058	.0010	.0000	.0004	.0005	.0000	.003	.004
%RSD	183.9	92.48	10.16	542.7	349.1	5.586	.2656	.3956

#1	-.0072	-.0004	.0004	-.0002	-.0002	.0004	1.018	1.053
#2	.0009	-.0017	.0004	.0004	.0005	.0005	1.022	1.047

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2533.8	33270.	3222.5
Stddev	10.9	77.	10.5
%RSD	.42827	.23146	.32503

#1	2526.1	33216.	3229.9
#2	2541.5	33325.	3215.1

Sample Name: CCVA Acquired: 3/14/2018 13:45:45 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2533	.2603	.2573	.2668	.2616	.25564	.2605	.2542
Stddev	.0009	.0071	.0028	.0004	.0002	.00153	.0001	.0008
%RSD	.3594	2.730	1.074	.1450	.0731	.59695	.0245	.3218

#1	.2527	.2653	.2553	.2670	.2615	.25672	.2605	.2548
#2	.2539	.2553	.2592	.2665	.2617	.25456	.2604	.2536

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2538	.5133	.5100	.2520	.2532	.2556	.2607	.2488
Stddev	.0005	.0055	.0003	.0006	.0003	.0002	.0034	.0027
%RSD	.1882	1.076	.0602	.2266	.1376	.0821	1.289	1.087

#1	.2541	.5094	.5098	.2515	.2535	.2557	.2630	.2507
#2	.2535	.5172	.5102	.2524	.2530	.2555	.2583	.2468

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2530	.0006	.2641	.2452	.2463	.25912	.2300	.2550
Stddev	.0001	.0025	.0150	.0001	.0015	.00064	.0018	.0008
%RSD	.0254	398.5	5.697	.0486	.6022	.24804	.7627	.3111

#1	.2531	-.0011	.2748	.2453	.2452	.25958	.2288	.2556
#2	.2530	.0024	.2535	.2452	.2473	.25867	.2312	.2545

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 13:45:45 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2528	-.0024	2.643	.2614	.1288	.2595	.3477	.00031
Stddev	.0002	.0030	.024	.0076	.0021	.0018	.0159	.00004
%RSD	.0820	123.6	.9079	2.914	1.627	.6955	4.560	11.546

#1	.2526	-.0045	2.626	.2560	.1273	.2608	.3365	.00028
#2	.2529	-.0003	2.660	.2668	.1302	.2582	.3590	.00033

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2573	.2524	.2572	.2532	.2534	.2612	-.0005	-.0045
Stddev	.0036	.0029	.0007	.0003	.0000	.0009	.0013	.0025
%RSD	1.383	1.167	.2564	.1283	.0126	.3498	239.8	55.34

#1	.2598	.2544	.2576	.2530	.2534	.2619	-.0014	-.0028
#2	.2548	.2503	.2567	.2534	.2534	.2606	.0004	-.0063

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2562.0	33686.	3234.3
Stddev	1.7	161.	29.0
%RSD	.06507	.47670	.89593

#1	2560.8	33799.	3213.8
#2	2563.2	33572.	3254.8

Sample Name: CCB Acquired: 3/14/2018 13:48:02 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0021	-0.0021	-0.0040	.0009	.0002	-0.00015	.0051	-0.0002
Stddev	.0005	.0000	.0048	.0010	.0002	.00013	.0020	.0001
%RSD	22.84	1.683	120.0	115.0	125.2	87.269	39.62	57.03

#1	-0.0024	-0.0021	-0.0006	.0016	.0003	-0.00024	.0037	-0.0001
#2	-0.0017	-0.0021	-0.0074	.0002	.0000	-0.00006	.0065	-0.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-0.0036	.0015	-0.0005	-0.0003	.0002	.0002	-0.0005
Stddev	.0001	.0071	.0003	.0005	.0001	.0000	.0001	.0019
%RSD	1317.	196.3	17.50	114.5	19.42	27.48	38.48	387.0

#1	.0000	.0014	.0013	-0.0009	-0.0003	.0001	.0002	.0008
#2	.0000	-0.0087	.0017	-0.0001	-0.0004	.0002	.0001	-0.0018

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0017	.0000	.0175	.0001	.0000	.00002	-0.0002	.0005
Stddev	.0002	.0026	.0301	.0001	.0028	.00010	.0007	.0000
%RSD	12.40	5523.	172.3	111.3	8206.	416.15	339.3	6.799

#1	.0015	-0.0018	.0388	.0002	-0.0019	-0.00005	-0.0007	.0005
#2	.0018	.0019	-0.0038	.0000	.0020	.00010	.0003	.0005

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 13:48:02 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0014	.0020	.0023	-.0066	.0003	.0642	.00001
Stddev	.0007	.0009	.0351	.0068	.0031	.0017	.0074	.00002
%RSD	875.1	60.19	1760.	296.5	47.75	493.6	11.45	152.16

#1	.0006	-.0008	.0268	-.0025	-.0088	.0015	.0694	.00000
#2	-.0004	-.0020	-.0228	.0071	-.0043	-.0008	.0590	.00002

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	-.0006	.0001	-.0001	.0002	.0001	-.0001	-.0020
Stddev	.0021	.0011	.0000	.0008	.0005	.0002	.0010	.0010
%RSD	212.5	174.3	1.722	566.3	310.1	158.4	1967.	50.12

#1	.0024	.0001	.0001	.0004	-.0002	.0000	-.0008	-.0027
#2	-.0005	-.0014	.0001	-.0007	.0005	.0003	.0007	-.0013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2538.0	33628.	3226.0
Stddev	3.5	248.	11.4
%RSD	.13750	.73879	.35399

#1	2535.5	33452.	3234.1
#2	2540.4	33803.	3217.9

Sample Name: K1801864-012 Acquired: 3/14/2018 13:50:30 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0022	.0001	.0224	.0038	-.00001	.0078	-.0003	-.0001
#1	.0018	-.0021	.0222	.0037	.00006	.0088	-.0002	.0000
#2	.0027	.0023	.0227	.0039	-.00008	.0069	-.0003	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.86	-.0003	.0000	-.0007	.0002	.0433	-.0008	.0010
#1	10.86	.0001	-.0003	-.0002	-.0007	.0407	-.0011	.0016
#2	10.86	-.0006	.0003	-.0012	.0010	.0459	-.0005	.0004
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.854	.02133	.0014	-.0003	.0130	.8218	.0035	5.137
#1	1.850	.02130	.0015	-.0004	.0138	.8310	.0060	5.110
#2	1.858	.02136	.0014	-.0002	.0123	.8125	.0011	5.163
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	2.237	.05549	.0004	-.0013	.0002	.0005	.0008
#1	.0000	2.244	.05513	.0004	-.0012	.0000	.0008	.0008
#2	-.0013	2.230	.05584	.0004	-.0015	.0005	.0003	.0009
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0009	.0002	1.988					
#1	.0011	-.0044	1.995					
#2	.0008	.0048	1.981					

Sample Name: K1801864-012 Acquired: 3/14/2018 13:50:30 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2524.2	33419.	3205.7
#1	2518.6	33348.	3210.0
#2	2529.9	33489.	3201.4

Sample Name: K1801864-013 Acquired: 3/14/2018 13:53:00 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0079	-.0039	.0023	.0039	-.00007	.0050	-.0002	-.0001
#1	.0087	-.0016	.0010	.0040	-.00002	.0061	-.0001	.0000
#2	.0071	-.0062	.0035	.0037	-.00012	.0040	-.0003	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.953	-.0005	.0000	-.0009	.0007	.0180	.0023	-.0014
#1	8.917	-.0004	.0004	-.0011	.0010	.0195	.0025	-.0018
#2	8.988	-.0005	-.0005	-.0007	.0004	.0166	.0021	-.0010
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.473	.00064	.0013	-.0003	.0093	.6383	.0025	5.145
#1	1.465	.00068	.0012	-.0004	.0150	.6318	.0009	5.176
#2	1.482	.00061	.0014	-.0002	.0036	.6447	.0042	5.114
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	1.920	.04981	-.0010	-.0006	.0006	.0006	.0010
#1	.0001	1.938	.04964	-.0039	-.0011	.0004	.0005	.0010
#2	-.0002	1.902	.04998	.0020	-.0001	.0008	.0007	.0009
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0012	-.0002	.9787					
#1	.0012	.0041	.9791					
#2	.0012	-.0045	.9782					

Sample Name: K1801864-013 Acquired: 3/14/2018 13:53:00 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2523.8	33582.	3215.8
#1	2529.6	33526.	3254.0
#2	2518.0	33638.	3177.5

Sample Name: K1801864-014 Acquired: 3/14/2018 13:55:31 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0045	.9705	3.176	.0271	-.00018	.0247	.0000	-.0004
#1	.0038	.9680	3.152	.0235	-.00024	.0243	.0000	-.0006
#2	.0052	.9731	3.201	.0306	-.00011	.0250	.0000	-.0003
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	114.4	.0004	.0127	-.0011	.0008	.1441	-.0021	.0025
#1	114.6	-.0006	.0125	-.0008	.0002	.1437	-.0021	.0031
#2	114.2	.0014	.0128	-.0013	.0015	.1445	-.0021	.0018
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.950	.00046	.0305	.0022	.0852	8.717	.0094	5.438
#1	3.945	.00055	.0307	.0026	.0801	8.689	.0077	5.464
#2	3.955	.00037	.0303	.0019	.0904	8.746	.0110	5.413
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	42.18	.28077	-.0026	.0009	.0007	.0005	.0013
#1	-.0002	42.07	.27996	-.0031	.0005	.0008	.0004	.0014
#2	-.0012	42.30	.28158	-.0021	.0013	.0006	.0005	.0012
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0011	-.0029	109.4					
#1	.0013	-.0002	109.0					
#2	.0009	-.0056	109.9					

Sample Name: K1801864-014 Acquired: 3/14/2018 13:55:31 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2447.2	32267.	3161.9
#1	2439.4	32370.	3163.8
#2	2454.9	32164.	3160.0

Sample Name: K1801864-015 Acquired: 3/14/2018 13:57:57 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0038	.9699	3.175	.0245	-.00013	.0247	-.0001	.0001
#1	.0058	.9652	3.169	.0246	-.00019	.0235	-.0001	-.0001
#2	.0019	.9747	3.182	.0245	-.00006	.0260	-.0001	.0003
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	114.8	.0008	.0133	-.0016	.0014	.1362	-.0029	.0016
#1	115.4	.0009	.0133	-.0022	.0015	.1338	-.0038	.0014
#2	114.2	.0008	.0133	-.0010	.0014	.1386	-.0021	.0018
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.951	.00039	.0300	.0022	.0730	9.031	.0125	5.504
#1	3.968	.00043	.0308	.0018	.0710	9.058	.0098	5.513
#2	3.933	.00036	.0292	.0025	.0750	9.004	.0152	5.495
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	43.25	.28130	-.0001	-.0009	.0001	.0005	.0016
#1	-.0013	43.36	.28199	.0008	-.0008	.0004	.0001	.0013
#2	.0001	43.15	.28061	-.0010	-.0009	-.0002	.0009	.0019
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0016	.0029	108.8					
#1	.0017	.0048	108.8					
#2	.0016	.0011	108.9					

Sample Name: K1801864-015 Acquired: 3/14/2018 13:57:57 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2458.4	32646.	3215.5
#1	2446.6	32570.	3207.8
#2	2470.1	32723.	3223.1

Sample Name: K1801889-001 Acquired: 3/14/2018 14:00:23 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1008	-.0035	.0006	.1216	-.00013	.8505	-.0001	-.0001

#1	.1018	-.0060	-.0017	.1212	-.00007	.8478	-.0001	.0000
#2	.0999	-.0010	.0029	.1220	-.00020	.8532	-.0001	-.0001

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.49	.0009	.0004	.0013	.0010	.1584	.0007	.0248

#1	41.30	.0018	.0002	.0019	.0002	.1588	.0018	.0239
#2	41.67	.0001	.0006	.0007	.0019	.1579	-.0004	.0258

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.95	.03106	.0034	.0025	.0114	3.614	.0010	2.167

#1	11.99	.03110	.0036	.0025	.0102	3.620	.0024	2.176
#2	11.90	.03102	.0033	.0025	.0125	3.608	-.0005	2.158

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	159.3	1.2073	-.0007	.0006	.0071	.0012	.0028

#1	-.0019	159.7	1.2004	-.0005	.0005	.0071	.0010	.0029
#2	-.0006	158.9	1.2142	-.0009	.0006	.0072	.0014	.0027

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0025	-.0029	134.2

#1	.0023	-.0011	134.4
#2	.0026	-.0046	134.1

Sample Name: K1801889-001 Acquired: 3/14/2018 14:00:23 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2435.7	32138.	3235.4
#1	2434.2	32037.	3262.5
#2	2437.3	32238.	3208.3

Sample Name: KQ1802836-05 Acquired: 3/14/2018 14:02:51 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801889-001D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0792	-.0037	-.0004	.1206	-.00012	.8374	-.0001	.0000
#1	.0793	-.0027	.0011	.1207	-.00018	.8402	-.0002	.0001
#2	.0792	-.0047	-.0019	.1204	-.00005	.8346	.0000	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.59	-.0005	.0003	.0007	.0021	.1477	-.0038	.0260
#1	41.54	.0003	.0004	.0009	.0024	.1480	-.0021	.0267
#2	41.64	-.0013	.0001	.0005	.0018	.1474	-.0056	.0254
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.63	.03110	.0031	.0025	.0166	3.469	-.0013	2.083
#1	11.59	.03102	.0033	.0026	.0143	3.456	-.0065	2.080
#2	11.67	.03118	.0028	.0024	.0189	3.483	.0038	2.086
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	154.5	1.2056	-.0036	-.0012	.0061	.0012	.0026
#1	-.0003	154.2	1.2054	-.0038	-.0017	.0061	.0020	.0028
#2	-.0010	154.9	1.2059	-.0034	-.0006	.0062	.0005	.0025
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0025	.0020	132.6					
#1	.0026	.0008	132.9					
#2	.0024	.0032	132.2					

Sample Name: KQ1802836-05 Acquired: 3/14/2018 14:02:51 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801889-001D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2422.6	31732.	3151.3
#1	2416.6	31731.	3143.5
#2	2428.7	31733.	3159.0

Sample Name: KQ1802836-06 Acquired: 3/14/2018 14:05:20 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801889-001S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.691	.4071	.8651	1.001	.04091	1.207	.0402	.0400

#1	1.697	.4103	.8667	.9992	.04108	1.214	.0402	.0399
#2	1.684	.4038	.8635	1.004	.04073	1.200	.0403	.0401

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	47.46	.1690	.4175	.2062	.2078	.9642	.3972	.0240

#1	47.45	.1677	.4169	.2071	.2090	.9630	.3958	.0233
#2	47.48	.1702	.4180	.2052	.2066	.9655	.3987	.0247

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.88	.44058	.9167	.4108	9.117	12.30	.7830	2.016

#1	18.89	.43943	.9180	.4120	9.121	12.27	.7775	2.025
#2	18.87	.44172	.9154	.4097	9.113	12.33	.7885	2.006

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0372	156.5	1.1475	.1623	.0003	.0082	.4445	.4096

#1	.0371	156.2	1.1450	.1629	-.0008	.0082	.4418	.4113
#2	.0372	156.7	1.1501	.1617	.0014	.0082	.4472	.4080

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.3989	.0007	122.6

#1	.3995	.0035	122.4
#2	.3982	-.0021	122.7

Sample Name: KQ1802836-06 Acquired: 3/14/2018 14:05:20 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801889-001S

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2397.6	31539.	3147.5
#1	2392.7	31679.	3149.0
#2	2402.4	31399.	3145.9

Sample Name: K1801889-001A Acquired: 3/14/2018 14:07:39 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, B, P

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.827	.4690	2.432	5.320	.11812	5.647	1.192	1.183

#1	4.818	.4672	2.441	5.310	.11787	5.649	1.193	1.186
#2	4.837	.4709	2.423	5.329	.11836	5.646	1.190	1.180

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.80	.4937	1.219	.5937	.5918	2.553	2.338	.0236

#1	52.73	.4965	1.219	.5913	.5928	2.557	2.343	.0239
#2	52.88	.4910	1.218	.5960	.5909	2.548	2.334	.0232

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.57	1.2328	.0039	1.192	5.275	16.03	2.199	1.991

#1	22.55	1.2373	.0037	1.195	5.284	15.96	2.201	1.982
#2	22.58	1.2284	.0041	1.189	5.266	16.11	2.196	2.001

Elem	Ag3280	Na5895 *	Sr4077	Ti1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5726	161.0	1.1817	2.264	-.0008	.0063	1.293	1.198

#1	.5699	160.6	1.1804	2.268	-.0015	.0065	1.298	1.201
#2	.5752	161.4	1.1830	2.260	.0000	.0062	1.289	1.194

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	1.158	.0001	128.1

#1	1.159	.0033	128.2
#2	1.157	-.0032	128.1

*N/A
 am 3/14/18

Sample Name: K1801889-001A Acquired: 3/14/2018 14:07:39 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, B, P

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2384.7	31199.	3087.4
#1	2382.5	31165.	3084.5
#2	2386.9	31232.	3090.3

Sample Name: K1801889-001 Acquired: 3/14/2018 14:09:52 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0037	.0037	.0007	.1209	-.00012	.8151	-.0001	-.0001
#1	-.0027	.0034	-.0010	.1218	.00002	.8117	-.0002	.0000
#2	-.0047	.0040	.0025	.1200	-.00026	.8185	.0000	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.19	.0002	-.0001	.0004	.0001	-.0028	.0011	.0222
#1	41.28	-.0002	-.0003	-.0003	-.0005	-.0039	-.0002	.0214
#2	41.10	.0005	.0001	.0010	.0007	-.0017	.0025	.0230
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.24	.02616	.0032	.0022	.0085	3.347	-.0015	1.890
#1	11.19	.02627	.0035	.0024	.0096	3.348	-.0052	1.876
#2	11.30	.02605	.0030	.0020	.0073	3.346	.0022	1.905
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	151.2	1.2012	-.0004	-.0010	-.0008	.0010	.0015
#1	-.0008	150.4	1.2017	-.0013	-.0026	-.0010	.0010	.0012
#2	-.0004	152.1	1.2007	.0004	.0006	-.0006	.0011	.0018
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0015	.0012	130.3					
#1	.0016	.0031	130.0					
#2	.0015	-.0007	130.6					

Sample Name: K1801889-001 Acquired: 3/14/2018 14:09:52 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2418.4	31001.	3089.1
#1	2407.1	31021.	3067.7
#2	2429.6	30981.	3110.5

Sample Name: K1801891-001 Acquired: 3/14/2018 14:12:21 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.341	2.609	-.0007	.0076	.0133	.00113	.3544	.0000
#1	2.336	2.626	-.0028	.0088	.0136	.00126	.3566	-.0001
#2	2.345	2.592	.0014	.0064	.0130	.00099	.3522	.0000
Elem	Cd2265	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	228.2	-.0026	.1932	-.0011	-.0012	120.5	.0056
#1	-.0005	228.4	-.0022	.1932	-.0014	-.0014	120.8	.0036
#2	-.0007	228.1	-.0029	.1933	-.0008	-.0009	120.2	.0075
Elem	Li6707	Mg2852	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0314	57.72	16.32	-.0011	.1384	.0709	5.383	-.0050
#1	.0312	58.06	16.40	-.0010	.1375	.0683	5.471	-.0121
#2	.0316	57.38	16.24	-.0013	.1393	.0734	5.295	.0022
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.680	-.0015	34.65	2.2871	-.0009	.0004	.0012	.0020
#1	9.729	-.0014	34.88	2.2955	-.0020	.0014	.0014	.0013
#2	9.631	-.0015	34.42	2.2788	.0002	-.0005	.0010	.0027
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.1907	.1971	.0005	336.6				
#1	.1912	.1961	-.0016	334.7				
#2	.1902	.1980	.0025	338.5				

Sample Name: K1801891-001 Acquired: 3/14/2018 14:12:21 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2436.6	31786.	3194.6
#1	2421.1	31827.	3204.3
#2	2452.1	31745.	3184.8

Sample Name: CCVB Acquired: 3/14/2018 14:14:55 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.934	9.912	-.0056	1.036	10.25	.00005	.0048	-.0002
Stddev	.031	.038	.0067	.002	.12	.00001	.0015	.0001
%RSD	.3928	.3854	118.9	.1476	1.208	20.826	30.58	28.46

#1	7.956	9.939	-.0009	1.035	10.33	.00004	.0058	-.0001
#2	7.912	9.885	-.0104	1.037	10.16	.00006	.0037	-.0002

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	10.07	9.932	.0005	-.0005	-.0001	.0007	9.844
Stddev	.0003	.00	.041	.0002	.0002	.0002	.0005	.069
%RSD	288.8	.0293	.4164	31.75	30.39	135.2	62.62	.6978

#1	-.0003	10.07	9.903	.0006	-.0007	.0000	.0010	9.796
#2	.0001	10.07	9.961	.0004	-.0004	-.0003	.0004	9.893

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	1.026	10.16	9.717	9.631	1.0072	.9233	.0005
Stddev	.0007	.001	.08	.039	.013	.0011	.0071	.0003
%RSD	48.94	.0682	.7798	.4042	.1325	.10676	.7649	66.06

#1	.0020	1.025	10.11	9.689	9.622	1.0065	.9183	.0007
#2	.0010	1.026	10.22	9.745	9.640	1.0080	.9283	.0002

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 3/14/2018 14:14:55 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	10.07	10.13	-.0010	9.415	-.0012	10.27	1.0351
Stddev	.0004	.01	.07	.0013	.012	.0005	.05	.0080
%RSD	183.7	.0663	.7100	126.0	.1251	39.27	.4717	.77189

#1	-.0005	10.06	10.08	-.0019	9.407	-.0009	10.24	1.0294
#2	.0001	10.07	10.19	-.0001	9.423	-.0016	10.31	1.0407

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0023	-.0010	.0001	-.0001	.0001	.0004	1.021	1.057
Stddev	.0010	.0003	.0000	.0001	.0002	.0002	.001	.009
%RSD	41.24	30.91	14.61	56.47	175.8	68.40	.1228	.8966

#1	-.0030	-.0008	.0002	-.0002	.0000	.0005	1.022	1.064
#2	-.0016	-.0012	.0001	-.0001	.0003	.0002	1.020	1.051

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2528.4	32808.	3151.9
Stddev	.9	190.	10.1
%RSD	.03548	.57946	.31903

#1	2527.8	32942.	3159.0
#2	2529.0	32673.	3144.8

Sample Name: CCVA Acquired: 3/14/2018 14:17:27 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:

Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2577	.2601	.2536	.2641	.2641	.25264	.2575	.2564
Stddev	.0040	.0011	.0053	.0029	.0003	.00155	.0023	.0001
%RSD	1.567	.4058	2.074	1.081	.1249	.61258	.8768	.0274

#1	.2605	.2609	.2573	.2621	.2643	.25155	.2559	.2564
#2	.2548	.2594	.2499	.2661	.2638	.25374	.2591	.2565

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2546	.5099	.5134	.2543	.2561	.2571	.2567	.2547
Stddev	.0005	.0027	.0006	.0019	.0008	.0009	.0007	.0119
%RSD	.2101	.5274	.1201	.7354	.3279	.3617	.2545	4.656

#1	.2542	.5080	.5129	.2530	.2566	.2577	.2571	.2631
#2	.2550	.5118	.5138	.2556	.2555	.2564	.2562	.2463

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2544	-.0002	.2629	.2468	.2403	.25987	.2306	.2564
Stddev	.0000	.0014	.0384	.0010	.0040	.00037	.0029	.0014
%RSD	.0006	727.2	14.61	.3906	1.671	.14353	1.238	.5592

#1	.2544	-.0012	.2357	.2474	.2431	.25960	.2326	.2554
#2	.2544	.0008	.2900	.2461	.2375	.26013	.2286	.2574

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 14:17:27 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2531	.0013	2.517	.2539	.1276	.2550	.3304	.00007
Stddev	.0010	.0068	.029	.0092	.0035	.0031	.0083	.00005
%RSD	.3768	505.6	1.168	3.641	2.775	1.214	2.514	65.516

#1	.2538	-.0035	2.497	.2474	.1251	.2528	.3245	.00011
#2	.2524	.0062	2.538	.2605	.1301	.2572	.3363	.00004

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2563	.2540	.2567	.2535	.2554	.2587	.0003	.0038
Stddev	.0003	.0007	.0005	.0009	.0013	.0001	.0034	.0047
%RSD	.1266	.2679	.1933	.3491	.5018	.0438	1082.	124.4

#1	.2565	.2545	.2564	.2541	.2545	.2587	.0027	.0072
#2	.2561	.2535	.2571	.2528	.2563	.2588	-.0021	.0005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2528.4	33144.	3149.4
Stddev	.3	137.	13.3
%RSD	.01326	.41391	.42100

#1	2528.2	33047.	3140.1
#2	2528.6	33241.	3158.8

Sample Name: CCB Acquired: 3/14/2018 14:19:44 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0014	-.0006	-.0005	-.0003	.00004	.0045	-.0002
Stddev	.0019	.0017	.0054	.0022	.0000	.00025	.0007	.0001
%RSD	1395.	116.3	945.1	439.0	5.935	585.10	16.58	45.49
#1	-.0015	-.0003	-.0044	-.0020	-.0003	.00022	.0039	-.0002
#2	.0012	-.0026	.0033	.0010	-.0003	-.00014	.0050	-.0003

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0068	.0030	.0010	.0001	-.0002	-.0002	.0046
Stddev	.0001	.0043	.0002	.0004	.0004	.0005	.0003	.0000
%RSD	35.34	62.92	5.428	43.21	349.9	312.6	123.1	.1597
#1	.0002	-.0098	.0031	.0007	.0004	-.0006	-.0004	.0046
#2	.0001	-.0038	.0029	.0013	-.0002	.0002	.0000	.0046

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0014	.0266	.0008	-.0003	.00008	-.0014	.0011
Stddev	.0014	.0009	.0156	.0002	.0033	.00003	.0020	.0005
%RSD	2172.	62.75	58.79	22.37	961.3	45.044	139.6	46.71
#1	-.0009	.0008	.0376	.0009	.0020	.00005	.0000	.0015
#2	.0010	.0020	.0155	.0006	-.0027	.00010	-.0029	.0008

Check ? Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass None Chk Pass
 High Limit
 Low Limit

Sample Name: CCB Acquired: 3/14/2018 14:19:44 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0024	.0472	-.0019	-.0137	-.0009	.0653	.00018
Stddev	.0003	.0010	.0036	.0041	.0040	.0006	.0093	.00003
%RSD	258.0	42.31	7.551	218.4	29.15	61.25	14.19	15.942

#1	.0001	-.0017	.0497	.0010	-.0166	-.0013	.0588	.00016
#2	-.0003	-.0032	.0447	-.0048	-.0109	-.0005	.0719	.00020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0003	.0000	-.0001	.0001	.0001	-.0025	.0072
Stddev	.0026	.0003	.000	.0007	.0001	.0001	.0041	.0033
%RSD	3346.	120.3	166.5	528.5	112.0	61.28	161.4	46.41

#1	-.0019	-.0005	-.0001	.0004	.0002	.0002	.0004	.0095
#2	.0018	.0000	.0000	-.0007	.0000	.0001	-.0054	.0048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2518.2	32882.	3141.9
Stddev	5.8	189.	4.1
%RSD	.22874	.57444	.13203

#1	2514.1	32748.	3144.9
#2	2522.3	33016.	3139.0

Sample Name: K1801891-002 Acquired: 3/14/2018 14:22:41 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8127	-.0024	.0005	.0211	.00038	.0324	.0000	.0001
#1	.8152	-.0010	-.0005	.0211	.00024	.0318	.0000	.0001
#2	.8101	-.0038	.0014	.0210	.00051	.0329	.0000	.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.62	.0003	.0111	.0026	.0033	.2232	.0011	.0086
#1	19.67	.0000	.0113	.0026	.0036	.2194	.0017	.0086
#2	19.57	.0006	.0109	.0026	.0030	.2271	.0005	.0086
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.795	1.0846	.0010	.0228	.0200	1.246	.0017	4.187
#1	5.804	1.0850	.0005	.0229	.0157	1.273	.0015	4.156
#2	5.785	1.0843	.0015	.0226	.0242	1.219	.0019	4.218
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0015	7.710	.22706	-.0009	-.0015	.0024	.0005	.0457
#1	-.0016	7.681	.22718	-.0005	-.0024	.0024	.0008	.0455
#2	-.0015	7.738	.22694	-.0013	-.0006	.0024	.0002	.0459
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0463	.0033	29.65					
#1	.0462	.0040	29.74					
#2	.0465	.0027	29.56					

Sample Name: K1801891-002 Acquired: 3/14/2018 14:22:41 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2513.5	33433.	3169.5
#1	2509.4	33449.	3150.5
#2	2517.6	33417.	3188.5

Sample Name: K1801891-001 Acquired: 3/14/2018 14:25:09 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.635	-.0052	.0032	.0125	.00074	.3456	.0001	.0001
#1	1.638	-.0038	.0018	.0124	.00071	.3488	.0001	.0000
#2	1.632	-.0066	.0045	.0125	.00077	.3424	.0001	.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	221.8	.0011	.1912	.0012	.0014	7.601	.0029	.0328
#1	222.6	.0015	.1920	.0009	.0020	7.633	.0029	.0325
#2	221.0	.0007	.1904	.0015	.0008	7.569	.0029	.0331
Elem	Mg2852	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.51	15.54	-.0004	.1412	.0014	5.195	.0046	9.130
#1	56.25	15.39	-.0004	.1410	.0035	5.122	.0023	9.105
#2	56.76	15.69	-.0003	.1413	-.0006	5.268	.0068	9.154
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0012	33.67	2.2050	-.0006	-.0007	-.0002	.0009	.1867
#1	-.0019	33.56	2.2115	-.0022	-.0013	-.0004	.0010	.1871
#2	-.0004	33.78	2.1986	.0011	.0000	.0000	.0008	.1862
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.1881	.0017	315.8					
#1	.1889	-.0008	317.0					
#2	.1873	.0043	314.7					

Sample Name: K1801891-001 Acquired: 3/14/2018 14:25:09 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2435.7	32521.	3228.8
#1	2442.6	32636.	3205.7
#2	2428.7	32406.	3251.9

Sample Name: K1801891-002 Acquired: 3/14/2018 14:27:42 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4784	-.0013	.0027	.0213	.00047	.0324	.0000	.0001
#1	.4791	-.0018	.0058	.0212	.00038	.0306	.0000	.0003
#2	.4777	-.0008	-.0004	.0215	.00056	.0343	.0000	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.51	-.0007	.0103	.0016	.0027	.0274	-.0011	.0076
#1	19.51	-.0007	.0104	.0018	.0016	.0341	-.0013	.0086
#2	19.50	-.0006	.0102	.0014	.0038	.0207	-.0008	.0066
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.757	1.0806	.0001	.0232	.0108	1.249	.0006	4.003
#1	5.754	1.0813	.0001	.0235	.0077	1.267	.0003	4.004
#2	5.761	1.0800	.0002	.0229	.0139	1.231	.0009	4.002
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0015	7.360	.22462	-.0014	-.0013	.0001	.0000	.0453
#1	-.0023	7.363	.22447	-.0016	.0000	-.0002	-.0002	.0458
#2	-.0007	7.356	.22476	-.0011	-.0026	.0003	.0002	.0449
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0450	.0025	29.13					
#1	.0450	.0015	29.12					
#2	.0450	.0035	29.14					

Sample Name: K1801891-002 Acquired: 3/14/2018 14:27:42 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2482.2	32700.	3106.6
#1	2480.4	32633.	3113.9
#2	2484.0	32768.	3099.4

Sample Name: KQ1802833-02 Acquired: 3/14/2018 14:30:10 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801864-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0018	-.0001	-.0022	.0003	-.00008	.0024	-.0001	-.0001
#1	-.0001	.0052	.0009	.0003	-.00014	.0023	.0000	-.0001
#2	-.0034	-.0053	-.0052	.0003	-.00003	.0024	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0027	-.0004	-.0008	.0001	-.0004	.0044	.0008	-.0004
#1	.0026	.0003	-.0009	.0006	.0004	.0033	-.0002	.0006
#2	.0029	-.0010	-.0006	-.0004	-.0012	.0056	.0017	-.0013
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.00024	.0004	-.0001	.0134	.0183	-.0019	.0259
#1	.0008	.00030	.0005	.0001	.0118	.0548	.0011	.0277
#2	.0007	.00017	.0004	-.0003	.0149	-.0183	-.0049	.0241
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0705	.00015	-.0035	-.0016	.0002	-.0007	.0001
#1	-.0007	.0809	.00008	-.0047	-.0008	.0002	-.0009	.0001
#2	-.0001	.0600	.00023	-.0023	-.0023	.0003	-.0005	.0001
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0001	.0031	.0110					
#1	.0001	.0015	.0016					
#2	.0002	.0046	.0205					

Sample Name: KQ1802833-02 Acquired: 3/14/2018 14:30:10 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-MB

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2509.2	33351.	3116.0
#1	2503.3	33328.	3117.3
#2	2515.1	33375.	3114.7

Sample Name: KQ1802833-01 Acquired: 3/14/2018 14:32:37 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-LCSW

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.618	2.144	2.372	4.785	.12101	.5136	1.158	1.157
#1	4.616	2.161	2.378	4.790	.12111	.5125	1.158	1.157
#2	4.620	2.127	2.366	4.781	.12091	.5148	1.159	1.157
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.75	.4671	1.164	.5769	.5733	2.246	2.269	.0019
#1	11.84	.4685	1.165	.5780	.5732	2.238	2.271	.0022
#2	11.66	.4658	1.163	.5759	.5734	2.254	2.267	.0015
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.96	1.1538	1.019	1.159	9.559	11.70	2.447	.0117
#1	10.93	1.1543	1.018	1.159	9.572	11.72	2.468	.0098
#2	10.99	1.1532	1.021	1.158	9.546	11.67	2.426	.0136
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5634	11.73	.00033	2.258	.0014	.0000	1.193	1.190
#1	.5621	11.70	.00048	2.247	.0021	.0000	1.196	1.189
#2	.5647	11.75	.00019	2.268	.0007	.0001	1.190	1.191
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.185	-.0035	-.0054					
#1	1.190	-.0050	-.0051					
#2	1.180	-.0020	-.0057					

Sample Name: KQ1802833-01 Acquired: 3/14/2018 14:32:37 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-LCSW

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2496.7	32863.	3142.2
#1	2503.1	32866.	3126.9
#2	2490.3	32861.	3157.5

Sample Name: K1801864-001 Acquired: 3/14/2018 14:34:49 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0351	2.969	.0453	-.00014	.0198	.0000	-.0001
#1	.0000	.0424	2.972	.0451	-.00007	.0197	.0001	-.0001
#2	-.0009	.0279	2.966	.0455	-.00020	.0200	.0000	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.83	-.0004	.0047	-.0007	-.0007	8.257	.0005	.0004
#1	83.87	.0006	.0052	-.0004	-.0004	8.233	.0013	.0018
#2	83.79	-.0014	.0043	-.0009	-.0010	8.281	-.0003	-.0011
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.46	1.0013	.0075	-.0001	.1380	9.367	.0073	6.240
#1	21.40	1.0024	.0078	.0001	.1405	9.305	.0058	6.210
#2	21.51	1.0001	.0072	-.0003	.1356	9.429	.0088	6.270
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	20.66	.52350	-.0017	-.0001	.0001	.0005	.0005
#1	-.0009	20.57	.52237	-.0035	.0005	-.0004	-.0003	.0004
#2	-.0011	20.74	.52463	.0000	-.0008	.0005	.0013	.0007
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0009	-.0007	36.57					
#1	.0011	.0045	36.74					
#2	.0008	-.0060	36.39					

Sample Name: K1801864-001 Acquired: 3/14/2018 14:34:49 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2408.0	32067.	3072.5
#1	2410.4	31962.	3071.4
#2	2405.6	32172.	3073.6

Sample Name: K1801864-001L Acquired: 3/14/2018 14:37:16 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 031418B 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0009	.0067	.6175	.0087	-.00023	.0063	-.0002	-.0001

#1	-.0002	.0076	.6182	.0087	-.00012	.0060	-.0001	.0000
#2	-.0016	.0057	.6167	.0087	-.00035	.0066	-.0003	-.0003

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.92	.0002	.0012	.0004	.0007	1.664	.0011	.0001

#1	16.94	-.0002	.0012	.0008	.0008	1.669	.0012	-.0024
#2	16.90	.0005	.0012	-.0001	.0005	1.660	.0010	.0027

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.501	.20733	.0017	.0001	.0279	1.876	.0038	1.273

#1	4.508	.20817	.0016	.0002	.0271	1.925	.0010	1.285
#2	4.495	.20649	.0019	.0001	.0287	1.828	.0066	1.260

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	4.166	.10445	-.0001	-.0008	.0000	.0010	.0003

#1	-.0008	4.179	.10484	-.0017	-.0018	-.0003	.0015	.0004
#2	-.0004	4.152	.10407	.0015	.0002	.0003	.0006	.0003

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0002	.0035	7.528

#1	.0001	.0048	7.534
#2	.0003	.0021	7.521

Sample Name: K1801864-001L Acquired: 3/14/2018 14:37:16 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 5 Test Type: Sample Type:
Comment: EM 031418B 1/5

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2492.1	32831.	3124.0
#1	2490.0	32822.	3117.5
#2	2494.2	32839.	3130.5

Sample Name: KQ1802833-03 Acquired: 3/14/2018 14:39:45 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-001D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0313	2.954	.0455	-.00007	.0168	-.0001	-.0002
#1	.0018	.0278	2.949	.0453	.00001	.0167	-.0001	-.0003
#2	-.0011	.0349	2.959	.0457	-.00014	.0170	-.0001	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.29	-.0005	.0044	-.0009	.0002	8.225	.0010	.0014
#1	83.29	.0000	.0043	-.0003	.0002	8.225	.0003	.0007
#2	83.30	-.0010	.0045	-.0015	.0002	8.225	.0017	.0021
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.34	1.0023	.0062	-.0003	.1376	9.287	-.0002	6.204
#1	21.46	1.0024	.0059	-.0001	.1405	9.370	-.0027	6.231
#2	21.23	1.0021	.0065	-.0005	.1346	9.203	.0023	6.176
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	20.49	.52112	.0002	.0008	.0000	.0007	.0006
#1	-.0016	20.60	.52116	.0002	.0007	-.0003	.0010	.0006
#2	.0002	20.37	.52108	.0001	.0009	.0003	.0005	.0005
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0008	.0012	36.27					
#1	.0008	-.0024	36.24					
#2	.0008	.0048	36.30					

Sample Name: KQ1802833-03 Acquired: 3/14/2018 14:39:45 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-001D

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2381.5	31589.	3056.8
#1	2372.8	31642.	3072.7
#2	2390.2	31536.	3040.9

Sample Name: KQ1802833-04 Acquired: 3/14/2018 14:42:13 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B K1801864-001S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.609	.4381	3.655	.9251	.03956	.4538	.0407	.0403
#1	1.607	.4382	3.660	.9221	.03931	.4538	.0409	.0404
#2	1.610	.4380	3.649	.9281	.03982	.4538	.0405	.0403
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	89.20	.1714	.4173	.2055	.2032	8.709	.4047	.0026
#1	88.95	.1713	.4175	.2055	.2040	8.659	.4031	.0010
#2	89.46	.1716	.4170	.2055	.2025	8.760	.4063	.0041
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.99	1.3793	.9736	.4009	9.234	17.34	.7528	5.935
#1	28.07	1.3801	.9725	.4002	9.246	17.29	.7460	5.928
#2	27.91	1.3786	.9747	.4016	9.222	17.39	.7595	5.943
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0381	28.01	.50198	.1650	-.0002	.0001	.4397	.4033
#1	.0376	28.01	.50133	.1648	-.0011	.0000	.4396	.4027
#2	.0387	28.01	.50263	.1652	.0008	.0002	.4399	.4038
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.3884	.0011	34.49					
#1	.3883	.0036	34.46					
#2	.3886	-.0015	34.51					

Sample Name: KQ1802833-04 Acquired: 3/14/2018 14:42:13 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B K1801864-001S

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2376.8	31288.	3026.2
#1	2376.0	31324.	3036.2
#2	2377.7	31252.	3016.1

Sample Name: K1801864-001A Acquired: 3/14/2018 14:44:35 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, B, P

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.683	.4942	5.215	5.289	.11546	4.733	1.198	1.183
#1	4.707	.4914	5.186	5.266	.11539	4.728	1.199	1.185
#2	4.658	.4970	5.244	5.311	.11553	4.738	1.197	1.182
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	94.49	.5016	1.219	.5956	.5862	10.50	2.359	.0004
#1	94.41	.5038	1.221	.5971	.5861	10.47	2.355	.0001
#2	94.57	.4995	1.218	.5941	.5862	10.54	2.363	.0008
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.19	2.2071	.0068	1.180	4.895	20.86	2.140	6.011
#1	31.03	2.2066	.0071	1.182	4.879	20.77	2.126	6.003
#2	31.34	2.2075	.0065	1.178	4.911	20.95	2.155	6.019
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.5670	31.60	.50978	2.329	-.0009	.0001	1.299	1.187
#1	.5676	31.42	.50900	2.325	-.0015	.0004	1.299	1.189
#2	.5664	31.78	.51057	2.334	-.0003	-.0001	1.298	1.185
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.135	.0053	34.81					
#1	1.130	.0071	34.56					
#2	1.139	.0036	35.05					

*N/A
am 3/14/18

Sample Name: K1801864-001A Acquired: 3/14/2018 14:44:35 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B A=0.05/10mL CICV-1,3 + Sb, B, P

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2366.1	30828.	2980.9
#1	2355.2	30830.	2973.0
#2	2376.9	30825.	2988.8

Sample Name: CCVB Acquired: 3/14/2018 14:46:53 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.044	9.710	.0036	1.026	10.38	-.00014	.0108	-.0002
Stddev	.018	.029	.0027	.005	.00	.00010	.0032	.0001
%RSD	.2193	.2963	75.88	.4949	.0226	73.015	29.48	38.82

#1	8.056	9.690	.0017	1.023	10.38	-.00007	.0130	-.0002
#2	8.031	9.730	.0055	1.030	10.38	-.00022	.0085	-.0003

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.17	9.897	.0006	.0005	-.0002	.0002	9.926
Stddev	.0001	.03	.221	.0003	.0008	.0004	.0002	.034
%RSD	141.4	.2855	2.229	48.35	159.2	213.3	94.74	.3450

#1	.0000	10.19	10.05	.0004	-.0001	.0001	.0004	9.950
#2	.0001	10.15	9.741	.0008	.0011	-.0004	.0001	9.902

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.9663	10.39	9.805	9.237	1.0181	.9140	.0006
Stddev	.0017	.0011	.06	.058	.025	.0003	.0006	.0001
%RSD	407.2	.1089	.6140	.5909	.2723	.02984	.0682	9.649

#1	.0016	.9670	10.44	9.846	9.219	1.0183	.9144	.0006
#2	-.0008	.9655	10.35	9.764	9.255	1.0179	.9136	.0007

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value Range								

Sample Name: CCVB Acquired: 3/14/2018 14:46:53 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	10.11	9.710	.0024	9.100	-.0008	9.777	1.0353
Stddev	.0002	.01	.003	.0024	.009	.0005	.038	.0037
%RSD	39.76	.1014	.0263	102.1	.1008	59.17	.3843	.35242

#1	-.0005	10.12	9.712	.0041	9.107	-.0005	9.751	1.0379
#2	-.0003	10.10	9.708	.0007	9.094	-.0011	9.804	1.0327

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0001	.0005	.0005	.0002	.0003	1.017	1.009
Stddev	.0011	.0011	.0002	.0003	.0002	.0000	.001	.001
%RSD	303.0	1201.	48.77	59.71	106.3	15.11	.0825	.0726

#1	.0004	.0007	.0007	.0008	.0003	.0003	1.016	1.009
#2	-.0012	-.0009	.0003	.0003	.0000	.0003	1.018	1.010

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2488.6	31923.	3018.4
Stddev	3.8	162.	25.7
%RSD	.15330	.50839	.85151

#1	2491.3	31808.	3000.2
#2	2485.9	32038.	3036.6

Sample Name: CCVA Acquired: 3/14/2018 14:49:26 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2584	.2520	.2591	.2618	.2620	.25105	.2569	.2558
Stddev	.0017	.0009	.0017	.0010	.0013	.00005	.0003	.0005
%RSD	.6585	.3397	.6453	.3946	.4794	.02002	.1266	.1994

#1	.2572	.2526	.2579	.2611	.2629	.25102	.2567	.2562
#2	.2596	.2514	.2603	.2625	.2611	.25109	.2572	.2555

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2530	.5196	.5093	.2531	.2535	.2559	.2495	.2517
Stddev	.0006	.0084	.0006	.0005	.0000	.0002	.0018	.0010
%RSD	.2342	1.609	.1276	.1787	.0061	.0975	.7266	.3854

#1	.2535	.5255	.5098	.2528	.2535	.2557	.2507	.2510
#2	.2526	.5137	.5089	.2534	.2535	.2561	.2482	.2524

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2533	-.0008	.2615	.2465	.2312	.25909	.2267	.2558
Stddev	.0031	.0015	.0298	.0017	.0016	.00061	.0015	.0012
%RSD	1.228	185.8	11.38	.6806	.6766	.23480	.6556	.4797

#1	.2555	-.0019	.2404	.2453	.2323	.25953	.2277	.2566
#2	.2511	.0003	.2825	.2476	.2301	.25866	.2256	.2549

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 14:49:26 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2508	.0005	2.420	.2561	.1083	.2507	.3004	.00015
Stddev	.0005	.0030	.066	.0025	.0074	.0006	.0064	.00007
%RSD	.2118	559.9	2.730	.9761	6.827	.2536	2.145	45.578

#1	.2504	-.0016	2.374	.2578	.1135	.2502	.3050	.00020
#2	.2512	.0027	2.467	.2543	.1031	.2511	.2959	.00010

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2510	.2526	.2557	.2540	.2544	.2570	.0001	-.0015
Stddev	.0031	.0016	.0008	.0000	.0010	.0005	.0014	.0056
%RSD	1.250	.6262	.3099	.0058	.3932	.1876	1071.	366.1

#1	.2488	.2537	.2551	.2540	.2551	.2567	-.0009	-.0055
#2	.2532	.2514	.2562	.2540	.2537	.2573	.0011	.0024

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2522.4	32890.	3068.3
Stddev	.2	22.	23.8
%RSD	.00828	.06674	.77702

#1	2522.3	32874.	3085.2
#2	2522.6	32905.	3051.5

Sample Name: CCB Acquired: 3/14/2018 14:51:43 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0013	-.0043	.0033	.0022	-.00008	.0028	.0000
Stddev	.0014	.0015	.0020	.0005	.0002	.00016	.0024	.0001
%RSD	160400.	111.7	46.97	15.80	9.480	185.62	83.27	2693.

#1	-.0010	.0003	-.0028	.0036	.0020	.00003	.0045	.0001
#2	.0010	.0024	-.0057	.0029	.0023	-.00019	.0012	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	F .0377	F .0431	-.0001	.0009	.0005	-.0001	.0043
Stddev	.0001	.0052	.0001	.0002	.0001	.0001	.0002	.0024
%RSD	93.71	13.91	.3042	249.9	7.575	11.47	247.5	54.67

#1	.0003	.0340	.0430	-.0003	.0008	.0005	.0001	.0027
#2	.0001	.0414	.0432	.0001	.0009	.0004	-.0003	.0060

Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		.0200	.0200					
Low Limit		-.0200	-.0200					

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0009	.0162	F .0138	F .0127	.00067	-.0001	.0011
Stddev	.0012	.0008	.0013	.0000	.0024	.00007	.0021	.0000
%RSD	1900.	80.76	7.941	.1102	19.12	11.137	2101.	2.849

#1	-.0008	-.0004	.0153	.0138	.0110	.00072	-.0015	.0011
#2	.0009	-.0015	.0171	.0138	.0144	.00062	.0014	.0011

Check ?	Chk Pass	Chk Pass	None	Chk Fail	Chk Fail	Chk Pass	None	Chk Pass
High Limit				.0050	.0050			
Low Limit				-.0050	-.0050			

*see rerun
am 3/14/18*

Sample Name: CCB Acquired: 3/14/2018 14:51:43 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0031	.0114	.0014	.0080	-.0011	.0714	.00058
Stddev	.0003	.0043	.0091	.0062	.0015	.0003	.0069	.00002
%RSD	192.7	137.3	79.70	455.9	19.19	30.16	9.653	3.1229

#1	.0004	.0061	.0050	.0057	.0091	-.0009	.0762	.00056
#2	-.0001	.0001	.0179	-.0030	.0069	-.0014	.0665	.00059

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0018	-.0007	.0006	-.0002	.0003	.0000	.0021	.0059
Stddev	.0013	.0009	.0001	.0003	.0003	.0001	.0018	.0087
%RSD	72.40	124.9	13.02	153.4	115.8	191.5	89.80	147.8

#1	-.0009	-.0001	.0006	-.0004	.0005	.0001	.0034	.0121
#2	-.0027	-.0014	.0007	.0000	.0001	.0000	.0008	-.0003

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2517.1	32664.	3043.3
Stddev	3.0	299.	5.4
%RSD	.11848	.91493	.17852

#1	2519.2	32453.	3039.4
#2	2515.0	32876.	3047.1

*see rerun
ann 3/14/18*

Sample Name: CCB Acquired: 3/14/2018 14:57:03 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0014	.0003	-.0024	.0014	-.0002	-.00015	.0033	-.0003
Stddev	.0009	.0008	.0013	.0007	.0000	.00019	.0011	.0002
%RSD	59.73	300.4	55.77	52.54	7.770	128.51	31.82	62.86

#1	-.0020	-.0003	-.0014	.0020	-.0002	-.00001	.0026	-.0001
#2	-.0008	.0008	-.0033	.0009	-.0002	-.00028	.0040	-.0004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0154	.0020	-.0005	.0000	.0000	.0010	.0100
Stddev	.0001	.0142	.0001	.0008	.000	.001	.0000	.0066
%RSD	6981.	92.40	4.414	167.3	346.8	1592.	4.484	66.35

#1	-.0001	.0053	.0021	.0001	-.0002	.0004	.0010	.0146
#2	.0001	.0255	.0020	-.0011	.0001	-.0005	.0009	.0053

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0015	.0458	.0007	.0004	.00000	-.0010	.0005
Stddev	.0007	.0006	.0009	.0000	.0005	.00017	.0007	.0004
%RSD	162.3	40.17	1.896	4.712	141.6	91101.	63.84	83.72

#1	-.0009	.0020	.0452	.0007	.0000	-.00012	-.0006	.0009
#2	.0001	.0011	.0465	.0007	.0007	.00012	-.0015	.0002

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 14:57:03 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0036	.0250	-.0030	.0050	.0004	.0547	.00011
Stddev	.0003	.0054	.0173	.0003	.0061	.0002	.0029	.00006
%RSD	100.6	151.2	69.31	9.023	122.2	62.76	5.331	58.941

#1	.0005	-.0074	.0372	-.0028	.0007	.0002	.0568	.00015
#2	.0001	.0002	.0127	-.0032	.0093	.0005	.0527	.00006

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	.0000	.0002	-.0001	.0004	.0002	-.0017	-.0053
Stddev	.0018	.0005	.0001	.0002	.0001	.0002	.0012	.0056
%RSD	115.1	1392.	51.18	314.0	27.35	110.7	69.62	106.0

#1	-.0003	.0004	.0001	-.0003	.0004	.0003	-.0026	-.0092
#2	-.0029	-.0003	.0003	.0001	.0003	.0000	-.0009	-.0013

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2533.2	33169.	3135.9
Stddev	16.1	21.	12.2
%RSD	.63470	.06443	.38981

#1	2544.6	33154.	3144.6
#2	2521.9	33184.	3127.3

Sample Name: LLCCV Acquired: 3/14/2018 14:59:57 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0088	.0117	.0199	.0082	.0044	.00110	.0254	.0009
Stddev	.0002	.0025	.0025	.0023	.0005	.00019	.0002	.0000
%RSD	2.457	21.27	12.69	28.49	11.73	17.035	.8146	.3518

#1	.0086	.0135	.0217	.0066	.0047	.00096	.0252	.0009
#2	.0089	.0099	.0181	.0099	.0040	.00123	.0255	.0009

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273 *	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	F .0030	.0224	.0043	.0025	.0043	F .0054	.0230
Stddev	.0000	.0021	.0004	.0007	.0005	.0002	.0002	.0048
%RSD	3.738	69.34	1.873	15.66	19.62	4.706	3.934	20.92

#1	.0012	.0015	.0221	.0039	.0029	.0044	.0052	.0196
#2	.0011	.0045	.0227	.0048	.0022	.0042	.0055	.0264

Check ? Value Range	Chk Pass	Chk Fail .0200 -30.00%	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail .0040 30.00%	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0113	.0210	.0210	.0053	.0050	.00117	.0006	.0049
Stddev	.0026	.0000	.0709	.0001	.0043	.00001	.0004	.0001
%RSD	22.73	.0250	337.8	2.331	87.17	1.0314	68.24	1.949

#1	.0095	.0210	.0712	.0052	.0080	.00117	.0003	.0049
#2	.0131	.0210	-.0292	.0054	.0019	.00118	.0009	.0050

Check ? Value Range	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
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*rewritten
 am 3/14/18

Sample Name: LLCCV Acquired: 3/14/2018 14:59:57 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0468	.2515	.0186	.1971	.0033	.2594	.00107
Stddev	.0002	.0024	.0159	.0001	.0101	.0001	.0072	.00011
%RSD	3.853	5.044	6.333	.6273	5.099	1.689	2.779	10.299

#1	.0039	.0484	.2628	.0187	.1900	.0033	.2543	.00115
#2	.0041	.0451	.2403	.0185	.2042	.0032	.2645	.00099

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0110	.0205	.0023	.0042	.0041	.0040	.0256	.0293
Stddev	.0037	.0013	.0005	.0002	.0004	.0003	.0018	.0000
%RSD	33.41	6.138	22.53	4.479	10.18	7.435	6.916	.0644

#1	.0084	.0196	.0026	.0041	.0038	.0043	.0243	.0293
#2	.0137	.0214	.0019	.0044	.0044	.0038	.0268	.0292

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2545.0	33640.	3154.6
Stddev	4.4	94.	27.9
%RSD	.17231	.28085	.88298

#1	2541.9	33707.	3174.3
#2	2548.1	33573.	3134.9

Sample Name: LLCCV Acquired: 3/14/2018 15:02:29 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0083	.0073	.0166	F .0157	.0039	.00091	.0225	.0009
Stddev	.0032	.0009	.0022	.0020	.0008	.00009	.0015	.0000
%RSD	38.60	12.32	13.00	12.48	20.80	9.9201	6.876	.2215

#1	.0060	.0066	.0151	.0171	.0045	.00098	.0236	.0009
#2	.0105	.0079	.0181	.0143	.0034	.00085	.0214	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value				.0100				
Range				30.00%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	F .0125	.0209	.0048	.0023	.0037	.0033	.0217
Stddev	.0002	.0024	.0001	.0007	.0001	.0004	.0007	.0031
%RSD	15.51	19.33	.3752	15.33	4.999	10.64	19.96	14.43

#1	.0010	.0108	.0208	.0053	.0022	.0039	.0028	.0239
#2	.0012	.0142	.0209	.0042	.0024	.0034	.0037	.0195

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0200						
Range		-30.00%						

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0120	.0210	-.0209	.0050	F .0096	.00097	.0002	.0042
Stddev	.0025	.0001	.0161	.0001	.0030	.00015	.0025	.0004
%RSD	20.47	.4508	77.00	1.508	31.17	15.045	988.1	8.935

#1	.0103	.0210	-.0322	.0050	.0118	.00108	-.0015	.0045
#2	.0138	.0209	-.0095	.0051	.0075	.00087	.0020	.0039

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
Value					.0050			
Range					30.00%			

Sample Name: LLCCV Acquired: 3/14/2018 15:02:29 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0037	.0406	.2421	.0194	.1764	.0034	.2533	.00126
Stddev	.0003	.0048	.0404	.0011	.0165	.0002	.0013	.00012
%RSD	8.811	11.90	16.69	5.427	9.383	4.799	.5032	9.8153
#1	.0039	.0372	.2707	.0202	.1647	.0036	.2524	.00117
#2	.0035	.0440	.2135	.0187	.1881	.0033	.2542	.00135

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0068	.0207	.0021	.0036	.0042	.0042	.0235	.0297
Stddev	.0001	.0002	.0001	.0008	.0005	.0001	.0020	.0045
%RSD	1.736	.9317	5.331	22.01	10.93	1.922	8.479	15.24
#1	.0069	.0208	.0020	.0031	.0038	.0042	.0221	.0329
#2	.0067	.0205	.0022	.0042	.0045	.0043	.0249	.0265

Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.0100							
Range	-30.00%							

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2564.0	33968.	3185.1
Stddev	8.5	112.	13.7
%RSD	.33104	.33050	.43050
#1	2558.0	34048.	3194.8
#2	2570.0	33889.	3175.4

Sample Name: LLCCV,0.5 Acquired: 3/14/2018 15:05:12 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0200	.0208	.0369	.0224	.0077	.00198	.0442	.0019
Stddev	.0027	.0016	.0020	.0034	.0009	.00014	.0027	.0002
%RSD	13.33	7.773	5.319	15.13	12.07	7.1710	6.084	10.64

#1	.0181	.0197	.0383	.0200	.0083	.00208	.0423	.0021
#2	.0219	.0219	.0355	.0248	.0070	.00188	.0461	.0018

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0366	.0419	.0087	.0043	.0075	.0084	.0458
Stddev	.0001	.0043	.0001	.0001	.0008	.0002	.0002	.0049
%RSD	6.331	11.78	.3273	.8392	18.63	2.688	2.742	10.64

#1	.0018	.0397	.0420	.0087	.0048	.0074	.0086	.0424
#2	.0020	.0336	.0418	.0088	.0037	.0077	.0083	.0493

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0202	.0409	.0092	.0099	.0100	.00193	.0018	.0086
Stddev	.0019	.0008	.0336	.0001	.0034	.00004	.0005	.0004
%RSD	9.475	2.069	363.6	1.474	34.27	2.0822	29.52	4.134

#1	.0189	.0415	.0330	.0098	.0124	.00190	.0015	.0088
#2	.0216	.0403	-.0145	.0101	.0076	.00196	.0022	.0083

Check ? Value Range	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Sample Name: LLCCV,0.5 Acquired: 3/14/2018 15:05:12 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0084	.0760	.3756	.0415	.3832	.0068	.4667	.00217
Stddev	.0001	.0091	.1083	.0023	.0022	.0010	.0089	.00008
%RSD	1.314	11.92	28.84	5.586	.5735	13.97	1.917	3.8145

#1	.0083	.0824	.4522	.0399	.3816	.0075	.4731	.00223
#2	.0085	.0696	.2990	.0432	.3847	.0061	.4604	.00211

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0189	.0421	.0042	.0088	.0086	.0084	.0419	.0712
Stddev	.0015	.0020	.0004	.0002	.0002	.0001	.0031	.0042
%RSD	7.970	4.860	10.61	1.920	1.921	1.474	7.332	5.944

#1	.0199	.0435	.0039	.0089	.0085	.0083	.0440	.0742
#2	.0178	.0406	.0045	.0087	.0087	.0084	.0397	.0682

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2544.4	33882.	3195.5
Stddev	9.1	138.	16.0
%RSD	.35677	.40823	.50148

#1	2550.8	33784.	3206.8
#2	2537.9	33980.	3184.2

Sample Name: K1801864-002 Acquired: 3/14/2018 15:07:50 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0092	.0026	.0359	.0055	-.00024	.0064	-.0001	.0000
#1	.0092	.0042	.0317	.0052	-.00003	.0068	-.0002	.0000
#2	.0092	.0011	.0401	.0057	-.00044	.0059	-.0001	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.53	-.0002	.0000	-.0004	.0020	.1185	-.0006	.0008
#1	12.50	-.0002	.0003	-.0002	.0026	.1167	-.0023	.0015
#2	12.57	-.0001	-.0003	-.0007	.0013	.1202	.0011	.0000
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.301	.02793	.0014	-.0002	.0196	.8492	.0054	5.106
#1	2.294	.02790	.0016	.0000	.0217	.8611	.0009	5.121
#2	2.309	.02797	.0011	-.0003	.0174	.8373	.0099	5.091
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	2.648	.06676	-.0054	-.0011	.0005	.0001	.0004
#1	.0004	2.655	.06658	-.0067	-.0004	.0006	.0003	.0003
#2	.0002	2.640	.06695	-.0042	-.0017	.0004	-.0001	.0006
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0007	.0005	2.484					
#1	.0006	.0034	2.496					
#2	.0008	-.0025	2.472					

Sample Name: K1801864-002 Acquired: 3/14/2018 15:07:50 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2494.0	33317.	3152.0
#1	2490.0	33246.	3166.8
#2	2498.0	33388.	3137.3

Sample Name: K1801864-003 Acquired: 3/14/2018 15:10:20 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0309	11.45	.0241	-.00005	.0081	-.0002	-.0002
#1	.0022	.0332	11.48	.0242	.00007	.0095	-.0002	-.0002
#2	.0018	.0285	11.42	.0239	-.00017	.0067	-.0003	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	175.2	-.0013	.0013	-.0014	-.0022	35.66	.0001	.0049
#1	175.4	-.0008	.0008	-.0015	-.0030	35.69	-.0014	.0038
#2	175.0	-.0018	.0018	-.0013	-.0015	35.64	.0017	.0059
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.57	1.4484	.0006	.0007	.2339	2.862	-.0008	5.904
#1	38.38	1.4487	.0005	.0008	.2381	2.855	.0000	5.846
#2	38.76	1.4481	.0006	.0006	.2296	2.869	-.0015	5.962
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	5.855	1.9437	-.0040	.0001	.0003	-.0001	.0020
#1	-.0002	5.832	1.9467	-.0059	.0001	.0001	.0001	.0023
#2	.0003	5.879	1.9408	-.0020	.0000	.0005	-.0003	.0018
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0031	.0036	96.48					
#1	.0028	.0023	96.52					
#2	.0033	.0049	96.43					

Sample Name: K1801864-003 Acquired: 3/14/2018 15:10:20 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2363.5	31635.	3069.6
#1	2359.7	31633.	3048.8
#2	2367.2	31636.	3090.4

Sample Name: K1801864-004 Acquired: 3/14/2018 15:12:49 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	-.0039	.0161	.0108	-.00017	.0055	-.0002	-.0002
#1	.0039	-.0059	.0183	.0107	-.00002	.0055	-.0002	-.0003
#2	.0045	-.0019	.0140	.0108	-.00033	.0054	-.0002	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.296	-.0001	.0003	.0003	.0010	.0194	.0011	.0003
#1	9.270	-.0005	.0006	.0005	.0025	.0210	-.0004	.0015
#2	9.323	.0004	.0001	.0001	-.0005	.0177	.0027	-.0008
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.487	.00087	.0015	-.0001	.0188	.6204	.0069	3.921
#1	2.485	.00104	.0016	-.0001	.0194	.6016	.0058	3.891
#2	2.490	.00071	.0015	-.0001	.0182	.6393	.0080	3.950
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	1.568	.07607	-.0021	-.0011	.0008	.0004	.0005
#1	-.0013	1.553	.07603	-.0048	-.0019	.0007	-.0001	.0006
#2	-.0006	1.583	.07611	.0006	-.0003	.0010	.0008	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	.0016	.6324					
#1	.0006	.0005	.6227					
#2	.0004	.0026	.6422					

Sample Name: K1801864-004 Acquired: 3/14/2018 15:12:49 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2513.2	33250.	3072.8
#1	2497.7	33170.	3060.2
#2	2528.6	33330.	3085.3

Sample Name: K1801864-005 Acquired: 3/14/2018 15:15:19 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	-.0049	.0071	.0093	-.00016	.0039	-.0002	-.0001
#1	.0056	.0019	.0087	.0086	-.00014	.0046	.0000	.0000
#2	.0056	-.0117	.0056	.0099	-.00017	.0032	-.0004	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.270	.0000	-.0003	.0002	-.0002	.0181	.0013	.0004
#1	9.320	-.0004	-.0010	.0001	.0001	.0210	.0005	-.0004
#2	9.219	.0003	.0005	.0002	-.0005	.0151	.0020	.0012
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.365	.00053	.0017	.0001	.0165	.6408	.0021	3.926
#1	2.370	.00050	.0018	.0002	.0214	.6656	.0016	3.918
#2	2.361	.00057	.0016	.0000	.0116	.6161	.0025	3.934
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0012	1.573	.07711	-.0036	-.0005	.0003	.0008	.0005
#1	-.0007	1.575	.07695	-.0030	-.0003	.0002	.0015	.0004
#2	-.0017	1.570	.07727	-.0042	-.0007	.0004	.0002	.0006
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0006	.0024	.5394					
#1	.0007	.0036	.5410					
#2	.0006	.0012	.5378					

Sample Name: K1801864-005 Acquired: 3/14/2018 15:15:19 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2513.7	33441.	3117.1
#1	2508.2	33328.	3101.1
#2	2519.1	33553.	3133.2

Sample Name: K1801864-006 Acquired: 3/14/2018 15:17:50 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0087	.0077	.0510	.0067	-.00011	.0042	-.0001	.0000
#1	.0090	.0035	.0508	.0068	-.00017	.0035	-.0001	-.0001
#2	.0084	.0119	.0512	.0066	-.00005	.0049	-.0001	.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.078	.0005	-.0001	-.0007	-.0001	.0390	-.0009	.0023
#1	9.143	.0007	.0000	-.0009	.0001	.0347	-.0020	.0017
#2	9.013	.0002	-.0002	-.0006	-.0004	.0433	.0001	.0030
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.413	.00099	.0017	-.0005	.0300	.6927	.0007	2.881
#1	4.429	.00110	.0010	-.0007	.0299	.6667	.0015	2.858
#2	4.397	.00088	.0024	-.0003	.0300	.7187	-.0001	2.904
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.7934	.03594	-.0052	-.0005	.0006	.0000	.0008
#1	.0001	.7919	.03588	-.0048	.0000	.0005	.0006	.0007
#2	-.0003	.7950	.03601	-.0055	-.0010	.0007	-.0006	.0009
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0009	-.0003	.8353					
#1	.0008	.0003	.8352					
#2	.0010	-.0010	.8353					

Sample Name: K1801864-006 Acquired: 3/14/2018 15:17:50 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2520.2	33417.	3114.4
#1	2521.5	33420.	3089.7
#2	2519.0	33414.	3139.2

Sample Name: K1801864-007 Acquired: 3/14/2018 15:20:21 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	-.0028	.0032	.0077	-.00027	.0036	-.0002	-.0002

#1	.0026	-.0052	.0026	.0076	-.00033	.0037	-.0002	-.0002
#2	.0032	-.0005	.0038	.0077	-.00021	.0035	-.0002	-.0002

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.19	-.0007	-.0001	-.0013	.0004	.0072	.0010	.0014

#1	13.17	-.0020	.0002	-.0015	.0009	.0098	.0022	.0012
#2	13.22	.0006	-.0004	-.0011	-.0002	.0046	-.0002	.0016

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.244	.00026	.0004	.0001	.0165	.5370	.0044	2.419

#1	5.236	.00025	.0010	-.0002	.0156	.5482	.0035	2.404
#2	5.252	.00027	-.0003	.0004	.0174	.5257	.0053	2.434

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.5812	.03362	-.0013	-.0008	.0004	-.0003	.0003

#1	.0002	.5724	.03352	.0008	.0007	.0004	-.0004	.0003
#2	-.0005	.5901	.03371	-.0034	-.0022	.0005	-.0003	.0004

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0005	.0023	.3876

#1	.0007	.0033	.3883
#2	.0004	.0014	.3868

Sample Name: K1801864-007 Acquired: 3/14/2018 15:20:21 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2523.8	33447.	3117.3
#1	2516.8	33450.	3115.2
#2	2530.8	33445.	3119.3

Sample Name: K1801864-008 Acquired: 3/14/2018 15:22:51 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0068	-.0011	.0122	.0047	-.00014	.0030	-.0002	-.0001
#1	.0080	-.0018	.0094	.0045	-.00008	.0015	-.0001	-.0001
#2	.0056	-.0004	.0150	.0049	-.00021	.0044	-.0003	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.83	-.0002	.0006	.0004	.0006	.0205	.0017	-.0003
#1	10.82	-.0002	.0003	-.0002	.0010	.0238	.0018	-.0016
#2	10.84	-.0001	.0008	.0009	.0002	.0173	.0016	.0010
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.878	.00086	.0018	.0000	.0196	.4879	.0007	2.666
#1	4.881	.00087	.0019	-.0003	.0222	.5227	.0027	2.672
#2	4.874	.00085	.0018	.0002	.0171	.4531	-.0012	2.660
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	.7352	.03247	-.0012	-.0001	.0002	-.0002	.0006
#1	-.0014	.7312	.03260	-.0018	-.0001	.0003	-.0001	.0007
#2	-.0007	.7392	.03234	-.0005	-.0001	.0002	-.0002	.0006
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0007	.0039	.5870					
#1	.0008	.0017	.5842					
#2	.0007	.0061	.5898					

Sample Name: K1801864-008 Acquired: 3/14/2018 15:22:51 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2519.4	33218.	3126.6
#1	2516.7	33054.	3119.8
#2	2522.1	33382.	3133.5

Sample Name: K1801864-009 Acquired: 3/14/2018 15:25:22 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0093	-.0026	.0037	.0105	-.00016	.0042	-.0001	.0000
#1	.0099	-.0029	.0091	.0104	-.00035	.0053	-.0002	-.0001
#2	.0086	-.0022	-.0017	.0105	.00003	.0031	-.0001	.0000
Elem	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.983	7.963	.0001	.0000	-.0005	.0003	.0181	-.0001
#1	7.997	7.954	.0001	-.0002	-.0001	.0005	.0168	.0000
#2	7.970	7.973	.0002	.0003	-.0009	.0002	.0193	-.0001
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.6902	.00079	.0014	.0000	.0147	.7436	.0013
#1	.0012	.6900	.00072	.0015	.0004	.0126	.7071	-.0027
#2	.0010	.6904	.00086	.0013	-.0003	.0168	.7801	.0054
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.842	-.0006	2.034	.10572	.0004	-.0004	.0004	.0004
#1	4.837	-.0008	2.032	.10576	-.0011	.0002	.0004	.0013
#2	4.847	-.0004	2.036	.10569	.0020	-.0009	.0005	-.0006
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.0006	.0007	-.0004	.4209				
#1	.0007	.0005	-.0037	.4203				
#2	.0005	.0009	.0029	.4214				

Sample Name: K1801864-009 Acquired: 3/14/2018 15:25:22 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2515.8	33377.	3120.7
#1	2517.0	33362.	3105.6
#2	2514.6	33392.	3135.9

Sample Name: K1801864-010 Acquired: 3/14/2018 15:27:53 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 031418B

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0775	.0069	.0400	.0034	-.00022	.0052	-.0001	.0000
#1	.0766	.0114	.0377	.0032	-.00018	.0046	.0000	.0000
#2	.0784	.0023	.0422	.0036	-.00026	.0057	-.0001	-.0001
Elem	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.197	8.272	.0015	.0004	.0007	.0007	.2028	.0023
#1	8.181	8.257	.0020	.0005	.0002	.0003	.1953	.0031
#2	8.213	8.288	.0011	.0003	.0012	.0010	.2104	.0015
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	1.216	.00517	.0005	.0002	.0378	.7959	.0054
#1	.0011	1.212	.00517	.0005	.0000	.0407	.8061	.0092
#2	.0031	1.220	.00516	.0006	.0003	.0349	.7857	.0017
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.773	-.0006	3.514	.06129	-.0001	-.0004	.0031	.0006
#1	6.758	-.0009	3.501	.06095	.0016	-.0005	.0032	.0004
#2	6.787	-.0002	3.526	.06162	-.0017	-.0004	.0030	.0008
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.0019	.0022	.0011	3.432				
#1	.0022	.0024	-.0019	3.440				
#2	.0016	.0019	.0040	3.424				

Sample Name: K1801864-010 Acquired: 3/14/2018 15:27:53 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment: EM 031418B

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2527.0	33271.	3120.5
#1	2537.6	33372.	3113.8
#2	2516.5	33169.	3127.2

Sample Name: K1801864-001 Acquired: 3/14/2018 15:30:24 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0008	.0221	1.559	.0362	-.00011	.0178	-.0002	-.0001
#1	-.0002	.0235	1.558	.0365	-.00012	.0162	-.0001	.0000
#2	.0018	.0207	1.560	.0359	-.00010	.0193	-.0002	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.29	.0002	.0046	.0004	.0006	3.720	-.0002	.0009
#1	83.28	.0000	.0044	.0004	-.0006	3.734	.0017	.0014
#2	83.31	.0005	.0048	.0004	.0017	3.707	-.0022	.0005
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	21.62	1.0015	.0056	.0001	.0428	9.479	-.0023	6.302
#1	21.57	1.0030	.0057	-.0001	.0431	9.438	-.0042	6.266
#2	21.67	1.0001	.0055	.0002	.0424	9.520	-.0004	6.338
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0014	21.48	.52685	-.0018	-.0002	-.0002	.0008	.0021
#1	-.0021	21.40	.52740	-.0026	-.0006	-.0001	.0012	.0021
#2	-.0007	21.57	.52630	-.0010	.0002	-.0002	.0003	.0022
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0021	-.0015	36.48					
#1	.0021	-.0029	36.49					
#2	.0020	-.0001	36.48					

Sample Name: K1801864-001 Acquired: 3/14/2018 15:30:24 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2455.3	32371.	3105.9
#1	2451.9	32315.	3092.3
#2	2458.6	32426.	3119.4

Sample Name: CCVB Acquired: 3/14/2018 15:32:53 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.963	10.45	-0.0029	1.042	10.13	-0.00015	.0030	.0000
Stddev	.012	.03	.0000	.008	.02	.00023	.0020	.000
%RSD	.1443	.2680	1.182	.7328	.2208	155.83	66.37	140.3

#1	7.971	10.43	-0.0029	1.037	10.14	.00002	.0044	-0.0001
#2	7.955	10.47	-0.0029	1.048	10.11	-0.00031	.0016	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	9.951	9.902	.0005	.0003	-0.0001	.0017	9.606
Stddev	.0000	.010	.052	.0001	.0000	.0001	.0021	.024
%RSD	93.29	.1007	.5294	10.15	5.105	121.0	122.4	.2489

#1	.0000	9.958	9.939	.0006	.0003	-0.0002	.0002	9.589
#2	.0000	9.944	9.865	.0005	.0003	.0000	.0032	9.623

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	1.011	10.24	9.608	9.495	.99352	F .8894	.0004
Stddev	.0018	.007	.01	.014	.142	.00098	.0107	.0004
%RSD	190.4	.7107	.0783	.1407	1.499	.09871	1.200	96.28

#1	-0.0003	1.006	10.24	9.618	9.395	.99422	.8818	.0001
#2	.0022	1.016	10.23	9.599	9.596	.99283	.8969	.0007

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Fail	None
Value Range							1.000 -10.44%	

Sample Name: CCVB Acquired: 3/14/2018 15:32:53 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0010	10.10	10.03	.0039	9.307	-.0013	10.09	1.0153
Stddev	.0002	.03	.08	.0039	.086	.0010	.07	.0028
%RSD	21.18	.2690	.7898	101.1	.9268	77.84	.6992	.27209

#1	-.0008	10.11	9.973	.0067	9.246	-.0020	10.04	1.0134
#2	-.0011	10.08	10.08	.0011	9.368	-.0006	10.14	1.0173

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0027	.0003	.0004	.0002	.0001	.0004	1.018	1.038
Stddev	.0002	.0001	.0001	.0002	.0003	.0000	.006	.003
%RSD	7.428	17.93	21.80	93.34	244.1	1.350	.5695	.3069

#1	-.0028	.0003	.0005	.0001	.0003	.0004	1.022	1.036
#2	-.0025	.0002	.0003	.0004	-.0001	.0004	1.014	1.040

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2555.2	33513.	3146.8
Stddev	.5	19.	24.1
%RSD	.02005	.05719	.76694

#1	2555.5	33499.	3129.7
#2	2554.8	33526.	3163.8

Sample Name: CCVA Acquired: 3/14/2018 15:35:25 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2547	.2756	.2593	.2674	.2585	.25466	.2609	.2521
Stddev	.0028	.0028	.0058	.0033	.0008	.00020	.0020	.0005
%RSD	1.090	1.034	2.237	1.235	.3136	.07971	.7735	.2155

#1	.2566	.2776	.2552	.2650	.2580	.25452	.2623	.2517
#2	.2527	.2736	.2634	.2697	.2591	.25480	.2594	.2525

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2514	.5143	.5044	.2509	.2517	.2527	.2605	.2412
Stddev	.0002	.0075	.0015	.0005	.0003	.0007	.0014	.0083
%RSD	.0632	1.457	.3058	.2125	.1168	.2665	.5535	3.446

#1	.2515	.5196	.5033	.2513	.2515	.2531	.2594	.2353
#2	.2513	.5090	.5055	.2506	.2520	.2522	.2615	.2471

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2497	-.0005	.2905	.2443	.2383	.25647	.2259	.2516
Stddev	.0036	.0001	.0350	.0007	.0017	.00007	.0044	.0011
%RSD	1.424	12.46	12.06	.2665	.7164	.02804	1.941	.4280

#1	.2472	-.0004	.3153	.2438	.2396	.25652	.2228	.2509
#2	.2522	-.0005	.2657	.2448	.2371	.25642	.2290	.2524

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 15:35:25 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2508	.0000	2.523	.2648	.1213	.2578	.3041	.00006
Stddev	.0006	.000	.032	.0011	.0014	.0010	.0112	.00011
%RSD	.2482	312.4	1.253	.4131	1.180	.3865	3.691	183.97

#1	.2513	.0000	2.545	.2656	.1203	.2585	.2962	-.00002
#2	.2504	.0000	2.500	.2640	.1224	.2571	.3120	.00014

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2533	.2537	.2537	.2512	.2521	.2609	.0038	-.0081
Stddev	.0027	.0008	.0011	.0014	.0004	.0005	.0009	.0011
%RSD	1.070	.3158	.4456	.5581	.1545	.1995	24.11	13.26

#1	.2552	.2543	.2529	.2522	.2524	.2612	.0045	-.0088
#2	.2513	.2531	.2545	.2502	.2518	.2605	.0032	-.0073

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2572.4	33803.	3182.8
Stddev	1.5	25.	26.0
%RSD	.05852	.07270	.81679

#1	2573.5	33785.	3164.4
#2	2571.4	33820.	3201.2

Sample Name: CCB Acquired: 3/14/2018 15:37:42 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0022	.0000	-.0017	.0015	.0003	-.00025	.0012	.0000
Stddev	.0013	.003	.0033	.0009	.0005	.00015	.0006	.000
%RSD	60.47	9385.	195.4	61.36	203.5	60.266	56.09	452.3
#1	-.0012	.0023	.0006	.0022	-.0001	-.00035	.0007	.0001
#2	-.0031	-.0023	-.0040	.0009	.0006	-.00014	.0016	-.0002

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0074	.0022	.0005	-.0002	.0005	.0003	.0018
Stddev	.0000	.0177	.0001	.0004	.0004	.0003	.0013	.0001
%RSD	31.39	238.8	2.638	87.80	197.4	56.72	454.2	5.611
#1	.0001	.0051	.0023	.0002	-.0005	.0007	-.0006	.0019
#2	.0001	-.0199	.0022	.0008	.0001	.0003	.0012	.0018

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0023	-.0003	.0109	.0004	.0044	.00010	.0015	.0008
Stddev	.0015	.0002	.0473	.0002	.0018	.00013	.0005	.0005
%RSD	68.31	52.01	434.5	49.63	41.27	124.66	35.25	64.63
#1	.0012	-.0004	-.0226	.0002	.0056	.00020	.0018	.0012
#2	.0033	-.0002	.0444	.0005	.0031	.00001	.0011	.0004

Check ? Chk Pass Chk Pass None Chk Pass Chk Pass Chk Pass None Chk Pass
 High Limit
 Low Limit

Sample Name: CCB Acquired: 3/14/2018 15:37:42 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0001	.0387	-.0012	-.0014	-.0009	.0443	.00002
Stddev	.0001	.0045	.0234	.0005	.0024	.0003	.0026	.00001
%RSD	38.15	5272.	60.35	37.71	176.2	37.50	5.860	32.230
#1	-.0002	.0031	.0222	-.0016	-.0031	-.0012	.0425	.00002
#2	-.0001	-.0033	.0553	-.0009	.0003	-.0007	.0462	.00001

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	.0001	.0002	.0003	.0003	.0002	.0022	-.0091
Stddev	.0005	.0008	.0004	.0009	.0000	.0000	.0035	.0059
%RSD	58.12	652.4	245.4	311.7	11.55	18.75	157.9	64.36
#1	-.0006	.0007	.0004	-.0004	.0003	.0002	-.0003	-.0050
#2	-.0013	-.0004	-.0001	.0009	.0004	.0002	.0047	-.0133

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2541.6	33289.	3098.6
Stddev	2.8	16.	4.7
%RSD	.11146	.04946	.15071
#1	2539.6	33301.	3095.3
#2	2543.7	33278.	3101.9

Sample Name: K1801864-002 Acquired: 3/14/2018 15:40:11 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	.0024	.0369	.0049	-.00017	.0038	-.0001	-.0002
#1	.0077	.0026	.0345	.0046	-.00015	.0043	-.0001	-.0002
#2	.0035	.0021	.0392	.0051	-.00019	.0034	-.0001	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.76	.0005	-.0004	.0004	.0031	.0745	.0001	-.0001
#1	12.74	.0007	-.0005	.0006	.0030	.0785	-.0018	-.0022
#2	12.78	.0004	-.0003	.0002	.0031	.0706	.0019	.0020
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.329	.02743	.0016	.0001	.0152	.9551	-.0028	5.123
#1	2.324	.02741	.0015	.0006	.0137	.9192	-.0033	5.135
#2	2.334	.02745	.0018	-.0005	.0168	.9910	-.0024	5.111
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	2.626	.06670	-.0005	-.0009	.0002	.0002	.0010
#1	-.0010	2.629	.06657	.0016	-.0014	.0001	-.0003	.0007
#2	-.0015	2.624	.06684	-.0027	-.0003	.0003	.0008	.0012
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0012	-.0011	2.526					
#1	.0014	.0021	2.537					
#2	.0011	-.0042	2.514					

Sample Name: K1801864-002 Acquired: 3/14/2018 15:40:11 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2506.0	33398.	3116.6
#1	2508.2	33384.	3128.4
#2	2503.7	33412.	3104.8

Sample Name: K1801864-003 Acquired: 3/14/2018 15:42:42 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0048	.0008	8.999	.0192	-.00017	.0081	-.0001	-.0003

#1	-.0053	.0044	8.994	.0188	-.00015	.0071	-.0001	-.0002
#2	-.0044	-.0029	9.005	.0195	-.00020	.0092	.0000	-.0004

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	176.3	.0000	.0016	-.0003	-.0011	27.95	.0002	.0057

#1	176.3	.0001	.0017	-.0008	-.0013	27.97	-.0026	.0054
#2	176.3	.0000	.0015	.0003	-.0009	27.92	.0029	.0061

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.51	1.4462	.0004	.0008	.0127	2.852	.0002	5.766

#1	38.67	1.4494	.0001	.0009	.0167	2.886	.0011	5.794
#2	38.35	1.4430	.0006	.0007	.0086	2.819	-.0006	5.737

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	5.811	1.9257	-.0047	.0005	.0005	.0006	.0022

#1	-.0001	5.840	1.9285	-.0072	.0006	.0004	.0007	.0020
#2	-.0012	5.783	1.9228	-.0022	.0004	.0006	.0004	.0023

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0028	.0018	97.81

#1	.0028	.0009	97.62
#2	.0029	.0027	97.99

Sample Name: K1801864-003 Acquired: 3/14/2018 15:42:42 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2370.3	31648.	3047.1
#1	2365.1	31641.	3058.0
#2	2375.5	31655.	3036.3

Sample Name: K1801864-004 Acquired: 3/14/2018 15:45:13 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	-.0019	.0137	.0098	-.00024	.0051	-.0002	-.0002
#1	-.0001	.0023	.0189	.0098	-.00029	.0061	-.0001	-.0002
#2	.0040	-.0061	.0084	.0098	-.00019	.0040	-.0003	-.0001
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.167	-.0005	.0001	-.0009	-.0006	.0063	.0024	-.0004
#1	9.143	-.0009	.0006	-.0007	-.0004	.0033	.0026	-.0009
#2	9.191	-.0002	-.0004	-.0010	-.0008	.0092	.0021	.0001
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.449	.00019	.0013	.0001	.0129	.6797	.0054	3.989
#1	2.453	.00018	.0013	.0005	.0115	.6150	.0069	4.015
#2	2.445	.00020	.0013	-.0003	.0142	.7443	.0040	3.963
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	1.610	.07495	-.0014	-.0012	.0002	-.0001	.0006
#1	-.0020	1.620	.07542	-.0012	-.0008	.0003	-.0004	.0005
#2	-.0012	1.601	.07448	-.0015	-.0016	.0001	.0002	.0008
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0010	.0012	.6356					
#1	.0011	.0034	.6503					
#2	.0009	-.0011	.6209					

Sample Name: K1801864-004 Acquired: 3/14/2018 15:45:13 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2544.6	33871.	3166.0
#1	2538.9	33907.	3159.0
#2	2550.2	33836.	3173.1

Sample Name: K1801864-005 Acquired: 3/14/2018 15:47:43 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0025	-.0026	.0069	.0091	-.00015	.0053	-.0001	-.0002

#1	.0013	-.0035	.0056	.0091	-.00012	.0051	.0001	-.0004
#2	.0036	-.0016	.0083	.0092	-.00018	.0055	-.0002	-.0001

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.050	.0001	.0001	-.0011	-.0004	.0114	-.0008	.0011

#1	9.073	.0003	-.0002	-.0016	-.0007	.0038	-.0004	.0008
#2	9.028	.0000	.0003	-.0005	.0000	.0190	-.0013	.0014

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.320	.00031	.0013	.0001	.0093	.6048	-.0034	3.965

#1	2.327	.00038	.0014	.0002	.0047	.5979	-.0056	3.956
#2	2.313	.00025	.0013	.0000	.0140	.6117	-.0012	3.975

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	1.595	.07605	.0006	-.0001	.0004	-.0005	.0008

#1	-.0010	1.599	.07635	.0006	.0002	.0004	-.0003	.0009
#2	.0006	1.590	.07575	.0006	-.0005	.0004	-.0007	.0006

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0010	.0024	.5500

#1	.0012	.0009	.5535
#2	.0008	.0039	.5466

Sample Name: K1801864-005 Acquired: 3/14/2018 15:47:43 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2541.7	33948.	3204.8
#1	2535.1	34041.	3190.6
#2	2548.2	33855.	3219.0

Sample Name: K1801864-006 Acquired: 3/14/2018 15:50:14 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0023	.0471	.0068	-.00010	.0024	-.0001	-.0001

#1	.0040	.0006	.0460	.0065	-.00018	.0037	-.0002	-.0002
#2	-.0008	.0040	.0481	.0072	-.00002	.0011	-.0001	-.0001

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.977	.0002	.0001	.0001	.0016	.0160	.0018	.0006

#1	9.020	.0006	.0000	.0003	.0021	.0242	.0013	.0014
#2	8.934	-.0002	.0003	-.0001	.0012	.0078	.0024	-.0002

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.362	.00020	.0010	-.0003	.0245	.7364	.0050	2.915

#1	4.375	.00022	.0009	-.0004	.0216	.7553	.0041	2.914
#2	4.349	.00019	.0012	-.0003	.0274	.7175	.0059	2.916

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.8202	.03580	-.0028	-.0014	.0000	.0005	.0010

#1	.0003	.8257	.03585	-.0031	-.0018	.0003	.0004	.0010
#2	.0000	.8147	.03576	-.0025	-.0011	-.0004	.0006	.0010

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0013	-.0008	.8537

#1	.0013	-.0037	.8501
#2	.0013	.0022	.8573

Sample Name: K1801864-006 Acquired: 3/14/2018 15:50:14 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2552.0	34042.	3189.9
#1	2553.2	33958.	3174.6
#2	2550.7	34126.	3205.2

Sample Name: K1801864-007 Acquired: 3/14/2018 15:52:44 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	-.0058	.0067	.0081	-.00025	.0047	-.0001	-.0002
#1	-.0016	-.0016	.0094	.0082	-.00021	.0039	-.0001	-.0001
#2	.0006	-.0100	.0041	.0080	-.00029	.0055	-.0001	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.45	.0008	-.0002	.0003	.0004	.0110	.0010	.0013
#1	13.41	.0000	-.0004	-.0002	-.0001	.0065	.0008	.0020
#2	13.49	.0015	.0000	.0008	.0009	.0155	.0012	.0006
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.352	.00000	.0007	.0001	.0189	.6393	-.0001	2.534
#1	5.338	-.00008	.0012	-.0003	.0209	.6081	-.0027	2.519
#2	5.365	.00009	.0002	.0006	.0169	.6705	.0026	2.549
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0008	.6095	.03440	-.0028	-.0009	.0001	.0005	.0008
#1	.0003	.6080	.03422	.0005	-.0011	.0004	.0004	.0008
#2	-.0019	.6109	.03458	-.0062	-.0007	-.0003	.0007	.0007
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0008	.0005	.4062					
#1	.0008	.0029	.4061					
#2	.0008	-.0018	.4063					

Sample Name: K1801864-007 Acquired: 3/14/2018 15:52:44 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2544.5	33921.	3186.4
#1	2552.7	33876.	3175.1
#2	2536.4	33966.	3197.8

Sample Name: K1801864-008 Acquired: 3/14/2018 15:55:15 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	-.0023	.0208	.0057	-.00015	.0056	-.0002	-.0002

#1	.0014	.0002	.0203	.0061	-.00013	.0060	-.0002	-.0003
#2	.0022	-.0048	.0213	.0054	-.00017	.0053	-.0003	.0000

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.79	.0003	.0003	.0059	.0067	.0102	.0019	.0017

#1	10.83	-.0003	-.0001	.0061	.0052	.0132	.0038	.0036
#2	10.74	.0008	.0008	.0058	.0081	.0072	.0001	-.0003

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.815	.00106	.0019	.0019	.0114	.4650	.0029	2.696

#1	4.818	.00105	.0021	.0018	.0129	.4070	.0026	2.712
#2	4.812	.00108	.0017	.0020	.0099	.5231	.0032	2.680

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	.7552	.03280	-.0017	-.0005	.0002	.0005	.0063

#1	-.0007	.7428	.03287	-.0022	-.0003	.0003	.0002	.0062
#2	-.0014	.7675	.03272	-.0011	-.0007	.0002	.0008	.0065

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0068	.0029	.5894

#1	.0070	.0018	.5921
#2	.0066	.0041	.5866

Sample Name: K1801864-008 Acquired: 3/14/2018 15:55:15 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2541.5	33809.	3202.8
#1	2542.7	33749.	3194.3
#2	2540.2	33868.	3211.4

Sample Name: K1801864-009 Acquired: 3/14/2018 15:57:46 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	-.0015	-.0022	.0108	-.00028	.0065	-.0001	-.0002
#1	.0050	-.0037	-.0019	.0107	-.00043	.0058	.0000	-.0003
#2	.0032	.0008	-.0024	.0109	-.00013	.0072	-.0002	.0000
Elem	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.175	8.247	.0009	-.0001	.0070	.0084	.0103	-.0012
#1	8.146	8.268	.0012	-.0002	.0076	.0086	.0049	.0004
#2	8.205	8.227	.0006	.0000	.0064	.0082	.0158	-.0029
Elem	Li6707	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	.7189	.00080	.0016	.0001	.0172	.7391	.0035
#1	-.0007	.7171	.00096	.0014	.0004	.0158	.7333	.0027
#2	-.0006	.7208	.00064	.0018	-.0002	.0186	.7449	.0042
Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.942	-.0006	2.157	.10584	.0010	.0003	.0003	-.0001
#1	4.926	-.0009	2.155	.10557	-.0010	-.0002	.0003	-.0004
#2	4.958	-.0002	2.158	.10612	.0030	.0008	.0004	.0002
Elem	Zn2062	Zn2138	Bi2230	S_1820				
Units	ppm	ppm	ppm	ppm				
Avg	.0069	.0073	.0026	.4464				
#1	.0070	.0073	.0032	.4442				
#2	.0067	.0073	.0020	.4486				

Sample Name: K1801864-009 Acquired: 3/14/2018 15:57:46 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2571.5	34272.	3209.1
#1	2573.7	34263.	3208.7
#2	2569.4	34281.	3209.5

Sample Name: K1801864-010 Acquired: 3/14/2018 16:00:16 Type: Unk
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: D Sample Type:
 Comment: EM 031418B DISS

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	-.0035	.0284	.0021	-.00018	.0038	-.0001	-.0001
#1	.0026	-.0044	.0289	.0016	-.00014	.0028	.0000	.0000
#2	.0004	-.0027	.0280	.0026	-.00022	.0047	-.0002	-.0002
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.499	-.0002	.0000	-.0008	.0006	.0169	-.0005	.0012
#1	8.126	-.0003	-.0005	.0000	.0002	.0154	-.0007	.0010
#2	8.873	-.0001	.0006	-.0017	.0011	.0183	-.0003	.0014
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.250	.00134	.0008	-.0004	.0198	.7631	.0045	6.922
#1	1.194	.00136	.0006	-.0006	.0216	.7282	.0048	6.904
#2	1.306	.00132	.0010	-.0003	.0180	.7981	.0042	6.940
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0013	3.680	.06384	-.0010	-.0008	.0002	.0009	.0014
#1	-.0014	3.678	.06098	-.0023	.0000	.0004	.0007	.0012
#2	-.0012	3.682	.06669	.0003	-.0015	.0000	.0011	.0017
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0015	.0005	3.497					
#1	.0016	.0006	3.501					
#2	.0014	.0005	3.492					

Sample Name: K1801864-010 Acquired: 3/14/2018 16:00:16 Type: Unk
Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: D Sample Type:
Comment: EM 031418B DISS

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2547.9	33969.	3094.6
#1	2543.9	34037.	3217.5
#2	2551.9	33902.	2971.7

Sample Name: CCVB Acquired: 3/14/2018 16:02:48 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.956	10.62	-.0026	1.059	10.45	-.00006	.0031	-.0001
Stddev	.014	.02	.0050	.003	.05	.00008	.0010	.0001
%RSD	.1768	.1608	188.4	.2853	.4612	137.23	33.37	160.3

#1	7.966	10.63	-.0061	1.057	10.49	.00000	.0038	-.0001
#2	7.946	10.61	.0009	1.061	10.42	-.00012	.0024	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	9.935	9.876	.0005	.0001	-.0009	.0002	9.684
Stddev	.0002	.073	.015	.0012	.0002	.0003	.0003	.008
%RSD	105.9	.7363	.1556	229.3	158.9	30.19	169.8	.0792

#1	-.0003	9.987	9.887	.0013	.0000	-.0011	.0004	9.679
#2	.0000	9.883	9.865	-.0003	.0002	-.0007	.0000	9.689

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0011	1.046	10.13	9.646	9.816	.99759	.9102	.0000
Stddev	.0003	.005	.06	.027	.050	.00153	.0081	.0004
%RSD	24.84	.5208	.5652	.2797	.5070	.15314	.8893	60570.

#1	-.0013	1.050	10.09	9.665	9.851	.99867	.9159	.0003
#2	-.0009	1.042	10.17	9.626	9.781	.99651	.9045	-.0003

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 3/14/2018 16:02:48 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	10.16	10.35	-.0034	9.643	-.0015	10.46	1.0278
Stddev	.0001	.02	.07	.0030	.045	.0008	.11	.0072
%RSD	80.21	.2101	.6930	87.65	.4633	50.17	1.048	.70381

#1	-.0001	10.15	10.40	-.0056	9.611	-.0021	10.53	1.0329
#2	-.0003	10.18	10.30	-.0013	9.674	-.0010	10.38	1.0226

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
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Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0019	.0001	.0004	-.0001	.0001	.0005	1.027	1.054
Stddev	.0037	.0006	.0002	.0000	.0002	.0000	.006	.003
%RSD	202.2	506.7	56.75	41.77	187.8	1.943	.5472	.2616

#1	.0045	-.0003	.0005	-.0001	.0000	.0005	1.023	1.056
#2	-.0008	.0006	.0002	-.0001	.0002	.0005	1.031	1.053

Check ? Value Range	None	None	None	None	None	None	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2575.3	33650.	3228.7
Stddev	4.7	18.	9.8
%RSD	.18102	.05350	.30464

#1	2572.0	33663.	3235.7
#2	2578.6	33637.	3221.8

Sample Name: CCVA Acquired: 3/14/2018 16:05:20 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2610	.2975	.2636	.2647	.2607	.26220	.2705	.2533
Stddev	.0010	.0017	.0030	.0043	.0014	.00049	.0008	.0001
%RSD	.3970	.5737	1.129	1.638	.5263	.18835	.2845	.0520

#1	.2602	.2987	.2657	.2677	.2617	.26255	.2699	.2534
#2	.2617	.2963	.2615	.2616	.2597	.26185	.2710	.2533

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2532	.5035	.5085	.2509	.2536	.2544	.2688	.2500
Stddev	.0010	.0160	.0021	.0002	.0000	.0006	.0014	.0090
%RSD	.3818	3.182	.4144	.0765	.0121	.2552	.5273	3.580

#1	.2539	.5149	.5100	.2507	.2535	.2539	.2698	.2564
#2	.2526	.4922	.5070	.2510	.2536	.2549	.2678	.2437

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2588	.0010	.2788	.2450	.2431	.25620	.2258	.2540
Stddev	.0026	.0004	.0422	.0036	.0014	.00031	.0019	.0009
%RSD	1.006	41.01	15.15	1.487	.5789	.12269	.8257	.3671

#1	.2606	.0012	.2490	.2476	.2421	.25642	.2245	.2546
#2	.2569	.0007	.3087	.2424	.2441	.25598	.2272	.2533

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 3/14/2018 16:05:20 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2536	-.0059	2.546	.2707	.1254	.2654	.3133	.00012
Stddev	.0004	.0041	.039	.0018	.0012	.0002	.0121	.00034
%RSD	.1589	68.53	1.521	.6786	.9430	.0733	3.871	276.32

#1	.2538	-.0088	2.519	.2720	.1246	.2652	.3047	.00036
#2	.2533	-.0030	2.573	.2694	.1263	.2655	.3218	-.00012

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2621	.2558	.2552	.2504	.2527	.2649	-.0009	-.0115
Stddev	.0041	.0002	.0006	.0005	.0006	.0007	.0030	.0041
%RSD	1.576	.0889	.2235	.2001	.2198	.2804	317.6	35.92

#1	.2651	.2556	.2548	.2508	.2531	.2654	-.0030	-.0144
#2	.2592	.2559	.2556	.2501	.2523	.2644	.0012	-.0086

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2581.8	34274.	3222.7
Stddev	2.8	47.	49.9
%RSD	.10742	.13692	1.5475

#1	2583.8	34307.	3187.5
#2	2579.8	34241.	3258.0

Sample Name: CCB Acquired: 3/14/2018 16:07:38 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	.0017	-.0028	.0008	.0001	-.00009	.0013	.0000
Stddev	.0007	.0072	.0034	.0055	.0004	.00013	.0006	.000
%RSD	42.93	423.8	122.6	698.4	555.1	141.27	48.61	724.6

#1	-.0021	-.0034	-.0004	-.0031	.0004	.00000	.0018	-.0001
#2	-.0011	.0068	-.0052	.0047	-.0002	-.00019	.0009	.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0097	.0012	-.0004	.0001	-.0001	.0004	-.0016
Stddev	.0000	.0015	.0001	.0000	.0004	.0001	.0004	.0087
%RSD	21.87	15.67	7.084	12.04	690.8	62.69	89.18	547.6

#1	.0002	-.0108	.0013	-.0003	.0003	-.0001	.0007	-.0078
#2	.0002	-.0087	.0012	-.0004	-.0002	-.0002	.0002	.0046

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0003	.0166	.0002	-.0031	.00003	-.0004	.0006
Stddev	.0014	.0015	.0841	.0001	.0014	.00003	.0003	.0000
%RSD	89.05	499.2	508.0	60.37	44.58	90.520	70.72	6.638

#1	.0026	.0013	-.0429	.0002	-.0041	.00001	-.0006	.0006
#2	.0006	-.0007	.0760	.0001	-.0021	.00005	-.0002	.0007

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 3/14/2018 16:07:38 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0000	.0009	.0022	-.0160	-.0008	.0470	.00006
Stddev	.0003	.0002	.0246	.0025	.0151	.0004	.0143	.00015
%RSD	74.13	1888.	2888.	117.6	94.29	44.72	30.41	248.66

#1	.0002	.0001	-.0165	.0039	-.0267	-.0011	.0571	-.00005
#2	.0006	-.0001	.0183	.0004	-.0053	-.0006	.0369	.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0018	-.0005	-.0002	.0007	.0004	.0002	-.0008	-.0104
Stddev	.0003	.0004	.0000	.0003	.0002	.0001	.0018	.0039
%RSD	19.16	94.93	19.04	49.78	52.10	66.13	215.6	37.64

#1	-.0020	-.0001	-.0002	.0004	.0006	.0001	.0004	-.0132
#2	-.0015	-.0008	-.0002	.0009	.0003	.0003	-.0021	-.0076

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2546.8	33743.	3217.1
Stddev	5.9	9.	8.7
%RSD	.23218	.02667	.26998

#1	2550.9	33750.	3223.2
#2	2542.6	33737.	3210.9

Sample Name: CCB Acquired: 3/14/2018 16:10:05 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	.0003	-.0034	.0049	.0006	.00002	.0017	-.0001
Stddev	.0012	.0017	.0003	.0005	.0003	.00019	.0009	.0000
%RSD	73.44	695.9	8.322	10.47	52.36	827.48	50.59	46.49

#1	-.0008	.0015	-.0032	.0053	.0008	-.00011	.0024	-.0001
#2	-.0025	-.0010	-.0036	.0046	.0004	.00015	.0011	-.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0067	.0060	-.0007	-.0003	-.0002	.0006	.0097
Stddev	.0001	.0126	.0004	.0004	.0003	.0008	.0011	.0033
%RSD	69.45	187.8	6.805	50.20	124.2	351.6	193.8	34.21

#1	.0002	-.0156	.0063	-.0005	.0000	.0003	-.0002	.0120
#2	.0001	.0022	.0057	-.0010	-.0005	-.0008	.0014	.0073

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	-.0014	.0070	.0019	.0004	-.00001	.0007	.0002
Stddev	.0017	.0008	.0380	.0002	.0064	.00003	.0003	.0003
%RSD	129.8	55.85	545.2	9.658	1556.	296.22	43.14	192.1

#1	.0026	-.0020	-.0199	.0020	.0049	-.00003	.0009	-.0001
#2	.0001	-.0009	.0338	.0018	-.0041	.00001	.0005	.0004

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

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3/14/18

Sample Name: CCB Acquired: 3/14/2018 16:10:05 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0014	.0301	.0028	-.0196	-.0010	.0495	.00030
Stddev	.0002	.0002	.0212	.0047	.0081	.0002	.0017	.00002
%RSD	2367.	17.17	70.41	167.7	41.29	20.57	3.420	6.6379

#1	.0002	-.0015	.0451	-.0005	-.0139	-.0008	.0506	.00031
#2	-.0002	-.0012	.0151	.0062	-.0254	-.0011	.0483	.00028

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0025	.0000	.0000	.0001	.0001	.0000	.0005	-.0125
Stddev	.0005	.001	.000	.0007	.0001	.000	.0042	.0083
%RSD	20.95	2152.	770.0	971.2	128.3	17.60	840.2	65.91

#1	-.0028	.0004	-.0001	-.0004	.0000	.0000	.0035	-.0184
#2	-.0021	-.0005	.0001	.0005	.0002	.0000	-.0025	-.0067

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2575.5	34218.	3256.0
Stddev	12.4	49.	42.7
%RSD	.48184	.14296	1.3104

#1	2584.3	34253.	3225.8
#2	2566.7	34184.	3286.2

am
3/14/18

Sample Name: LLCCV Acquired: 3/14/2018 16:12:33 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0072	.0118	.0175	.0108	.0040	.00106	.0245	.0009
Stddev	.0008	.0003	.0005	.0009	.0001	.00019	.0019	.0001
%RSD	11.09	2.402	3.029	8.177	3.140	17.694	7.698	6.135

#1	.0067	.0116	.0171	.0101	.0041	.00092	.0231	.0009
#2	.0078	.0120	.0179	.0114	.0039	.00119	.0258	.0010

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	F .0120	.0207	.0039	.0022	.0046	.0052	.0210
Stddev	.0001	.0111	.0001	.0003	.0002	.0005	.0006	.0026
%RSD	11.28	92.85	.5196	8.798	7.239	11.24	11.32	12.33

#1	.0011	.0199	.0206	.0036	.0021	.0049	.0048	.0228
#2	.0010	.0041	.0208	.0041	.0023	.0042	.0056	.0192

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0200						
Range		-30.00%						

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0130	.0200	.0327	.0049	.0044	.00106	.0017	.0042
Stddev	.0011	.0012	.0263	.0000	.0014	.00006	.0001	.0002
%RSD	8.296	5.978	80.32	.5094	32.88	5.6298	6.852	4.026

#1	.0138	.0191	.0513	.0049	.0054	.00102	.0017	.0041
#2	.0123	.0208	.0141	.0049	.0034	.00110	.0016	.0043

Check ?	Chk Fail	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value	.0100							
Range	30.00%							

*see return
am 3/14/18*

Sample Name: LLCCV Acquired: 3/14/2018 16:12:33 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.0464	.2228	.0175	.1881	.0035	.2571	.00116
Stddev	.0004	.0058	.0386	.0026	.0065	.0005	.0095	.00011
%RSD	10.44	12.52	17.33	14.65	3.444	15.31	3.690	9.2451

#1	.0039	.0423	.1955	.0193	.1927	.0031	.2638	.00108
#2	.0045	.0505	.2501	.0157	.1835	.0039	.2504	.00123

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0118	.0212	.0019	.0038	.0043	.0043	.0251	.0291
Stddev	.0033	.0001	.0001	.0004	.0001	.0002	.0067	.0083
%RSD	27.57	.5454	3.579	10.94	1.811	4.993	26.78	28.66

#1	.0095	.0212	.0018	.0035	.0043	.0042	.0203	.0232
#2	.0141	.0213	.0019	.0041	.0042	.0045	.0298	.0350

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2565.4	34269.	3248.2
Stddev	7.7	188.	30.2
%RSD	.30098	.54913	.93028

#1	2570.8	34402.	3269.5
#2	2559.9	34136.	3226.8

*see perm
am 3/14/18*

Sample Name: LLCCV Acquired: 3/14/2018 16:15:01 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0090	.0108	.0182	.0080	.0036	.00086	.0232	.0008
Stddev	.0010	.0033	.0018	.0001	.0001	.00007	.0008	.0000
%RSD	11.13	30.74	9.667	1.297	1.944	8.1947	3.326	.0669

#1	.0083	.0084	.0195	.0079	.0036	.00091	.0227	.0008
#2	.0097	.0131	.0170	.0081	.0037	.00081	.0238	.0008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0257	.0206	.0050	.0021	.0040	.0051	.0258
Stddev	.0000	.0075	.0001	.0011	.0004	.0002	.0015	.0051
%RSD	4.150	29.33	.3527	22.91	18.88	4.463	29.21	19.93

#1	.0009	.0310	.0205	.0058	.0024	.0041	.0041	.0294
#2	.0010	.0204	.0206	.0042	.0018	.0038	.0062	.0221

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0115	.0208	.0201	.0048	.0062	.00096	.0006	.0042
Stddev	.0018	.0011	.0180	.0001	.0014	.00005	.0005	.0005
%RSD	15.60	5.224	89.52	1.838	23.44	5.4339	75.76	12.14

#1	.0128	.0216	.0329	.0047	.0051	.00099	.0003	.0046
#2	.0102	.0201	.0074	.0048	.0072	.00092	.0010	.0039

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: LLCCV Acquired: 3/14/2018 16:15:01 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0049	.0439	.2278	.0211	.1914	.0044	.2503	.00124
Stddev	.0001	.0054	.0093	.0009	.0177	.0018	.0013	.00002
%RSD	2.488	12.22	4.105	4.271	9.243	40.20	.5387	1.8115

#1	.0050	.0401	.2344	.0217	.2039	.0056	.2493	.00122
#2	.0048	.0477	.2211	.0204	.1789	.0031	.2512	.00125

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0076	.0198	.0020	.0032	.0044	.0042	.0232	.0334
Stddev	.0021	.0009	.0002	.0003	.0000	.0002	.0014	.0037
%RSD	27.66	4.575	11.22	9.189	.0687	4.535	6.108	10.94

#1	.0090	.0204	.0018	.0034	.0044	.0043	.0242	.0360
#2	.0061	.0191	.0022	.0030	.0044	.0041	.0222	.0308

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2561.0	34038.	3261.0
Stddev	6.7	28.	15.1
%RSD	.26339	.08145	.46222

#1	2556.3	34057.	3250.4
#2	2565.8	34018.	3271.7

Sample Name: LLCCV,0.5 Acquired: 3/14/2018 16:17:28 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0210	.0227	.0368	.0220	.0079	.00208	.0435	.0020
Stddev	.0006	.0017	.0004	.0025	.0003	.00017	.0011	.0001
%RSD	3.098	7.500	.9585	11.32	3.245	8.3600	2.511	5.367

#1	.0205	.0215	.0366	.0238	.0077	.00220	.0428	.0021
#2	.0214	.0239	.0371	.0202	.0081	.00196	.0443	.0020

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	.0378	.0412	.0091	.0038	.0085	.0096	.0425
Stddev	.0002	.0060	.0000	.0000	.0003	.0008	.0006	.0001
%RSD	9.944	15.78	.0197	.3786	6.734	9.007	6.473	.2441

#1	.0018	.0336	.0412	.0091	.0040	.0091	.0092	.0426
#2	.0021	.0421	.0412	.0091	.0036	.0080	.0101	.0424

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0229	.0420	.0514	.0098	.0121	.00207	F .0006	.0086
Stddev	.0002	.0009	.0112	.0001	.0011	.00002	.0006	.0005
%RSD	.7083	2.191	21.72	.8429	8.951	.82156	86.12	6.080

#1	.0230	.0414	.0435	.0099	.0129	.00208	.0003	.0090
#2	.0228	.0427	.0593	.0098	.0113	.00206	.0010	.0083

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value							.0020	
Range							-30.00%	

Sample Name: LLCCV,0.5 Acquired: 3/14/2018 16:17:28 Type: QC
 Method: 2017B-6010-ICP04(v30) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089	.0800	.4302	.0480	.3679	.0090	.4472	.00225
Stddev	.0005	.0024	.0323	.0025	.0306	.0005	.0025	.00021
%RSD	5.341	3.016	7.510	5.279	8.307	5.750	.5536	9.1185
#1	.0092	.0817	.4074	.0498	.3895	.0094	.4454	.00211
#2	.0085	.0783	.4531	.0462	.3463	.0087	.4489	.00240

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0192	.0424	.0042	.0078	.0083	.0087	.0418	.0663
Stddev	.0030	.0006	.0001	.0006	.0001	.0003	.0021	.0036
%RSD	15.55	1.411	1.737	7.629	.9245	3.127	5.067	5.388
#1	.0213	.0428	.0043	.0082	.0083	.0089	.0403	.0638
#2	.0171	.0420	.0042	.0074	.0082	.0085	.0433	.0688

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	2551.5	33888.	3203.5
Stddev	5.8	209.	14.5
%RSD	.22913	.61563	.45194
#1	2555.6	33741.	3193.3
#2	2547.4	34036.	3213.8

Service Request #K1801181 #2, K1801109; K1801267 #10;
~~K1801234, K1801280; K1801202, K1801357; am 2/20/18~~

Instrument ID# K-ICP-AES-03

Calibration 022018AICP03

ALS LIMS Run # 580921

Pipette IDs: MU26922, V66550, V68260

Pipette Calibration Due: 4/22/18

ICP-OES Data Review Form

	Yes	No
1. Appropriate standardization completed	<u> X </u>	<u> </u>
2. ICV within control limits	<u> X </u>	<u> </u>
3. CCV's in control	<u> X </u>	<u> </u>
4. ICB/CCB's below MRL	<u> X </u>	<u> </u>
4. LLICV standard analyzed and in control	<u> X </u>	<u> </u>
5. ICS standards within 20% of true value	<u> X </u>	<u> </u>
7. All analytes within instrument linear range	<u> X </u>	<u> </u>
7. Adequate rinse out time allowed	<u> X </u>	<u> </u>
8. Was the run terminated? If so, why.	<u> </u>	<u> X </u>

See Benchsheet exception report for sample batch QC information.

Comments:

6010: OK

After 12:13 NR AI3944, Li, S.

Primary Review by am Date 2/20/18

Secondary Review by RRM Date 2/22/18

Data Review Form

Instrument ID#: K-ICP-AES-03
DataFile Name: R:\ICP\WIP\DATA\K-ICP-AES-03 (6500)\022018AICP03.txt
RUNNO: 580921

K1801109

No exceptions to report.

K1801181

No exceptions to report.

K1801267

K1801267-010MS - Metals TCLP - 6010C

MS Recovery

6010C/Metals TCLP - Ag3280 - Recovery: 73 Limits: 75 - 125

post spike okay

Primary Approver: *am 2/20/18*
Secondary Approver: *am 2/22/18*

ALS Environmental - Laboratory Note Sheet

run #580921

Service Request Number(s):

Sample Number						
K180181	USW:	Se=76%	@1/5	Se=84%		
K180167	DIOS:	Ag=73%	, post spike okay			

Comments/Notes:

Analyst: <i>Elmer...</i>	Date: <i>2/20/18</i>
Reviewed: <i>...</i>	Date: <i>2/20/18</i>

Sample Name: BLK Acquired: 2/20/2018 9:36:28 Type: Cal
 Method: 2017B-6010-ICP-03(v111) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: INT. STD. ICP17-22-C

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0005	-47.88	1.506	2.142	.0074	-10.073	-11.94
Stddev	.0001	10.70	.397	.676	.0009	.715	3.06
%RSD	18.86	22.34	26.37	31.54	11.71	7.0995	25.59

#1	-0.0005	-55.44	1.225	1.665	.0068	-10.579	-9.780
#2	-0.0004	-40.31	1.787	2.620	.0080	-9.5675	-14.10

Elem	Cd2144	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-0.0004	-0.0001	.0014	.0128	-0.0001	.0005	-0.0005
Stddev	.0000	.0001	.0003	.0003	.0000	.0002	.0001
%RSD	4.870	52.20	17.67	2.231	33.23	37.43	17.31

#1	-0.0004	-0.0001	.0013	.0126	-0.0001	.0006	-0.0004
#2	-0.0004	-0.0002	.0016	.0130	-0.0001	.0003	-0.0005

Elem	Cu3273	Fe2599	Pb2203	Li6707	Mg2790	Mg2795	Mg2852
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-174.2	.0001	.0000	27.14	-0.0002	.0024	-11.05
Stddev	12.2	.0005	.000	26.97	.0002	.0001	5.02
%RSD	6.981	674.6	310.9	99.37	77.07	6.231	45.43

#1	-182.8	.0004	.0000	46.21	-0.0004	.0025	-14.60
#2	-165.6	-0.0003	-0.0001	8.070	-0.0001	.0023	-7.500

Elem	Mn2576	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00005	.0000	.0002	.0006	.0001	-19.73	.4105
Stddev	.00001	.000	.0001	.0002	.0001	9.93	.0305
%RSD	17.597	32.56	81.58	32.08	118.1	50.34	7.435

#1	.00006	.0000	.0003	.0007	.0000	-26.75	.4320
#2	.00004	.0000	.0001	.0004	.0001	-12.70	.3889

Sample Name: BLK Acquired: 2/20/2018 9:36:28 Type: Cal
 Method: 2017B-6010-ICP-03(v111) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: INT. STD. ICP17-22-C

Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	2.150	-9.997	-96.79	-.00162	.0001	.0003	.0011
Stddev	2.263	1.647	25.38	.00120	.0001	.0000	.0000
%RSD	105.2	16.48	26.22	74.216	105.2	.9921	.7908

#1	3.750	-8.832	-114.7	-.00247	.0001	.0003	.0012
#2	.5500	-11.16	-78.85	-.00077	.0000	.0003	.0011

Elem	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.0002	.0000	1.040	.0011	-.8396
Stddev	.0001	.000	.444	.0001	.2269
%RSD	31.60	168.4	42.69	9.217	27.02

#1	.0001	-.0001	.7257	.0011	-.6791
#2	.0002	.0000	1.353	.0012	-1.000

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4047.6	130500.	7689.1
Stddev	7.8	662.	69.2
%RSD	.19162	.50702	.89940

#1	4042.1	130970.	7640.2
#2	4053.1	130040.	7738.0

Ann
 2/20/18

Sample Name: STD A Acquired: 2/20/2018 9:38:56 Type: Cal
 Method: 2017B-6010-ICP-03(v111) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-19-A

Elem	Al1670	Sb2068	Be2348	B_2496	Cd2144	Cd2265	Ca3933	Cr2677
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.1301	184.2	20906.	1892.	1.420	1.181	12.55	.0474
Stddev	.0013	.1	127.	16.	.011	.007	.01	.0004
%RSD	1.016	.0321	.60835	.8366	.7392	.6119	.0641	.7470

#1	.1311	184.3	20816.	1881.	1.428	1.186	12.56	.0476
#2	.1292	184.2	20996.	1903.	1.413	1.176	12.55	.0471

Elem	Co2307	Cu2247	Cu3273	Pb2203	Mg2795	Mn2576	Mo2020	Ni2216
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.4334	.2493	8224.	.0923	2.235	.31430	.3287	.4568
Stddev	.0028	.0019	17.	.0011	.011	.00296	.0030	.0025
%RSD	.6439	.7808	.2126	1.177	.5071	.94289	.9259	.5378

#1	.4353	.2507	8212.	.0930	2.227	.31639	.3309	.4586
#2	.4314	.2479	8237.	.0915	2.243	.31220	.3266	.4551

Elem	Se1960	Ag3280	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	136.8	8612.	.0651	.0742	.1969	.0567	.3630	4385.
Stddev	.7	14.	.0006	.0008	.0001	.0002	.0021	19.
%RSD	.5172	.1613	.8898	1.120	.0716	.4142	.5906	.4252

#1	137.3	8602.	.0655	.0748	.1968	.0568	.3645	4398.
#2	136.3	8622.	.0647	.0736	.1970	.0565	.3615	4372.

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4041.2	130790.	7582.5
Stddev	10.8	557.	14.1
%RSD	.26747	.42564	.18640

#1	4033.6	130390.	7592.5
#2	4048.8	131180.	7572.5

Sample Name: STD B Acquired: 2/20/2018 9:41:10 Type: Cal
 Method: 2017B-6010-ICP-03(v111) Mode: IR Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-19-B

Elem	Al3944	As1890	Ba4554	Ca3158	Fe2599	Li6707	Mg2790
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	115500.	498.8	88.77	1.592	2.291	11010.	.2520
Stddev	396.	1.6	.04	.003	.013	157.	.0029
%RSD	.3428	.3117	.0503	.2031	.5657	1.427	1.141

#1	115200.	499.9	88.80	1.594	2.300	11120.	.2540
#2	115800.	497.7	88.74	1.590	2.282	10890.	.2499

Elem	Mg2852	Mn2605	P_1782	K_7664	Si2516	Na5895	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	34570.	.0291	1.165	7718.	5604.	22290.	11.408
Stddev	365.	.0004	.001	40.	15.	247.	.120
%RSD	1.055	1.397	.1044	.5153	.2713	1.107	1.0546

#1	34830.	.0294	1.166	7746.	5615.	22460.	11.493
#2	34310.	.0288	1.164	7690.	5594.	22110.	11.323

Elem	Bi2230	S_1820
Units	Cts/S	Cts/S
Avg	.2734	272.4
Stddev	.0012	1.3
%RSD	.4503	.4697

#1	.2725	273.3
#2	.2742	271.5

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4012.9	129200.	7650.8
Stddev	6.5	542.	13.8
%RSD	.16172	.41980	.18024

#1	4017.5	128810.	7660.6
#2	4008.3	129580.	7641.1

Sample Name: ICVB Acquired: 2/20/2018 9:43:49 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-20-A

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9633	1.085	.0015	-.0010	.0011	.00023	2.016	.0000
Stddev	.0072	.014	.0014	.0005	.0003	.00011	.020	.0001
%RSD	.7505	1.328	97.18	52.33	26.26	49.338	.9841	390.9

#1	.9684	1.075	.0005	-.0006	.0013	.00015	2.002	.0000
#2	.9582	1.095	.0025	-.0014	.0009	.00030	2.030	.0001

Check ?	Chk Pass	None	None	None	None	None	Chk Pass	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	5.113	4.841	-.0011	-.0004	-.0002	-.0014	10.33
Stddev	.0001	.010	.058	.0001	.0000	.0008	.0007	.01
%RSD	57.11	.1949	1.199	7.478	1.298	409.8	53.70	.0812

#1	-.0002	5.120	4.882	-.0012	-.0004	-.0007	-.0019	10.32
#2	-.0001	5.106	4.800	-.0010	-.0004	.0003	-.0008	10.33

Check ?	None	None	Chk Pass	None	None	None	None	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	2.058	5.072	4.852	5.080	9.1674	10.05	.0001
Stddev	.0001	.045	.041	.010	.122	.0111	.14	.0000
%RSD	8.264	2.196	.8027	.2049	2.393	.12114	1.401	39.37

#1	.0017	2.026	5.101	4.859	4.994	9.1752	9.949	.0001
#2	.0015	2.090	5.043	4.845	5.166	9.1595	10.15	.0001

Check ?	None	Chk Pass	None	Chk Pass	None	None	Chk Pass	None
Value								
Range								

Sample Name: ICVB Acquired: 2/20/2018 9:43:49 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-20-A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	4.973	.0666	-.0012	5.136	-.0003	14.33	2.0892
Stddev	.0004	.023	.0018	.0019	.109	.0000	.29	.0179
%RSD	189.6	.4536	2.746	163.8	2.117	12.18	2.046	.85475

#1	.0001	4.989	.0653	-.0026	5.059	-.0003	14.13	2.0766
#2	-.0005	4.957	.0679	.0002	5.213	-.0003	14.54	2.1018

Check ?	None	Chk Pass	None	None	Chk Pass	None	None	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	4.852	.0000	.0009	-.0001	.0002	5.084	4.938
Stddev	.0021	.023	.0001	.0001	.0001	.0001	.003	.014
%RSD	176.5	.4783	604.7	13.02	109.6	48.28	.0554	.2779

#1	-.0003	4.869	.0001	.0009	-.0001	.0003	5.086	4.928
#2	.0026	4.836	-.0001	.0008	.0000	.0001	5.082	4.948

Check ?	None	Chk Pass	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4056.7	130880.	7691.9
Stddev	17.0	1092.	150.2
%RSD	.41801	.83438	1.9522

#1	4044.7	130100.	7585.7
#2	4068.6	131650.	7798.1

Sample Name: ICV Acquired: 2/20/2018 9:46:20 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-14-D

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.303	5.353	2.450	2.543	5.116	.12413	.0075	1.209
Stddev	.021	.051	.001	.001	.021	.00057	.0007	.004
%RSD	.5005	.9590	.0209	.0360	.4204	.46296	9.378	.3266

#1	4.318	5.317	2.450	2.542	5.131	.12372	.0079	1.212
#2	4.287	5.389	2.451	2.543	5.101	.12454	.0070	1.206

Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.213	12.81	12.05	.4910	1.208	.5978	.6035	2.573
Stddev	.001	.10	.06	.0010	.005	.0022	.0047	.017
%RSD	.0418	.7536	.5054	.2001	.4237	.3666	.7776	.6776

#1	1.213	12.88	12.00	.4917	1.212	.5994	.6002	2.585
#2	1.212	12.75	12.09	.4903	1.205	.5963	.6068	2.560

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.417	-.0020	12.70	11.93	12.69	1.1812	1.245	.5110
Stddev	.006	.0019	.02	.08	.15	.0011	.013	.0022
%RSD	.2417	92.08	.1774	.6760	1.187	.09148	1.072	.4252

#1	2.421	-.0007	12.68	11.99	12.59	1.1819	1.235	.5125
#2	2.413	-.0033	12.72	11.87	12.80	1.1804	1.254	.5095

Check ?	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: ICV Acquired: 2/20/2018 9:46:20 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-14-D

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.209	.0004	12.91	2.420	.1928	.5950	12.89	.00031
Stddev	.004	.0032	.08	.001	.0015	.0006	.08	.00011
%RSD	.3139	875.9	.6354	.0451	.7932	.0953	.6008	36.063

#1	1.212	-.0019	12.85	2.421	.1917	.5946	12.83	.00039
#2	1.207	.0026	12.97	2.420	.1939	.5954	12.94	.00023

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.382	.0008	2.012	1.247	1.208	1.208	.0021	.0017
Stddev	.008	.0002	.006	.001	.005	.002	.0002	.0008
%RSD	.3486	22.36	.2890	.1033	.4503	.1474	12.03	46.95

#1	2.388	.0007	2.007	1.248	1.212	1.209	.0019	.0011
#2	2.376	.0010	2.016	1.246	1.204	1.207	.0022	.0023

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4052.3	130990.	7674.8
Stddev	12.7	334.	75.3
%RSD	.31257	.25508	.98111

#1	4043.3	130760.	7621.5
#2	4061.2	131230.	7728.0

Sample Name: ICB Acquired: 2/20/2018 9:48:38 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0013	.0060	-.0019	.0003	-.00005	.0033	-.0001
Stddev	.0002	.0012	.0017	.0032	.0002	.00005	.0001	.0000
%RSD	161.4	94.94	29.20	165.1	55.14	105.62	4.417	31.29

#1	.0000	.0021	.0072	.0003	.0002	-.00001	.0034	-.0001
#2	.0003	.0004	.0047	-.0042	.0004	-.00009	.0032	-.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0008	.0005	.0002	-.0001	.0009	-.0007	.0004
Stddev	.0002	.0107	.0000	.0004	.0002	.0000	.0006	.0048
%RSD	199.4	1337.	4.364	189.7	153.4	4.098	91.41	1099.

#1	.0002	.0068	.0005	.0005	.0000	.0009	-.0002	-.0030
#2	.0000	-.0084	.0005	-.0001	-.0003	.0009	-.0011	.0039

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0005	.0148	.0005	.0024	.00024	-.0001	.0013
Stddev	.0005	.0040	.0202	.0001	.0015	.00003	.0011	.0001
%RSD	212.2	752.4	136.7	11.76	65.09	10.941	781.6	9.275

#1	-.0001	-.0023	.0005	.0005	.0034	.00022	-.0009	.0012
#2	.0006	.0034	.0290	.0006	.0013	.00026	.0006	.0014

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 2/20/2018 9:48:38 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0019	.0502	.0035	.0083	-.0004	.0174	.00011
Stddev	.0001	.0022	.0235	.0013	.0034	.0001	.0033	.00013
%RSD	128.5	118.4	46.76	37.27	41.13	37.35	18.93	118.38
#1	.0000	.0003	.0668	.0026	.0107	-.0005	.0150	.00002
#2	.0001	.0035	.0336	.0044	.0059	-.0003	.0197	.00021

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0020	-.0006	.0004	.0001	.0000	.0000	-.0017	-.0026
Stddev	.0023	.0006	.0002	.0001	.0001	.000	.0020	.0040
%RSD	120.3	101.8	51.30	51.12	203.8	87.37	121.6	154.9
#1	-.0003	-.0010	.0006	.0001	.0000	.0000	-.0002	.0002
#2	-.0036	-.0002	.0003	.0002	.0001	-.0001	-.0031	-.0055

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 High Limit
 Low Limit

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4058.3	131700.	7691.1
Stddev	52.1	123.	110.1
%RSD	1.2835	.09354	1.4315
#1	4021.5	131790.	7769.0
#2	4095.1	131620.	7613.3

Sample Name: LLICV Acquired: 2/20/2018 9:51:05 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0098	.0113	.0204	.0104	.0041	.00109	.0225	.0010
Stddev	.0003	.0021	.0033	.0002	.0002	.00000	.0013	.0000
%RSD	2.678	18.63	16.07	2.295	3.985	.04875	5.652	.6951

#1	.0100	.0098	.0181	.0105	.0040	.00109	.0234	.0010
#2	.0096	.0128	.0227	.0102	.0042	.00109	.0216	.0010

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0227	.0204	.0047	.0021	.0045	.0044	.0229
Stddev	.0001	.0047	.0003	.0002	.0001	.0003	.0007	.0004
%RSD	5.930	20.59	1.320	3.480	2.995	7.295	16.01	1.745

#1	.0010	.0194	.0206	.0048	.0021	.0043	.0039	.0226
#2	.0011	.0260	.0202	.0046	.0021	.0047	.0049	.0232

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0103	.0177	.0135	.0051	F .0071	.00107	.0008	.0043
Stddev	.0005	.0004	.0370	.0001	.0013	.00001	.0006	.0002
%RSD	4.511	2.406	274.0	1.562	19.13	.65073	71.88	4.510

#1	.0100	.0174	.0397	.0050	.0061	.00108	.0004	.0044
#2	.0107	.0180	-.0127	.0052	.0080	.00107	.0012	.0041

Check ? Value Range	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail .0050 30.00%	Chk Pass	None	Chk Pass
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Sample Name: LLICV Acquired: 2/20/2018 9:51:05 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	.0429	.2498	.0208	.2134	.0043	.2266	.00109
Stddev	.0003	.0003	.0704	.0019	.0100	.0013	.0024	.00002
%RSD	6.958	.5881	28.20	9.278	4.674	29.74	1.056	2.2805
#1	.0039	.0427	.2996	.0194	.2063	.0034	.2282	.00111
#2	.0043	.0431	.2000	.0221	.2204	.0052	.2249	.00108

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0098	.0206	.0022	.0040	.0040	.0043	.0208	.0388
Stddev	.0021	.0000	.0000	.0003	.0002	.0000	.0015	.0021
%RSD	21.63	.0049	.3413	7.922	5.164	.1891	7.346	5.391
#1	.0113	.0206	.0022	.0038	.0039	.0043	.0197	.0403
#2	.0083	.0206	.0022	.0043	.0042	.0043	.0219	.0373

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4156.0	134790.	7845.9
Stddev	18.3	944.	50.2
%RSD	.43997	.70069	.63988
#1	4143.1	134120.	7810.4
#2	4168.9	135460.	7881.4

Sample Name: LLICV Acquired: 2/20/2018 9:53:32 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0103	.0129	.0222	.0089	.0042	.00112	.0231	.0010
Stddev	.0004	.0023	.0013	.0031	.0001	.00013	.0002	.0001
%RSD	4.066	18.15	5.868	34.74	2.771	11.552	1.069	10.40

#1	.0106	.0145	.0231	.0067	.0041	.00103	.0230	.0009
#2	.0100	.0112	.0213	.0111	.0043	.00121	.0233	.0011

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.0244	.0204	.0045	.0018	.0042	.0030	.0212
Stddev	.0001	.0061	.0000	.0007	.0001	.0006	.0006	.0009
%RSD	9.977	24.87	.1308	16.25	4.183	13.64	18.71	4.163

#1	.0010	.0201	.0204	.0050	.0018	.0046	.0034	.0206
#2	.0011	.0287	.0204	.0040	.0017	.0038	.0026	.0219

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0096	.0184	.0110	.0052	F .0077	.00108	.0009	.0042
Stddev	.0006	.0006	.0320	.0000	.0004	.00002	.0001	.0002
%RSD	6.638	3.518	291.8	.0845	4.805	2.2682	10.03	3.722

#1	.0092	.0188	-.0336	.0052	.0079	.00106	.0008	.0041
#2	.0101	.0179	.0117	.0052	.0074	.00109	.0009	.0044

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
Value Range					.0050 30.00%			

Ann
2/20/18

Sample Name: LLICV Acquired: 2/20/2018 9:53:32 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 0.5/50mL RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.0414	.2598	.0204	.2193	.0041	.2293	.00115
Stddev	.0002	.0009	.0541	.0031	.0114	.0001	.0124	.00012
%RSD	4.640	2.277	20.81	15.38	5.178	1.553	5.416	10.735
#1	.0043	.0407	.2216	.0226	.2113	.0041	.2381	.00106
#2	.0041	.0421	.2981	.0182	.2274	.0040	.2205	.00124

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0094	.0208	.0023	.0038	.0040	.0042	.0224	.0358
Stddev	.0006	.0000	.0001	.0004	.0001	.0001	.0032	.0030
%RSD	6.803	.0191	2.957	9.155	2.430	2.613	14.45	8.475
#1	.0090	.0209	.0023	.0041	.0041	.0042	.0247	.0336
#2	.0099	.0208	.0024	.0036	.0040	.0041	.0201	.0379

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4141.3	136420.	7940.5
Stddev	.7	52.	24.5
%RSD	.01726	.03826	.30901
#1	4141.8	136460.	7957.8
#2	4140.8	136390.	7923.1

Ann
2/20/18

Sample Name: LLICV,0.5 Acquired: 2/20/2018 9:55:58 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 1/50mL

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0191	.0233	.0406	.0176	.0077	.00211	.0421	.0020
Stddev	.0002	.0015	.0009	.0007	.0007	.00009	.0008	.0000
%RSD	.9159	6.464	2.248	3.982	8.857	4.2011	1.962	.4792

#1	.0190	.0222	.0399	.0171	.0081	.00217	.0415	.0020
#2	.0193	.0244	.0412	.0181	.0072	.00204	.0427	.0020

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0018	.0411	.0385	.0080	.0039	.0077	.0072	.0404
Stddev	.0001	.0020	.0001	.0003	.0002	.0000	.0005	.0005
%RSD	3.680	4.884	.2402	3.482	5.696	.5785	7.595	1.199

#1	.0018	.0425	.0385	.0078	.0040	.0077	.0068	.0400
#2	.0019	.0397	.0384	.0082	.0037	.0077	.0076	.0407

Check ? Value Range	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197	.0380	.0443	.0097	.0106	.00194	.0018	.0077
Stddev	.0001	.0040	.0106	.0000	.0037	.00004	.0005	.0001
%RSD	.4170	10.42	23.93	.0700	35.22	1.8120	29.08	1.127

#1	.0196	.0352	.0368	.0097	.0080	.00197	.0022	.0077
#2	.0197	.0408	.0518	.0097	.0133	.00192	.0015	.0078

Check ? Value Range	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
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am
2/20/18

Sample Name: LLICV,0.5 Acquired: 2/20/2018 9:55:58 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-21-A 1/50mL

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0074	.0779	.4288	.0377	.3956	.0075	.4328	.00206
Stddev	.0001	.0022	.0089	.0021	.0125	.0005	.0116	.00004
%RSD	1.026	2.882	2.076	5.649	3.159	6.928	2.682	1.7783

#1	.0074	.0795	.4351	.0362	.4044	.0072	.4245	.00204
#2	.0075	.0763	.4225	.0392	.3867	.0079	.4410	.00209

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0173	.0392	.0039	.0080	.0073	.0078	.0417	.0815
Stddev	.0003	.0007	.0001	.0000	.0002	.0001	.0008	.0001
%RSD	1.582	1.874	3.796	.5982	3.309	1.888	1.984	.1663

#1	.0175	.0397	.0040	.0080	.0072	.0079	.0422	.0814
#2	.0171	.0387	.0038	.0081	.0075	.0077	.0411	.0816

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4170.4	135490.	7728.8
Stddev	25.1	206	23.5
%RSD	.60248	.15190	.30375

#1	4152.6	135350.	7745.4
#2	4188.1	135640.	7712.2

am
2/20/18

Sample Name: LLICV-TCLP Acquired: 2/20/2018 9:58:52 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP16-65-B 0.2/10mL

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0008	.0020	-.0035	.2098	.00007	-.0001	.0000
Stddev	.0003	.0005	.0023	.0006	.0010	.00005	.0001	.000
%RSD	120.8	61.98	118.8	17.95	.4857	64.613	73.21	1273.
#1	.0000	-.0012	.0003	-.0039	.2091	.00004	.0000	-.0001
#2	.0005	-.0005	.0036	-.0030	.2105	.00011	-.0001	.0000
Check ? Value Range	None	None	None	None	Chk Pass	None	None	None

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0053	.0015	.0002	-.0001	-.0001	-.0012	-.0014
Stddev	.000	.0102	.0000	.0004	.0000	.0003	.0006	.0004
%RSD	220.6	191.5	1.867	172.9	.1135	576.6	50.27	29.88
#1	-.0001	.0125	.0015	.0000	-.0001	-.0003	-.0008	-.0011
#2	.0000	-.0019	.0014	.0005	-.0001	.0002	-.0016	-.0016
Check ? Value Range	None	None	None	None	None	None	None	None

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	-.0020	-.0186	.0001	.0014	.00005	-.0003	.0002
Stddev	.0001	.0007	.0337	.0001	.0002	.00007	.0006	.0001
%RSD	5.905	35.53	181.0	76.21	14.14	158.60	232.5	49.55
#1	.0011	-.0015	-.0424	.0002	.0016	-.00001	-.0007	.0002
#2	.0012	-.0025	.0052	.0001	.0013	.00010	.0002	.0001
Check ? Value Range	None	None	None	None	None	None	None	None

Sample Name: LLICV-TCLP Acquired: 2/20/2018 9:58:52 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP16-65-B 0.2/10mL

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0008	.0391	-.0010	.0013	-.0002	-.0065	.00011
Stddev	.0002	.0029	.0703	.0001	.0047	.0003	.0123	.00005
%RSD	215.3	355.6	179.8	7.554	349.3	138.5	188.1	45.249

#1	-.0001	.0028	-.0106	-.0010	-.0020	-.0004	-.0152	.00014
#2	.0003	-.0012	.0888	-.0011	.0046	.0000	.0022	.00007

Check ? Value Range	None	None	None	None	None	None	None	None
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Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	-.0010	.0002	.0004	.2056	.2046	.0005	-.0006
Stddev	.0016	.0003	.0001	.0001	.0005	.0002	.0021	.0021
%RSD	98.24	32.41	52.46	22.91	.2232	.0769	451.9	336.0

#1	-.0005	-.0008	.0003	.0003	.2060	.2047	.0020	-.0021
#2	-.0027	-.0012	.0001	.0004	.2053	.2045	-.0010	.0009

Check ? Value Range	None	None	None	None	Chk Pass	Chk Pass	None	None
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4042.8	132940.	7735.6
Stddev	2.8	901.	56.7
%RSD	.06974	.67806	.73265

#1	4040.8	133580.	7775.7
#2	4044.8	132310.	7695.5

Sample Name: CCVB1 Acquired: 2/20/2018 10:01:29 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.681	10.79	-.0016	1.022	10.08	-.00008	.0009	-.0001
Stddev	.002	.06	.0025	.006	.10	.00005	.0003	.0001
%RSD	.0295	.5146	163.5	.5534	1.034	67.339	31.59	111.3

#1	7.680	10.83	.0002	1.026	10.15	-.00012	.0011	-.0001
#2	7.683	10.75	-.0034	1.018	10.00	-.00004	.0007	.0000

Check ? Value Range	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	10.10	9.320	.0001	.0002	-.0005	-.0009	10.11
Stddev	.0001	.07	.116	.0001	.0003	.0001	.0003	.03
%RSD	64.03	.6954	1.244	81.98	157.8	13.60	35.18	.3297

#1	.0003	10.15	9.402	.0001	.0000	-.0006	-.0012	10.14
#2	.0001	10.05	9.238	.0000	.0004	-.0005	-.0007	10.09

Check ? Value Range	None	Chk Pass	None	None	None	None	None	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	1.004	10.11	9.463	9.876	.97309	.9977	-.0001
Stddev	.0004	.003	.08	.081	.029	.00374	.0039	.0001
%RSD	70.14	.3221	.7897	.8603	.2886	.38484	.3878	76.70

#1	.0009	1.006	10.17	9.520	9.856	.97044	.9949	.0000
#2	.0003	1.001	10.06	9.405	9.896	.97574	1.000	-.0001

Check ? Value Range	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
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Sample Name: CCVB1 Acquired: 2/20/2018 10:01:29 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0003	10.30	10.11	-0.0020	10.06	.0000	10.10	.99438
Stddev	.0002	.01	.05	.0001	.01	.0008	.04	.00035
%RSD	81.45	.1079	.4586	7.460	.0698	7186.	.4108	.03554
#1	-0.0001	10.30	10.08	-0.0021	10.05	.0006	10.07	.99463
#2	-0.0005	10.29	10.15	-0.0019	10.06	-0.0006	10.13	.99413

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0008	-0.0006	.0002	.0002	.0001	.0002	1.051	1.036
Stddev	.0007	.0009	.0002	.0002	.0001	.0000	.001	.007
%RSD	86.00	156.5	136.0	89.02	87.21	2.665	.1006	.6520
#1	-0.0013	-0.0012	.0003	.0004	.0002	.0002	1.051	1.041
#2	-0.0003	.0001	.0000	.0001	.0000	.0002	1.050	1.032

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4025.4	131300.	7648.5
Stddev	7.4	892.	26.9
%RSD	.18355	.67957	.35215
#1	4030.6	131930.	7629.5
#2	4020.2	130670.	7667.5

Sample Name: CCVA1 Acquired: 2/20/2018 10:04:07 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2549	.2922	.2540	.2561	.2537	.25555	.2541	.2513
Stddev	.0000	.0004	.0013	.0027	.0005	.00138	.0023	.0007
%RSD	.0004	.1385	.5253	1.072	.2088	.53914	.8904	.2647

#1	.2549	.2925	.2530	.2542	.2533	.25457	.2525	.2518
#2	.2549	.2920	.2549	.2581	.2541	.25652	.2557	.2509

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2493	.5163	.4832	.2438	.2529	.2531	.2559	.2533
Stddev	.0005	.0033	.0003	.0003	.0002	.0002	.0017	.0057
%RSD	.2126	.6317	.0701	.1364	.0877	.0841	.6593	2.237

#1	.2496	.5186	.4830	.2440	.2531	.2530	.2547	.2573
#2	.2489	.5140	.4835	.2435	.2528	.2533	.2571	.2493

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2494	-.0047	.2687	.2419	.2497	.24525	.2488	.2508
Stddev	.0016	.0022	.0006	.0001	.0067	.00023	.0037	.0003
%RSD	.6554	46.35	.2398	.0482	2.690	.09295	1.487	.1115

#1	.2506	-.0031	.2691	.2418	.2545	.24541	.2514	.2506
#2	.2483	-.0062	.2682	.2419	.2450	.24509	.2462	.2510

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: CCVA1 Acquired: 2/20/2018 10:04:07 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2497	.0018	2.524	.2522	.1401	.2523	.2622	.00018
Stddev	.0005	.0018	.008	.0026	.0031	.0015	.0033	.00007
%RSD	.2193	100.6	.3117	1.045	2.178	.5900	1.242	38.101

#1	.2501	.0031	2.529	.2540	.1422	.2513	.2599	.00013
#2	.2493	.0005	2.518	.2503	.1379	.2534	.2645	.00023

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2554	.2522	.2498	.2465	.2527	.2550	-.0006	-.0033
Stddev	.0018	.0008	.0002	.0011	.0004	.0008	.0004	.0021
%RSD	.6989	.3359	.0685	.4373	.1483	.2958	58.90	64.15

#1	.2567	.2528	.2497	.2473	.2530	.2555	-.0009	-.0018
#2	.2542	.2516	.2499	.2458	.2524	.2545	-.0004	-.0048

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4086.4	133570.	7685.2
Stddev	.9	529.	68.9
%RSD	.02107	.39586	.89698

#1	4085.8	133200.	7733.9
#2	4087.0	133950.	7636.4

Sample Name: CCB Acquired: 2/20/2018 10:06:22 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0007	.0026	-.0018	-.0001	.00001	.0005	.0000
Stddev	.0000	.0003	.0003	.0005	.0000	.00005	.0001	.000
%RSD	10.70	41.94	11.31	28.47	31.00	861.42	27.25	108.7

#1	-.0003	-.0009	.0024	-.0014	-.0001	.00004	.0007	-.0001
#2	-.0004	-.0005	.0028	-.0022	-.0001	-.00003	.0004	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0036	.0000	.0006	.0000	.0000	-.0011	-.0028
Stddev	.0001	.0033	.0000	.0004	.0002	.0009	.0007	.0000
%RSD	54.97	89.99	811.2	59.88	535.0	4616.	62.04	1.002

#1	.0001	.0059	.0000	.0003	.0002	-.0006	-.0006	-.0028
#2	.0002	.0013	.0000	.0008	-.0001	.0006	-.0015	-.0028

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0051	.0005	-.0001	.0027	.00003	.0010	.0003
Stddev	.0004	.0006	.0143	.0001	.0014	.00000	.0009	.0002
%RSD	38.42	11.74	2652.	88.68	52.26	2.6482	90.91	84.38

#1	.0008	-.0055	.0106	.0000	.0036	.00003	.0016	.0004
#2	.0014	-.0047	-.0095	-.0001	.0017	.00003	.0003	.0001

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/20/2018 10:06:22 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0001	.0383	-.0004	.0087	-.0002	.0096	.00014
Stddev	.0001	.0032	.0326	.0028	.0048	.0005	.0017	.00013
%RSD	33.10	4277.	85.06	728.5	54.88	248.2	17.37	97.043

#1	.0002	.0023	.0153	-.0024	.0054	-.0006	.0108	.00023
#2	.0003	-.0022	.0614	.0016	.0121	.0002	.0084	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0015	.0002	.0003	.0001	-.0001	-.0005	.0006
Stddev	.0000	.0001	.0003	.0002	.0001	.0001	.0005	.0077
%RSD	10.59	5.389	179.9	94.50	116.3	66.37	95.23	1212.

#1	.0005	-.0014	.0004	.0001	.0000	-.0001	-.0008	-.0048
#2	.0004	-.0016	.0000	.0004	.0002	-.0002	-.0002	.0060

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4040.7	133860.	7666.8
Stddev	1.9	59.	101.3
%RSD	.04733	.04438	1.3217

#1	4039.4	133820.	7738.5
#2	4042.1	133900.	7595.2

Sample Name: ICSA Acquired: 2/20/2018 10:08:50 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-12-C

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.45	395.1	.0098	.0067	.0002	-.00056	.0107	-.0016
Stddev	.00	2.7	.0004	.0053	.0000	.00026	.0006	.0000
%RSD	.0095	.6889	4.580	79.80	19.35	45.941	5.862	2.338

#1	22.45	393.2	.0095	.0029	.0003	-.00038	.0111	-.0016
#2	22.46	397.0	.0101	.0105	.0002	-.00074	.0102	-.0016

Check ? Value Range	None	None	None	None	None	None	None	None
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0016	484.0	*****	-.0035	-.0077	-.0056	-.0062	189.1
Stddev	.0001	2.6	----	.0009	.0001	.0007	.0001	1.3
%RSD	5.615	.5430	----	25.53	1.426	12.47	1.157	.7125

#1	-.0017	485.9	----	-.0028	-.0076	-.0061	-.0062	190.1
#2	-.0015	482.1	----	-.0041	-.0078	-.0051	-.0061	188.1

Check ? Value Range	None	Chk Pass	None	None	None	None	None	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0021	.0036	507.2	*****	419.8	-.01732	-.0111	-.0004
Stddev	.0022	.0009	4.4	----	.3	.00022	.0002	.0001
%RSD	106.3	24.58	.8662	----	.0742	1.2483	1.930	15.35

#1	-.0037	.0043	510.3	----	419.5	-.01747	-.0109	-.0004
#2	-.0005	.0030	504.1	----	420.0	-.01716	-.0112	-.0005

Check ? Value Range	None	None	Chk Pass	None	None	None	None	None
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Sample Name: ICSA Acquired: 2/20/2018 10:08:50 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-12-C

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0039	.0004	.0294	.0050	.0035	-.0004	.0290	.00474
Stddev	.0003	.0004	.0222	.0013	.0033	.0001	.0102	.00004
%RSD	6.955	95.48	75.53	25.25	91.89	21.18	35.12	.90203

#1	-.0041	.0001	.0137	.0041	.0058	-.0004	.0362	.00477
#2	-.0037	.0007	.0451	.0058	.0012	-.0005	.0218	.00471

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0026	-.0013	.0004	.0006	-.0028	.0107	.0080
Stddev	.0011	.0008	.0002	.0002	.0006	.0001	.0025	.0038
%RSD	318.4	29.92	12.59	50.78	92.38	3.124	23.36	46.75

#1	-.0004	.0032	-.0014	.0006	.0011	-.0028	.0090	.0054
#2	.0012	.0021	-.0012	.0003	.0002	-.0027	.0125	.0107

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3641.2	116200.	7316.0
Stddev	2.9	116.	44.4
%RSD	.08003	.09980	.60728

#1	3643.2	116120.	7284.6
#2	3639.1	116280.	7347.4

Sample Name: ICSAB Acquired: 2/20/2018 10:11:30 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-13-A

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.06	389.5	.8602	.0052	.5123	.45130	.0125	.9011
Stddev	.01	.2	.0050	.0008	.0026	.00586	.0009	.0015
%RSD	.0418	.0623	.5868	14.95	.5101	1.2978	7.126	.1623

#1	23.07	389.3	.8638	.0058	.5142	.44716	.0119	.9021
#2	23.05	389.7	.8566	.0047	.5105	.45544	.0132	.9001

Check ?	None	None	Chk Pass	None	Chk Pass	Chk Pass	None	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8943	492.2	*****	.4694	.4409	.4482	.4290	190.8
Stddev	.0026	1.8	----	.0015	.0010	.0011	.0036	.4
%RSD	.2857	.3737	----	.3300	.2176	.2548	.8469	.2199

#1	.8961	493.5	----	.4705	.4416	.4490	.4264	191.1
#2	.8925	490.9	----	.4684	.4402	.4474	.4315	190.5

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8658	.0011	509.3	*****	406.4	.43598	.4845	-.0001
Stddev	.0010	.0030	.8	----	5.6	.00476	.0095	.0003
%RSD	.1199	272.7	.1513	----	1.366	1.0920	1.969	264.8

#1	.8665	.0033	508.7	----	402.5	.43935	.4912	-.0004
#2	.8650	-.0010	509.8	----	410.3	.43262	.4777	.0001

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
Value								
Range								

Sample Name: ICSAB Acquired: 2/20/2018 10:11:30 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: ICP17-13-A

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8713	-.0025	.0457	.0060	.0035	.8453	.0276	.00455
Stddev	.0007	.0008	.0471	.0013	.0047	.0143	.0102	.00021
%RSD	.0772	34.06	103.2	21.54	134.6	1.696	37.20	4.5766

#1	.8718	-.0019	.0790	.0051	.0002	.8352	.0203	.00469
#2	.8708	-.0030	.0123	.0069	.0068	.8554	.0348	.00440

Check ?	Chk Pass	None	None	None	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0007	-.0009	.4966	.8960	.8327	.0127	.0051
Stddev	.0019	.0015	.0001	.0012	.0021	.0021	.0031	.0012
%RSD	122.5	215.1	9.071	.2433	.2362	.2574	24.32	23.12

#1	.0029	-.0004	-.0009	.4974	.8975	.8342	.0149	.0042
#2	.0002	.0018	-.0010	.4957	.8945	.8312	.0105	.0059

Check ?	None	None	None	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3549.0	114720.	7132.6
Stddev	2.9	1224.	.2
%RSD	.08115	1.0670	.00247

#1	3551.0	113850.	7132.7
#2	3546.9	115580.	7132.5

Sample Name: 200ppm FeSTD Acquired: 2/20/2018 10:21:56 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: 0.2/10mL Fe 10,000ppm MET2-94-L

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0142	-.0009	.0040	-.0004	-.00026	-.0003	.0000
Stddev	.0005	.0005	.0028	.0034	.0002	.00009	.0043	.0001
%RSD	272300.	3.715	313.3	84.82	48.31	34.084	1664.	35e15

#1	.0003	.0138	.0011	.0065	-.0005	-.00032	.0028	.0001
#2	-.0003	.0145	-.0029	.0016	-.0003	-.00020	-.0033	-.0001

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0202	.0027	-.0005	.0004	.0000	-.0016	F 199.9
Stddev	.000	.0095	.0001	.0002	.0000	.0007	.0003	.0
%RSD	543600.	47.23	3.030	36.79	5.228	21080.	19.02	.0221

#1	.0001	.0135	.0027	-.0006	.0004	.0005	-.0019	199.9
#2	-.0001	.0269	.0028	-.0003	.0004	-.0005	-.0014	199.9

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit								.0200
Low Limit								-.0200

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0019	-.0056	-.0094	-.0040	-.0030	-.00026	-.0085	-.0006
Stddev	.0027	.0005	.0050	.0000	.0010	.00004	.0006	.0001
%RSD	138.8	9.242	53.01	.0344	33.43	15.974	6.742	23.08

#1	-.0038	-.0053	-.0129	-.0040	-.0037	-.00023	-.0089	-.0007
#2	.0000	-.0060	-.0059	-.0040	-.0023	-.00029	-.0081	-.0005

Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: 200ppm FeSTD Acquired: 2/20/2018 10:21:56 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: 0.2/10mL Fe 10,000ppm MET2-94-L

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0023	.0263	.0015	-.0052	-.0007	-.0061	.00003
Stddev	.000	.0023	.0008	.0022	.0005	.0009	.0079	.00002
%RSD	240.6	97.22	3.202	145.9	9.734	128.2	130.9	93.400
#1	-.0001	.0007	.0257	.0031	-.0048	-.0013	-.0005	.00001
#2	.0000	.0039	.0268	.0000	-.0055	-.0001	-.0117	.00004

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0005	.0002	-.0005	.0006	.0003	.0103	.0244
Stddev	.0001	.0002	.0003	.0006	.0001	.0001	.0011	.0025
%RSD	167.4	40.90	162.0	106.0	13.35	24.95	10.93	10.10
#1	.0000	.0006	.0004	-.0009	.0006	.0003	.0095	.0226
#2	-.0002	.0004	.0000	-.0001	.0005	.0004	.0111	.0261

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4024.4	132300.	7556.5
Stddev	16.4	343.	4.8
%RSD	.40733	.25934	.06324
#1	4012.8	132060.	7559.9
#2	4036.0	132540.	7553.2

Sample Name: KQ1802107-01 Acquired: 2/20/2018 10:56:54 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A K1801181-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0722	.0007	-.0060	.0031	-.00024	.0032	-.0004	-.0001

#1	.0716	.0032	-.0046	.0030	-.00015	.0036	-.0004	-.0001
#2	.0728	-.0019	-.0073	.0031	-.00032	.0029	-.0003	.0000

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0768	.0010	-.0005	.0006	.0002	.0033	-.0003	-.0027

#1	.0767	.0010	-.0002	.0003	.0001	.0049	-.0010	-.0029
#2	.0769	.0009	-.0007	.0008	.0004	.0018	.0004	-.0025

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0068	.00003	.0002	-.0005	.0040	.0861	.0008	.0108

#1	.0068	.00005	.0002	-.0007	.0036	.1016	.0019	.0153
#2	.0068	.00001	.0001	-.0003	.0043	.0707	-.0003	.0062

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0256	.00094	-.0034	.0059	.0000	.0001	.0010

#1	.0001	.0329	.00092	-.0027	.0039	.0001	.0003	.0010
#2	.0003	.0183	.00096	-.0040	.0079	-.0002	-.0002	.0009

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0016	.0002	.0016

#1	.0016	.0020	-.0011
#2	.0017	-.0016	.0043

*1/5
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Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3984.4	133420.	7519.7

#1	3950.4	132750.	7474.2
#2	4018.3	134090.	7565.2

Sample Name: KQ1802107-02 Acquired: 2/20/2018 10:59:21 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A K1801181-LCSW

Elem Units Avg	Al3944 ppm	Sb2068 ppm	As1890 ppm	Ba4554 ppm	Be2348 ppm	B_2496 ppm	Cd2144 ppm	Cd2265 ppm
Avg	3.740	.8847	1.817	1.958	.08665	.8184	.0915	.0890

#1	3.737	.8807	1.812	1.968	.08643	.8170	.0914	.0891
#2	3.742	.8887	1.821	1.948	.08687	.8198	.0917	.0888

Elem Units Avg	Ca3158 ppm	Cr2677 ppm	Co2307 ppm	Cu2247 ppm	Cu3273 ppm	Fe2599 ppm	Pb2203 ppm	Li6707 ppm
Avg	18.93	.3717	.9600	.4522	.4612	1.948	.8860	-.0051

#1	19.01	.3725	.9583	.4528	.4600	1.959	.8890	-.0028
#2	18.85	.3709	.9617	.4515	.4623	1.938	.8829	-.0075

Elem Units Avg	Mg2852 ppm	Mn2576 ppm	Mo2020 ppm	Ni2216 ppm	P_1782 ppm	K_7664 ppm	Se1960 ppm	Si2516 ppm
Avg	18.64	.88202	2.045	.9209	-.0001	18.76	1.525	.0054

#1	18.58	.88214	2.047	.9214	.0005	18.70	1.521	.0041
#2	18.69	.88190	2.042	.9204	-.0008	18.82	1.529	.0067

Elem Units Avg	Ag3280 ppm	Na5895 ppm	Sr4077 ppm	Tl1908 ppm	Sn1899 ppm	Ti3361 ppm	V_2924 ppm	Zn2062 ppm
Avg	.0836	18.99	.00130	.3640	.0029	.0006	.9723	.9203

#1	.0835	18.88	.00128	.3639	.0019	.0008	.9718	.9199
#2	.0837	19.10	.00132	.3640	.0038	.0004	.9729	.9207

Elem Units Avg	Zn2138 ppm	Bi2230 ppm	S_1820 ppm
Avg	.8483	-.0007	.0001

#1	.8462	-.0005	-.0039
#2	.8504	-.0009	.0041

* 1/5
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Int. Std. Units Avg	Y_2243 Cts/S	Y_3600 Cts/S	Y_3600-2 Cts/S
Avg	3910.5	130550.	7592.9

#1	3901.9	130490.	7562.6
#2	3919.1	130600.	7623.2

Sample Name: K1801181-002 Acquired: 2/20/2018 11:01:42 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0250	.0843	-.0008	.0107	-.00021	-.0051	-.0002	-.0002

#1	.0251	.0837	-.0012	.0108	-.00020	-.0049	-.0001	-.0002
#2	.0248	.0849	-.0004	.0106	-.00023	-.0053	-.0003	-.0003

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4760	.0008	.0787	.0054	.0033	.0531	.0028	-.0057

#1	.4771	.0010	.0788	.0050	.0040	.0539	.0029	-.0060
#2	.4748	.0007	.0787	.0057	.0026	.0522	.0028	-.0055

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0172	.01468	.1059	.0226	.2198	.0125	.0103	9.391

#1	.0172	.01470	.1062	.0227	.2219	-.0031	.0127	9.474
#2	.0172	.01466	.1056	.0224	.2178	.0281	.0079	9.308

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.1432	.00277	-.0063	.0482	3.786	-.0006	1.563

#1	.0021	.1614	.00273	-.0076	.0477	3.786	-.0006	1.564
#2	.0012	.1250	.00280	-.0049	.0487	3.787	-.0006	1.561

Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	1.479	.0022	4.173					

#1	1.481	.0020	4.185					
#2	1.476	.0024	4.161					

* 1/5
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Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4102.9	140070.	7951.2					

#1	4098.0	139950.	8013.1					
#2	4107.8	140180.	7889.3					

Sample Name: KQ1802107-03 Acquired: 2/20/2018 11:04:05 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A K1801181-002D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1152	.0732	-.0010	.0155	-.00021	-.0041	-.0003	-.0002

#1	.1143	.0735	-.0008	.0155	-.00024	-.0038	-.0003	-.0003
#2	.1161	.0730	-.0013	.0155	-.00019	-.0043	-.0003	-.0001

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4791	.0010	.0698	.0050	.0024	.0485	.0035	-.0041

#1	.4793	.0012	.0698	.0043	.0023	.0473	.0036	-.0028
#2	.4789	.0008	.0698	.0057	.0025	.0497	.0034	-.0055

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0284	.01312	.0940	.0199	.1962	.0044	.0065	8.680

#1	.0282	.01305	.0939	.0199	.1949	-.0167	.0061	8.697
#2	.0286	.01318	.0942	.0199	.1976	.0255	.0069	8.663

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	.1339	.00278	-.0059	.0427	3.390	-.0001	1.389

#1	.0009	.1423	.00276	-.0071	.0419	3.389	.0004	1.385
#2	.0012	.1255	.00281	-.0046	.0435	3.391	-.0006	1.393

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	1.308	-.0001	3.653

#1	1.314	.0009	3.660
#2	1.303	-.0010	3.647

*1/5
 Ann 2/20/18

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4058.8	138130.	7844.9

#1	4071.1	138050.	7859.1
#2	4046.6	138210.	7830.8

Sample Name: KQ1802107-04 Acquired: 2/20/2018 11:06:29 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A K1801181-002S

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.794	.9617	1.897	2.013	.08737	.8063	.0955	.0933
#1	3.792	.9618	1.897	2.014	.08691	.8063	.0958	.0937
#2	3.796	.9615	1.896	2.011	.08782	.8062	.0953	.0930
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.25	.3851	1.073	.4850	.4825	2.056	.9156	-.0057
#1	20.20	.3845	1.077	.4864	.4811	2.061	.9144	-.0057
#2	20.30	.3857	1.069	.4835	.4839	2.051	.9167	-.0058
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.98	.92689	2.199	.9850	.2060	18.74	1.735	9.911
#1	19.06	.92678	2.206	.9873	.2052	18.84	1.731	9.915
#2	18.91	.92700	2.192	.9827	.2068	18.63	1.738	9.906
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0863	19.35	.00503	.3677	.0423	3.398	1.013	2.369
#1	.0856	19.44	.00496	.3693	.0411	3.406	1.013	2.377
#2	.0871	19.26	.00511	.3661	.0434	3.390	1.012	2.361
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	2.093	.0037	3.580					
#1	2.089	.0033	3.577					
#2	2.098	.0041	3.584					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3833.9	128880.	7494.8					
#1	3816.3	128400.	7517.1					
#2	3851.5	129350.	7472.4					

*1/5
ann 2/20/18

Sample Name: K1801109-001 Acquired: 2/20/2018 11:08:48 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0200	.0091	.0045	.0024	-.00017	-.0128	-.0004	.0000
#1	.0204	.0083	.0063	.0024	-.00020	-.0115	-.0005	-.0001
#2	.0195	.0098	.0027	.0025	-.00014	-.0142	-.0003	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1932	.0012	-.0001	.0022	.0016	.0096	.0106	-.0042
#1	.1941	.0011	-.0005	.0020	.0016	.0116	.0115	-.0032
#2	.1923	.0014	.0002	.0023	.0015	.0076	.0096	-.0052
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0267	.00034	.0012	.0012	.0451	.0594	.0187	.1125
#1	.0271	.00030	.0015	.0013	.0472	.0701	.0198	.1086
#2	.0264	.00037	.0010	.0011	.0430	.0488	.0175	.1165
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.2033	.00087	-.0081	12.58	.0003	-.0001	.0011
#1	.0000	.2023	.00085	-.0068	12.74	.0004	-.0003	.0009
#2	-.0004	.2043	.00090	-.0094	12.42	.0003	.0000	.0013
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0015	-.0007	.0997					
#1	.0015	-.0001	.1036					
#2	.0015	-.0012	.0957					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4062.7	137520.	7793.8					
#1	4017.7	139590.	7726.7					
#2	4107.6	135440.	7860.9					

Sample Name: KQ1802107-01 Acquired: 2/20/2018 11:11:16 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 022018A 1/5 K1801181-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .0181	-.0004	.0001	.0005	-.00012	.0018	-.0002	.0000
#1	.0183	.0015	-.0001	.0007	-.00015	.0019	-.0003	.0001
#2	.0178	-.0023	.0002	.0004	-.00009	.0016	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0185	.0001	-.0003	.0003	-.0010	.0013	.0007	-.0036
#1	.0186	-.0003	-.0002	.0006	-.0012	.0051	.0006	-.0056
#2	.0184	.0005	-.0004	.0001	-.0008	-.0025	.0009	-.0016
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033	.00001	.0007	.0001	.0002	-.0016	-.0010	.0301
#1	.0035	.00002	.0006	.0003	-.0014	-.0175	-.0015	.0303
#2	.0032	.00001	.0007	-.0001	.0018	.0143	-.0005	.0298
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0031	.00013	-.0024	.0084	.0000	.0001	.0004
#1	-.0003	-.0064	.00012	-.0025	.0073	.0000	.0001	.0005
#2	-.0003	.0127	.00015	-.0022	.0094	-.0001	.0002	.0003
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	-.0029	-.0003					
#1	.0005	-.0017	.0024					
#2	.0004	-.0042	-.0029					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4020.4	135730.	7405.1					
#1	3999.2	135730.	7361.7					
#2	4041.7	135730.	7448.5					

Sample Name: KQ1802107-02 Acquired: 2/20/2018 11:13:43 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 022018A 1/5 K1801181-LCSW

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.7671	.1919	.3812	.3916	.01841	.1817	.0184	.0183
#1	.7682	.1962	.3813	.3932	.01836	.1807	.0184	.0185
#2	.7660	.1876	.3810	.3900	.01847	.1826	.0184	.0180
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.565	.0733	.1916	.0947	.0961	.3854	.1845	-.0023
#1	3.556	.0737	.1914	.0954	.0960	.3893	.1862	.0003
#2	3.574	.0729	.1918	.0940	.0961	.3814	.1827	-.0049
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.633	.18218	.3928	.1868	.0005	3.787	.3442	.0186
#1	3.647	.18297	.3933	.1870	.0003	3.807	.3465	.0223
#2	3.620	.18139	.3922	.1866	.0006	3.766	.3418	.0150
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0192	3.766	.00027	.0771	.0009	.0002	.1875	.1875
#1	.0191	3.773	.00039	.0765	.0010	.0004	.1878	.1879
#2	.0193	3.759	.00015	.0777	.0007	.0000	.1872	.1871
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.1843	-.0011	-.0016					
#1	.1846	-.0032	-.0039					
#2	.1840	.0011	.0007					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4117.8	135360.	7534.1					
#1	4124.9	134680.	7517.7					
#2	4110.8	136040.	7550.5					

Sample Name: K1801181-002 Acquired: 2/20/2018 11:16:05 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 022018A 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0055	.0168	-.0015	.0016	-.00007	-.0005	-.0001	-.0001
#1	.0060	.0169	-.0029	.0017	-.00011	-.0004	-.0001	-.0001
#2	.0050	.0166	-.0001	.0016	-.00002	-.0006	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0917	.0010	.0154	.0012	-.0018	.0102	.0019	-.0007
#1	.0920	.0011	.0154	.0009	-.0014	.0084	.0026	.0012
#2	.0913	.0009	.0153	.0014	-.0022	.0120	.0013	-.0027
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	.00301	.0214	.0045	.0519	.0293	.0009	1.777
#1	.0031	.00303	.0214	.0043	.0524	.0198	.0009	1.780
#2	.0030	.00299	.0215	.0046	.0515	.0388	.0009	1.775
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0365	.00045	-.0031	.0094	.7249	-.0002	.3169
#1	.0002	.0379	.00048	-.0027	.0085	.7243	-.0002	.3170
#2	.0004	.0352	.00041	-.0034	.0103	.7255	-.0002	.3167
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.3258	.0007	.9318					
#1	.3264	.0006	.9327					
#2	.3252	.0008	.9309					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4186.5	141380.	7890.9					
#1	4186.9	141170.	7878.3					
#2	4186.2	141600.	7903.6					

Sample Name: KQ1802107-03 Acquired: 2/20/2018 11:18:30 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 022018A 1/5 K1801181-002D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0248	.0169	-.0018	.0028	-.00008	-.0020	-.0002	.0000

#1	.0245	.0177	.0008	.0027	-.00004	-.0026	-.0002	-.0001
#2	.0251	.0160	-.0044	.0030	-.00012	-.0013	-.0001	.0000

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0941	.0002	.0136	.0008	-.0023	.0080	.0011	-.0057

#1	.0938	-.0001	.0136	.0006	-.0030	.0089	.0002	-.0072
#2	.0944	.0005	.0136	.0010	-.0017	.0071	.0020	-.0041

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0056	.00267	.0184	.0040	.0426	.0334	.0037	1.703

#1	.0056	.00266	.0184	.0042	.0430	.0417	.0046	1.712
#2	.0056	.00268	.0185	.0039	.0421	.0252	.0028	1.693

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	.0292	.00052	-.0025	.0080	.6506	.0001	.2822

#1	.0006	.0296	.00054	-.0021	.0074	.6493	.0001	.2826
#2	.0000	.0289	.00050	-.0029	.0086	.6519	.0001	.2817

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.2933	-.0009	.8380

#1	.2932	-.0020	.8351
#2	.2934	.0002	.8408

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4217.3	142480.	7967.6

#1	4208.6	142620.	8010.4
#2	4226.0	142340.	7924.9

Sample Name: CCVB Acquired: 2/20/2018 11:20:57 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.715	F 11.36	.0029	1.040	9.920	-.00004	.0001	.0000
Stddev	.015	.00	.0018	.006	.095	.00008	.0005	.000
%RSD	.1959	.0343	61.05	.6265	.9575	198.60	395.4	481.4

#1	7.726	11.35	.0042	1.045	9.987	-.00010	.0005	.0001
#2	7.704	11.36	.0017	1.036	9.852	.00002	-.0002	-.0001

Check ?	None	Chk Fail	None	Chk Pass	Chk Pass	None	None	None
Value		10.00						
Range		10.44%						

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.01	9.223	.0000	.0004	-.0008	-.0018	10.01
Stddev	.0001	.01	.131	.001	.0001	.0005	.0002	.00
%RSD	184.4	.0497	1.424	2495.	33.07	67.73	12.79	.0013

#1	.0001	10.01	9.316	.0003	.0005	-.0004	-.0016	10.01
#2	.0000	10.01	9.130	-.0003	.0003	-.0011	-.0020	10.01

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	1.004	9.994	9.399	9.796	.95798	.9614	.0000
Stddev	.0001	.000	.028	.058	.040	.00220	.0044	.0001
%RSD	7.577	.0205	.2787	.6128	.4090	.22916	.4588	327.8

#1	.0012	1.004	9.974	9.358	9.825	.95643	.9645	.0000
#2	.0013	1.003	10.01	9.440	9.768	.95954	.9583	.0001

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

*See rerun
 run 2/20/18*

Sample Name: CCVB Acquired: 2/20/2018 11:20:57 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	10.23	10.06	.0017	10.12	-.0002	10.10	.98147
Stddev	.0001	.03	.01	.0022	.00	.0006	.01	.00162
%RSD	45.84	.3344	.1411	136.3	.0367	260.9	.1171	.16526

#1	-.0001	10.25	10.05	.0032	10.13	.0002	10.11	.98262
#2	-.0002	10.20	10.07	.0001	10.12	-.0006	10.09	.98032

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0003	.0005	.0001	.0003	.0003	1.052	1.062
Stddev	.0013	.0002	.0000	.0004	.0000	.0000	.003	.002
%RSD	406.7	47.94	6.352	366.1	1.033	5.478	.3031	.1699

#1	.0006	-.0005	.0005	-.0002	.0003	.0003	1.054	1.063
#2	-.0013	-.0002	.0006	.0004	.0003	.0003	1.050	1.061

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4124.5	134770.	7689.2
Stddev	1.8	49.	6.6
%RSD	.04312	.03626	.08598

#1	4123.2	134810.	7693.8
#2	4125.7	134740.	7684.5

*see rem
 am 2/20/18*

Sample Name: CCVB Acquired: 2/20/2018 11:31:20 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.736	10.93	.0015	1.030	9.929	-.00003	.0001	-.0001
Stddev	.006	.10	.0009	.007	.007	.00004	.0005	.0000
%RSD	.0818	.9229	58.05	.7059	.0732	147.33	980.1	41.11

#1	7.741	10.86	.0009	1.025	9.924	.00000	-.0003	-.0001
#2	7.732	11.00	.0022	1.035	9.934	-.00005	.0004	-.0001

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	10.00	9.245	.0003	.0000	.0003	-.0012	10.11
Stddev	.000	.05	.023	.0007	.0002	.0001	.0002	.02
%RSD	695.9	.5441	.2534	205.9	1659.	18.14	14.01	.1512

#1	.0000	10.04	9.261	.0008	-.0001	.0004	-.0013	10.10
#2	.0000	9.966	9.228	-.0001	.0002	.0003	-.0011	10.12

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030	1.009	10.11	9.419	9.866	.95501	.9748	.0001
Stddev	.0012	.003	.04	.036	.092	.00210	.0116	.0000
%RSD	40.75	.2854	.3628	.3866	.9378	.22012	1.194	28.49

#1	.0021	1.007	10.14	9.445	9.800	.95353	.9665	.0001
#2	.0038	1.011	10.08	9.393	9.931	.95650	.9830	.0001

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 2/20/2018 11:31:20 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0006	10.24	10.05	.0024	10.06	.0002	10.09	.99476
Stddev	.0000	.01	.05	.0011	.13	.0001	.08	.00748
%RSD	1.963	.1069	.4739	48.24	1.281	33.20	.8326	.75206

#1	-.0006	10.23	10.02	.0016	9.971	.0003	10.03	.98947
#2	-.0006	10.25	10.08	.0032	10.15	.0002	10.15	1.0001

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0014	-.0001	.0002	.0003	.0002	1.045	1.039
Stddev	.0021	.0006	.0002	.0003	.0002	.0000	.004	.001
%RSD	670.8	42.31	192.8	118.6	70.58	21.53	.4229	.0449

#1	-.0018	-.0010	.0000	.0004	.0001	.0002	1.042	1.039
#2	.0011	-.0018	-.0002	.0000	.0004	.0001	1.048	1.040

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4082.9	133520.	7615.9
Stddev	1.7	262.	34.5
%RSD	.04199	.19650	.45272

#1	4084.1	133710.	7591.5
#2	4081.7	133340.	7640.3

Sample Name: CCVA Acquired: 2/20/2018 11:34:00 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2575	.2977	.2574	.2659	.2603	.25863	.2539	.2496
Stddev	.0012	.0027	.0020	.0043	.0001	.00097	.0008	.0014
%RSD	.4648	.9070	.7615	1.631	.0441	.37623	.3344	.5476

#1	.2583	.2958	.2560	.2628	.2603	.25794	.2533	.2506
#2	.2566	.2997	.2588	.2689	.2602	.25932	.2545	.2486

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2474	.5337	.4920	.2443	.2515	.2517	.2584	.2602
Stddev	.0015	.0156	.0005	.0001	.0018	.0027	.0004	.0027
%RSD	.5947	2.914	.0962	.0525	.7246	1.057	.1561	1.031

#1	.2484	.5447	.4923	.2444	.2528	.2535	.2587	.2621
#2	.2464	.5227	.4916	.2442	.2502	.2498	.2582	.2583

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2495	-.0031	.2370	.2484	.2462	.24652	.2424	.2508
Stddev	.0014	.0010	.0074	.0005	.0004	.00132	.0016	.0017
%RSD	.5545	32.96	3.104	.1978	.1516	.53464	.6537	.6882

#1	.2505	-.0024	.2318	.2488	.2459	.24745	.2435	.2520
#2	.2486	-.0038	.2422	.2481	.2465	.24559	.2413	.2496

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

Sample Name: CCVA Acquired: 2/20/2018 11:34:00 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2489	.0023	2.558	.2575	.1454	.2563	.2598	.00009
Stddev	.0018	.0013	.042	.0030	.0054	.0006	.0011	.00013
%RSD	.7218	55.06	1.634	1.170	3.686	.2464	.4069	148.32

#1	.2501	.0032	2.587	.2596	.1416	.2559	.2591	.00017
#2	.2476	.0014	2.528	.2553	.1492	.2568	.2606	.00000

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2555	.2497	.2492	.2456	.2516	.2586	.0001	-.0019
Stddev	.0017	.0012	.0008	.0006	.0011	.0002	.0001	.0036
%RSD	.6736	.4685	.3394	.2348	.4547	.0707	77.65	188.2

#1	.2567	.2505	.2498	.2460	.2524	.2585	.0000	.0006
#2	.2543	.2488	.2486	.2452	.2508	.2587	.0001	-.0044

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4169.2	135250.	7453.8
Stddev	27.8	480.	39.0
%RSD	.66629	.35501	.52315

#1	4149.6	134910.	7481.4
#2	4188.9	135590.	7426.2

Sample Name: CCB Acquired: 2/20/2018 11:36:14 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0012	-.0007	.0006	.0000	.00003	-.0009	.0000
Stddev	.0002	.0020	.0015	.0000	.000	.00004	.0013	.000
%RSD	129.9	164.8	226.1	1.710	393.1	127.85	148.6	285.4

#1	.0003	-.0027	.0004	.0006	.0001	.00005	-.0018	-.0001
#2	.0000	.0002	-.0017	.0006	-.0001	.00000	.0000	.0000

Check ? High Limit Low Limit	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0017	.0003	.0009	.0000	-.0003	-.0021	-.0024
Stddev	.0001	.0169	.0001	.0002	.000	.0001	.0004	.0009
%RSD	170.4	974.5	18.54	23.78	31.52	38.88	18.34	37.30

#1	.0001	.0137	.0004	.0007	.0000	-.0002	-.0018	-.0017
#2	.0000	-.0102	.0003	.0010	.0000	-.0003	-.0023	-.0030

Check ? High Limit Low Limit	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0012	.0134	.0003	.0018	-.00003	.0002	.0005
Stddev	.0022	.0029	.0236	.0001	.0005	.00002	.0023	.0000
%RSD	13910.	235.6	175.8	40.37	28.28	49.396	1329.	7.949

#1	-.0015	.0008	-.0033	.0004	.0022	-.00005	-.0015	.0005
#2	.0015	-.0032	.0301	.0002	.0014	-.00002	.0018	.0005

Check ? High Limit Low Limit	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
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Sample Name: CCB Acquired: 2/20/2018 11:36:14 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0001	.0326	.0001	.0103	.0000	.0108	-.00005
Stddev	.0002	.0019	.0402	.0027	.0006	.001	.0122	.00005
%RSD	81.14	2406.	123.4	3252.	6.148	2107.	113.0	103.60

#1	-.0005	.0013	.0610	-.0018	.0098	-.0007	.0194	-.00001
#2	-.0001	-.0014	.0042	.0020	.0107	.0006	.0022	-.00008

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0023	-.0010	.0000	.0002	-.0002	.0001	-.0003	-.0007
Stddev	.0012	.0006	.000	.0004	.0002	.0000	.0017	.0011
%RSD	52.94	56.57	403.9	189.7	112.2	38.40	586.7	171.2

#1	-.0032	-.0014	.0000	.0005	.0000	.0001	.0009	-.0015
#2	-.0015	-.0006	.0000	-.0001	-.0003	.0001	-.0015	.0001

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4152.9	139520.	7800.5
Stddev	73.8	543.	34.5
%RSD	1.7770	.38926	.44191

#1	4205.1	139140.	7824.9
#2	4100.8	139900.	7776.2

Sample Name: LLCCV Acquired: 2/20/2018 11:38:49 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0108	F .0133	.0196	.0092	.0040	.00106	.0215	.0010
Stddev	.0000	.0004	.0017	.0031	.0000	.00005	.0014	.0001
%RSD	.3866	3.369	8.856	34.04	.1429	5.0999	6.380	8.118

#1	.0108	.0136	.0184	.0114	.0040	.00102	.0225	.0010
#2	.0108	.0129	.0208	.0070	.0040	.00110	.0206	.0011

Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.0100						
Range		30.00%						

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0192	.0194	.0042	.0020	.0042	.0030	.0217
Stddev	.0001	.0023	.0001	.0001	.0001	.0006	.0005	.0021
%RSD	6.909	12.08	.6393	1.750	4.428	14.53	18.11	9.562

#1	.0010	.0176	.0195	.0042	.0021	.0038	.0026	.0203
#2	.0009	.0209	.0193	.0041	.0019	.0047	.0034	.0232

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0117	.0155	.0000	.0049	.0059	.00095	.0005	.0043
Stddev	.0013	.0023	.0465	.0002	.0012	.00004	.0016	.0000
%RSD	10.91	14.78	282600.	4.419	20.70	3.6797	318.3	.3098

#1	.0126	.0171	-.0329	.0051	.0051	.00098	-.0006	.0043
#2	.0108	.0139	.0329	.0048	.0068	.00093	.0016	.0043

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: LLCCV Acquired: 2/20/2018 11:38:49 Type: QC
 Method: 2017B-6010-ICP-03(v1111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0040	.0398	.1938	.0198	.2115	.0044	.2131	.00104
Stddev	.0008	.0019	.0207	.0008	.0129	.0009	.0031	.00009
%RSD	20.43	4.880	10.67	4.057	6.088	20.97	1.466	8.9744

#1	.0034	.0384	.2084	.0192	.2206	.0038	.2109	.00111
#2	.0045	.0412	.1791	.0203	.2024	.0051	.2153	.00098

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0086	.0199	.0021	.0040	.0040	.0042	.0241	.0410
Stddev	.0007	.0002	.0003	.0001	.0001	.0000	.0011	.0049
%RSD	7.827	1.232	12.09	3.779	2.331	.5275	4.614	11.91

#1	.0090	.0197	.0023	.0039	.0040	.0041	.0233	.0445
#2	.0081	.0201	.0019	.0041	.0039	.0042	.0248	.0376

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4154.7	141320.	7757.2
Stddev	52.7	984.	65.4
%RSD	1.2686	.69625	.84364

#1	4192.0	140630.	7711.0
#2	4117.4	142020.	7803.5

Sample Name: LLCCV-TCLP Acquired: 2/20/2018 11:41:21 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0017	.0009	-.0027	.2130	-.00006	-.0007	.0000
Stddev	.0003	.0008	.0013	.0020	.0010	.00002	.0008	.000
%RSD	49.05	47.49	152.6	75.16	.4797	32.892	104.9	293.3
#1	.0008	.0012	.0018	-.0013	.2137	-.00008	-.0002	-.0001
#2	.0004	.0023	-.0001	-.0042	.2122	-.00005	-.0013	.0000
Check ?	None	None	None	None	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0055	.0018	.0003	-.0002	.0003	-.0010	.0015
Stddev	.0001	.0011	.0001	.0001	.0003	.0004	.0008	.0017
%RSD	127.0	20.48	5.302	24.07	157.7	119.7	73.90	114.8
#1	.0000	.0047	.0019	.0003	.0000	.0006	-.0005	.0027
#2	.0002	.0063	.0017	.0004	-.0005	.0000	-.0016	.0003
Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0011	-.0035	-.0077	.0005	.0044	.00003	-.0005	.0000
Stddev	.0006	.0025	.0342	.0001	.0012	.00001	.0014	.0003
%RSD	54.17	71.70	443.0	13.26	27.72	40.723	260.2	905.7
#1	.0007	-.0017	-.0319	.0005	.0052	.00002	-.0015	-.0002
#2	.0015	-.0052	.0164	.0004	.0035	.00004	.0005	.0002
Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Sample Name: LLCCV-TCLP Acquired: 2/20/2018 11:41:21 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.0016	.0457	-.0015	.0117	.0001	.0272	.00009
Stddev	.0002	.0016	.0371	.0014	.0044	.0002	.0148	.00002
%RSD	75.82	97.27	81.23	93.23	37.76	171.1	54.26	20.881

#1	-.0004	-.0028	.0719	-.0005	.0086	.0000	.0376	.00011
#2	-.0001	-.0005	.0194	-.0025	.0148	.0003	.0168	.00008

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	-.0017	.0001	.0002	.2046	.2056	-.0013	-.0018
Stddev	.0005	.0006	.0001	.0004	.0019	.0008	.0001	.0023
%RSD	129.6	34.35	56.43	197.5	.9445	.3969	4.889	126.1

#1	.0000	-.0013	.0001	-.0001	.2060	.2062	-.0012	-.0035
#2	-.0008	-.0021	.0002	.0005	.2032	.2051	-.0013	-.0002

Check ?	None	None	None	None	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4139.0	135760.	7260.7
Stddev	12.8	275.	68.5
%RSD	.31011	.20281	.94370

#1	4130.0	135570.	7212.2
#2	4148.1	135960.	7309.1

Sample Name: KQ1802107-04 Acquired: 2/20/2018 11:44:30 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: Sample Type:
 Comment: EM 022018A 1/5 K1801181-002S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.8035	.2187	.4065	.4047	.02001	.1922	.0192	.0191

#1	.8033	.2195	.4082	.4038	.01990	.1913	.0191	.0192
#2	.8036	.2178	.4049	.4055	.02012	.1930	.0193	.0191

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.815	.0764	.2157	.1000	.1044	.4128	.1974	-.0034

#1	3.845	.0759	.2152	.0997	.1046	.4201	.1980	-.0081
#2	3.785	.0769	.2161	.1002	.1043	.4056	.1967	.0012

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.703	.18800	.4240	.1997	.0424	3.879	.3878	1.958

#1	3.696	.18753	.4241	.1999	.0415	3.843	.3900	1.971
#2	3.710	.18847	.4239	.1995	.0434	3.914	3855	1.945

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0206	3.924	.00096	.0808	.0086	.6509	.1961	.4789

#1	.0205	3.919	.00106	.0817	.0081	.6502	.1953	.4777
#2	.0206	3.930	.00087	.0799	.0090	.6517	.1970	.4801

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.4777	.0010	.8264

#1	.4770	-.0001	.8242
#2	.4783	.0021	.8287

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4096.4	136440.	7591.7

#1	4096.9	136260.	7583.8
#2	4096.0	136630.	7599.6

Sample Name: 50mL TUBE Acquired: 2/20/2018 11:46:53 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A LOT #P7138151

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.0004	.0020	-.0002	.00007	.0005	.0000	.0001
#1	.0004	-.0033	.0020	-.0002	.00013	-.0010	.0000	.0001
#2	.0001	.0041	.0019	-.0001	.00002	.0020	.0000	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0016	.0004	-.0002	.0001	-.0011	.0007	-.0009	-.0055
#1	.0016	-.0003	-.0002	-.0001	-.0008	-.0014	-.0006	-.0064
#2	.0015	.0011	-.0001	.0004	-.0015	.0027	-.0012	-.0046
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	.00003	.0005	.0000	.0010	-.0098	.0000	.0179
#1	.0003	-.00004	.0004	.0001	.0019	-.0317	.0011	.0068
#2	.0001	.00009	.0006	-.0001	.0001	.0121	-.0011	.0291
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0001	.00011	-.0010	-.0010	.0002	.0001	.0001
#1	-.0005	.0058	.00011	-.0010	-.0015	.0002	.0004	.0000
#2	-.0001	-.0059	.00011	-.0010	-.0006	.0003	-.0002	.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0001	.0000	-.0059					
#1	.0002	.0005	-.0023					
#2	.0001	-.0005	-.0095					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4155.3	135760.	7315.2					
#1	4150.7	135360.	7323.1					
#2	4160.0	136150.	7307.4					

am
2/20/18

Sample Name: 50mL TUBE Acquired: 2/20/2018 11:49:20 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A LOT #P7198465

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0002	-.0008	.0004	-.0002	-.00008	.0001	.0000	.0000

#1	.0001	-.0021	.0015	-.0004	-.00005	.0002	.0000	.0000
#2	.0004	.0005	-.0007	.0001	-.00011	-.0001	.0001	.0000

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0000	-.0001	.0000	-.0012	-.0054	-.0006	-.0032

#1	.0009	-.0001	-.0001	-.0004	-.0013	-.0104	.0005	-.0034
#2	.0009	.0000	-.0002	.0005	-.0010	-.0005	-.0016	-.0029

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.00004	.0003	.0001	-.0001	.0025	-.0017	.0050

#1	-.0001	-.00009	.0003	.0000	.0000	-.0014	-.0005	.0062
#2	.0000	.00000	.0003	.0002	-.0001	.0065	-.0029	.0037

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	.0051	-.00012	-.0009	-.0012	.0002	.0006	.0000

#1	.0000	.0171	.00001	-.0019	-.0008	.0004	.0008	.0000
#2	-.0005	-.0068	-.00025	.0002	-.0016	.0000	.0004	-.0001

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0000	-.0005	-.0016

#1	.0000	-.0010	.0000
#2	.0000	.0001	-.0031

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4050.1	126020.	6763.9

#1	4018.4	124990.	6750.5
#2	4081.9	127040.	6777.4

*Ann
2/20/18*

Sample Name: 50mL TUBE Acquired: 2/20/2018 11:51:48 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A LOT #P7204894

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0029	-.0023	.0001	-.00003	.0006	-.0001	.0000
#1	.0002	.0038	-.0029	.0003	-.00008	.0008	-.0001	-.0001
#2	-.0003	.0020	-.0017	-.0002	.00003	.0004	-.0001	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0012	.0001	-.0005	.0000	-.0012	.0024	.0010	-.0056
#1	.0012	-.0003	-.0006	-.0002	-.0015	.0010	.0005	-.0036
#2	.0013	.0005	-.0005	.0002	-.0008	.0037	.0016	-.0075
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.00007	.0000	-.0001	.0015	.0034	-.0008	.0039
#1	.0000	-.00009	.0000	-.0003	.0008	.0185	.0008	.0075
#2	-.0001	-.00005	.0001	.0001	.0021	-.0117	-.0024	.0004
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	.0081	.00001	-.0002	-.0010	.0001	.0002	-.0001
#1	-.0009	-.0071	-.00001	.0006	-.0010	-.0001	.0003	.0000
#2	-.0006	.0234	.00003	-.0010	-.0011	.0003	.0001	-.0001
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0001	-.0008	-.0042					
#1	.0002	-.0009	-.0034					
#2	.0001	-.0007	-.0050					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3974.3	130500.	7182.9					
#1	3972.9	129920.	7156.9					
#2	3975.6	131070.	7208.9					

am
2/20/18

Sample Name: 50mL TUBE Acquired: 2/20/2018 11:54:14 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A LOT #P7211143

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.0010	-.0021	-.0004	.00003	-.0007	.0000	.0000
#1	-.0001	.0004	-.0016	-.0004	.00001	.0000	.0000	.0000
#2	-.0003	.0016	-.0026	-.0004	.00005	-.0015	-.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.0003	-.0002	-.0004	-.0012	.0005	.0004	-.0039
#1	.0007	.0004	-.0004	-.0007	-.0012	.0000	.0003	-.0028
#2	.0006	.0001	.0000	-.0002	-.0012	.0011	.0006	-.0050
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	-.00003	.0003	-.0001	.0001	.0432	-.0019	.0003
#1	-.0002	-.00001	.0001	-.0004	-.0010	.0482	.0006	.0037
#2	-.0003	-.00004	.0004	.0001	.0011	.0382	-.0044	-.0032
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0105	.00007	-.0006	-.0018	.0000	-.0002	.0000
#1	-.0001	.0001	.00005	-.0011	-.0018	-.0002	-.0005	-.0001
#2	.0004	.0208	.00008	-.0002	-.0017	.0002	.0001	.0000
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0000	-.0018	-.0015					
#1	.0000	-.0016	-.0016					
#2	.0000	-.0021	-.0014					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4015.1	132610.	7241.1					
#1	4002.8	132710.	7248.0					
#2	4027.4	132500.	7234.1					

*Ann
2/20/18*

Sample Name: 125mL HDPE BOTTLE #1 Acquired: 2/20/2018 11:56:42 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 022018A 9/10 PSQ125/P26/L16US-M

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	-.0023	.0011	-.0002	-.00001	.0001	.0000	.0001
#1	.0008	-.0008	-.0001	-.0002	.00003	-.0005	.0000	.0001
#2	.0003	-.0038	.0022	-.0001	-.00005	.0007	-.0001	.0002
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0036	.0007	-.0004	.0006	-.0009	-.0006	.0004	-.0048
#1	.0036	.0012	-.0004	.0006	-.0013	-.0010	.0001	-.0052
#2	.0036	.0002	-.0004	.0006	-.0006	-.0002	.0007	-.0044
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.00009	.0002	.0001	.0017	.0018	.0003	.0033
#1	.0005	-.00004	.0001	.0002	.0011	.0388	.0002	-.0032
#2	.0004	-.00015	.0003	.0001	.0023	-.0353	.0004	.0098
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0004	.0155	.00012	-.0005	-.0011	.0001	.0006	.0004
#1	-.0004	.0098	.00020	.0001	-.0010	.0002	.0010	.0003
#2	-.0004	.0212	.00005	-.0010	-.0012	-.0001	.0002	.0005
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0028	.0112					
#1	.0002	-.0017	.0090					
#2	.0003	-.0038	.0135					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4061.3	132680.	7284.7					
#1	4047.7	132380.	7294.6					
#2	4074.9	132990.	7274.8					

am
2/20/18

Sample Name: 125mL HDPE BOTTLE #2 Acquired: 2/20/2018 11:59:09 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 022018A 9/10 PSQ125/P26/L16US-M

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	.0013	-.0009	.0001	.00003	-.0005	.0001	.0000
#1	.0004	.0025	.0003	-.0002	.00003	-.0010	.0000	-.0001
#2	.0004	.0001	-.0020	.0003	.00003	-.0001	.0001	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033	.0009	-.0001	.0004	-.0011	-.0023	-.0001	-.0023
#1	.0033	.0009	-.0002	.0006	-.0013	-.0018	-.0009	-.0005
#2	.0033	.0010	.0000	.0002	-.0009	-.0029	.0007	-.0042
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.00005	.0000	.0002	-.0002	-.0027	-.0032	.0057
#1	.0004	-.00001	.0001	.0004	-.0013	-.0409	-.0032	.0000
#2	.0004	-.00009	-.0001	.0000	.0008	.0355	-.0032	.0114
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0028	.00015	-.0002	-.0008	.0001	.0002	.0003
#1	.0001	.0125	-.00001	-.0002	-.0003	.0002	.0006	.0003
#2	-.0001	-.0069	.00031	-.0003	-.0013	.0001	-.0001	.0004
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0004	.0120					
#1	.0002	-.0008	.0112					
#2	.0002	.0001	.0129					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4132.2	131830.	7009.7					
#1	4115.2	131330.	6872.8					
#2	4149.1	132330.	7146.6					

am
2/20/18

Sample Name: 125mL HDPE BOTTLE #3 Acquired: 2/20/2018 12:01:36 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 022018A 9/10 PSQ125/P26/L16US-M

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	.0002	-.0006	-.0004	-.00002	.0006	.0000	.0000
#1	.0029	-.0014	-.0014	-.0003	-.00003	.0009	.0000	.0000
#2	.0029	.0018	.0002	-.0005	-.00001	.0002	.0000	.0000
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0078	.0006	-.0002	.0002	-.0010	.0018	-.0005	-.0063
#1	.0078	.0004	-.0004	.0003	-.0008	.0010	-.0018	-.0052
#2	.0078	.0007	-.0001	.0001	-.0012	.0025	.0008	-.0074
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	.00004	.0005	.0002	-.0013	.0227	-.0008	-.0021
#1	.0008	.00000	.0003	.0001	-.0016	.0012	-.0011	.0032
#2	.0007	.00008	.0007	.0004	-.0011	.0443	-.0005	-.0075
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	.0129	.00014	-.0007	-.0010	.0000	.0003	.0005
#1	-.0004	.0118	.00007	-.0014	-.0011	.0003	.0001	.0005
#2	-.0006	.0141	.00021	.0001	-.0008	-.0002	.0005	.0005
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0007	-.0017	.0102					
#1	.0007	-.0020	.0110					
#2	.0007	-.0013	.0094					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4111.2	135560.	7466.1					
#1	4111.1	134990.	7443.6					
#2	4111.3	136120.	7488.6					

Ann
2/20/18

Sample Name: 125mL HDPE BOTTLE #4 Acquired: 2/20/2018 12:04:03 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 022018A 9/10 PSQ125/P26/L16US-M

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	-.0005	-.0017	-.0005	-.00006	.0001	.0000	.0001

#1	.0013	-.0019	-.0004	-.0007	-.00005	.0005	.0001	.0001
#2	.0017	.0009	-.0030	-.0004	-.00007	-.0003	.0000	.0001

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0035	.0007	.0001	.0003	-.0012	-.0016	.0006	-.0038

#1	.0034	.0004	.0003	.0003	-.0010	-.0019	.0013	-.0044
#2	.0035	.0009	-.0001	.0004	-.0014	-.0012	-.0002	-.0032

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.00000	.0001	.0001	.0009	-.0124	.0012	.0044

#1	.0001	.00004	.0003	.0004	-.0030	-.0642	-.0004	.0048
#2	.0000	-.00003	-.0002	-.0001	.0048	.0393	.0028	.0039

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0137	.00011	-.0006	-.0010	.0000	-.0003	.0002

#1	.0000	.0134	.00007	-.0007	-.0013	-.0001	-.0003	.0002
#2	.0002	.0139	.00014	-.0005	-.0008	.0002	-.0003	.0002

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0002	-.0018	.0113

#1	.0002	-.0020	.0099
#2	.0002	-.0016	.0126

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4159.1	137540.	7600.3

#1	4169.0	137650.	7618.8
#2	4149.3	137420.	7581.8

Ann
2/20/18

Sample Name: 125mL HDPE BOTTLE #5 Acquired: 2/20/2018 12:06:30 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 022018A 9/10 PSQ125/P26/L16US-M

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0004	-.0002	-.0004	-.0004	.00010	-.0004	.0000	.0001
#1	.0004	.0018	.0006	-.0005	.00017	.0006	.0000	.0000
#2	.0004	-.0022	-.0013	-.0004	.00003	-.0014	.0000	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0032	.0005	-.0002	.0004	-.0012	-.0003	.0001	-.0043
#1	.0032	.0004	-.0003	.0003	-.0008	-.0009	.0007	-.0032
#2	.0032	.0005	-.0001	.0004	-.0016	.0003	-.0004	-.0055
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.00010	-.0002	.0001	.0012	.0406	-.0019	.0080
#1	.0003	-.00008	-.0001	-.0001	.0032	.0750	-.0040	.0093
#2	.0003	-.00013	-.0003	.0002	-.0008	.0063	.0003	.0068
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0196	.00001	-.0018	-.0013	.0001	-.0001	.0002
#1	.0000	.0129	-.00014	-.0024	-.0010	.0002	-.0005	.0002
#2	.0000	.0264	.00015	-.0013	-.0015	.0001	.0003	.0001
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0002	-.0014	.0104					
#1	.0002	-.0010	.0120					
#2	.0002	-.0018	.0088					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4101.3	135400.	7433.9					
#1	4098.1	135950.	7450.7					
#2	4104.5	134860.	7417.2					

Ann
2/20/18

Sample Name: CCVB Acquired: 2/20/2018 12:08:59 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.710	10.87	.0006	1.034	10.31	.00000	.0003	.0000
Stddev	.036	.01	.0025	.001	.05	.00005	.0007	.000
%RSD	.4612	.0799	386.3	.1006	.4852	57468.	233.6	11.86
#1	7.735	10.88	.0024	1.033	10.34	-.00004	-.0002	-.0001
#2	7.685	10.87	-.0011	1.035	10.27	.00004	.0008	.0000

Check ?	None	Chk Pass	None	Chk Pass	Chk Pass	None	None	None
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	10.28	9.323	.0003	-.0006	-.0001	-.0008	10.35
Stddev	.0002	.05	.030	.0003	.0003	.0007	.0004	.01
%RSD	1402.	.4853	.3185	111.8	61.89	837.9	43.41	.0603
#1	.0001	10.32	9.344	.0001	-.0003	.0004	-.0011	10.35
#2	-.0001	10.24	9.302	.0005	-.0008	-.0006	-.0006	10.36

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0015	1.014	10.31	9.629	9.803	.97064	.9799	-.0002
Stddev	.0017	.003	.01	.084	.093	.00041	.0058	.0003
%RSD	108.8	.2792	.1164	.8764	.9497	.04242	.5941	169.6
#1	.0027	1.012	10.30	9.689	9.737	.97093	.9758	-.0004
#2	.0004	1.016	10.32	9.569	9.869	.97034	.9840	.0000

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value								
Range								

Sample Name: CCVB Acquired: 2/20/2018 12:08:59 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	10.27	10.04	.0009	9.969	-.0003	10.07	1.0141
Stddev	.0003	.07	.06	.0003	.041	.0006	.12	.0000
%RSD	56.04	.6589	.6200	30.31	.4122	186.6	1.222	.00003
#1	-.0003	10.31	9.995	.0007	9.940	.0001	9.979	1.0141
#2	-.0006	10.22	10.08	.0010	9.998	-.0007	10.15	1.0141

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	-.0009	.0003	.0003	-.0002	.0002	1.047	1.044
Stddev	.0012	.0007	.0001	.0006	.0002	.0000	.004	.002
%RSD	142.4	77.89	35.66	238.2	63.31	25.90	.3919	.1548
#1	-.0018	-.0013	.0002	-.0002	-.0003	.0002	1.050	1.043
#2	.0000	-.0004	.0004	.0007	-.0001	.0001	1.044	1.045

Check ?	None	None	None	None	None	None	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4087.1	132000.	7439.0
Stddev	13.4	258.	58.1
%RSD	.32673	.19565	.78120
#1	4077.7	131820.	7397.9
#2	4096.6	132180.	7480.1

Sample Name: CCVA Acquired: 2/20/2018 12:11:37 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2626	.2982	.2628	.2678	.2616	.26332	.2610	.2559
Stddev	.0017	.0043	.0038	.0011	.0014	.00074	.0001	.0004
%RSD	.6412	1.438	1.434	.4204	.5505	.28168	.0253	.1669
#1	.2614	.3012	.2601	.2670	.2606	.26384	.2611	.2556
#2	.2638	.2951	.2655	.2686	.2626	.26279	.2610	.2562

Check ? Chk Pass None Chk Pass None None Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2534	.5370	.4934	.2478	.2583	.2564	.2615	.2615
Stddev	.0005	.0104	.0008	.0005	.0003	.0004	.0003	.0011
%RSD	.2010	1.930	.1603	.1869	.1131	.1385	.1211	.4023
#1	.2530	.5296	.4928	.2474	.2585	.2566	.2617	.2608
#2	.2537	.5443	.4940	.2481	.2581	.2561	.2612	.2623

Check ? Chk Pass None Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass None
 Value
 Range

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2562	-.0045	.2541	.2500	.2461	.24664	.2426	.2570
Stddev	.0010	.0001	.0041	.0010	.0013	.00029	.0001	.0017
%RSD	.4023	1.927	1.597	.3961	.5208	.11638	.0508	.6628
#1	.2555	-.0044	.2513	.2493	.2452	.24643	.2425	.2582
#2	.2569	-.0046	.2570	.2507	.2470	.24684	.2427	.2558

Check ? Chk Pass None None Chk Pass None Chk Pass None Chk Pass
 Value
 Range

Sample Name: CCVA Acquired: 2/20/2018 12:11:37 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2558	-.0008	2.560	.2611	.1359	.2609	.2619	.00009
Stddev	.0002	.0035	.006	.0021	.0062	.0004	.0109	.00014
%RSD	.0662	429.1	.2510	.7995	4.575	.1526	4.155	157.64

#1	.2557	.0017	2.565	.2626	.1315	.2611	.2696	.00019
#2	.2559	-.0033	2.556	.2596	.1403	.2606	.2542	-.00001

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2626	.2580	.2521	.2494	.2573	.2632	-.0010	-.0031
Stddev	.0011	.0004	.0003	.0001	.0001	.0001	.0003	.0010
%RSD	.4156	.1679	.1322	.0503	.0492	.0477	32.68	33.68

#1	.2618	.2583	.2524	.2493	.2572	.2631	-.0012	-.0038
#2	.2633	.2577	.2519	.2494	.2574	.2633	-.0008	-.0023

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4151.3	136000.	7498.1
Stddev	11.1	254.	5.3
%RSD	.26822	.18695	.07058

#1	4143.4	135820.	7501.8
#2	4159.2	136180.	7494.3

Sample Name: CCB Acquired: 2/20/2018 12:13:52 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0000	-.0001	-.0012	.0000	-.00001	-.0009	.0000
Stddev	.0004	.0001	.0001	.0033	.000	.00001	.0008	.0001
%RSD	1179.	1417.	127.5	276.4	484.8	248.55	94.15	1047.

#1	-.0002	.0000	.0000	.0011	.0001	-.00002	-.0003	.0000
#2	.0003	.0000	-.0002	-.0035	-.0002	.00000	-.0014	.0000

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0019	-.0001	.0004	.0000	-.0002	-.0012	.0000
Stddev	.0001	.0097	.0000	.0001	.0003	.0003	.0002	.0003
%RSD	131.0	514.6	11.77	13.69	2612.	141.0	13.37	703.3

#1	.0001	.0087	-.0001	.0004	-.0002	-.0004	-.0011	.0002
#2	.0000	-.0050	-.0001	.0004	.0002	.0000	-.0013	-.0002

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0007	-.0063	.0012	-.0003	.0016	-.00002	-.0010	.0006
Stddev	.0003	.0045	.0188	.0000	.0007	.00004	.0016	.0002
%RSD	42.39	72.29	1564.	2.859	46.28	208.96	161.2	41.32

#1	.0005	-.0095	-.0121	-.0003	.0021	.00001	-.0021	.0007
#2	.0009	-.0031	.0145	-.0003	.0011	-.00005	.0001	.0004

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 2/20/2018 12:13:52 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0004	.0394	.0002	.0037	-.0005	.0120	.00007
Stddev	.0004	.0006	.0544	.0024	.0066	.0009	.0076	.00034
%RSD	163.5	136.3	138.1	1213.	175.4	194.2	63.55	483.27

#1	.0000	-.0008	.0009	.0019	-.0009	-.0011	.0174	.00031
#2	-.0006	.0000	.0779	-.0015	.0084	.0002	.0066	-.00017

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	-.0013	.0001	.0000	.0000	.0000	-.0013	-.0008
Stddev	.0020	.0005	.0001	.000	.000	.000	.0024	.0027
%RSD	283.6	36.90	134.4	935.7	469.8	200.3	187.0	363.0

#1	.0007	-.0017	.0002	.0001	-.0002	-.0001	.0004	.0012
#2	-.0022	-.0010	.0000	-.0001	.0001	.0000	-.0030	-.0027

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4204.0	136380.	7643.2
Stddev	25.7	117.	87.1
%RSD	.61124	.08610	1.1398

#1	4185.9	136470.	7704.8
#2	4222.2	136300.	7581.6

Sample Name: 125mL HDPE BOTTLE #6 Acquired: 2/20/2018 12:16:21 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1.111 Test Type: Sample Type:
 Comment: EM 022018A 9/10 PSQ125/P26/L16US-M

Elem Units Avg	Al1670 ppm .0005	Sb2068 ppm -.0001	As1890 ppm .0002	Ba4554 ppm -.0002	Be2348 ppm .00007	B_2496 ppm .0004	Cd2144 ppm .0000	Cd2265 ppm .0000
#1	.0006	-.0013	-.0015	.0001	.00006	.0005	.0000	.0001
#2	.0003	.0011	.0020	-.0004	.00009	.0004	.0000	.0000
Elem Units Avg	Ca3933 ppm .0023	Cr2677 ppm .0006	Co2307 ppm .0000	Cu2247 ppm .0005	Cu3273 ppm -.0015	Fe2599 ppm -.0003	Pb2203 ppm .0011	Li6707 ppm -.0069
#1	.0023	.0002	.0000	.0004	-.0015	.0008	.0009	-.0035
#2	.0023	.0009	.0000	.0005	-.0015	-.0014	.0013	-.0103
Elem Units Avg	Mg2795 ppm .0001	Mn2576 ppm -.00002	Mo2020 ppm .0001	Ni2216 ppm .0002	P_1782 ppm -.0001	K_7664 ppm .0106	Se1960 ppm -.0015	Si2516 ppm .0030
#1	.0002	.00001	.0003	.0001	-.0027	.0209	-.0028	.0002
#2	.0001	-.00004	-.0001	.0003	.0025	.0004	-.0002	.0059
Elem Units Avg	Ag3280 ppm .0001	Na5895 ppm .0139	Sr4077 ppm .00008	Tl1908 ppm -.0010	Sn1899 ppm -.0015	Ti3361 ppm .0000	V_2924 ppm -.0001	Zn2062 ppm .0001
#1	.0000	.0260	.00009	-.0004	-.0011	.0000	-.0002	.0001
#2	.0002	.0018	.00007	-.0016	-.0019	.0001	.0001	.0001
Elem Units Avg	Zn2138 ppm .0002	Bi2230 ppm -.0021	S_1820 ppm .0167					
#1	.0002	-.0047	.0158					
#2	.0001	.0005	.0177					
Int. Std. Units Avg	Y_2243 Cts/S 4216.1	Y_3600 Cts/S 138630.	Y_3600-2 Cts/S 7606.3					
#1	4208.8	138320.	7617.2					
#2	4223.3	138940.	7595.4					

ann
2/20/18

Sample Name: KQ1801951-02 Acquired: 2/20/2018 12:18:50 Type: Unk
 Method: 2017B-6010-ICP-03(v1111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/5 K1801267-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0026	.0013	-.0014	.0004	.00000	.0007	-.0001	-.0001

#1	.0024	.0023	-.0035	.0002	.00002	-.0001	-.0001	.0000
#2	.0028	.0002	.0008	.0005	-.00003	.0015	.0000	-.0001

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0167	.0007	-.0003	.0009	-.0017	-.0012	.0010	-.0046

#1	.0170	.0001	.0002	.0009	-.0015	-.0002	.0017	-.0057
#2	.0165	.0013	-.0007	.0010	-.0019	-.0021	.0003	-.0035

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0030	.00002	.0000	.0006	.0075	.0494	-.0003	.0322

#1	.0030	.00003	-.0002	.0007	.0065	.0301	.0016	.0305
#2	.0030	.00001	.0002	.0006	.0084	.0688	-.0022	.0339

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0082	302.3	.00020	.0006	-.0013	-.0007	.0006	.0012

#1	.0082	300.6	.00019	.0017	-.0017	-.0007	.0003	.0014
#2	.0083	304.0	.00020	-.0005	-.0010	-.0007	.0009	.0011

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0012	-.0041	.0128

#1	.0011	-.0044	.0157
#2	.0013	-.0038	.0098

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3993.7	125510.	7148.2

#1	3975.8	124170.	7117.3
#2	4011.6	126850.	7179.2

Sample Name: KQ1801951-01 Acquired: 2/20/2018 12:21:23 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/5 K1801267-LCSE

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0063	-.0015	1.011	2.033	-.00008	.0051	.1963	.1920

#1	.0061	-.0019	1.016	2.042	-.00012	.0051	.1963	.1918
#2	.0065	-.0011	1.005	2.025	-.00004	.0051	.1963	.1923

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0212	.9602	-.0005	.1923	.1874	.0015	.9231	-.0032

#1	.0213	.9652	-.0005	.1924	.1866	.0012	.9247	-.0010
#2	.0212	.9552	-.0004	.1922	.1883	.0018	.9216	-.0055

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0029	-.00003	-.0001	.1903	.0050	.0560	.1874	.0241

#1	.0030	.00001	-.0002	.1909	.0033	.0476	.1894	.0223
#2	.0029	-.00007	.0000	.1896	.0068	.0643	.1855	.0260

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1910	301.4	.00025	-.0010	-.0004	-.0007	.0004	2.007

#1	.1898	300.6	.00028	-.0014	.0012	-.0006	.0002	2.004
#2	.1922	302.1	.00022	-.0007	-.0019	-.0007	.0007	2.011

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	1.909	-.0013	.0114

#1	1.915	-.0012	.0113
#2	1.903	-.0015	.0116

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3970.3	128430.	7470.0

#1	3975.9	127880.	7415.7
#2	3964.7	128990.	7524.4

Sample Name: K1801267-010 Acquired: 2/20/2018 12:23:48 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/5

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0167	.0020	.0172	.0125	.00005	.1472	-.0001	-.0003

#1	.0165	-.0024	.0161	.0129	.00007	.1461	-.0001	-.0004
#2	.0169	.0063	.0183	.0121	.00003	.1482	.0000	-.0003

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.27	.0002	.0011	-.0007	-.0032	27.09	.0009	.0017

#1	36.30	.0009	.0010	-.0008	-.0031	27.13	.0008	.0026
#2	36.23	-.0006	.0012	-.0006	-.0034	27.06	.0009	.0007

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.24	.25357	-.0001	-.0001	.6539	6.368	.0011	2.032

#1	11.26	.25301	-.0002	-.0002	.6563	6.372	.0016	2.036
#2	11.21	.25412	.0001	.0001	.6516	6.364	.0007	2.029

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	329.3	.26898	.0013	-.0001	.0000	.0018	.0060

#1	-.0001	334.4	.26907	-.0001	.0003	.0000	.0019	.0058
#2	-.0004	324.1	.26890	.0028	-.0005	.0000	.0017	.0061

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0053	.0010	2.452

#1	.0053	.0013	2.449
#2	.0054	.0007	2.454

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3893.3	123260.	7252.3

#1	3873.9	123540.	7247.2
#2	3912.8	122980.	7257.4

Sample Name: K1801267-010L Acquired: 2/20/2018 12:26:29 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 25 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/25

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	.0019	.0029	.0024	-.00007	.0308	.0000	.0001

#1	.0041	.0025	.0063	.0023	-.00006	.0303	.0000	.0000
#2	.0041	.0013	-.0004	.0024	-.00009	.0312	-.0001	.0002

Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.631	.0005	-.0004	.0003	-.0015	5.396	-.0007	-.0025

#1	6.541	.0004	-.0004	.0001	-.0009	5.382	.0000	-.0035
#2	6.721	.0006	-.0004	.0004	-.0020	5.410	-.0014	-.0016

Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.335	.05091	-.0003	.0004	.1317	1.343	.0000	.4107

#1	2.326	.05096	-.0001	.0000	.1291	1.321	.0004	.4153
#2	2.345	.05086	-.0004	.0007	.1344	1.365	-.0004	.4061

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	67.81	.05259	-.0016	-.0014	-.0001	.0000	.0014

#1	.0003	67.90	.05256	-.0007	-.0018	-.0001	.0001	.0012
#2	-.0006	67.72	.05262	-.0026	-.0011	-.0001	.0000	.0017

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0012	-.0012	.5062

#1	.0012	-.0020	.5107
#2	.0013	-.0004	.5016

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4065.2	133130.	7530.2

#1	4059.0	132600.	7560.4
#2	4071.4	133660.	7499.9

Sample Name: KQ1801951-03 Acquired: 2/20/2018 12:28:59 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/5 K1801267-010D

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0175	.0018	.0149	.0114	-.00010	.1394	-.0001	-.0001
#1	.0177	.0041	.0154	.0115	-.00019	.1387	-.0001	-.0001
#2	.0172	-.0005	.0143	.0114	-.00001	.1401	-.0001	-.0002

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	35.01	.0003	.0008	-.0012	-.0032	26.11	-.0007	-.0008
#1	34.84	.0003	.0004	-.0010	-.0034	25.97	-.0008	-.0004
#2	35.18	.0004	.0013	-.0015	-.0030	26.24	-.0006	-.0011

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.19	.24905	-.0003	.0002	.6397	6.395	.0006	2.129
#1	11.28	.24820	-.0005	.0002	.6400	6.448	-.0004	2.142
#2	11.09	.24991	-.0002	.0001	.6394	6.342	.0016	2.115

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	330.1	.26015	-.0008	-.0008	.0001	.0016	.0065
#1	-.0007	332.7	.25903	-.0008	-.0010	.0000	.0014	.0065
#2	-.0002	327.6	.26127	-.0008	-.0007	.0002	.0018	.0065

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	.0061	.0011	2.444
#1	.0061	.0016	2.442
#2	.0060	.0005	2.446

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	3958.6	126750.	7508.2
#1	3942.4	126850.	7608.5
#2	3974.7	126640.	7407.9

Sample Name: KQ1801951-04 Acquired: 2/20/2018 12:31:40 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/5 K1801267-010S

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0166	-.0001	1.066	2.145	-.00009	.1468	.1951	.1924
#1	.0169	-.0033	1.061	2.134	-.00008	.1472	.1970	.1943
#2	.0163	.0031	1.072	2.156	-.00010	.1465	.1932	.1906

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.73	1.003	.0007	.1931	.1928	27.51	.9325	.0040
#1	36.53	1.010	.0009	.1946	.1916	27.37	.9387	.0071
#2	36.94	.9968	.0005	.1915	.1940	27.65	.9264	.0009

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.71	.25517	-.0001	.1904	.6616	6.683	.1944	1.930
#1	11.70	.25582	-.0001	.1928	.6676	6.714	.1922	1.943
#2	11.72	.25452	-.0001	.1879	.6556	6.652	.1967	1.917

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1456	338.6	.27415	.0002	-.0009	.0000	.0020	1.995
#1	.1454	336.2	.27276	.0008	-.0009	.0001	.0017	2.017
#2	.1458	341.0	.27553	-.0003	-.0009	-.0001	.0023	1.974

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	1.971	-.0005	2.527
#1	1.960	-.0031	2.507
#2	1.983	.0021	2.547

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4032.7	127050.	7434.9
#1	3971.1	126490.	7473.1
#2	4094.3	127610.	7396.6

Sample Name: K1801267-010A Acquired: 2/20/2018 12:34:12 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 5 Test Type: E Sample Type:
 Comment: EM 022018A TCLP 1/5 A=0.1/10mL MET3-1-A

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0197	-.0088	5.325	10.47	-.00011	.1556	.9850	.9752
#1	.0209	-.0121	5.340	10.35	-.00015	.1553	1.000	.9908
#2	.0186	-.0056	5.310	10.59	-.00007	.1559	.9699	.9597
Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.04	5.051	.0014	.9908	.9877	27.14	4.742	.0014
#1	35.34	5.075	.0015	1.004	.9848	26.61	4.814	.0014
#2	36.74	5.028	.0014	.9771	.9906	27.67	4.670	.0013
Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.32	.25852	.0000	.9738	.6687	6.961	.9774	2.214
#1	12.12	.25899	.0001	.9893	.6719	6.824	.9790	2.184
#2	12.52	.25805	-.0001	.9583	.6656	7.098	.9758	2.245
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9383	355.7	.27345	.0002	-.0005	.0002	.0029	9.919
#1	.9382	347.0	.26763	.0016	-.0007	.0000	.0028	10.06
#2	.9384	364.4	.27928	-.0012	-.0003	.0004	.0030	9.774
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	>4.500	-.0011	2.577					
#1	9.515	.0010	2.577					
#2	9.428	-.0032	2.578					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	3992.0	127820.	7920.6					
#1	3946.8	127350.	7945.6					
#2	4037.1	128280.	7895.6					

Sample Name: KQ1802012-02 Acquired: 2/20/2018 12:36:51 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A K1801234-MB

Elem	Al1670	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0013	.0004	.0007	.0002	-.00013	.0018	-.0002	.0000
#1	.0016	.0016	.0003	.0002	-.00013	.0010	-.0002	-.0002
#2	.0011	-.0009	.0011	.0001	-.00013	.0025	-.0001	.0001
Elem	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0034	.0005	-.0003	.0006	-.0017	.0016	.0007	-.0051
#1	.0035	.0003	-.0003	.0008	-.0013	.0016	.0011	-.0084
#2	.0034	.0007	-.0004	.0005	-.0021	.0016	.0003	-.0019
Elem	Mg2795	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0006	.00002	.0001	-.0004	.0076	.0262	.0026	.0294
#1	.0007	.00001	.0002	-.0004	.0092	.0426	.0014	.0341
#2	.0006	.00003	.0000	-.0005	.0060	.0097	.0038	.0246
Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0002	.1326	-.00002	-.0018	-.0015	.0000	-.0003	.0002
#1	.0002	.1261	-.00003	-.0021	-.0016	-.0001	-.0003	.0003
#2	-.0005	.1391	.00000	-.0016	-.0015	.0000	-.0003	.0002
Elem	Zn2138	Bi2230	S_1820					
Units	ppm	ppm	ppm					
Avg	.0005	-.0012	-.0010					
#1	.0006	-.0020	.0002					
#2	.0005	-.0004	-.0022					
Int. Std.	Y_2243	Y_3600	Y_3600-2					
Units	Cts/S	Cts/S	Cts/S					
Avg	4342.9	145560.	8106.4					
#1	4315.9	145090.	8049.7					
#2	4369.9	146040.	8163.1					

Sample Name: KQ1802012-01 Acquired: 2/20/2018 12:39:19 Type: Unk
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: EM 022018A K1801234-LCSW

Elem	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144	Cd2265
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.140	1.968	2.301	4.653	.11317	.4452	1.026	1.028

#1	5.127	1.976	2.303	4.684	.11269	.4449	1.027	1.029
#2	5.153	1.959	2.299	4.623	.11365	.4455	1.025	1.027

Elem	Ca3158	Cr2677	Co2307	Cu2247	Cu3273	Fe2599	Pb2203	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.49	.4206	1.093	.5348	.5884	2.251	2.080	-.0057

#1	11.54	.4222	1.093	.5355	.5894	2.264	2.084	-.0038
#2	11.44	.4190	1.092	.5340	.5873	2.238	2.077	-.0076

Elem	Mg2852	Mn2576	Mo2020	Ni2216	P_1782	K_7664	Se1960	Si2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.23	1.0282	.9122	1.063	.0112	11.96	2.062	.0249

#1	11.23	1.0328	.9137	1.065	.0109	11.93	2.067	.0231
#2	11.23	1.0236	.9107	1.062	.0116	11.98	2.056	.0266

Elem	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.6761	11.80	.00018	2.096	-.0016	.0000	1.083	1.044

#1	.6747	11.82	.00022	2.100	-.0014	.0000	1.083	1.043
#2	.6776	11.78	.00014	2.092	-.0017	-.0001	1.084	1.044

Elem	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm
Avg	1.085	-.0001	-.0017

#1	1.087	.0006	-.0033
#2	1.083	-.0009	.0000

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4263.9	142270.	7978.3

#1	4263.0	141970.	7936.6
#2	4264.7	142570.	8020.0

Sample Name: CCVB Acquired: 2/20/2018 12:41:37 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.421	F 11.78	.0012	1.104	10.45	-.00004	.0006	.0000
Stddev	.036	.07	.0005	.002	.06	.00000	.0006	.0001
%RSD	.4823	.5595	39.03	.2098	.5383	2.9335	99.10	271.5

#1	7.446	11.82	.0016	1.102	10.49	-.00004	.0011	.0001
#2	7.395	11.73	.0009	1.105	10.41	-.00004	.0002	.0000

Check ?	None	Chk Fail	None	Chk Pass	Chk Pass	None	None	None
Value		10.00						
Range		10.44%						

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.45	9.762	.0006	.0000	.0001	-.0017	10.49
Stddev	.0001	.03	.059	.0008	.0000	.0004	.0009	.03
%RSD	207.6	.2413	.6030	138.2	2.367	371.5	55.37	.3105

#1	.0000	10.43	9.720	.0000	.0000	-.0002	-.0024	10.51
#2	.0001	10.47	9.803	.0011	.0000	.0004	-.0010	10.46

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0020	F 1.106	10.32	9.786	10.62	.97498	1.004	.0009
Stddev	.0002	.004	.03	.012	.03	.00087	.009	.0003
%RSD	8.990	.3672	.2753	.1237	.2711	.08945	.8681	36.29

#1	.0019	1.103	10.34	9.795	10.60	.97436	.9979	.0007
#2	.0022	1.108	10.30	9.777	10.64	.97559	1.010	.0011

Check ?	None	Chk Fail	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value		1.000						
Range		10.44%						

Sample Name: CCVB Acquired: 2/20/2018 12:41:37 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	10.26	10.95	.0027	10.88	-.0007	11.02	1.0365
Stddev	.0000	.02	.04	.0006	.03	.0002	.06	.0033
%RSD	8.743	.1682	.3617	21.11	.2332	23.35	.5048	.31932

#1	-.0005	10.27	10.98	.0023	10.89	-.0006	10.98	1.0341
#2	-.0005	10.25	10.92	.0031	10.86	-.0008	11.06	1.0388

Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	Chk Pass
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0003	-.0007	.0000	.0000	.0002	.0004	1.057	F 1.124
Stddev	.0008	.0006	.000	.000	.0002	.0002	.003	.000
%RSD	220.0	85.11	67.87	476.4	93.94	39.51	.2387	.0207

#1	.0002	-.0003	.0000	.0001	.0004	.0006	1.059	1.124
#2	-.0009	-.0011	.0000	-.0002	.0001	.0003	1.055	1.124

Check ?	None	None	None	None	None	None	Chk Pass	Chk Fail
Value								1.000
Range								10.44%

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4328.1	140740.	8013.5
Stddev	10.3	693.	1.0
%RSD	.23752	.49232	.01263

#1	4320.8	141230.	8012.8
#2	4335.4	140250.	8014.2

Sample Name: CCVB Acquired: 2/20/2018 12:52:02 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.351	F 11.61	.0002	F 1.112	10.09	-.00008	.0004	.0000
Stddev	.037	.10	.0000	.008	.11	.00003	.0017	.000
%RSD	.5105	.8380	3.638	.6993	1.116	42.446	461.8	174.2

#1	7.378	11.68	.0002	1.106	10.17	-.00010	-.0008	-.0001
#2	7.325	11.54	.0002	1.117	10.01	-.00005	.0016	.0000

Check ?	None	Chk Fail	None	Chk Fail	Chk Pass	None	None	None
Value		10.00		1.000				
Range		10.44%		10.44%				

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	10.01	9.451	.0001	.0001	-.0001	-.0012	10.15
Stddev	.0001	.12	.145	.0001	.0002	.0005	.0000	.09
%RSD	138.9	1.210	1.533	114.0	133.7	427.0	3.765	.9160

#1	.0001	10.10	9.554	.0000	.0003	-.0005	-.0013	10.22
#2	.0000	9.926	9.349	.0002	.0000	.0002	-.0012	10.09

Check ?	None	Chk Pass	None	None	None	None	None	Chk Pass
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	F 1.108	10.13	9.506	10.75	.93790	.9870	.0000
Stddev	.0007	.002	.15	.023	.05	.00238	.0031	.000
%RSD	32.25	.1514	1.464	.2391	.4907	.25354	.3144	1702.

#1	.0016	1.109	10.24	9.490	10.79	.93959	.9892	-.0001
#2	.0026	1.107	10.03	9.522	10.72	.93622	.9848	.0001

Check ?	None	Chk Fail	Chk Pass	None	Chk Pass	None	Chk Pass	None
Value		1.000						
Range		10.44%						

*Ann
2/20/18*

Sample Name: CCVB Acquired: 2/20/2018 12:52:02 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0009	10.17	F 11.06	-0.0009	10.90	-0.0003	F 11.13	1.0175
Stddev	.0004	.01	.00	.0027	.07	.0000	.01	.0091
%RSD	45.87	.0651	.0011	285.1	.6449	6.041	.1158	.89662

#1	-0.0012	10.17	11.06	.0010	10.95	-0.0003	11.13	1.0240
#2	-0.0006	10.16	11.06	-0.0029	10.85	-0.0003	11.12	1.0111

Check ?	None	Chk Pass	Chk Fail	None	Chk Pass	None	Chk Fail	Chk Pass
Value			10.00				10.00	
Range			10.44%				10.44%	

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-0.0011	-0.0011	.0003	.0003	.0000	.0003	1.045	F 1.137
Stddev	.0003	.0001	.0001	.0003	.0002	.0000	.004	.014
%RSD	26.36	7.406	24.52	115.7	627.9	2.752	.3456	1.242

#1	-0.0013	-0.0010	.0002	.0001	.0002	.0003	1.042	1.127
#2	-0.0009	-0.0011	.0003	.0005	-0.0001	.0003	1.047	1.147

Check ?	None	None	None	None	None	None	Chk Pass	Chk Fail
Value								1.000
Range								10.44%

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4382.5	144590.	8293.7
Stddev	11.6	217.	72.8
%RSD	.26442	.14986	.87818

#1	4374.3	144740.	8242.2
#2	4390.7	144440.	8345.2

*Ann
2/20/18*

Sample Name: CCVA Acquired: 2/20/2018 12:54:51 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B2496
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2557	.3304	F .2788	.2848	.2579	F .28444	F .2853
Stddev	.0018	.0040	.0023	.0009	.0013	.00360	.0023
%RSD	.7164	1.196	.8150	.3257	.5091	1.2670	.8220
#1	.2570	.3276	.2804	.2854	.2569	.28190	.2836
#2	.2544	.3332	.2772	.2841	.2588	.28699	.2869
Check ?	Chk Pass	None	Chk Fail	None	None	Chk Fail	Chk Fail
Value			.2500			.25000	.2500
Range			10.44%			10.440%	10.44%
Elem	Cd2144	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2527	.2490	.5146	.4926	.2409	.2578	.2533
Stddev	.0017	.0018	.0040	.0028	.0013	.0020	.0019
%RSD	.6720	.7102	.7769	.5786	.5268	.7913	.7696
#1	.2539	.2503	.5174	.4906	.2400	.2593	.2547
#2	.2515	.2478	.5117	.4946	.2418	.2564	.2520
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							
Elem	Cu3273	Fe2599	Pb2203	Li6707	Mg2790	Mg2795	Mg2852
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .2814	.2584	.2521	-.0074	.2655	.2422	.2735
Stddev	.0025	.0033	.0003	.0008	.0343	.0016	.0019
%RSD	.8744	1.276	.1005	10.38	12.93	.6425	.7121
#1	.2796	.2560	.2519	-.0080	.2898	.2411	.2721
#2	.2831	.2607	.2523	-.0069	.2412	.2433	.2749
Check ?	Chk Fail	None	Chk Pass	None	None	Chk Pass	None
Value	.2500						
Range	10.44%						

*see rerun
am 2/20/18*

Sample Name: CCVA Acquired: 2/20/2018 12:54:51 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Mn2576	Mn2605	Mo2020	Ni2216	P_1782	K_7664	Se1960
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23787	.2496	.2563	.2520	.0001	2.738	F .2778
Stddev	.00171	.0006	.0021	.0014	.0027	.051	.0023
%RSD	.71837	.2551	.8351	.5372	4331.	1.880	.8334

#1	.23666	.2500	.2578	.2530	-.0019	2.775	.2795
#2	.23908	.2491	.2547	.2511	.0020	2.702	.2762

Check ?	Chk Pass	None	Chk Pass	Chk Pass	None	None	Chk Fail
Value							.2500
Range							10.44%

Elem	Si2516	Ag3280	Na5895	Sr4077	Tl1908	Sn1899	Ti3361
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1549	F .2814	.3196	.00012	.2631	.2583	.2529
Stddev	.0049	.0034	.0136	.00003	.0000	.0021	.0015
%RSD	3.158	1.217	4.254	23.850	.0168	.7974	.5779

#1	.1515	.2790	.3100	.00010	.2632	.2597	.2518
#2	.1584	.2838	.3292	.00014	.2631	.2568	.2539

Check ?	None	Chk Fail	None	None	Chk Pass	Chk Pass	Chk Pass
Value		.2500					
Range		10.44%					

Elem	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm
Avg	.2475	.2531	.2748	.0002	-.0012
Stddev	.0014	.0014	.0009	.0003	.0012
%RSD	.5512	.5554	.3150	203.2	96.08

#1	.2465	.2541	.2754	.0004	-.0004
#2	.2484	.2521	.2742	-.0001	-.0021

Check ?	Chk Pass	Chk Pass	Chk Pass	None	None
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Value Range

*see rem
 am 2/20/18*

Sample Name: CCVA Acquired: 2/20/2018 12:54:51 Type: QC
Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
User: admin Dilution: 1 Test Type: Sample Type:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4337.2	146270.	8245.5
Stddev	19.7	70.	65.6
%RSD	.45510	.04812	.79533
#1	4323.2	146220.	8291.8
#2	4351.2	146320.	8199.1

*See rerun
ann 2/20/18*

Sample Name: CCVA Acquired: 2/20/2018 13:05:05 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2548	.3201	.2693	.2672	.2529	.27017	.2693	.2464
Stddev	.0007	.0003	.0018	.0027	.0008	.00048	.0014	.0009
%RSD	.2628	.1019	.6538	.9987	.3114	.17657	.5343	.3768

#1	.2553	.3199	.2706	.2691	.2534	.26983	.2703	.2470
#2	.2543	.3204	.2681	.2654	.2523	.27050	.2683	.2457

Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2431	.5208	.4809	.2347	.2524	.2508	.2716	.2525
Stddev	.0011	.0179	.0014	.0004	.0015	.0007	.0014	.0009
%RSD	.4436	3.445	.2970	.1760	.6027	.2682	.5009	.3371

#1	.2439	.5335	.4819	.2350	.2534	.2503	.2707	.2519
#2	.2424	.5081	.4799	.2344	.2513	.2512	.2726	.2531

Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value								
Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2440	-.0047	.2711	.2397	.2479	.23859	.2328	.2504
Stddev	.0003	.0000	.0074	.0009	.0005	.00052	.0003	.0003
%RSD	.1331	.2417	2.712	.3830	.1924	.21683	.1475	.1390

#1	.2442	-.0046	.2659	.2404	.2476	.23896	.2326	.2506
#2	.2438	-.0047	.2763	.2391	.2483	.23823	.2330	.2501

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: CCVA Acquired: 2/20/2018 13:05:05 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2445	-.0004	2.584	.2723	.1307	.2644	.2909	.00001
Stddev	.0012	.0014	.047	.0010	.0036	.0008	.0163	.00009
%RSD	.4738	346.5	1.826	.3718	2.726	.3170	5.599	659.85

#1	.2453	.0006	2.551	.2730	.1282	.2650	.2794	.00008
#2	.2437	-.0014	2.618	.2716	.1333	.2638	.3025	-.00005

Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	None
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2585	.2520	.2457	.2381	.2499	.2670	-.0007	-.0040
Stddev	.0006	.0018	.0000	.0008	.0000	.0011	.0024	.0010
%RSD	.2327	.6951	.0053	.3520	.0182	.4053	347.2	26.26

#1	.2581	.2532	.2457	.2387	.2499	.2677	-.0024	-.0047
#2	.2589	.2508	.2457	.2375	.2499	.2662	.0010	-.0032

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4312.4	143260.	7834.7
Stddev	3.7	104.	58.0
%RSD	.08540	.07289	.74012

#1	4315.1	143330.	7793.7
#2	4309.8	143190.	7875.7

Sample Name: CCB Acquired: 2/20/2018 13:07:27 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	.0001	.0034	-.0019	-.0006	-.00004	.0004	.0000
Stddev	.0002	.0009	.0012	.0011	.0000	.00001	.0000	.000
%RSD	39.95	749.9	34.49	55.87	2.033	34.899	9.572	865.1

#1	-.0007	-.0005	.0026	-.0011	-.0006	-.00005	.0004	-.0002
#2	-.0004	.0008	.0043	-.0026	-.0006	-.00003	.0004	.0001

Check ? High Limit Low Limit	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	.0005	-.0001	.0003	-.0003	-.0002	-.0020	-.0032
Stddev	.0001	.0043	.0000	.0005	.0000	.0001	.0001	.0013
%RSD	97.43	903.9	4.134	142.6	10.87	87.11	3.638	39.89

#1	.0000	-.0025	-.0001	.0006	-.0003	-.0002	-.0021	-.0023
#2	-.0001	.0035	-.0001	.0000	-.0003	-.0001	-.0020	-.0041

Check ? High Limit Low Limit	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
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Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0005	-.0058	.0172	-.0002	.0014	-.00004	.0003	.0006
Stddev	.0003	.0012	.0028	.0001	.0012	.00005	.0001	.0003
%RSD	55.10	20.48	16.18	54.94	87.13	146.15	16.29	54.12

#1	-.0007	-.0050	.0152	-.0003	.0005	.00000	.0004	.0004
#2	-.0003	-.0067	.0191	-.0001	.0023	-.00008	.0003	.0008

Check ? High Limit Low Limit	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
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Sample Name: CCB Acquired: 2/20/2018 13:07:27 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0005	.0006	-.0003	.0027	.0002	.0186	-.00001
Stddev	.0001	.0000	.0123	.0023	.0053	.0004	.0143	.00006
%RSD	104.3	.4765	2018.	834.8	198.3	159.3	77.00	453.04

#1	.0002	.0005	-.0081	-.0019	-.0011	.0000	.0288	.00003
#2	.0000	.0005	.0093	.0014	.0064	.0005	.0085	-.00005

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	-.0016	-.0001	-.0001	-.0001	.0000	-.0008	.0024
Stddev	.0007	.0001	.0000	.0002	.0001	.000	.0028	.0017
%RSD	560.3	7.995	8.939	108.1	215.6	49.81	340.6	72.20

#1	.0006	-.0017	-.0001	-.0002	.0000	.0000	-.0028	.0036
#2	-.0004	-.0015	-.0001	.0000	-.0001	.0000	.0012	.0012

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4208.7	140980.	7830.6
Stddev	51.1	89.	70.7
%RSD	1.2139	.06338	.90256

#1	4172.6	141050.	7780.6
#2	4244.9	140920.	7880.6

Sample Name: LLCCV Acquired: 2/20/2018 13:10:33 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0106	.0117	.0191	.0104	.0036	.00113	.0220	.0009
Stddev	.0006	.0000	.0019	.0010	.0000	.00008	.0002	.0000
%RSD	5.291	.1720	10.15	9.170	.2244	6.7619	.7797	1.025

#1	.0102	.0117	.0204	.0111	.0036	.00118	.0222	.0009
#2	.0110	.0117	.0177	.0098	.0036	.00107	.0219	.0009

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0009	.0206	.0197	.0045	.0022	.0043	F .0021	.0214
Stddev	.0000	.0026	.0002	.0001	.0000	.0001	.0005	.0014
%RSD	2.259	12.46	1.070	2.357	1.769	2.820	23.03	6.390

#1	.0009	.0224	.0198	.0044	.0022	.0044	.0018	.0204
#2	.0009	.0188	.0195	.0045	.0022	.0042	.0025	.0223

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value Range							.0040 -30.00%	

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0109	.0194	.0138	.0048	.0064	.00092	.0017	.0044
Stddev	.0008	.0001	.0308	.0001	.0004	.00000	.0005	.0001
%RSD	7.153	.4724	223.8	1.095	6.068	.47023	27.42	3.355

#1	.0103	.0194	-.0080	.0048	.0067	.00093	.0021	.0045
#2	.0114	.0193	.0356	.0047	.0061	.00092	.0014	.0043

Check ?	Chk Pass	Chk Pass	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value Range								

*see return
ann 2/20/18*

Sample Name: LLCCV Acquired: 2/20/2018 13:10:33 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0041	.0415	.2302	.0210	.2053	.0044	.2286	.00114
Stddev	.0004	.0021	.0150	.0014	.0052	.0000	.0128	.00011
%RSD	8.985	5.072	6.533	6.688	2.521	.9665	5.616	10.098

#1	.0043	.0400	.2409	.0200	.2017	.0043	.2377	.00122
#2	.0038	.0430	.2196	.0220	.2090	.0044	.2195	.00105

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0098	.0205	.0020	.0040	.0039	.0044	.0229	.0428
Stddev	.0019	.0001	.0002	.0000	.0001	.0000	.0004	.0022
%RSD	19.67	.5650	8.984	.8149	3.605	1.090	1.794	5.040

#1	.0112	.0204	.0022	.0041	.0038	.0044	.0226	.0412
#2	.0085	.0206	.0019	.0040	.0040	.0044	.0232	.0443

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4276.4	142760.	7784.4
Stddev	3.1	.	22.1
%RSD	.07312	.00011	.28341

#1	4274.2	142760.	7768.8
#2	4278.6	142760.	7800.0

*see rem
 am 2/20/18*

Sample Name: LLCCV Acquired: 2/20/2018 13:13:10 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0100	.0123	.0211	.0097	.0035	.00114	.0229	.0010
Stddev	.0004	.0005	.0017	.0024	.0000	.00006	.0010	.0000
%RSD	3.659	4.146	8.028	24.27	.4178	5.4811	4.426	4.410
#1	.0098	.0120	.0199	.0114	.0035	.00109	.0222	.0010
#2	.0103	.0127	.0223	.0080	.0034	.00118	.0236	.0010

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0010	.0240	.0192	.0044	.0015	.0043	.0030	.0190
Stddev	.0001	.0038	.0001	.0004	.0004	.0000	.0001	.0021
%RSD	13.47	15.90	.6037	8.032	23.78	1.063	4.518	10.93
#1	.0009	.0267	.0192	.0046	.0013	.0042	.0029	.0205
#2	.0011	.0213	.0191	.0041	.0018	.0043	.0031	.0176

Check ? Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass Chk Pass
 Value
 Range

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0109	.0167	.0113	.0045	.0062	.00091	.0009	.0040
Stddev	.0002	.0011	.0014	.0000	.0006	.00002	.0011	.0002
%RSD	1.587	6.578	12.03	.0952	9.171	2.6521	124.8	4.007
#1	.0110	.0159	.0122	.0045	.0058	.00090	.0001	.0041
#2	.0108	.0175	.0103	.0045	.0067	.00093	.0017	.0039

Check ? Chk Pass Chk Pass None Chk Pass None Chk Pass None Chk Pass
 Value
 Range

Sample Name: LLCCV Acquired: 2/20/2018 13:13:10 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment: RERUN

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0033	.0437	.1986	.0221	.2008	.0042	.2458	.00112
Stddev	.0002	.0031	.0211	.0004	.0030	.0001	.0137	.00008
%RSD	6.576	7.163	10.63	1.954	1.509	2.242	5.576	7.6182

#1	.0035	.0414	.1837	.0224	.1986	.0043	.2361	.00106
#2	.0032	.0459	.2135	.0218	.2029	.0041	.2555	.00118

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Tl1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0089	.0203	.0019	.0037	.0037	.0044	.0208	.0435
Stddev	.0003	.0009	.0001	.0001	.0000	.0000	.0023	.0026
%RSD	3.094	4.488	5.182	1.763	.7442	.0155	11.30	6.037

#1	.0091	.0209	.0018	.0036	.0037	.0044	.0191	.0453
#2	.0087	.0196	.0020	.0037	.0037	.0044	.0224	.0416

Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4326.1	144200.	7930.3
Stddev	14.1	339.	54.0
%RSD	.32665	.23541	.68122

#1	4316.1	144440.	7892.1
#2	4336.1	143960.	7968.5

Sample Name: LLCCV-TCLP Acquired: 2/20/2018 13:15:49 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Al1670	Al3944	Sb2068	As1890	Ba4554	Be2348	B_2496	Cd2144
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0001	-.0001	.0014	-.0004	.2073	-.00003	-.0004	.0000
Stddev	.0002	.0009	.0031	.0012	.0005	.00005	.0002	.000
%RSD	294.5	1072.	220.8	324.1	.2368	154.75	33.89	172.0
#1	-.0002	.0006	-.0008	.0005	.2076	.00000	-.0005	.0000
#2	.0001	-.0007	.0036	-.0012	.2069	-.00006	-.0003	-.0001
Check ?	None	None	None	None	Chk Pass	None	None	None
Value Range								

Elem	Cd2265	Ca3158	Ca3933	Cr2677	Co2307	Cu2247	Cu3273	Fe2599
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.0010	.0009	.0001	-.0003	-.0002	-.0023	.0048
Stddev	.0001	.0002	.0000	.0005	.0004	.0004	.0003	.0013
%RSD	190.1	23.36	2.051	345.6	130.5	176.3	11.46	26.38
#1	.0000	.0011	.0009	-.0002	-.0005	-.0005	-.0021	.0057
#2	.0002	.0008	.0009	.0005	.0000	.0001	-.0025	.0039
Check ?	None	None	None	None	None	None	None	None
Value Range								

Elem	Pb2203	Li6707	Mg2790	Mg2795	Mg2852	Mn2576	Mn2605	Mo2020
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0003	-.0026	-.0098	-.0003	-.0001	-.00004	-.0006	.0001
Stddev	.0004	.0028	.0349	.0000	.0011	.00003	.0000	.0001
%RSD	116.2	109.7	354.8	15.80	1548.	81.983	5.334	108.5
#1	.0001	-.0006	.0148	-.0003	.0007	-.00006	-.0006	.0000
#2	.0006	-.0046	-.0345	-.0002	-.0009	-.00002	-.0006	.0002
Check ?	None	None	None	None	None	None	None	None
Value Range								

Sample Name: LLCCV-TCLP Acquired: 2/20/2018 13:15:49 Type: QC
 Method: 2017B-6010-ICP-03(v111) Mode: CONC Corr. Factor: 1.000000
 User: admin Dilution: 1 Test Type: Sample Type:
 Comment:

Elem	Ni2216	P_1782	K_7664	Se1960	Si2516	Ag3280	Na5895	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	.0021	.0397	.0000	.0012	.0001	.0330	-.00002
Stddev	.000	.0029	.0364	.001	.0023	.0003	.0055	.00004
%RSD	989.0	137.1	91.79	4137.	181.9	376.4	16.71	237.61

#1	.0002	.0001	.0139	.0003	-.0004	.0003	.0291	.00001
#2	-.0002	.0041	.0654	-.0003	.0029	-.0001	.0369	-.00004

Check ?	None	None	None	None	None	None	None	None
Value								
Range								

Elem	Ti1908	Sn1899	Ti3361	V_2924	Zn2062	Zn2138	Bi2230	S_1820
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0021	-.0017	.0000	.0001	.1974	.2124	-.0004	-.0023
Stddev	.0014	.0010	.000	.0004	.0009	.0001	.0003	.0032
%RSD	65.86	55.69	481.5	297.5	.4429	.0592	69.75	135.7

#1	-.0031	-.0010	.0000	.0005	.1980	.2125	-.0002	-.0046
#2	-.0011	-.0024	-.0001	-.0002	.1968	.2123	-.0006	-.0001

Check ?	None	None	None	None	Chk Pass	Chk Pass	None	None
Value								
Range								

Int. Std.	Y_2243	Y_3600	Y_3600-2
Units	Cts/S	Cts/S	Cts/S
Avg	4302.8	143660.	7879.4
Stddev	5.7	882.	71.0
%RSD	.13267	.61425	.90055

#1	4306.9	143040.	7829.3
#2	4298.8	144290.	7929.6

Service Request #K1801202, K1801300, K1801357, K1801267,
 K1801415
 Instrument ID # K-ICP-MS-04
 Calibration 022618AICPMS04
 ALS LIMS Run #581650

Cal Std: MS23-16-J
 ICV Std: MS23-15-M
 LLICV Std: MS23-15-N
 I.S. Solution: MS22-91-A
 Tune Solution: MS22-85-B
 Pipettes: CH90197, 759050158, DH12718
 Pipette Check Due: 4/15/18

ICSA: MS23-16-A
 ICSAB: MS23-16-B

ICP-MS Data Review Form

Yes No NA

- | | | | |
|--|--------------|--------------|-------------|
| 1. Appropriate standardization completed | <u> X </u> | <u> </u> | <u> </u> |
| 2. ICV in control (+/- 10%) | <u> X </u> | <u> </u> | <u> </u> |
| 3. CCV's in control (+/- 10%) | <u> X </u> | <u> </u> | <u> </u> |
| 4. ICB/CCB's below MRL | <u> X </u> | <u> </u> | <u> </u> |
| 5. LLICV standard analyzed and in control | <u> X </u> | <u> </u> | <u> </u> |
| 6. ICS standards within 20% of true value | <u> X </u> | <u> </u> | <u> </u> |
| 6. All analytes within instrument linear range | <u> X </u> | <u> </u> | <u> </u> |
| 7. Adequate rinse out time allowed | <u> X </u> | <u> </u> | <u> </u> |
| 8. Internal standards in control | <u> X </u> | <u> </u> | <u> </u> |
| 9. Interferences checked | <u> X </u> | <u> </u> | <u> </u> |
| 10. Was the run terminated? If so, why. | <u> </u> | <u> X </u> | <u> </u> |

See Benchsheet exception report for sample batch QC information.
 Comments:

2X V MRL
 2X Ba MRL after 15:42

Primary Review by ERM Date 2/27/18
 Secondary Review by [Signature] Date 2/28/18

Data Review Form

Instrument ID#: K-ICP-MS-04
DataFile Name: R:\ICP\WIP\DATA\K-ICP-MS-04 (NexION)\022618a.txt
RUNNO: 581650

K1801202

No exceptions to report.

K1801267

No exceptions to report.

K1801300

No exceptions to report.

K1801357

No exceptions to report.

K1801415

No exceptions to report.

Primary Approver: RRM 2/27/18
Secondary Approver: A 2/26/18

Dataset Report

User Name: ALKLS.ALKLSXP373
 Computer Name: ALKLSXP373
 Dataset File Path: C:\NexIONData\DataSet\022618A1\
 Report Date/Time: Tuesday, February 27, 2018 15:18:52

The Dataset

Sample ID	Date and Time	Read Type	Description	Batch ID	Samp. File Name
Blank	13:02:39 Mon 26-Feb-18	Blank			C:\NexIONData\DataSet\022618A1\Blank.001
Standard 1	13:06:31 Mon 26-Feb-18	Standard #1			C:\NexIONData\DataSet\022618A1\Standard
ICV	13:10:22 Mon 26-Feb-18	QC Std #1			C:\NexIONData\DataSet\022618A1\ICV.003
CCV	13:14:13 Mon 26-Feb-18	QC Std #2			C:\NexIONData\DataSet\022618A1\CCV.004
ICB	13:18:05 Mon 26-Feb-18	QC Std #3			C:\NexIONData\DataSet\022618A1\ICB.005
CCB	13:21:57 Mon 26-Feb-18	QC Std #4			C:\NexIONData\DataSet\022618A1\CCB.006
LLICVW	13:25:48 Mon 26-Feb-18	QC Std #5			C:\NexIONData\DataSet\022618A1\LLICVW.(
ICSA	13:29:40 Mon 26-Feb-18	QC Std #7			C:\NexIONData\DataSet\022618A1\ICSA.008
ICSAB	13:33:31 Mon 26-Feb-18	QC Std #8			C:\NexIONData\DataSet\022618A1\ICSAB.00
KQ1802015-01	13:47:03 Mon 26-Feb-18	Sample			C:\NexIONData\DataSet\022618A1\KQ18020
KQ1802015-02	13:50:54 Mon 26-Feb-18	Sample			C:\NexIONData\DataSet\022618A1\KQ18020
K1801202-020	13:54:45 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
KQ1802015-05	13:58:36 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\KQ18020
K1801202-020L	14:02:27 Mon 26-Feb-18	Sample	5X	D	C:\NexIONData\DataSet\022618A1\K1801202
K1801202-020A	14:06:18 Mon 26-Feb-18	Sample	+20ppb +10ppb	#D	C:\NexIONData\DataSet\022618A1\K1801202
KQ1802015-06	14:10:09 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\KQ18020
K1801202-021	14:14:01 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
K1801202-022	14:17:52 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
K1801202-023	14:21:43 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
CCV	14:25:37 Mon 26-Feb-18	QC Std #2			C:\NexIONData\DataSet\022618A1\CCV.020
CCB	14:29:29 Mon 26-Feb-18	QC Std #4			C:\NexIONData\DataSet\022618A1\CCB.021
K1801300-001	14:33:23 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-002	14:37:13 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-003	14:41:04 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-004	14:44:55 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-005	14:48:47 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-006	14:52:38 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-007	14:56:29 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-008	15:00:20 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-009	15:04:11 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
K1801300-010	15:08:03 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801300
CCV	15:11:56 Mon 26-Feb-18	QC Std #2			C:\NexIONData\DataSet\022618A1\CCV.032
CCB	15:15:47 Mon 26-Feb-18	QC Std #4			C:\NexIONData\DataSet\022618A1\CCB.033
LLCCVW	15:19:39 Mon 26-Feb-18	QC Std #6			C:\NexIONData\DataSet\022618A1\LLCCVW.
LLCCVW	15:23:43 Mon 26-Feb-18	QC Std #6			C:\NexIONData\DataSet\022618A1\LLCCVW.
LLCCVW 2X	15:33:06 Mon 26-Feb-18	QC Std #9			C:\NexIONData\DataSet\022618A1\LLCCVW
K1801357-001	15:42:43 Mon 26-Feb-18	Sample			C:\NexIONData\DataSet\022618A1\K1801357
K1801357-002	15:46:35 Mon 26-Feb-18	Sample			C:\NexIONData\DataSet\022618A1\K1801357
KQ1802015-03	15:50:26 Mon 26-Feb-18	Sample			C:\NexIONData\DataSet\022618A1\KQ18020
K1801357-002L	15:54:17 Mon 26-Feb-18	Sample	5X		C:\NexIONData\DataSet\022618A1\K1801357
K1801357-002A	15:58:08 Mon 26-Feb-18	Sample	+20ppb +10ppb Ag		C:\NexIONData\DataSet\022618A1\K1801357
KQ1802015-04	16:01:59 Mon 26-Feb-18	Sample			C:\NexIONData\DataSet\022618A1\KQ18020
K1801357-001	16:05:50 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801357
K1801357-002	16:09:41 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801357
K1801202-020	16:13:33 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
K1801202-021	16:17:25 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
CCV	16:21:19 Mon 26-Feb-18	QC Std #2			C:\NexIONData\DataSet\022618A1\CCV.047
CCB	16:25:11 Mon 26-Feb-18	QC Std #4			C:\NexIONData\DataSet\022618A1\CCB.048
K1801202-022	16:29:04 Mon 26-Feb-18	Sample		D	C:\NexIONData\DataSet\022618A1\K1801202
K1801300-001	16:32:57 Mon 26-Feb-18	Sample	2X	D	C:\NexIONData\DataSet\022618A1\K1801300

P7204894	16:36:48 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\P7204894
P7138151	16:40:39 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\P7138151
P7198465	16:44:30 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\P7198465
P7211143	16:48:22 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\P7211143
KQ1802192-01	16:52:13 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802192-01
KQ1802192-02	16:56:04 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802192-02
KQ1802192-03	16:59:55 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802192-03
P7204894	17:03:48 Mon 26-Feb-18	Sample	Rerun	C:\NexIONData\DataSet\022618A1\P7204894
CCV	17:07:42 Mon 26-Feb-18	QC Std #2		C:\NexIONData\DataSet\022618A1\CCV.059
CCB	17:11:33 Mon 26-Feb-18	QC Std #4		C:\NexIONData\DataSet\022618A1\CCB.060
LLCCVW	17:15:25 Mon 26-Feb-18	QC Std #6		C:\NexIONData\DataSet\022618A1\LLCCVW.061
LLCCVW	17:19:26 Mon 26-Feb-18	QC Std #6		C:\NexIONData\DataSet\022618A1\LLCCVW.062
LLCCVW 2X	17:23:18 Mon 26-Feb-18	QC Std #9		C:\NexIONData\DataSet\022618A1\LLCCVW.063
LLCCVW 2X	17:28:04 Mon 26-Feb-18	QC Std #9		C:\NexIONData\DataSet\022618A1\LLCCVW.064
K1801267-004	17:31:56 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801267-004
K1801267-004L	17:35:47 Mon 26-Feb-18	Sample	5X	C:\NexIONData\DataSet\022618A1\K1801267-004L
K1801267-018	17:39:38 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801267-018
KQ1802018-01	17:43:29 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802018-01
K1801415-002	17:47:21 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801415-002
KQ1802018-03	17:51:12 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802018-03
K1801415-002L	17:55:03 Mon 26-Feb-18	Sample	5X	C:\NexIONData\DataSet\022618A1\K1801415-002L
K1801415-002A	17:58:54 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801415-002A
KQ1802018-04	18:02:45 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802018-04
KQ1802018-02	18:06:38 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\KQ1802018-02
CCV	18:10:30 Mon 26-Feb-18	QC Std #2		C:\NexIONData\DataSet\022618A1\CCV.075
CCB	18:14:22 Mon 26-Feb-18	QC Std #4		C:\NexIONData\DataSet\022618A1\CCB.076
MoSTD	18:18:15 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\MoSTD.077
K1801415-003	18:22:08 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801415-003
K1801415-006	18:25:59 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801415-006
K1801415-007	18:29:50 Mon 26-Feb-18	Sample		C:\NexIONData\DataSet\022618A1\K1801415-007
CCV	18:33:42 Mon 26-Feb-18	QC Std #2		C:\NexIONData\DataSet\022618A1\CCV.081
CCB	18:37:33 Mon 26-Feb-18	QC Std #4		C:\NexIONData\DataSet\022618A1\CCB.082
LLCCVW	18:41:25 Mon 26-Feb-18	QC Std #6		C:\NexIONData\DataSet\022618A1\LLCCVW.083
LLCCVW 2X	18:45:17 Mon 26-Feb-18	QC Std #9		C:\NexIONData\DataSet\022618A1\LLCCVW.084

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\CAS SmartTune Full FAST.swz

Optimization Status

Start Time: 2/26/2018 11:48:41 AM

Mass Calibration and Resolution

Optimization Settings:

Method: C:\NexIONData\Method\CAS Tuning.mth.

MassCal File: C:\NexIONData\MassCal\Default.tun

Iterations: 6

Target accuracy (+/- amu): 0.1 for Mass Cal. and 0.1 for Resolution

Peak height (%) for Res. Opt.: 5

Optimization Results:

Initial Try

Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.725)
Target/Obtained mass (9.0122/9.075), Target/Obtained resolution (0.7/0.709)
Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.713)
Target/Obtained mass (58.9332/58.975), Target/Obtained resolution (0.7/0.708)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.722)
Target/Obtained mass (139.905/139.925), Target/Obtained resolution (0.7/0.708)
Target/Obtained mass (207.977/207.975), Target/Obtained resolution (0.7/0.718)
Target/Obtained mass (208.98/208.975), Target/Obtained resolution (0.7/0.715)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.710)

[Passed] Optimum value(s): N/A

Daily Performance Report

Sample ID: Daily Performance Check

Sample Date/Time: Monday, February 26, 2018 12:07:38

Sample Description:

Method File: C:\NexIONData\Method\CAS Daily Performance.mth

Dataset File: C:\NexIONData\DataSet\Default\Daily Performance Check.1156

MassCal File: C:\NexIONData\MassCal\Default.tun

Conditions File: C:\NexIONData\Conditions\Default.dac

Dual Detector Mode: Pulse

Acq. Dead Time (ns): 35

Current Dead Time (ns): 35

Torch Z position (mm): 0.00

Summary

Analyte	Mass	Meas. Intens.	Mean	Net Intens.	Mean	Net Intens.	SD	Net Intens.	RSD	Mode
Li	7.0	97336.7	97336.719	1954.093	2.0	Standard				
Be	9.0	20315.0	20314.971	343.917	1.7	Standard				
Mg	24.0	84356.4	84356.416	1786.245	2.1	Standard				
Co	58.9	62230.2	62230.229	1324.136	2.1	Standard				
In	114.9	128867.9	128867.917	1741.853	1.4	Standard				
Pb	208.0	150309.9	150309.924	2008.164	1.3	Standard				
Bi	209.0	112793.6	112793.648	2032.224	1.8	Standard				
U	238.1	97391.7	97391.654	300.583	0.3	Standard				
[CeO	155.9	2868.3	0.019	0.001	3.4	Standard				
[> Ce	139.9	153552.2	153552.153	2134.256	1.4	Standard				
[Ce++	70.0	2458.1	0.016	0.000	2.7	Standard				
Bkgd	220.0	0.3	0.267	0.365	136.9	Standard				

Replicates

Repeat 1

Analyte	Mass	Meas. Intensity
Li	7	97873.461
Be	9	20463.980
Mg	24	86099.346
Co	59	63234.308
In	115	130203.999
Pb	208	147730.300
Bi	209	114014.501
U	238	97114.307
CeO	156	2758.266
Ce	140	151970.718
Ce++	70	2546.894
Bkgd	220	0.000

Repeat 2

Analyte	Mass	Meas. Intensity
Li	7	100425.750
Be	9	20496.693
Mg	24	84532.698
Co	59	59945.508
In	115	126778.731
Pb	208	153260.565
Bi	209	114624.016
U	238	97264.658
CeO	156	2974.310
Ce	140	151098.877
Ce++	70	2404.202
Bkgd	220	0.667

Repeat 3

Analyte	Mass	Meas. Intensity
Li	7	96800.186
Be	9	20485.344
Mg	24	82794.563
Co	59	63008.647
In	115	127306.729

Pb	208	150848.241
Bi	209	113788.711
U	238	97151.223
CeO	156	2890.959
Ce	140	153449.062
Ce++	70	2432.874
Bkgd	220	0.000

Repeat 4

Analyte	Mass	Meas. Intensity
Li	7	96230.355
Be	9	19701.576
Mg	24	82281.612
Co	59	62318.296
In	115	129365.096
Pb	208	149672.334
Bi	209	111889.129
U	238	97677.460
CeO	156	2832.281
Ce	140	156372.507
Ce++	70	2443.542
Bkgd	220	0.000

Repeat 5

Analyte	Mass	Meas. Intensity
Li	7	95353.841
Be	9	20427.261
Mg	24	86073.859
Co	59	62644.384
In	115	130685.029
Pb	208	150038.181
Bi	209	109651.882
U	238	97750.625
CeO	156	2885.625
Ce	140	154869.602
Ce++	70	2462.879
Bkgd	220	0.667

Current Conditions File Data

Current Value	Description
0.89	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
16.00	Plasma Gas Flow
-9.50	Deflector Voltage
1600.00	ICP RF Power
-1750.00	Analog Stage Voltage
1250.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-14.50	Cell Rod Offset STD [CRO]
8.00	Discriminator Threshold
-5.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.89	DRC Mode NEB
-6.50	DRC Mode QRO
-1.50	DRC Mode CRO
-10.00	DRC Mode Cell Entrance/Exit Voltage
3.50	Cell Gas A
0.00	Cell Gas B
280.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-40.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
5.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

LABWORKS - Summary Report

Sample ID: Blank
 Sample Date/Time: Monday, February 26, 2018 13:02:39
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\Blank.001
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1565455.1		2.9			ppb
[	Be-STD1	9	30.0		17.6			ppb
[	Mn-STD1	55	1058.0		7.7			ppb
[>	Ge-STD	72	1499420.6		1.9			ppb
[	Al-KED2	27	275.3		2.3			ppb
[>	Sc-KED2	45	89558.7		3.2			ppb
[	V-KED3	51	67.3		4.8			ppb
|	Cr-KED3	52	12.7		36.5			ppb
|	Cr-KED3	53	32.0		6.3			ppb
|	Fe-KED3	54	65.6		5.9			ppb
|	Fe-KED3	56	1481.1		2.5			ppb
|	Co-KED3	59	6.3		48.2			ppb
|	Ni-KED3	60	8.7		24.0			ppb
|	Ni-KED3	62	2.0		100.0			ppb
|	Cu-KED3	63	25.3		18.2			ppb
|	Cu-KED3	65	12.0		22.0			ppb
|	Zn-KED3	66	100.3		4.6			ppb
[>	Ge-KED3	72	70975.9		1.2			ppb
[>	Ge-KED2	72	304953.6		3.1			ppb
[	As-KED2	75	66.7		11.7			ppb
[>	Ge-KED1	72	899657.4		3.4			ppb
|	Se-KED1	77	492.7		7.5			ppb
|	Se-KED1	78	13.0		33.9			ppb
|	Mo-KED2	95	12.7		63.8			ppb
|	Mo-KED2	98	19.4		42.2			ppb
[>	Rh-KED2	103	398694.4		1.5			ppb
|	Ag-KED2	107	15.3		24.7			ppb
|	Ag-KED2	109	11.3		18.4			ppb
|	Cd-KED2	111	6.3		59.8			ppb
|	Cd-KED2	114	9.9		71.7			ppb
|	Sb-KED2	121	35.3		13.1			ppb
|	Sb-KED2	123	25.9		2.5			ppb
[	Ba-KED2	137	9.7		46.6			ppb
[>	Lu-KED2	175	177123.2		3.0			ppb
|	Tl-KED2	203	7.3		95.8			ppb
	Tl-KED2	205	17.3		18.5			ppb
[Pb-KED2	208	61.7		6.1			ppb
[>	Th-KED2	232	484913.6		2.1			ppb
[U-KED2	238	6.7		45.8			ppb

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QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72					
[	Al-KED2	27					
[>	Sc-KED2	45					
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72					
[>	Ge-KED2	72					
[	As-KED2	75					
[>	Ge-KED1	72					
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103					
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175					
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232					
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: Standard 1
 Sample Date/Time: Monday, February 26, 2018 13:06:31
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\Standard 1.002
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1550625.4		3.0			ppb
[Be-STD1	9	220162.1		3.3	25.00000	0.8	ppb
[Mn-STD1	55	769972.9		7.1	25.00000	1.6	ppb
> Ge-STD	72	1499304.2		5.5			ppb
[Al-KED2	27	11997.0		1.6	25.00000	0.1	ppb
> Sc-KED2	45	88953.5		1.7			ppb
[V-KED3	51	21395.7		0.4	25.00000	1.6	ppb
[Cr-KED3	52	29276.6		0.2	25.00000	1.3	ppb
[Cr-KED3	53	3609.8		1.7	25.00000	2.5	ppb
[Fe-KED3	54	12160.2		0.7	250.00000	0.8	ppb
[Fe-KED3	56	233987.2		1.4	250.00000	1.4	ppb
[Co-KED3	59	67705.8		1.6	25.00000	2.3	ppb
[Ni-KED3	60	20726.0		0.4	25.00000	1.6	ppb
[Ni-KED3	62	3475.8		1.6	25.00000	1.5	ppb
[Cu-KED3	63	63154.0		2.9	25.00000	3.1	ppb
[Cu-KED3	65	33066.2		0.6	25.00000	1.5	ppb
[Zn-KED3	66	6794.9		2.0	25.00000	2.4	ppb
> Ge-KED3	72	68952.7		1.2			ppb
> Ge-KED2	72	304978.5		2.7			ppb
[As-KED2	75	12696.3		0.3	25.00000	3.0	ppb
> Ge-KED1	72	921329.5		3.8			ppb
[Se-KED1	77	4140.6		3.5	25.00000	4.0	ppb
[Se-KED1	78	11656.2		1.9	25.00000	2.9	ppb
[Mo-KED2	95	26415.1		1.6	12.50000	1.0	ppb
[Mo-KED2	98	44961.5		3.9	12.50000	2.5	ppb
> Rh-KED2	103	403625.9		1.3			ppb
> Ag-KED2	107	105955.1		0.3	12.50000	1.1	ppb
[Ag-KED2	109	100605.5		2.8	12.50000	3.1	ppb
[Cd-KED2	111	28340.8		0.3	25.00000	1.3	ppb
[Cd-KED2	114	65758.9		1.1	25.00000	1.8	ppb
[Sb-KED2	121	22812.9		3.1	12.50000	1.8	ppb
[Sb-KED2	123	17111.5		3.2	12.50000	2.1	ppb
[Ba-KED2	137	23133.1		2.2	25.00000	1.6	ppb
> Lu-KED2	175	176257.0		0.6			ppb
[Ti-KED2	203	127265.2		2.0	25.00000	1.4	ppb
[Ti-KED2	205	306098.5		1.0	25.00000	1.3	ppb
[Pb-KED2	208	400839.9		1.8	25.00000	1.3	ppb
> Th-KED2	232	480532.8		1.6			ppb
[U-KED2	238	343021.7		1.1	25.00000	1.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6					
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72					
[	Al-KED2	27					
[>	Sc-KED2	45					
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72					
[>	Ge-KED2	72					
[	As-KED2	75					
[>	Ge-KED1	72					
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103					
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175					
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232					
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: ICV
 Sample Date/Time: Monday, February 26, 2018 13:10:22
 Sample Description:
 Autosampler Position: 3
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\ICV.003
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1526731.9		1.5			ppb
[Be-STD1	9	23743.1		1.4	2.73543	0.3	ppb
[Mn-STD1	55	764572.2		4.1	25.52891	3.6	ppb
[> Ge-STD	72	1458891.5		2.2			ppb
[Al-KED2	27	47946.3		1.8	101.14899	0.4	ppb
[> Sc-KED2	45	89403.3		2.1			ppb
[V-KED3	51	21690.1		1.9	24.94903	1.4	ppb
[Cr-KED3	52	12015.7		1.8	10.09457	1.3	ppb
[Cr-KED3	53	1488.7		3.2	10.01998	2.7	ppb
[Fe-KED3	54	2652.5		1.0	52.65628	1.4	ppb
[Fe-KED3	56	50803.9		1.9	52.22440	1.7	ppb
[Co-KED3	59	70268.1		1.5	25.54291	1.5	ppb
[Ni-KED3	60	21455.4		1.6	25.47677	1.1	ppb
[Ni-KED3	62	3526.4		1.1	24.97401	1.6	ppb
[Cu-KED3	63	32066.0		2.7	12.49217	2.8	ppb
[Cu-KED3	65	16876.0		2.2	12.55623	1.7	ppb
[Zn-KED3	66	7194.5		1.4	26.07649	1.9	ppb
[> Ge-KED3	72	70031.9		0.5			ppb
[> Ge-KED2	72	308832.9		0.4			ppb
[As-KED2	75	13238.5		2.0	25.73355	2.2	ppb
[> Ge-KED1	72	895988.5		5.2			ppb
[Se-KED1	77	4189.9		5.7	26.13656	1.6	ppb
[Se-KED1	78	12068.4		3.9	26.61944	3.2	ppb
[Mo-KED2	95	55908.5		1.6	26.22678	1.3	ppb
[Mo-KED2	98	93016.2		2.6	25.63661	1.3	ppb
[> Rh-KED2	103	407364.2		2.9			ppb
[Ag-KED2	107	107832.0		3.1	12.60298	0.6	ppb
[Ag-KED2	109	103163.3		2.3	12.70141	1.7	ppb
[Cd-KED2	111	14538.4		2.4	12.70468	1.5	ppb
[Cd-KED2	114	34244.8		3.2	12.89526	0.5	ppb
[Sb-KED2	121	23576.8		2.9	12.80484	2.4	ppb
[Sb-KED2	123	17948.4		2.0	12.99893	2.8	ppb
[Ba-KED2	137	95692.9		2.4	102.51162	0.7	ppb
[> Lu-KED2	175	180319.3		3.1			ppb
[Ti-KED2	203	130208.1		1.4	25.01227	1.8	ppb
[Ti-KED2	205	311096.6		0.6	24.85414	3.7	ppb
[Pb-KED2	208	407886.7		0.8	24.87971	2.4	ppb
[> Th-KED2	232	484362.4		2.8			ppb
[U-KED2	238	354969.5		0.8	25.67302	2.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				98	
[	Be-STD1	9		109			
[	Mn-STD1	55		102			
[>	Ge-STD	72				97	
[	Al-KED2	27		101			
[>	Sc-KED2	45				100	
[	V-KED3	51		100			
[	Cr-KED3	52		101			
[	Cr-KED3	53		100			
[	Fe-KED3	54		105			
[	Fe-KED3	56		104			
[	Co-KED3	59		102			
[	Ni-KED3	60		102			
[	Ni-KED3	62		100			
[	Cu-KED3	63		100			
[	Cu-KED3	65		100			
[	Zn-KED3	66		104			
[>	Ge-KED3	72				99	
[>	Ge-KED2	72				101	
[	As-KED2	75		103			
[>	Ge-KED1	72				100	
[	Se-KED1	77		105			
[	Se-KED1	78		106			
[	Mo-KED2	95		105			
[	Mo-KED2	98		103			
[>	Rh-KED2	103				102	
[	Ag-KED2	107		101			
[	Ag-KED2	109		102			
[	Cd-KED2	111		102			
[	Cd-KED2	114		103			
[	Sb-KED2	121		102			
[	Sb-KED2	123		104			
[	Ba-KED2	137		103			
[>	Lu-KED2	175				102	
[	Tl-KED2	203		100			
[	Tl-KED2	205		99			
[	Pb-KED2	208		100			
[>	Th-KED2	232				100	
[U-KED2	238		103			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 13:14:13
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexlONData\DataSet\022618A1\CCV.004
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1541866.0	0.8			ppb
[	Be-STD1	9	219050.6	3.4	25.01253	2.6	ppb
[	Mn-STD1	55	757584.0	1.0	25.26289	3.2	ppb
[>	Ge-STD	72	1461406.8	2.3			ppb
[	Al-KED2	27	12008.7	1.7	24.38520	2.2	ppb
[>	Sc-KED2	45	91239.4	0.8			ppb
[	V-KED3	51	21209.7	2.9	24.34908	5.6	ppb
|	Cr-KED3	52	29524.2	2.6	24.77238	5.4	ppb
|	Cr-KED3	53	3585.8	0.2	24.38283	2.8	ppb
|	Fe-KED3	54	12175.2	2.4	245.93310	5.2	ppb
|	Fe-KED3	56	236072.6	1.8	247.77532	4.3	ppb
|	Co-KED3	59	68985.2	1.7	25.02157	4.2	ppb
|	Ni-KED3	60	21204.7	3.0	25.12745	5.1	ppb
|	Ni-KED3	62	3519.1	2.4	24.87199	5.2	ppb
|	Cu-KED3	63	65150.9	1.0	25.32696	2.3	ppb
|	Cu-KED3	65	33724.8	1.4	25.04083	2.9	ppb
|	Zn-KED3	66	6911.7	1.0	24.97678	3.5	ppb
[>	Ge-KED3	72	70237.7	2.8			ppb
[>	Ge-KED2	72	303274.4	1.3			ppb
[	As-KED2	75	12933.2	5.6	25.59550	5.1	ppb
[>	Ge-KED1	72	911167.0	3.3			ppb
|	Se-KED1	77	4116.6	2.0	25.14562	1.5	ppb
[	Se-KED1	78	11816.8	0.5	25.62780	2.9	ppb
[	Mo-KED2	95	27179.2	2.9	12.82615	2.1	ppb
|	Mo-KED2	98	45558.0	0.9	12.63580	1.2	ppb
[>	Rh-KED2	103	404699.4	1.0			ppb
|	Ag-KED2	107	107915.7	3.4	12.69573	3.0	ppb
|	Ag-KED2	109	102888.0	2.2	12.74811	1.8	ppb
|	Cd-KED2	111	28546.8	2.2	25.11142	1.6	ppb
|	Cd-KED2	114	65617.8	3.1	24.87731	3.0	ppb
|	Sb-KED2	121	23285.7	4.4	12.72791	4.5	ppb
|	Sb-KED2	123	17537.5	0.8	12.77958	0.3	ppb
[	Ba-KED2	137	23765.8	1.5	25.61658	1.2	ppb
[>	Lu-KED2	175	179324.2	0.8			ppb
|	Tl-KED2	203	127507.9	0.8	24.62070	0.5	ppb
|	Tl-KED2	205	311547.8	1.6	25.00964	1.7	ppb
[	Pb-KED2	208	403007.2	0.7	24.70637	0.3	ppb
[>	Th-KED2	232	484230.4	1.4			ppb
[	U-KED2	238	350182.4	1.2	25.32875	2.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			98		
[	Be-STD1	9	100				
[	Mn-STD1	55	101				
[>	Ge-STD	72		97			
[	Al-KED2	27	98				
[>	Sc-KED2	45		102			
[	V-KED3	51	97				
|	Cr-KED3	52	99				
|	Cr-KED3	53	98				
|	Fe-KED3	54	98				
|	Fe-KED3	56	99				
|	Co-KED3	59	100				
|	Ni-KED3	60	101				
|	Ni-KED3	62	99				
|	Cu-KED3	63	101				
|	Cu-KED3	65	100				
|	Zn-KED3	66	100				
[>	Ge-KED3	72		99			
[>	Ge-KED2	72		99			
[	As-KED2	75	102				
[>	Ge-KED1	72		101			
|	Se-KED1	77	101				
[	Se-KED1	78	103				
[	Mo-KED2	95	103				
|	Mo-KED2	98	101				
[>	Rh-KED2	103		102			
|	Ag-KED2	107	102				
|	Ag-KED2	109	102				
|	Cd-KED2	111	100				
|	Cd-KED2	114	100				
|	Sb-KED2	121	102				
|	Sb-KED2	123	102				
[	Ba-KED2	137	102				
[>	Lu-KED2	175		101			
|	Ti-KED2	203	98				
|	Ti-KED2	205	100				
[	Pb-KED2	208	99				
[>	Th-KED2	232		100			
[U-KED2	238	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: ICB
 Sample Date/Time: Monday, February 26, 2018 13:18:05
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\ICB.005
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
>	Li-STD	6	1527336.7	1.3			ppb
[	Be-STD1	9	36.0	14.7	0.00077	72.7	ppb
[	Mn-STD1	55	1120.0	6.6	0.00383	49.2	ppb
>	Ge-STD	72	1427675.2	1.9			ppb
[	Al-KED2	27	327.7	26.3	0.10551	172.7	ppb
>	Sc-KED2	45	90280.7	0.2			ppb
[	V-KED3	51	62.7	4.0	-0.00504	93.3	ppb
|	Cr-KED3	52	14.7	3.9	0.00170	43.9	ppb
|	Cr-KED3	53	34.7	13.3	0.01873	163.6	ppb
|	Fe-KED3	54	73.6	9.8	0.16160	66.9	ppb
|	Fe-KED3	56	1475.4	1.9	-0.00093	6008.2	ppb
|	Co-KED3	59	8.0	0.0	0.00061	12.4	ppb
|	Ni-KED3	60	9.0	29.4	0.00044	728.5	ppb
|	Ni-KED3	62	0.7	173.2	-0.00917	90.8	ppb
|	Cu-KED3	63	20.7	29.6	-0.00181	119.7	ppb
|	Cu-KED3	65	11.3	13.5	-0.00047	215.3	ppb
|	Zn-KED3	66	99.7	10.7	-0.00196	1517.3	ppb
>	Ge-KED3	72	70785.0	2.6			ppb
>	Ge-KED2	72	305367.7	0.8			ppb
[	As-KED2	75	68.3	18.6	0.00318	809.6	ppb
>	Ge-KED1	72	913806.5	4.3			ppb
|	Se-KED1	77	504.7	6.4	0.02919	548.5	ppb
[	Se-KED1	78	17.9	23.5	0.01040	99.9	ppb
[	Mo-KED2	95	34.0	35.3	0.00994	58.0	ppb
|	Mo-KED2	98	47.3	18.6	0.00764	32.4	ppb
>	Rh-KED2	103	406239.3	1.6			ppb
|	Ag-KED2	107	48.0	25.6	0.00381	39.9	ppb
|	Ag-KED2	109	39.7	34.3	0.00349	50.2	ppb
|	Cd-KED2	111	9.7	36.3	0.00285	112.2	ppb
|	Cd-KED2	114	10.8	18.3	0.00027	292.3	ppb
|	Sb-KED2	121	61.3	11.5	0.01383	28.8	ppb
|	Sb-KED2	123	54.8	15.2	0.02070	32.1	ppb
[	Ba-KED2	137	12.7	43.5	0.00308	198.7	ppb
>	Lu-KED2	175	179939.0	1.4			ppb
|	Ti-KED2	203	19.3	21.5	0.00229	36.2	ppb
|	Ti-KED2	205	42.3	19.7	0.00198	35.5	ppb
[	Pb-KED2	208	222.3	94.7	0.00980	132.2	ppb
>	Th-KED2	232	494913.3	2.4			ppb
[	U-KED2	238	153.3	141.6	0.01048	148.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		95			
[	Al-KED2	27					
[>	Sc-KED2	45		101			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		100			
[>	Ge-KED2	72		100			
[	As-KED2	75					
[>	Ge-KED1	72		102			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		102			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		102			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 13:21:57
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.006
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1541136.1			1.4			ppb
[Be-STD1	9	38.0			41.1	0.00098	186.0	ppb
[Mn-STD1	55	1041.4			7.0	0.00020	1594.6	ppb
[> Ge-STD	72	1469442.6			3.3			ppb
[Al-KED2	27	402.0			49.6	0.24760	152.2	ppb
[> Sc-KED2	45	90739.6			4.0			ppb
[V-KED3	51	67.0			2.6	-0.00052	247.7	ppb
[Cr-KED3	52	14.7			30.7	0.00165	231.5	ppb
[Cr-KED3	53	36.0			19.2	0.02679	176.8	ppb
[Fe-KED3	54	71.6			14.6	0.11650	176.0	ppb
[Fe-KED3	56	1507.1			1.4	0.02468	135.7	ppb
[Co-KED3	59	9.3			32.7	0.00108	105.1	ppb
[Ni-KED3	60	6.3			24.1	-0.00276	61.7	ppb
[Ni-KED3	62	4.0			50.0	0.01401	100.6	ppb
[Cu-KED3	63	21.3			53.3	-0.00158	268.4	ppb
[Cu-KED3	65	13.7			40.3	0.00117	330.9	ppb
[Zn-KED3	66	104.7			13.5	0.01513	342.3	ppb
[> Ge-KED3	72	71098.2			1.4			ppb
[> Ge-KED2	72	306081.7			2.3			ppb
[As-KED2	75	76.7			17.7	0.01913	132.6	ppb
[> Ge-KED1	72	915592.4			2.4			ppb
[Se-KED1	77	487.3			4.5	-0.09838	74.9	ppb
[Se-KED1	78	14.9			37.0	0.00366	311.0	ppb
[Mo-KED2	95	21.3			44.3	0.00418	108.6	ppb
[Mo-KED2	98	34.4			73.5	0.00426	167.8	ppb
[> Rh-KED2	103	397334.9			1.1			ppb
[Ag-KED2	107	35.7			76.9	0.00245	134.5	ppb
[Ag-KED2	109	36.0			84.5	0.00312	123.3	ppb
[Cd-KED2	111	9.0			80.1	0.00243	266.9	ppb
[Cd-KED2	114	16.5			62.9	0.00258	156.1	ppb
[Sb-KED2	121	28.7			22.4	-0.00362	103.7	ppb
[Sb-KED2	123	25.7			13.8	-0.00008	3166.0	ppb
[Ba-KED2	137	9.7			21.5	0.00003	6668.0	ppb
[> Lu-KED2	175	177723.1			1.1			ppb
[Tl-KED2	203	14.7			55.1	0.00143	111.8	ppb
[Tl-KED2	205	33.7			43.3	0.00133	91.4	ppb
[Pb-KED2	208	72.0			25.3	0.00063	186.1	ppb
[> Th-KED2	232	479684.2			1.4			ppb
[U-KED2	238	113.3			151.8	0.00771	161.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		98			
[	Al-KED2	27					
[>	Sc-KED2	45		101			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		100			
[>	Ge-KED2	72		100			
[	As-KED2	75					
[>	Ge-KED1	72		102			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		100			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		100			
|	Ti-KED2	203					
|	Ti-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: LLICVW
 Sample Date/Time: Monday, February 26, 2018 13:25:48
 Sample Description:
 Autosampler Position: 4
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLICVW.007
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1514368.9		3.0			ppb
[	Be-STD1	9	202.0		11.2	0.02017	15.8	ppb
[	Mn-STD1	55	6966.4		3.9	0.20187	4.2	ppb
[>	Ge-STD	72	1438979.1		4.5			ppb
[	Al-KED2	27	2135.2		4.0	3.93565	4.9	ppb
[>	Sc-KED2	45	89644.4		1.7			ppb
[	V-KED3	51	235.3		5.0	0.19661	6.3	ppb
|	Cr-KED3	52	244.3		2.9	0.19629	2.1	ppb
|	Cr-KED3	53	60.0		8.8	0.19830	19.5	ppb
|	Fe-KED3	54	164.4		8.7	2.05082	15.1	ppb
|	Fe-KED3	56	3258.4		2.6	1.92421	4.0	ppb
|	Co-KED3	59	64.7		7.8	0.02139	8.8	ppb
|	Ni-KED3	60	182.7		12.2	0.20811	12.0	ppb
|	Ni-KED3	62	26.7		22.9	0.17595	23.9	ppb
|	Cu-KED3	63	284.0		11.7	0.10167	12.5	ppb
|	Cu-KED3	65	149.3		2.5	0.10309	1.9	ppb
|	Zn-KED3	66	622.0		5.0	1.93634	5.0	ppb
[>	Ge-KED3	72	69581.0		0.9			ppb
[>	Ge-KED2	72	304918.3		1.6			ppb
[	As-KED2	75	322.0		1.4	0.50530	0.6	ppb
[>	Ge-KED1	72	913359.8		3.3			ppb
|	Se-KED1	77	650.0		6.4	1.03802	22.5	ppb
[	Se-KED1	78	480.9		3.3	1.01255	0.8	ppb
[	Mo-KED2	95	217.3		11.1	0.09704	8.0	ppb
|	Mo-KED2	98	375.1		10.5	0.09959	13.8	ppb
[>	Rh-KED2	103	402053.3		3.9			ppb
|	Ag-KED2	107	181.0		5.3	0.01961	4.3	ppb
|	Ag-KED2	109	187.3		9.3	0.02193	8.3	ppb
|	Cd-KED2	111	30.7		19.7	0.02163	28.9	ppb
|	Cd-KED2	114	61.7		9.4	0.01979	14.0	ppb
|	Sb-KED2	121	114.7		7.3	0.04371	15.7	ppb
|	Sb-KED2	123	97.4		6.9	0.05245	11.5	ppb
[	Ba-KED2	137	53.0		1.9	0.04703	7.1	ppb
[>	Lu-KED2	175	180505.7		2.4			ppb
|	Tl-KED2	203	120.7		2.5	0.02173	4.5	ppb
|	Tl-KED2	205	279.0		3.8	0.02086	6.6	ppb
[	Pb-KED2	208	367.3		0.9	0.01856	3.2	ppb
[>	Th-KED2	232	493636.5		0.1			ppb
[	U-KED2	238	278.0		8.3	0.01924	8.6	ppb

Sample ID: LLICVW
 Report Date/Time: Tuesday, February 27, 2018 15:14:39
 Page 1

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				97	
[	Be-STD1	9		101			
[	Mn-STD1	55		101			
[>	Ge-STD	72				96	
[	Al-KED2	27		98			
[>	Sc-KED2	45				100	
[	V-KED3	51		98			
|	Cr-KED3	52		98			
|	Cr-KED3	53		99			
|	Fe-KED3	54		103			
|	Fe-KED3	56		96			
|	Co-KED3	59		107			
|	Ni-KED3	60		104			
|	Ni-KED3	62		88			
|	Cu-KED3	63		102			
|	Cu-KED3	65		103			
|	Zn-KED3	66		97			
[>	Ge-KED3	72				98	
[>	Ge-KED2	72				100	
[	As-KED2	75		101			
[>	Ge-KED1	72				102	
|	Se-KED1	77		104			
[	Se-KED1	78		101			
[	Mo-KED2	95		97			
|	Mo-KED2	98		100			
[>	Rh-KED2	103				101	
|	Ag-KED2	107		98			
|	Ag-KED2	109		110			
|	Cd-KED2	111		108			
|	Cd-KED2	114		99			
|	Sb-KED2	121		87			
|	Sb-KED2	123		105			
[	Ba-KED2	137		94			
[>	Lu-KED2	175				102	
|	Tl-KED2	203		109			
|	Tl-KED2	205		104			
[	Pb-KED2	208		93			
[>	Th-KED2	232				102	
[U-KED2	238		96			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: ICSA
 Sample Date/Time: Monday, February 26, 2018 13:29:40
 Sample Description:
 Autosampler Position: 5
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\ICSA.008
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1331322.9	2.4			ppb
[	Be-STD1	9	40.7	5.7	0.00201	21.1	ppb
[	Mn-STD1	55	24096.3	1.7	0.88340	2.7	ppb
[>	Ge-STD	72	1280753.8	0.9			ppb
[	Al-KED2	27	9303432.8	3.0	20770.66255	2.1	ppb
[>	Sc-KED2	45	84950.2	0.9			ppb
[	V-KED3	51	59.7	17.1	0.00154	856.5	ppb
|	Cr-KED3	52	684.7	6.0	0.64385	6.4	ppb
|	Cr-KED3	53	740.0	2.5	5.56598	3.2	ppb
|	Fe-KED3	54	2294203.8	1.3	53043.49190	1.8	ppb
|	Fe-KED3	56	44213525.2	1.7	53174.51870	2.2	ppb
|	Co-KED3	59	1557.1	1.3	0.64090	1.2	ppb
|	Ni-KED3	60	355.7	8.0	0.46999	8.4	ppb
|	Ni-KED3	62	72.0	5.6	0.56559	5.2	ppb
|	Cu-KED3	63	1305.4	2.2	0.56859	2.8	ppb
|	Cu-KED3	65	695.4	2.7	0.57953	3.2	ppb
|	Zn-KED3	66	173.3	8.3	0.36011	17.5	ppb
[>	Ge-KED3	72	61635.0	0.6			ppb
[>	Ge-KED2	72	269879.6	1.3			ppb
[	As-KED2	75	95.3	15.8	0.08110	39.9	ppb
[>	Ge-KED1	72	783924.4	3.4			ppb
|	Se-KED1	77	455.3	5.7	0.21251	107.6	ppb
[	Se-KED1	78	114.1	7.2	0.25935	8.6	ppb
[	Mo-KED2	95	103801.3	2.7	57.46564	3.0	ppb
|	Mo-KED2	98	178215.7	3.6	57.97951	4.1	ppb
[>	Rh-KED2	103	345183.8	1.5			ppb
|	Ag-KED2	107	101.3	12.5	0.01216	15.5	ppb
|	Ag-KED2	109	102.3	8.0	0.01344	8.2	ppb
|	Cd-KED2	111	37.7	24.7	0.03316	28.2	ppb
|	Cd-KED2	114	87.0	14.8	0.03486	16.4	ppb
|	Sb-KED2	121	84.7	5.5	0.03473	9.6	ppb
|	Sb-KED2	123	64.2	4.2	0.03570	5.5	ppb
[	Ba-KED2	137	858.4	6.1	1.07439	5.5	ppb
[>	Lu-KED2	175	173511.7	0.2			ppb
|	Tl-KED2	203	45.3	20.8	0.00762	24.9	ppb
|	Tl-KED2	205	83.0	6.3	0.00548	7.7	ppb
[	Pb-KED2	208	1187.4	3.2	0.07141	3.4	ppb
[>	Th-KED2	232	467234.2	0.8			ppb
[	U-KED2	238	30.7	16.4	0.00182	19.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6				85	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				85	
[	Al-KED2	27	104				
[>	Sc-KED2	45				95	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54	106				
|	Fe-KED3	56	106				
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				87	
[>	Ge-KED2	72				88	
[	As-KED2	75					
[>	Ge-KED1	72				87	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95	115				
|	Mo-KED2	98	116				
|>	Rh-KED2	103				87	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				98	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				96	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: ICSAB
 Sample Date/Time: Monday, February 26, 2018 13:33:31
 Sample Description:
 Autosampler Position: 6
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\ICSAB.009
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1356182.2		0.9			ppb
[	Be-STD1	9	40.7		5.7	0.00191	17.1	ppb
[	Mn-STD1	55	1413969.7		1.1	50.76046	2.3	ppb
[>	Ge-STD	72	1358099.5		1.9			ppb
[	Al-KED2	27	9351867.3		1.5	20848.51886	1.3	ppb
[>	Sc-KED2	45	85092.7		1.9			ppb
[	V-KED3	51	40908.8		1.7	55.02518	2.5	ppb
|	Cr-KED3	52	54772.8		2.2	53.76640	3.1	ppb
|	Cr-KED3	53	7449.9		4.1	59.58064	3.9	ppb
|	Fe-KED3	54	2361053.8		0.8	56075.84532	1.1	ppb
|	Fe-KED3	56	44589827.1		0.6	55089.80364	1.6	ppb
|	Co-KED3	59	125219.1		0.6	53.13545	1.6	ppb
|	Ni-KED3	60	36889.6		1.7	51.14807	2.7	ppb
|	Ni-KED3	62	6006.6		1.6	49.66518	1.9	ppb
|	Cu-KED3	63	107437.9		1.7	48.88857	2.6	ppb
|	Cu-KED3	65	55304.2		0.9	48.06088	1.9	ppb
|	Zn-KED3	66	5478.7		0.3	23.13799	1.4	ppb
[>	Ge-KED3	72	60000.4		1.0			ppb
[>	Ge-KED2	72	270072.5		2.7			ppb
[	As-KED2	75	11286.5		2.9	25.08992	2.9	ppb
[>	Ge-KED1	72	800126.7		2.7			ppb
|	Se-KED1	77	3439.1		2.3	23.74774	0.6	ppb
[	Se-KED1	78	10009.0		1.6	24.70958	2.0	ppb
[	Mo-KED2	95	104839.3		1.2	57.48957	3.8	ppb
|	Mo-KED2	98	179484.6		3.0	57.81651	3.5	ppb
[>	Rh-KED2	103	348814.2		4.3			ppb
|	Ag-KED2	107	89876.3		2.6	12.27508	2.3	ppb
|	Ag-KED2	109	84398.9		0.5	12.14898	4.7	ppb
|	Cd-KED2	111	23896.6		2.2	24.42158	5.1	ppb
|	Cd-KED2	114	57322.5		2.2	25.22971	2.2	ppb
|	Sb-KED2	121	59.3		23.9	0.01825	55.9	ppb
|	Sb-KED2	123	55.3		9.3	0.02760	10.1	ppb
[	Ba-KED2	137	855.4		0.7	1.06073	4.0	ppb
[>	Lu-KED2	175	174663.3		2.3			ppb
|	Tl-KED2	203	38.0		22.9	0.00609	27.0	ppb
|	Tl-KED2	205	92.3		9.2	0.00621	14.3	ppb
[	Pb-KED2	208	1183.4		2.7	0.07066	1.3	ppb
[>	Th-KED2	232	474669.5		1.0			ppb
[	U-KED2	238	26.0		0.0	0.00144	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					87
[	Be-STD1	9					
[	Mn-STD1	55	102				
[>	Ge-STD	72				91	
[	Al-KED2	27	104				
[>	Sc-KED2	45				95	
[	V-KED3	51	110				
|	Cr-KED3	52	108				
|	Cr-KED3	53	119				
|	Fe-KED3	54	112				
|	Fe-KED3	56	110				
|	Co-KED3	59	106				
|	Ni-KED3	60	102				
|	Ni-KED3	62	99				
|	Cu-KED3	63	98				
|	Cu-KED3	65	96				
|	Zn-KED3	66	93				
[>	Ge-KED3	72				85	
[>	Ge-KED2	72				89	
[	As-KED2	75	100				
[>	Ge-KED1	72				89	
|	Se-KED1	77	95				
|	Se-KED1	78	99				
[	Mo-KED2	95	115				
|	Mo-KED2	98	116				
|>	Rh-KED2	103				87	
|	Ag-KED2	107	98				
|	Ag-KED2	109	97				
|	Cd-KED2	111	98				
|	Cd-KED2	114	101				
|	Sb-KED2	121					
|	Sb-KED2	123					
|	Ba-KED2	137					
[>	Lu-KED2	175				99	
|	Tl-KED2	203					
|	Tl-KED2	205					
|	Pb-KED2	208					
[>	Th-KED2	232				98	
	U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802015-01
 Sample Date/Time: Monday, February 26, 2018 13:47:03
 Sample Description:
 Autosampler Position: 301
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802015-01.010
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1577106.7		2.3			ppb
[	Be-STD1	9		27.3	18.4	-0.00031	201.6	ppb
[	Mn-STD1	55	1386.7		7.2	0.01103	33.3	ppb
[>	Ge-STD	72	1489266.9		2.6			ppb
[	Al-KED2	27	1097.0		12.8	1.79808	15.9	ppb
[>	Sc-KED2	45	87341.9		1.4			ppb
[	V-KED3	51	114.7		5.6	0.05577	13.4	ppb
|	Cr-KED3	52	23.3		21.6	0.00915	47.3	ppb
|	Cr-KED3	53	48.7		6.3	0.11805	21.8	ppb
|	Fe-KED3	54	163.3		10.4	2.01025	18.1	ppb
|	Fe-KED3	56	3523.8		3.4	2.18705	7.4	ppb
|	Co-KED3	59	7.3		28.4	0.00040	193.1	ppb
|	Ni-KED3	60	19.0		9.1	0.01241	14.0	ppb
|	Ni-KED3	62	2.7		43.3	0.00501	170.5	ppb
|	Cu-KED3	63	39.3		5.9	0.00560	15.5	ppb
|	Cu-KED3	65	20.0		30.0	0.00610	73.8	ppb
|	Zn-KED3	66	139.7		6.1	0.14965	16.4	ppb
[>	Ge-KED3	72	69976.3		1.6			ppb
[>	Ge-KED2	72	300357.7		2.9			ppb
[	As-KED2	75	66.7		9.2	0.00199	561.1	ppb
[>	Ge-KED1	72	901028.6		3.7			ppb
|	Se-KED1	77	501.3		3.6	0.06088	384.7	ppb
[	Se-KED1	78	20.3		36.4	0.01612	105.0	ppb
[	Mo-KED2	95	38.7		19.6	0.01269	27.4	ppb
|	Mo-KED2	98	67.6		10.1	0.01383	11.7	ppb
[>	Rh-KED2	103	393282.6		1.9			ppb
|	Ag-KED2	107	76.7		111.2	0.00755	139.7	ppb
|	Ag-KED2	109	61.7		75.1	0.00650	93.4	ppb
|	Cd-KED2	111	14.3		76.5	0.00742	137.6	ppb
|	Cd-KED2	114	17.6		101.2	0.00312	227.5	ppb
|	Sb-KED2	121	30.0		6.7	-0.00272	49.3	ppb
|	Sb-KED2	123	23.9		18.5	-0.00124	289.2	ppb
[	Ba-KED2	137	20.7		35.0	0.01243	67.8	ppb
[>	Lu-KED2	175	173721.3		2.4			ppb
|	Tl-KED2	203	12.7		77.9	0.00110	181.7	ppb
|	Tl-KED2	205	27.0		77.1	0.00084	208.7	ppb
[	Pb-KED2	208	183.0		9.5	0.00775	13.8	ppb
[>	Th-KED2	232	477728.1		0.8			ppb
[	U-KED2	238	8.7		13.3	0.00015	58.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		101			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		99			
[	Al-KED2	27					
[>	Sc-KED2	45		98			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		99			
[>	Ge-KED2	72		98			
[	As-KED2	75					
[>	Ge-KED1	72		100			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		99			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802015-02
 Sample Date/Time: Monday, February 26, 2018 13:50:54
 Sample Description:
 Autosampler Position: 302
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802015-02.011
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1581669.8		1.8			ppb
[	Be-STD1	9	25021.9		1.6	2.78345	2.8	ppb
[	Mn-STD1	55	806789.0		3.0	26.69967	1.6	ppb
[>	Ge-STD	72	1471751.9		1.5			ppb
[	Al-KED2	27	50478.7		1.0	103.79605	3.4	ppb
[>	Sc-KED2	45	91789.1		2.8			ppb
[	V-KED3	51	22517.4		0.9	25.84113	2.0	ppb
|	Cr-KED3	52	12467.1		2.8	10.44826	3.0	ppb
|	Cr-KED3	53	1612.8		5.2	10.85128	6.6	ppb
|	Fe-KED3	54	2757.1		3.2	54.62968	2.3	ppb
|	Fe-KED3	56	53954.1		2.8	55.40508	1.9	ppb
|	Co-KED3	59	73262.4		2.2	26.55968	0.9	ppb
|	Ni-KED3	60	22251.6		0.5	26.35964	2.1	ppb
|	Ni-KED3	62	3755.8		0.6	26.53256	1.8	ppb
|	Cu-KED3	63	34535.0		0.8	13.42065	1.3	ppb
|	Cu-KED3	65	17883.9		2.3	13.27683	3.7	ppb
|	Zn-KED3	66	7499.3		2.5	27.12829	3.2	ppb
[>	Ge-KED3	72	70216.5		1.5			ppb
[>	Ge-KED2	72	311422.8		1.0			ppb
[	As-KED2	75	26992.5		0.4	52.16908	1.0	ppb
[>	Ge-KED1	72	933843.7		2.9			ppb
|	Se-KED1	77	8259.1		0.9	52.55235	2.5	ppb
[	Se-KED1	78	24859.1		3.2	52.59859	0.9	ppb
[	Mo-KED2	95	48656.7		0.6	22.82626	3.3	ppb
|	Mo-KED2	98	81438.1		4.3	22.43013	1.7	ppb
[>	Rh-KED2	103	407485.6		2.9			ppb
|	Ag-KED2	107	111439.5		2.9	13.02148	0.6	ppb
|	Ag-KED2	109	106959.4		2.1	13.16413	0.8	ppb
|	Cd-KED2	111	30382.6		2.4	26.54775	0.7	ppb
|	Cd-KED2	114	70526.4		4.4	26.54739	1.6	ppb
|	Sb-KED2	121	19461.9		2.6	10.56285	1.6	ppb
|	Sb-KED2	123	14643.7		3.6	10.59301	0.7	ppb
[	Ba-KED2	137	100861.1		3.6	107.99215	0.9	ppb
[>	Lu-KED2	175	181912.6		3.1			ppb
|	Tl-KED2	203	273518.0		1.5	52.08700	2.5	ppb
|	Tl-KED2	205	654238.3		1.5	51.78892	1.6	ppb
[	Pb-KED2	208	859838.0		2.4	51.97465	1.1	ppb
[>	Th-KED2	232	499349.0		1.7			ppb
[	U-KED2	238	317340.2		1.1	22.25658	1.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			101		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		98			
[	Al-KED2	27					
[>	Sc-KED2	45		102			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		99			
[>	Ge-KED2	72		102			
[	As-KED2	75					
[>	Ge-KED1	72		104			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		102			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		103			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-020
 Sample Date/Time: Monday, February 26, 2018 13:54:45
 Sample Description:
 Autosampler Position: 303
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-020.012
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1564632.4		3.1			ppb
[Be-STD1	9	64.0		13.6	0.00385	30.7	ppb
[Mn-STD1	55	46779886.3		2.5	1583.96311	0.5	ppb
> Ge-STD	72	1440542.3		2.7			ppb
[Al-KED2	27	3453.8		19.1	6.41346	18.6	ppb
> Sc-KED2	45	93439.0		2.0			ppb
[V-KED3	51	14842.7		1.7	17.19985	2.1	ppb
[Cr-KED3	52	496.0		8.3	0.41006	7.4	ppb
[Cr-KED3	53	241.3		1.7	1.45701	1.8	ppb
[Fe-KED3	54	463105.0		2.1	9503.71859	1.7	ppb
[Fe-KED3	56	9243000.5		0.7	9868.05975	2.0	ppb
[Co-KED3	59	13646.9		1.9	5.00293	2.8	ppb
[Ni-KED3	60	12339.7		1.6	14.77953	2.8	ppb
[Ni-KED3	62	2064.1		3.8	14.73897	3.6	ppb
[Cu-KED3	63	7646.7		1.6	2.99737	0.5	ppb
[Cu-KED3	65	4092.9		0.7	3.06538	0.8	ppb
[Zn-KED3	66	1673.4		2.6	5.84128	4.1	ppb
> Ge-KED3	72	69428.7		1.3			ppb
> Ge-KED2	72	300210.0		3.2			ppb
[As-KED2	75	614.7		4.5	1.10344	3.2	ppb
> Ge-KED1	72	900706.4		3.9			ppb
[Se-KED1	77	464.7		6.8	-0.19238	174.9	ppb
[Se-KED1	78	50.2		9.9	0.08168	10.3	ppb
[Mo-KED2	95	1935.5		2.4	0.93921	3.2	ppb
[Mo-KED2	98	3215.1		2.6	0.91756	4.6	ppb
> Rh-KED2	103	391392.4		2.4			ppb
[Ag-KED2	107	92.0		28.3	0.00936	33.8	ppb
[Ag-KED2	109	84.7		9.8	0.00943	12.1	ppb
[Cd-KED2	111	20.0		30.4	0.01262	46.5	ppb
[Cd-KED2	114	28.4		31.4	0.00727	46.2	ppb
[Sb-KED2	121	176.0		7.1	0.08011	11.3	ppb
[Sb-KED2	123	114.4		4.6	0.06714	6.6	ppb
[Ba-KED2	137	38087.4		1.4	42.46721	2.1	ppb
> Lu-KED2	175	184896.5		2.8			ppb
[Tl-KED2	203	114.0		74.5	0.01987	79.1	ppb
[Tl-KED2	205	270.0		57.8	0.01957	61.2	ppb
[Pb-KED2	208	2526.1		3.4	0.14643	3.6	ppb
> Th-KED2	232	491129.7		2.8			ppb
[U-KED2	238	217.3		27.8	0.01501	28.6	ppb

*new B-Tl Pb, U
 with RSD, U
 2/27/18*

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			100		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72			96		
[	Al-KED2	27					
[>	Sc-KED2	45			104		
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72			98		
[>	Ge-KED2	72			98		
[	As-KED2	75					
[>	Ge-KED1	72			100		
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
|>	Rh-KED2	103			98		
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175			104		
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232			101		
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802015-05
 Sample Date/Time: Monday, February 26, 2018 13:58:36
 Sample Description:
 Autosampler Position: 304
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802015-05.013
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1585565.4		2.7			ppb
[	Be-STD1	9	60.0		26.5	0.00332	57.5	ppb
[	Mn-STD1	55	48602264.9		1.1	1635.17292	4.9	ppb
[>	Ge-STD	72	1452021.3		4.9			ppb
[	Al-KED2	27	3122.7		2.1	5.79063	0.0	ppb
[>	Sc-KED2	45	92932.7		2.1			ppb
[	V-KED3	51	14675.5		0.6	17.71201	1.1	ppb
|	Cr-KED3	52	503.0		3.6	0.43392	3.9	ppb
|	Cr-KED3	53	236.0		3.1	1.48766	3.0	ppb
|	Fe-KED3	54	459204.3		1.5	9813.83573	1.1	ppb
|	Fe-KED3	56	9127768.8		1.4	10146.97951	1.0	ppb
|	Co-KED3	59	13509.1		0.7	5.15662	0.2	ppb
|	Ni-KED3	60	12184.2		0.5	15.19491	0.5	ppb
|	Ni-KED3	62	1982.8		0.6	14.74506	1.1	ppb
|	Cu-KED3	63	7672.7		1.3	3.13262	0.9	ppb
|	Cu-KED3	65	3909.9		1.6	3.04962	2.1	ppb
|	Zn-KED3	66	1792.8		3.5	6.55629	3.1	ppb
[>	Ge-KED3	72	66666.2		0.5			ppb
[>	Ge-KED2	72	299160.9		1.8			ppb
[	As-KED2	75	620.3		2.0	1.11925	0.5	ppb
[>	Ge-KED1	72	877850.3		0.9			ppb
|	Se-KED1	77	460.7		6.2	-0.14568	121.9	ppb
[	Se-KED1	78	49.5		11.2	0.08303	14.6	ppb
[	Mo-KED2	95	1914.8		3.1	0.93846	4.4	ppb
|	Mo-KED2	98	3149.0		4.2	0.90754	5.8	ppb
[>	Rh-KED2	103	387615.6		2.8			ppb
|	Ag-KED2	107	32.3		17.0	0.00213	26.8	ppb
|	Ag-KED2	109	30.7		11.5	0.00255	22.1	ppb
|	Cd-KED2	111	14.7		20.8	0.00788	40.9	ppb
|	Cd-KED2	114	24.1		24.1	0.00570	38.1	ppb
|	Sb-KED2	121	157.3		11.8	0.07015	12.0	ppb
|	Sb-KED2	123	130.0		8.0	0.07987	9.6	ppb
[	Ba-KED2	137	37963.7		2.4	42.73560	1.1	ppb
[>	Lu-KED2	175	186976.7		1.1			ppb
|	Tl-KED2	203	13.3		8.7	0.00104	22.1	ppb
|	Tl-KED2	205	34.0		12.8	0.00121	26.7	ppb
[	Pb-KED2	208	2292.1		1.2	0.13095	0.2	ppb
[>	Th-KED2	232	495354.3		1.0			ppb
[	U-KED2	238	119.3		6.8	0.00796	7.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			101		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		97			
[	Al-KED2	27					
[>	Sc-KED2	45		104			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		94			
[>	Ge-KED2	72		98			
[	As-KED2	75					
[>	Ge-KED1	72		98			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		97			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		106			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-020L
 Sample Date/Time: Monday, February 26, 2018 14:02:27
 Sample Description: 5X
 Autosampler Position: 305
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-020L.014
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1533114.4	0.5			ppb
[	Be-STD1	9	94.7	118.6	0.00752	172.0	ppb
[	Mn-STD1	55	9575090.7	0.8	319.96646	1.9	ppb
[>	Ge-STD	72	1459952.2	2.6			ppb
[	Al-KED2	27	1040.7	2.6	1.60964	2.9	ppb
[>	Sc-KED2	45	90025.1	1.6			ppb
[	V-KED3	51	2984.0	1.5	3.40314	0.7	ppb
|	Cr-KED3	52	119.7	6.3	0.09132	9.3	ppb
|	Cr-KED3	53	72.0	24.7	0.28498	47.0	ppb
|	Fe-KED3	54	92524.0	1.5	1901.81921	2.6	ppb
|	Fe-KED3	56	1797354.4	1.0	1921.29717	1.4	ppb
|	Co-KED3	59	2690.9	2.3	0.98630	0.1	ppb
|	Ni-KED3	60	2528.6	0.3	3.02652	2.5	ppb
|	Ni-KED3	62	445.3	7.0	3.17900	9.1	ppb
|	Cu-KED3	63	1588.1	4.1	0.61596	3.5	ppb
|	Cu-KED3	65	831.0	3.1	0.61692	5.1	ppb
|	Zn-KED3	66	466.0	7.3	1.36748	9.9	ppb
[>	Ge-KED3	72	69298.7	2.2			ppb
[>	Ge-KED2	72	302504.3	0.6			ppb
[	As-KED2	75	185.7	2.4	0.23844	4.0	ppb
[>	Ge-KED1	72	903554.9	5.4			ppb
|	Se-KED1	77	482.7	6.0	-0.08405	160.8	ppb
[	Se-KED1	78	23.8	17.1	0.02338	25.6	ppb
[	Mo-KED2	95	368.0	2.4	0.16933	1.8	ppb
|	Mo-KED2	98	627.2	3.9	0.17019	2.9	ppb
[>	Rh-KED2	103	400900.6	1.2			ppb
|	Ag-KED2	107	16.7	28.4	0.00014	372.9	ppb
|	Ag-KED2	109	15.7	18.4	0.00053	64.2	ppb
|	Cd-KED2	111	7.3	43.8	0.00084	331.5	ppb
|	Cd-KED2	114	13.3	19.1	0.00129	77.7	ppb
|	Sb-KED2	121	78.7	24.0	0.02379	42.3	ppb
|	Sb-KED2	123	61.5	6.6	0.02614	11.2	ppb
[	Ba-KED2	137	7839.5	2.0	8.52258	1.2	ppb
[>	Lu-KED2	175	186395.8	2.2			ppb
|	Tl-KED2	203	12.0	0.0	0.00080	6.0	ppb
|	Tl-KED2	205	23.0	0.0	0.00037	10.4	ppb
[	Pb-KED2	208	501.7	0.9	0.02578	3.5	ppb
[>	Th-KED2	232	491105.5	1.1			ppb
[	U-KED2	238	36.7	22.7	0.00213	26.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		97			
[	Al-KED2	27					
[>	Sc-KED2	45		101			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		98			
[>	Ge-KED2	72		99			
[	As-KED2	75					
[>	Ge-KED1	72		100			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		101			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		105			
|	Ti-KED2	203					
|	Ti-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-020A
 Sample Date/Time: Monday, February 26, 2018 14:06:18
 Sample Description: +20ppb +10ppb Ag
 Autosampler Position: 306
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-020A.015
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1560027.6		2.5			ppb
[Be-STD1	9	180923.4		1.8	20.43475	4.2	ppb
[Mn-STD1	55	48268317.8		2.2	1614.98765	1.2	ppb
[> Ge-STD	72	1457778.4		1.9			ppb
[Al-KED2	27	13028.3		2.2	26.42561	2.0	ppb
[> Sc-KED2	45	91515.0		2.5			ppb
[V-KED3	51	31622.6		0.3	38.11163	1.0	ppb
[Cr-KED3	52	23885.3		1.0	21.01296	0.4	ppb
[Cr-KED3	53	3135.0		0.5	22.34752	1.2	ppb
[Fe-KED3	54	451214.8		1.0	9607.81387	1.4	ppb
[Fe-KED3	56	8912054.6		1.2	9870.75286	1.4	ppb
[Co-KED3	59	66191.7		0.3	25.18237	1.0	ppb
[Ni-KED3	60	27894.5		1.6	34.67200	1.9	ppb
[Ni-KED3	62	4576.7		1.6	33.92349	1.0	ppb
[Cu-KED3	63	54127.7		1.3	22.07812	2.0	ppb
[Cu-KED3	65	28004.1		2.8	21.81667	3.4	ppb
[Zn-KED3	66	6709.2		0.8	25.44171	1.6	ppb
[> Ge-KED3	72	66915.7		0.7			ppb
[> Ge-KED2	72	294514.9		1.9			ppb
[As-KED2	75	10262.0		0.2	20.89653	1.7	ppb
[> Ge-KED1	72	870065.9		4.0			ppb
[Se-KED1	77	3332.4		3.5	20.79635	4.4	ppb
[Se-KED1	78	9036.9		5.3	20.49927	1.4	ppb
[Mo-KED2	95	44435.0		2.6	22.07684	3.4	ppb
[Mo-KED2	98	75286.9		2.7	21.97265	1.3	ppb
[> Rh-KED2	103	384684.7		2.9			ppb
[Ag-KED2	107	81132.2		2.5	10.04248	0.9	ppb
[Ag-KED2	109	76848.2		1.2	10.02050	1.9	ppb
[Cd-KED2	111	21475.1		0.8	19.88148	2.2	ppb
[Cd-KED2	114	51257.8		1.7	20.44949	1.9	ppb
[Sb-KED2	121	36705.1		2.1	21.12426	1.9	ppb
[Sb-KED2	123	27758.1		2.1	21.29539	0.9	ppb
[Ba-KED2	137	56639.8		2.3	64.26425	2.7	ppb
[> Lu-KED2	175	188672.0		1.7			ppb
[Tl-KED2	203	101106.6		1.5	18.55867	2.3	ppb
[Tl-KED2	205	244209.1		1.0	18.63355	0.9	ppb
[Pb-KED2	208	318904.2		0.8	18.58604	2.5	ppb
[> Th-KED2	232	500430.3		0.4			ppb
[U-KED2	238	288058.6		0.4	20.15731	0.5	ppb

* NA, 4X
 M 2/27/18

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					100
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				97	
[	Al-KED2	27					
[>	Sc-KED2	45				102	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				94	
[>	Ge-KED2	72				97	
[	As-KED2	75					
[>	Ge-KED1	72				97	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
] >	Rh-KED2	103				96	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				107	
|	Ti-KED2	203					
|	Ti-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				103	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802015-06

Sample Date/Time: Monday, February 26, 2018 14:10:09

Sample Description:

Autosampler Position: 307

Number of Replicates: 3

Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802015-06.016

User Name: RRM

Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1510335.1	1.5			ppb
[	Be-STD1	9	23280.3	2.6	2.71209	3.8	ppb
[	Mn-STD1	55	47032844.4	0.8	1640.33959	4.4	ppb
[>	Ge-STD	72	1400205.2	4.2			ppb
[	Al-KED2	27	49899.0	2.0	103.59403	1.9	ppb
[>	Sc-KED2	45	90874.6	2.5			ppb
[	V-KED3	51	34706.8	2.3	42.35844	2.9	ppb
|	Cr-KED3	52	11825.2	1.1	10.52819	2.2	ppb
|	Cr-KED3	53	1662.8	4.0	11.90064	4.7	ppb
|	Fe-KED3	54	436896.8	1.0	9418.86527	2.1	ppb
|	Fe-KED3	56	8779773.4	0.8	9845.46554	2.0	ppb
|	Co-KED3	59	79046.8	0.8	30.44461	0.6	ppb
|	Ni-KED3	60	31515.1	1.7	39.66382	2.8	ppb
|	Ni-KED3	62	5193.6	2.0	38.98269	2.9	ppb
|	Cu-KED3	63	36880.9	1.4	15.22733	2.4	ppb
|	Cu-KED3	65	18894.5	0.8	14.89810	1.4	ppb
|	Zn-KED3	66	7628.4	2.2	29.34211	2.9	ppb
[>	Ge-KED3	72	66099.2	1.1			ppb
[>	Ge-KED2	72	292827.3	3.1			ppb
[	As-KED2	75	24522.7	2.0	50.41128	1.5	ppb
[>	Ge-KED1	72	868700.6	2.7			ppb
|	Se-KED1	77	7523.3	2.9	51.38992	4.2	ppb
[	Se-KED1	78	21846.9	1.8	49.70716	2.4	ppb
[	Mo-KED2	95	47813.2	1.5	23.71274	2.4	ppb
|	Mo-KED2	98	79269.5	1.9	23.09639	0.8	ppb
[>	Rh-KED2	103	385339.3	2.5			ppb
|	Ag-KED2	107	97927.2	0.8	12.10354	1.8	ppb
|	Ag-KED2	109	94083.2	2.1	12.24597	2.3	ppb
|	Cd-KED2	111	27095.7	3.8	25.04081	4.1	ppb
|	Cd-KED2	114	63275.2	2.9	25.20829	4.4	ppb
|	Sb-KED2	121	18243.0	3.4	10.46964	2.8	ppb
|	Sb-KED2	123	13694.6	1.9	10.47917	1.8	ppb
[	Ba-KED2	137	128713.7	2.0	145.81668	3.2	ppb
[>	Lu-KED2	175	182775.2	2.4			ppb
|	Ti-KED2	203	248859.4	1.9	47.15630	2.1	ppb
|	Ti-KED2	205	598499.0	2.1	47.13944	0.4	ppb
[	Pb-KED2	208	783417.4	2.0	47.12846	1.2	ppb
[>	Th-KED2	232	494523.0	1.9			ppb
[	U-KED2	238	302878.2	2.4	21.44714	1.3	ppb

Sample ID: KQ1802015-06

Report Date/Time: Tuesday, February 27, 2018 15:15:10

Page 1

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		96			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		93			
[	Al-KED2	27					
[>	Sc-KED2	45		101			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		93			
[>	Ge-KED2	72		96			
[	As-KED2	75					
[>	Ge-KED1	72		97			
|	Se-KED1	77					
|	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		97			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-021
 Sample Date/Time: Monday, February 26, 2018 14:14:01
 Sample Description:
 Autosampler Position: 308
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-021.017
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1567697.7		2.3			ppb
[Be-STD1	9	40.7		7.5	0.00120	35.1	ppb
[Mn-STD1	55	13635.2		1.9	0.41248	0.7	ppb
[> Ge-STD	72	1488106.7		1.2			ppb
[Al-KED2	27	1854.1		35.3	3.32591	42.1	ppb
[> Sc-KED2	45	90094.7		3.0			ppb
[V-KED3	51	1991.8		1.9	2.27670	1.3	ppb
[Cr-KED3	52	226.3		8.8	0.18437	8.8	ppb
[Cr-KED3	53	64.7		14.6	0.23856	29.1	ppb
[Fe-KED3	54	842.3		5.1	16.23048	4.9	ppb
[Fe-KED3	56	17312.8		1.0	17.21792	0.5	ppb
[Co-KED3	59	413.7		3.8	0.15171	3.1	ppb
[Ni-KED3	60	3250.7		0.8	3.94453	1.2	ppb
[Ni-KED3	62	497.3		5.8	3.59532	6.3	ppb
[Cu-KED3	63	17659.6		2.3	7.04060	1.9	ppb
[Cu-KED3	65	9141.6		1.8	6.96143	1.5	ppb
[Zn-KED3	66	27557.2		1.8	103.33520	1.1	ppb
[> Ge-KED3	72	68387.3		0.7			ppb
[> Ge-KED2	72	300479.3		3.5			ppb
[As-KED2	75	177.3		7.9	0.22405	9.6	ppb
[> Ge-KED1	72	887264.9		3.2			ppb
[Se-KED1	77	496.0		6.3	0.07240	274.3	ppb
[Se-KED1	78	36.6		6.9	0.05332	15.3	ppb
[Mo-KED2	95	1006.7		9.5	0.48597	9.4	ppb
[Mo-KED2	98	1686.3		2.4	0.47891	1.5	ppb
[> Rh-KED2	103	391026.8		3.5			ppb
[Ag-KED2	107	75.0		17.4	0.00735	25.5	ppb
[Ag-KED2	109	68.0		22.0	0.00735	29.6	ppb
[Cd-KED2	111	233.0		10.4	0.20706	13.4	ppb
[Cd-KED2	114	527.0		2.9	0.20331	6.3	ppb
[Sb-KED2	121	297.3		5.2	0.14890	6.2	ppb
[Sb-KED2	123	219.9		1.1	0.14700	2.7	ppb
[Ba-KED2	137	12079.4		1.6	13.47625	2.0	ppb
[> Lu-KED2	175	182598.3		1.2			ppb
[Tl-KED2	203	73.3		22.2	0.01245	23.5	ppb
[TI-KED2	205	166.0		16.0	0.01170	19.2	ppb
[Pb-KED2	208	495.0		42.8	0.02589	47.8	ppb
[> Th-KED2	232	498347.0		0.9			ppb
[U-KED2	238	288.7		37.1	0.01980	37.9	ppb

Higher RSDs
 run Tl, Pb, U
 on 2/27/18

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		100			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		99			
[	Al-KED2	27					
[>	Sc-KED2	45		101			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		96			
[>	Ge-KED2	72		99			
[	As-KED2	75					
[>	Ge-KED1	72		99			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		98			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		103			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-022
 Sample Date/Time: Monday, February 26, 2018 14:17:52
 Sample Description:
 Autosampler Position: 309
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-022.018
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1502339.0		5.9			ppb
[	Be-STD1	9	72.0		21.7	0.00507	34.6	ppb
[	Mn-STD1	55	19830991.6		0.3	677.74504	5.3	ppb
[>	Ge-STD	72	1429749.5		5.2			ppb
[	Al-KED2	27	8356.1		4.7	16.77841	0.9	ppb
[>	Sc-KED2	45	91279.3		4.0			ppb
[	V-KED3	51	3073.3		3.7	3.69316	2.4	ppb
[	Cr-KED3	52	483.0		2.0	0.42141	0.9	ppb
[	Cr-KED3	53	220.7		24.5	1.39355	26.9	ppb
[	Fe-KED3	54	348399.0		2.6	7537.20010	2.7	ppb
[	Fe-KED3	56	7048624.8		1.3	7932.18356	2.0	ppb
[	Co-KED3	59	10843.1		0.6	4.18957	1.4	ppb
[	Ni-KED3	60	1335.4		5.1	1.67687	5.4	ppb
[	Ni-KED3	62	241.3		2.1	1.80419	1.3	ppb
[	Cu-KED3	63	9794.0		3.1	4.05022	2.5	ppb
[	Cu-KED3	65	5001.5		1.7	3.95090	0.3	ppb
[	Zn-KED3	66	2129.2		1.9	7.95588	1.4	ppb
[>	Ge-KED3	72	65862.8		1.4			ppb
[>	Ge-KED2	72	296378.3		1.5			ppb
[	As-KED2	75	481.7		5.2	0.84835	4.3	ppb
[>	Ge-KED1	72	865337.6		3.5			ppb
[	Se-KED1	77	476.0		5.3	0.01414	461.8	ppb
[	Se-KED1	78	60.1		10.0	0.10886	12.5	ppb
[	Mo-KED2	95	3948.5		2.0	1.92974	3.6	ppb
[	Mo-KED2	98	6675.6		4.1	1.91639	2.4	ppb
[>	Rh-KED2	103	390055.4		3.5			ppb
[	Ag-KED2	107	105.3		96.1	0.01088	109.8	ppb
[	Ag-KED2	109	86.0		96.7	0.00949	108.9	ppb
[	Cd-KED2	111	20.3		75.3	0.01272	105.6	ppb
[	Cd-KED2	114	47.4		51.7	0.01470	62.2	ppb
[	Sb-KED2	121	280.7		5.3	0.13971	2.1	ppb
[	Sb-KED2	123	229.2		3.6	0.15432	0.8	ppb
[	Ba-KED2	137	18193.9		1.9	20.35292	1.8	ppb
[>	Lu-KED2	175	183292.1		2.2			ppb
[	Tl-KED2	203	26.7		102.4	0.00355	141.3	ppb
[	Tl-KED2	205	76.7		58.0	0.00457	73.2	ppb
[	Pb-KED2	208	2887.8		3.4	0.16951	5.3	ppb
[>	Th-KED2	232	495595.3		1.1			ppb
[	U-KED2	238	382.7		10.5	0.02658	11.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		96			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		95			
[	Al-KED2	27					
[>	Sc-KED2	45		102			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		93			
[>	Ge-KED2	72		97			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		98			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-023
 Sample Date/Time: Monday, February 26, 2018 14:21:43
 Sample Description:
 Autosampler Position: 310
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-023.019
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1519780.2	3.1			ppb
[	Be-STD1	9	34.7	27.3	0.00067	179.5	ppb
[	Mn-STD1	55	41939053.5	3.1	1400.30295	2.0	ppb
[>	Ge-STD	72	1461003.9	3.1			ppb
[	Al-KED2	27	1590.8	1.2	2.79848	2.9	ppb
[>	Sc-KED2	45	89249.3	1.4			ppb
[	V-KED3	51	739.4	1.4	0.82583	0.4	ppb
|	Cr-KED3	52	238.3	5.7	0.20144	4.3	ppb
|	Cr-KED3	53	247.3	18.7	1.57937	19.9	ppb
|	Fe-KED3	54	542171.2	0.8	11670.42928	1.2	ppb
|	Fe-KED3	56	10932406.9	1.6	12239.31237	0.2	ppb
|	Co-KED3	59	20822.2	1.6	8.00612	1.7	ppb
|	Ni-KED3	60	1354.4	0.9	1.69225	2.0	ppb
|	Ni-KED3	62	244.0	6.5	1.81646	8.0	ppb
|	Cu-KED3	63	189.3	3.7	0.06838	5.7	ppb
|	Cu-KED3	65	98.0	6.4	0.06841	8.1	ppb
|	Zn-KED3	66	777.7	5.2	2.66096	7.1	ppb
[>	Ge-KED3	72	66201.1	1.7			ppb
[>	Ge-KED2	72	292192.9	1.8			ppb
[	As-KED2	75	939.7	3.5	1.80888	4.0	ppb
[>	Ge-KED1	72	861983.3	4.2			ppb
|	Se-KED1	77	488.0	2.5	0.11934	73.7	ppb
[	Se-KED1	78	46.0	16.3	0.07680	18.2	ppb
[	Mo-KED2	95	1022.0	2.0	0.50327	0.9	ppb
|	Mo-KED2	98	1729.6	2.2	0.50121	3.4	ppb
[>	Rh-KED2	103	383438.6	1.6			ppb
|	Ag-KED2	107	17.7	11.8	0.00036	62.6	ppb
|	Ag-KED2	109	22.7	5.1	0.00154	6.8	ppb
|	Cd-KED2	111	8.3	25.0	0.00210	96.4	ppb
|	Cd-KED2	114	15.4	31.3	0.00236	84.0	ppb
|	Sb-KED2	121	87.3	11.3	0.03079	16.7	ppb
|	Sb-KED2	123	74.0	4.9	0.03781	7.6	ppb
[	Ba-KED2	137	18661.5	1.1	21.23225	2.1	ppb
[>	Lu-KED2	175	182129.1	1.4			ppb
|	Tl-KED2	203	45.3	20.8	0.00720	26.8	ppb
|	Tl-KED2	205	123.3	2.3	0.00834	3.8	ppb
[	Pb-KED2	208	202.7	10.4	0.00840	13.3	ppb
[>	Th-KED2	232	491920.4	0.6			ppb
[	U-KED2	238	48.7	9.5	0.00298	11.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		97			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		97			
[	Al-KED2	27					
[>	Sc-KED2	45		100			
[	V-KED3	51					
[	Cr-KED3	52					
[	Cr-KED3	53					
[	Fe-KED3	54					
[	Fe-KED3	56					
[	Co-KED3	59					
[	Ni-KED3	60					
[	Ni-KED3	62					
[	Cu-KED3	63					
[	Cu-KED3	65					
[	Zn-KED3	66					
[>	Ge-KED3	72		93			
[>	Ge-KED2	72		96			
[	As-KED2	75					
[>	Ge-KED1	72		96			
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
[	Mo-KED2	98					
[>	Rh-KED2	103		96			
[	Ag-KED2	107					
[	Ag-KED2	109					
[	Cd-KED2	111					
[	Cd-KED2	114					
[	Sb-KED2	121					
[	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
[	Tl-KED2	203					
[	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 14:25:37
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCV.020
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1524877.5		1.8			ppb
[	Be-STD1	9	220404.8		1.6	25.46009	3.1	ppb
[	Mn-STD1	55	770141.9		0.9	25.27752	1.8	ppb
[>	Ge-STD	72	1484429.2		2.3			ppb
[	Al-KED2	27	11713.8		1.4	24.87484	1.6	ppb
[>	Sc-KED2	45	87301.1		2.7			ppb
[	V-KED3	51	20588.8		1.0	24.34147	0.5	ppb
|	Cr-KED3	52	28631.3		0.4	24.74132	0.8	ppb
|	Cr-KED3	53	3555.8		1.8	24.91938	2.2	ppb
|	Fe-KED3	54	11892.2		2.1	247.39770	1.7	ppb
|	Fe-KED3	56	230697.1		1.4	249.43879	1.4	ppb
|	Co-KED3	59	66161.5		1.4	24.72010	1.2	ppb
|	Ni-KED3	60	20211.0		2.0	24.66824	1.7	ppb
|	Ni-KED3	62	3347.1		3.9	24.36329	3.9	ppb
|	Cu-KED3	63	62343.7		1.0	24.97570	1.6	ppb
|	Cu-KED3	65	32005.5		0.9	24.48753	1.3	ppb
|	Zn-KED3	66	6657.2		1.2	24.78336	1.4	ppb
[>	Ge-KED3	72	68132.1		0.6			ppb
[>	Ge-KED2	72	295808.7		3.1			ppb
[	As-KED2	75	12441.4		0.2	25.26167	3.1	ppb
[>	Ge-KED1	72	894026.3		4.4			ppb
|	Se-KED1	77	4069.9		2.9	25.41427	8.0	ppb
[	Se-KED1	78	10972.6		1.9	24.27812	6.0	ppb
[	Mo-KED2	95	26421.1		2.8	12.48867	2.0	ppb
|	Mo-KED2	98	44583.2		2.1	12.38329	0.2	ppb
[>	Rh-KED2	103	404081.3		2.0			ppb
|	Ag-KED2	107	105394.2		2.6	12.41763	0.6	ppb
|	Ag-KED2	109	100299.2		0.8	12.44918	1.8	ppb
|	Cd-KED2	111	28240.2		1.6	24.88278	1.2	ppb
|	Cd-KED2	114	65009.8		0.4	24.69038	2.0	ppb
|	Sb-KED2	121	22450.3		1.3	12.29191	2.2	ppb
|	Sb-KED2	123	16915.3		3.1	12.34308	1.7	ppb
[	Ba-KED2	137	23214.2		1.3	25.06274	1.1	ppb
[>	Lu-KED2	175	178869.6		1.4			ppb
|	Tl-KED2	203	129096.2		2.1	24.98881	0.8	ppb
|	Tl-KED2	205	309019.3		0.9	24.87005	0.6	ppb
[	Pb-KED2	208	404498.4		2.0	24.85933	0.9	ppb
[>	Th-KED2	232	497293.7		2.3			ppb
[	U-KED2	238	357456.0		1.3	25.17611	1.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		97			
[	Be-STD1	9	102				
[	Mn-STD1	55	101				
[>	Ge-STD	72		99			
[	Al-KED2	27	99				
[>	Sc-KED2	45		97			
[	V-KED3	51	97				
[	Cr-KED3	52	99				
[	Cr-KED3	53	100				
[	Fe-KED3	54	99				
[	Fe-KED3	56	100				
[	Co-KED3	59	99				
[	Ni-KED3	60	99				
[	Ni-KED3	62	97				
[	Cu-KED3	63	100				
[	Cu-KED3	65	98				
[	Zn-KED3	66	99				
[>	Ge-KED3	72		96			
[>	Ge-KED2	72		97			
[	As-KED2	75	101				
[>	Ge-KED1	72		99			
[	Se-KED1	77	102				
[	Se-KED1	78	97				
[	Mo-KED2	95	100				
[	Mo-KED2	98	99				
[>	Rh-KED2	103		101			
[	Ag-KED2	107	99				
[	Ag-KED2	109	100				
[	Cd-KED2	111	100				
[	Cd-KED2	114	99				
[	Sb-KED2	121	98				
[	Sb-KED2	123	99				
[	Ba-KED2	137	100				
[>	Lu-KED2	175		101			
[	Tl-KED2	203	100				
[	Tl-KED2	205	99				
[	Pb-KED2	208	99				
[>	Th-KED2	232		103			
[U-KED2	238	101				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 14:29:29
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.021
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1531055.4			1.1			ppb
[	Be-STD1	9		39.3		15.5	0.00115	63.6	ppb
[	Mn-STD1	55		2702.9		2.4	0.05159	7.1	ppb
[>	Ge-STD	72	1533801.4			2.5			ppb
[	Al-KED2	27		277.3		21.4	0.02160	509.1	ppb
[>	Sc-KED2	45	86677.0			3.2			ppb
[	V-KED3	51		70.0		15.5	0.00808	154.7	ppb
[	Cr-KED3	52		10.0		10.0	-0.00168	54.4	ppb
[	Cr-KED3	53		27.3		40.3	-0.01943	417.4	ppb
[	Fe-KED3	54		93.7		20.4	0.68326	59.0	ppb
[	Fe-KED3	56		1791.4		0.2	0.44396	3.1	ppb
[	Co-KED3	59		9.0		40.1	0.00116	118.9	ppb
[	Ni-KED3	60		7.0		24.7	-0.00142	156.7	ppb
[	Ni-KED3	62		0.7		173.2	-0.00907	93.9	ppb
[	Cu-KED3	63		30.0		24.0	0.00255	119.3	ppb
[	Cu-KED3	65		12.7		43.5	0.00109	397.1	ppb
[	Zn-KED3	66		95.0		8.6	0.00286	1182.5	ppb
[>	Ge-KED3	72	66706.1			0.8			ppb
[>	Ge-KED2	72	300395.6			2.4			ppb
[	As-KED2	75		74.3		35.7	0.01733	304.5	ppb
[>	Ge-KED1	72	911424.5			3.6			ppb
[	Se-KED1	77		471.3		14.7	-0.19814	205.8	ppb
[	Se-KED1	78		15.2		29.4	0.00432	199.8	ppb
[	Mo-KED2	95		52.0		110.3	0.01868	144.2	ppb
[	Mo-KED2	98		69.8		98.7	0.01405	135.1	ppb
[>	Rh-KED2	103	397299.8			2.5			ppb
[	Ag-KED2	107		79.7		81.0	0.00764	98.3	ppb
[	Ag-KED2	109		61.3		83.0	0.00625	99.8	ppb
[	Cd-KED2	111		14.0		56.7	0.00684	100.5	ppb
[	Cd-KED2	114		22.0		87.8	0.00458	158.4	ppb
[	Sb-KED2	121		45.3		5.1	0.00564	17.6	ppb
[	Sb-KED2	123		45.1		25.3	0.01440	62.3	ppb
[	Ba-KED2	137		23.0		68.3	0.01460	115.2	ppb
[>	Lu-KED2	175	175891.7			1.4			ppb
[	Tl-KED2	203		25.3		57.1	0.00354	78.8	ppb
[	Tl-KED2	205		71.7		30.8	0.00445	39.5	ppb
[	Pb-KED2	208		118.0		26.3	0.00355	53.7	ppb
[>	Th-KED2	232	490080.7			1.7			ppb
[	U-KED2	238		48.7		37.3	0.00301	44.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				98	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		102			
[	Al-KED2	27					
[>	Sc-KED2	45		97			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		94			
[>	Ge-KED2	72		99			
[	As-KED2	75					
[>	Ge-KED1	72		101			
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		100			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		99			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-001
 Sample Date/Time: Monday, February 26, 2018 14:33:23
 Sample Description:
 Autosampler Position: 311
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-001.022
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6		1363201.2	3.3			ppb
[Be-STD1	9		36.0	16.7	0.00128	63.7	ppb
[Mn-STD1	55		119406.3	0.7	4.93126	0.7	ppb
[> Ge-STD	72		1172877.6	0.1			ppb
[Al-KED2	27		2025.1	3.5	4.47722	0.4	ppb
[> Sc-KED2	45		75917.4	3.7			ppb
[V-KED3	51		527.3	2.0	0.79365	2.2	ppb
[Cr-KED3	52		820.0	6.7	0.97592	6.7	ppb
[Cr-KED3	53		127.3	7.7	1.03534	9.3	ppb
[Fe-KED3	54		272.9	16.5	6.62358	19.8	ppb
[Fe-KED3	56		5633.8	0.6	6.98217	0.7	ppb
[Co-KED3	59		193.3	2.3	0.09826	2.4	ppb
[Ni-KED3	60		1588.8	3.2	2.68938	3.2	ppb
[Ni-KED3	62		246.0	6.7	2.47919	6.7	ppb
[Cu-KED3	63		2203.5	3.2	1.21904	3.3	ppb
[Cu-KED3	65		1154.0	4.5	1.22024	4.5	ppb
[Zn-KED3	66		439.0	0.6	1.94372	0.7	ppb
[> Ge-KED3	72		48962.1	0.0			ppb
[> Ge-KED2	72		220176.5	3.6			ppb
[As-KED2	75		323.3	0.5	0.75487	3.9	ppb
[> Ge-KED1	72		657815.4	3.4			ppb
[Se-KED1	77		488.7	4.7	1.23700	15.7	ppb
[Se-KED1	78		220.4	12.9	0.63258	10.0	ppb
[Mo-KED2	95		6963.0	4.4	4.54090	6.3	ppb
[Mo-KED2	98		11798.9	1.8	4.52236	5.1	ppb
[> Rh-KED2	103		292946.1	3.4			ppb
[Ag-KED2	107		34.0	7.8	0.00371	16.0	ppb
[Ag-KED2	109		34.3	14.7	0.00446	20.6	ppb
[Cd-KED2	111		20.0	15.0	0.01859	15.4	ppb
[Cd-KED2	114		39.7	12.3	0.01703	17.0	ppb
[Sb-KED2	121		444.0	6.8	0.31594	4.3	ppb
[Sb-KED2	123		348.8	9.0	0.33204	6.6	ppb
[Ba-KED2	137		23090.0	1.3	34.40369	2.3	ppb
[> Lu-KED2	175		160615.6	1.3			ppb
[Tl-KED2	203		48.0	36.1	0.00889	41.0	ppb
[Tl-KED2	205		111.3	8.3	0.00857	8.8	ppb
[Pb-KED2	208		637.7	2.7	0.03982	1.5	ppb
[> Th-KED2	232		445097.4	1.6			ppb
[U-KED2	238		37104.1	2.3	2.91855	0.7	ppb

see dilution in 2/27/18

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6				87	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				78	
[	Al-KED2	27					
[>	Sc-KED2	45				85	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				69	
[>	Ge-KED2	72				72	
[	As-KED2	75					
[>	Ge-KED1	72				73	
|	Se-KED1	77					
|	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				73	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				91	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				92	
[	U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge-KED3 72 Int Std for samp	Ge-KED3	72	IS out of control

LABWORKS - Summary Report

Sample ID: K1801300-002

Sample Date/Time: Monday, February 26, 2018 14:37:13

Sample Description:

Autosampler Position: 312

Number of Replicates: 3

Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-002.023

User Name: RRM

Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1527409.4		0.1			ppb
[Be-STD1	9	42.0		20.8	0.00147	68.8	ppb
[Mn-STD1	55	1103316.5		2.5	41.26143	3.1	ppb
[> Ge-STD	72	1303367.7		1.1			ppb
[Al-KED2	27	4386.3		1.0	9.79071	1.6	ppb
[> Sc-KED2	45	80208.9		0.6			ppb
[V-KED3	51	316.3		5.3	0.39494	7.4	ppb
[Cr-KED3	52	259.0		5.1	0.27079	4.8	ppb
[Cr-KED3	53	48.0		23.2	0.20877	45.8	ppb
[Fe-KED3	54	614.7		4.2	14.83402	3.8	ppb
[Fe-KED3	56	12439.1		1.8	15.45675	1.0	ppb
[Co-KED3	59	325.0		4.1	0.15037	5.0	ppb
[Ni-KED3	60	1481.7		5.7	2.26421	6.7	ppb
[Ni-KED3	62	252.7		9.5	2.29973	10.5	ppb
[Cu-KED3	63	2632.2		2.4	1.31597	3.3	ppb
[Cu-KED3	65	1315.1		3.0	1.25613	3.9	ppb
[Zn-KED3	66	762.0		1.4	3.25287	0.6	ppb
[> Ge-KED3	72	54222.7		0.9			ppb
[> Ge-KED2	72	248794.4		1.5			ppb
[As-KED2	75	200.7		9.9	0.35442	12.0	ppb
[> Ge-KED1	72	729781.7		5.3			ppb
[Se-KED1	77	386.7		12.9	-0.12107	220.6	ppb
[Se-KED1	78	87.9		6.0	0.21021	10.1	ppb
[Mo-KED2	95	3401.7		3.2	2.02659	3.7	ppb
[Mo-KED2	98	5982.4		2.5	2.09503	2.9	ppb
[> Rh-KED2	103	319836.1		0.5			ppb
[Ag-KED2	107	26.3		4.4	0.00209	7.4	ppb
[Ag-KED2	109	15.0		30.6	0.00092	76.7	ppb
[Cd-KED2	111	23.0		15.7	0.01995	19.8	ppb
[Cd-KED2	114	44.8		9.1	0.01766	11.6	ppb
[Sb-KED2	121	3253.7		1.3	2.23423	1.8	ppb
[Sb-KED2	123	2437.3		1.8	2.23153	2.0	ppb
[Ba-KED2	137	23022.9		2.7	31.40523	3.1	ppb
[> Lu-KED2	175	168608.7		1.5			ppb
[Tl-KED2	203	54.7		18.0	0.00978	19.1	ppb
[Tl-KED2	205	117.3		6.8	0.00862	9.7	ppb
[Pb-KED2	208	2874.8		1.6	0.18365	1.5	ppb
[> Th-KED2	232	467292.4		0.3			ppb
[U-KED2	238	5871.2		2.6	0.43953	2.9	ppb

Sample ID: K1801300-002

Report Date/Time: Tuesday, February 27, 2018 15:15:29

Page 1

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					
[	Be-STD1	9				98	
[	Mn-STD1	55					
[>	Ge-STD	72				87	
[	Al-KED2	27					
[>	Sc-KED2	45				90	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				76	
[>	Ge-KED2	72				82	
[	As-KED2	75					
[>	Ge-KED1	72				81	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				80	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				95	
|	Ti-KED2	203					
|	Ti-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				96	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-003
 Sample Date/Time: Monday, February 26, 2018 14:41:04
 Sample Description:
 Autosampler Position: 313
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-003.024
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1574520.7		3.0				ppb
[Be-STD1	9	20.7		31.1		-0.00107	64.5	ppb
[Mn-STD1	55	88088.2		2.3		3.14478	1.9	ppb
[> Ge-STD	72	1351425.0		0.8				ppb
[Al-KED2	27	2109.8		1.0		4.21870	2.0	ppb
[> Sc-KED2	45	83361.2		2.0				ppb
[V-KED3	51	994.4		3.1		1.25954	3.2	ppb
[Cr-KED3	52	112.7		11.4		0.09988	13.2	ppb
[Cr-KED3	53	38.0		24.1		0.08702	83.2	ppb
[Fe-KED3	54	102.2		12.7		1.10376	28.8	ppb
[Fe-KED3	56	2438.9		1.3		1.45952	2.0	ppb
[Co-KED3	59	182.3		5.5		0.07494	6.1	ppb
[Ni-KED3	60	335.7		5.6		0.45417	5.3	ppb
[Ni-KED3	62	69.3		29.6		0.55864	30.8	ppb
[Cu-KED3	63	1678.8		4.7		0.75241	4.3	ppb
[Cu-KED3	65	870.7		1.2		0.74621	0.8	ppb
[> Zn-KED3	66	427.7		2.1		1.46656	2.5	ppb
[> Ge-KED3	72	60132.3		0.5				ppb
[> Ge-KED2	72	268903.8		1.9				ppb
[> As-KED2	75	867.7		2.9		1.81617	5.0	ppb
[> Ge-KED1	72	808779.6		3.9				ppb
[Se-KED1	77	414.0		2.7		-0.22451	41.7	ppb
[Se-KED1	78	61.3		18.5		0.12180	25.5	ppb
[Mo-KED2	95	7544.7		0.9		4.13568	0.7	ppb
[Mo-KED2	98	12689.0		1.8		4.08752	1.2	ppb
[> Rh-KED2	103	348096.7		0.6				ppb
[Ag-KED2	107	19.3		3.0		0.00081	11.7	ppb
[Ag-KED2	109	11.3		31.0		0.00021	246.7	ppb
[Cd-KED2	111	22.0		31.8		0.01685	42.5	ppb
[Cd-KED2	114	41.7		6.9		0.01457	8.0	ppb
[Sb-KED2	121	1160.0		1.3		0.71871	1.9	ppb
[Sb-KED2	123	854.7		2.7		0.70590	2.2	ppb
[Ba-KED2	137	30530.6		1.1		38.26383	0.6	ppb
[> Lu-KED2	175	173253.7		1.0				ppb
[Tl-KED2	203	16.0		21.7		0.00176	37.8	ppb
[Tl-KED2	205	39.7		15.4		0.00189	28.4	ppb
[> Pb-KED2	208	1996.7		1.5		0.12289	1.4	ppb
[> Th-KED2	232	478001.8		0.9				ppb
[U-KED2	238	8393.1		1.1		0.61443	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		101			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		90			
[	Al-KED2	27					
[>	Sc-KED2	45		93			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		85			
[>	Ge-KED2	72		88			
[	As-KED2	75					
[>	Ge-KED1	72		90			
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		87			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-004
 Sample Date/Time: Monday, February 26, 2018 14:44:55
 Sample Description:
 Autosampler Position: 314
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-004.025
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1593889.7		1.4			ppb
[	Be-STD1	9	31.3		19.5	0.00008	765.9	ppb
[	Mn-STD1	55	1257546.6		3.3	48.30558	5.6	ppb
[>	Ge-STD	72	1269939.1		2.3			ppb
[	Al-KED2	27	1814.4		4.4	3.72110	0.7	ppb
[>	Sc-KED2	45	79949.6		3.8			ppb
[	V-KED3	51	1443.4		2.3	2.08527	3.1	ppb
|	Cr-KED3	52	147.7		5.9	0.15068	6.3	ppb
|	Cr-KED3	53	47.3		17.1	0.20539	35.4	ppb
|	Fe-KED3	54	151.8		10.8	2.69002	15.0	ppb
|	Fe-KED3	56	2928.0		2.4	2.47590	4.5	ppb
|	Co-KED3	59	559.0		5.0	0.26145	4.5	ppb
|	Ni-KED3	60	1406.4		2.8	2.15832	2.8	ppb
|	Ni-KED3	62	225.3		5.4	2.05798	5.0	ppb
|	Cu-KED3	63	1257.4		2.3	0.62659	2.8	ppb
|	Cu-KED3	65	675.0		3.6	0.64360	4.0	ppb
[>	Zn-KED3	66	381.3		4.0	1.45476	4.1	ppb
[>	Ge-KED3	72	53957.0		0.7			ppb
[>	Ge-KED2	72	239907.1		3.3			ppb
[>	As-KED2	75	1317.4		1.5	3.18294	2.4	ppb
[>	Ge-KED1	72	734633.1		4.0			ppb
|	Se-KED1	77	528.0		7.6	1.08075	20.9	ppb
[	Se-KED1	78	496.5		6.3	1.30735	4.1	ppb
[	Mo-KED2	95	51018.3		2.0	31.03078	1.9	ppb
|	Mo-KED2	98	86535.9		2.8	30.92337	1.5	ppb
[>	Rh-KED2	103	314267.0		3.8			ppb
|	Ag-KED2	107	17.0		17.6	0.00075	60.3	ppb
|	Ag-KED2	109	13.0		20.4	0.00066	72.4	ppb
|	Cd-KED2	111	32.0		19.5	0.03052	20.5	ppb
|	Cd-KED2	114	56.5		13.4	0.02378	14.7	ppb
|	Sb-KED2	121	1674.1		1.4	1.16195	5.0	ppb
|	Sb-KED2	123	1246.7		0.4	1.15373	4.4	ppb
[	Ba-KED2	137	21526.6		3.1	29.88990	1.9	ppb
[>	Lu-KED2	175	164898.8		1.8			ppb
|	Tl-KED2	203	40.7		19.9	0.00710	23.6	ppb
|	Tl-KED2	205	95.0		13.8	0.00690	18.8	ppb
[	Pb-KED2	208	745.3		5.5	0.04588	6.2	ppb
[>	Th-KED2	232	454110.2		0.8			ppb
[	U-KED2	238	52297.6		1.1	4.03243	0.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			102		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		85			
[	Al-KED2	27					
[>	Sc-KED2	45		89			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		76			
[>	Ge-KED2	72		79			
[	As-KED2	75					
[>	Ge-KED1	72		82			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		79			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		93			
|	Ti-KED2	203					
|	Ti-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		94			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-005
 Sample Date/Time: Monday, February 26, 2018 14:48:47
 Sample Description:
 Autosampler Position: 315
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-005.026
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1511126.6		2.2			ppb
[Be-STD1	9	33.3		9.2	0.00051	78.9	ppb
[Mn-STD1	55	666052.9		1.0	24.29331	3.3	ppb
[> Ge-STD	72	1336129.4		2.6			ppb
[Al-KED2	27	7259.2		2.3	15.99295	4.2	ppb
[> Sc-KED2	45	83136.1		3.5			ppb
[V-KED3	51	372.7		7.8	0.45701	10.6	ppb
[Cr-KED3	52	187.7		10.4	0.18514	10.3	ppb
[Cr-KED3	53	44.0		19.8	0.15894	50.1	ppb
[Fe-KED3	54	1052.7		7.8	25.27526	10.0	ppb
[Fe-KED3	56	21891.8		1.3	27.19738	3.1	ppb
[Co-KED3	59	440.3		1.9	0.19633	3.6	ppb
[Ni-KED3	60	3243.7		0.8	4.76993	2.6	ppb
[Ni-KED3	62	496.7		4.1	4.34966	3.1	ppb
[Cu-KED3	63	1233.4		4.1	0.58648	2.8	ppb
[Cu-KED3	65	622.0		7.3	0.56537	6.4	ppb
[> Zn-KED3	66	868.0		4.5	3.59097	3.3	ppb
[> Ge-KED3	72	56470.7		1.7			ppb
[> Ge-KED2	72	254047.3		3.4			ppb
[> As-KED2	75	230.0		9.1	0.41424	10.4	ppb
[> Ge-KED1	72	750948.9		2.3			ppb
[Se-KED1	77	438.0		14.8	0.23289	265.1	ppb
[Se-KED1	78	217.5		8.8	0.54452	10.3	ppb
[Mo-KED2	95	11167.0		3.0	6.48743	1.6	ppb
[Mo-KED2	98	18716.9		3.0	6.38985	1.4	ppb
[> Rh-KED2	103	328605.5		2.2			ppb
[Ag-KED2	107	19.0		45.0	0.00091	130.7	ppb
[Ag-KED2	109	10.0		45.8	0.00009	719.7	ppb
[Cd-KED2	111	35.7		22.8	0.03308	28.2	ppb
[Cd-KED2	114	82.9		6.6	0.03492	9.2	ppb
[Sb-KED2	121	709.4		1.9	0.45863	0.6	ppb
[Sb-KED2	123	516.0		2.7	0.44465	2.2	ppb
[Ba-KED2	137	18207.3		0.4	24.17785	2.5	ppb
[> Lu-KED2	175	171033.4		0.4			ppb
[TI-KED2	203	53.3		12.1	0.00936	13.7	ppb
[TI-KED2	205	135.7		7.0	0.01001	8.4	ppb
[Pb-KED2	208	586.7		3.2	0.03389	3.7	ppb
[> Th-KED2	232	475188.8		1.3			ppb
[U-KED2	238	29577.9		0.8	2.17963	2.0	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			97		
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72		89			
[	Al-KED2 27					
[>	Sc-KED2 45		93			
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72		80			
[>	Ge-KED2 72		83			
[	As-KED2 75					
[>	Ge-KED1 72		83			
|	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103		82			
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175		97			
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232		98			
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-006
 Sample Date/Time: Monday, February 26, 2018 14:52:38
 Sample Description:
 Autosampler Position: 316
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-006.027
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1571493.4	1.2			ppb
[	Be-STD1	9	30.7	21.0	0.00006	1194.8	ppb
[	Mn-STD1	55	259132.4	2.0	9.57454	3.6	ppb
[>	Ge-STD	72	1315890.9	1.7			ppb
[	Al-KED2	27	8886.4	5.7	18.93019	5.8	ppb
[>	Sc-KED2	45	86382.0	0.2			ppb
[	V-KED3	51	1950.5	1.3	2.63166	0.4	ppb
|	Cr-KED3	52	529.7	7.1	0.52540	6.4	ppb
|	Cr-KED3	53	103.3	15.6	0.63782	20.5	ppb
|	Fe-KED3	54	1094.4	6.8	25.48731	7.5	ppb
|	Fe-KED3	56	21552.9	3.2	25.90031	1.8	ppb
|	Co-KED3	59	725.7	5.1	0.31532	6.0	ppb
|	Ni-KED3	60	3201.0	1.4	4.56646	1.8	ppb
|	Ni-KED3	62	502.0	1.8	4.26669	1.6	ppb
|	Cu-KED3	63	7639.4	1.5	3.57457	1.0	ppb
|	Cu-KED3	65	3870.2	2.5	3.45862	1.0	ppb
|	Zn-KED3	66	1169.0	3.4	4.80564	2.9	ppb
[>	Ge-KED3	72	58195.6	1.5			ppb
[>	Ge-KED2	72	261142.8	1.4			ppb
[	As-KED2	75	1312.4	2.9	2.90125	4.0	ppb
[>	Ge-KED1	72	769478.7	1.8			ppb
|	Se-KED1	77	467.3	9.6	0.37645	89.0	ppb
[	Se-KED1	78	195.0	6.2	0.47279	7.2	ppb
[	Mo-KED2	95	24269.9	1.3	13.77496	1.3	ppb
|	Mo-KED2	98	41017.8	1.9	13.68064	2.0	ppb
[>	Rh-KED2	103	336536.5	0.1			ppb
|	Ag-KED2	107	19.7	30.6	0.00095	89.3	ppb
|	Ag-KED2	109	13.3	56.8	0.00056	200.8	ppb
|	Cd-KED2	111	18.3	16.7	0.01374	23.4	ppb
|	Cd-KED2	114	30.2	24.0	0.00994	33.0	ppb
|	Sb-KED2	121	1073.4	0.9	0.68696	0.8	ppb
|	Sb-KED2	123	837.4	2.9	0.71572	2.9	ppb
[	Ba-KED2	137	112552.8	2.1	145.93917	2.1	ppb
[>	Lu-KED2	175	170226.1	2.0			ppb
|	Tl-KED2	203	75.3	60.6	0.01384	65.7	ppb
|	Tl-KED2	205	197.7	81.7	0.01522	88.3	ppb
[	Pb-KED2	208	659.7	27.3	0.03871	28.8	ppb
[>	Th-KED2	232	474170.3	0.6			ppb
[	U-KED2	238	18052.1	2.1	1.33286	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				100	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				88	
[	Al-KED2	27					
[>	Sc-KED2	45				96	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				82	
[>	Ge-KED2	72				86	
[	As-KED2	75					
[>	Ge-KED1	72				86	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				84	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				96	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				98	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-007
 Sample Date/Time: Monday, February 26, 2018 14:56:29
 Sample Description:
 Autosampler Position: 317
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-007.028
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1604086.0		3.3			ppb
[Be-STD1	9	28.0		7.1	-0.00030	99.5	ppb
[Mn-STD1	55	754725.7		2.2	27.52335	2.7	ppb
[> Ge-STD	72	1336030.6		1.3			ppb
[Al-KED2	27	1848.8		1.6	3.48282	3.4	ppb
[> Sc-KED2	45	86305.8		3.6			ppb
[V-KED3	51	862.4		2.5	1.08954	3.8	ppb
[Cr-KED3	52	902.4		2.1	0.87887	2.9	ppb
[Cr-KED3	53	170.7		13.7	1.16056	18.4	ppb
[Fe-KED3	54	211.9		6.3	3.73343	8.5	ppb
[Fe-KED3	56	4223.0		1.0	3.69080	1.7	ppb
[Co-KED3	59	230.7		9.1	0.09603	9.9	ppb
[Ni-KED3	60	4490.0		1.8	6.23939	0.3	ppb
[Ni-KED3	62	708.7		3.7	5.86983	3.6	ppb
[Cu-KED3	63	2901.0		2.9	1.31532	1.9	ppb
[Cu-KED3	65	1572.1		5.4	1.36209	3.6	ppb
[> Zn-KED3	66	588.0		1.6	2.16803	0.2	ppb
[> Ge-KED3	72	59771.8		1.8			ppb
[> Ge-KED2	72	263373.0		1.5			ppb
[As-KED2	75	326.7		11.3	0.61598	12.6	ppb
[> Ge-KED1	72	783505.0		4.3			ppb
[Se-KED1	77	487.3		8.3	0.46850	46.5	ppb
[Se-KED1	78	162.1		7.5	0.38029	3.6	ppb
[Mo-KED2	95	6952.4		0.9	3.93731	4.5	ppb
[Mo-KED2	98	11810.9		3.7	3.92710	1.9	ppb
[> Rh-KED2	103	337276.4		3.7			ppb
[Ag-KED2	107	14.7		23.9	0.00023	195.4	ppb
[Ag-KED2	109	10.7		10.8	0.00017	139.2	ppb
[Cd-KED2	111	19.0		41.1	0.01438	56.3	ppb
[Cd-KED2	114	33.5		13.7	0.01139	15.5	ppb
[Sb-KED2	121	214.0		5.7	0.12101	6.9	ppb
[Sb-KED2	123	154.7		12.3	0.11617	11.8	ppb
[Ba-KED2	137	267382.3		1.8	346.11151	2.0	ppb
[> Lu-KED2	175	168864.1		1.9			ppb
[TI-KED2	203	22.7		41.7	0.00319	58.7	ppb
[TI-KED2	205	55.7		13.5	0.00334	19.4	ppb
[Pb-KED2	208	450.0		2.4	0.02549	4.8	ppb
[> Th-KED2	232	469147.5		1.0			ppb
[U-KED2	238	7658.1		2.1	0.57110	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			102		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72			89		
[	Al-KED2	27					
[>	Sc-KED2	45			96		
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72			84		
[>	Ge-KED2	72			86		
[	As-KED2	75					
[>	Ge-KED1	72			87		
|	Se-KED1	77					
|	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103			85		
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175			95		
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232			97		
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-008
 Sample Date/Time: Monday, February 26, 2018 15:00:20
 Sample Description:
 Autosampler Position: 318
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A\K1801300-008.029
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6		1496720.3		3.2			ppb
[Be-STD1	9		21.3		5.4	-0.00086	15.1	ppb
[Mn-STD1	55		479177.5		1.4	17.83559	4.0	ppb
> Ge-STD	72		1309776.6		5.4			ppb
[Al-KED2	27		3612.1		1.6	7.61059	0.8	ppb
> Sc-KED2	45		83629.8		2.2			ppb
[V-KED3	51		813.4		2.9	1.05257	2.7	ppb
[Cr-KED3	52		97.3		21.4	0.08790	23.2	ppb
[Cr-KED3	53		32.0		41.0	0.04719	226.5	ppb
[Fe-KED3	54		545.9		45.8	12.02650	50.2	ppb
[Fe-KED3	56		10207.4		42.4	11.43342	47.4	ppb
[Co-KED3	59		205.0		17.1	0.08737	17.1	ppb
[Ni-KED3	60		743.4		2.0	1.05246	1.9	ppb
[Ni-KED3	62		121.3		6.7	1.02060	6.9	ppb
[Cu-KED3	63		1937.5		10.3	0.89884	9.7	ppb
[Cu-KED3	65		1040.0		12.4	0.92262	11.9	ppb
[Zn-KED3	66		889.7		4.2	3.56987	3.9	ppb
> Ge-KED3	72		58198.6		0.7			ppb
> Ge-KED2	72		261764.5		2.6			ppb
[As-KED2	75		1319.1		3.6	2.90881	2.9	ppb
> Ge-KED1	72		766398.0		2.7			ppb
[Se-KED1	77		456.0		2.6	0.30003	2.6	ppb
[Se-KED1	78		182.6		5.4	0.44299	7.3	ppb
[Mo-KED2	95		27124.4		2.5	15.86567	2.4	ppb
[Mo-KED2	98		45118.5		3.6	15.50943	3.9	ppb
> Rh-KED2	103		326572.7		0.7			ppb
[Ag-KED2	107		12.0		43.3	-0.00008	936.4	ppb
[Ag-KED2	109		10.0		36.1	0.00011	499.2	ppb
[Cd-KED2	111		20.7		24.8	0.01690	33.7	ppb
[Cd-KED2	114		41.4		8.2	0.01564	10.8	ppb
[Sb-KED2	121		436.0		5.6	0.27614	5.9	ppb
[Sb-KED2	123		332.5		2.4	0.28151	3.2	ppb
[Ba-KED2	137		26725.0		1.0	35.70106	0.3	ppb
> Lu-KED2	175		172831.9		0.6			ppb
[Tl-KED2	203		14.0		14.3	0.00137	30.2	ppb
[Tl-KED2	205		45.7		8.3	0.00239	12.6	ppb
[Pb-KED2	208		814.3		1.8	0.04798	1.9	ppb
> Th-KED2	232		469644.4		1.3			ppb
[U-KED2	238		14254.4		0.9	1.06247	1.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					96
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				87	
[	Al-KED2	27					
[>	Sc-KED2	45				93	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				82	
[>	Ge-KED2	72				86	
[	As-KED2	75					
[>	Ge-KED1	72				85	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
|>	Rh-KED2	103				82	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				98	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				97	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-009
 Sample Date/Time: Monday, February 26, 2018 15:04:11
 Sample Description:
 Autosampler Position: 319
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-009.030
 User Name: RRM
 Batch ID: D

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1481604.2	3.3			ppb
[	Be-STD1	9	38.7	29.4	0.00120	103.4	ppb
[	Mn-STD1	55	1223002.7	6.6	46.25366	3.9	ppb
[>	Ge-STD	72	1288286.0	4.3			ppb
[	Al-KED2	27	8595.3	2.5	19.54551	2.5	ppb
[>	Sc-KED2	45	80999.3	0.7			ppb
[	V-KED3	51	315.0	8.6	0.38395	10.5	ppb
|	Cr-KED3	52	289.7	4.4	0.29819	4.4	ppb
|	Cr-KED3	53	65.3	7.7	0.35214	12.2	ppb
|	Fe-KED3	54	1248.5	4.1	30.87577	4.4	ppb
|	Fe-KED3	56	24830.9	1.1	31.75574	0.8	ppb
|	Co-KED3	59	339.3	9.0	0.15401	8.8	ppb
|	Ni-KED3	60	1781.8	3.8	2.67209	3.9	ppb
|	Ni-KED3	62	261.3	9.4	2.33177	9.0	ppb
|	Cu-KED3	63	2411.5	2.6	1.18157	2.2	ppb
|	Cu-KED3	65	1286.4	3.6	1.20481	3.2	ppb
|	Zn-KED3	66	1216.1	2.4	5.29853	2.1	ppb
[>	Ge-KED3	72	55266.7	0.5			ppb
[>	Ge-KED2	72	246876.6	0.7			ppb
[	As-KED2	75	187.7	5.9	0.32665	7.2	ppb
[>	Ge-KED1	72	732160.3	4.0			ppb
|	Se-KED1	77	430.7	5.4	0.25729	57.1	ppb
[	Se-KED1	78	98.9	12.8	0.23802	10.2	ppb
[	Mo-KED2	95	3211.7	0.9	1.91448	1.1	ppb
|	Mo-KED2	98	5225.3	4.4	1.83141	5.7	ppb
[>	Rh-KED2	103	319594.0	1.7			ppb
|	Ag-KED2	107	29.7	10.3	0.00259	16.8	ppb
|	Ag-KED2	109	24.3	15.6	0.00239	24.7	ppb
|	Cd-KED2	111	20.0	18.0	0.01666	25.4	ppb
|	Cd-KED2	114	50.8	13.2	0.02061	17.1	ppb
|	Sb-KED2	121	2897.6	3.2	1.98900	2.9	ppb
|	Sb-KED2	123	2114.8	1.6	1.93513	0.2	ppb
[	Ba-KED2	137	23293.3	1.8	31.79524	0.5	ppb
[>	Lu-KED2	175	168476.8	1.5			ppb
|	Tl-KED2	203	45.3	22.6	0.00788	26.2	ppb
|	Tl-KED2	205	110.3	9.1	0.00802	11.6	ppb
[	Pb-KED2	208	4275.6	0.7	0.27525	1.9	ppb
[>	Th-KED2	232	464332.2	0.3			ppb
[	U-KED2	238	5721.8	1.9	0.43105	2.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				95	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				86	
[	Al-KED2	27					
[>	Sc-KED2	45				90	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				78	
[>	Ge-KED2	72				81	
[	As-KED2	75					
[>	Ge-KED1	72				81	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				80	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				95	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				96	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-010
 Sample Date/Time: Monday, February 26, 2018 15:08:03
 Sample Description:
 Autosampler Position: 320
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-010.031
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1622985.9		1.8			ppb
[Be-STD1	9	62.7		109.7	0.00341	217.5	ppb
[Mn-STD1	55	19034.0		74.1	0.62673	78.2	ppb
> Ge-STD	72	1405652.5		3.4			ppb
[Al-KED2	27	992.0		2.7	1.58182	1.0	ppb
> Sc-KED2	45	86932.6		3.4			ppb
[V-KED3	51	100.7		9.4	0.04625	24.2	ppb
[Cr-KED3	52	250.0		10.2	0.21217	11.7	ppb
[Cr-KED3	53	61.3		15.4	0.22941	30.5	ppb
[Fe-KED3	54	117.6		13.9	1.21717	30.8	ppb
[Fe-KED3	56	3028.7		0.9	1.84626	3.3	ppb
[Co-KED3	59	39.0		6.8	0.01274	9.0	ppb
[Ni-KED3	60	480.7		3.3	0.59418	3.3	ppb
[Ni-KED3	62	94.7		16.1	0.69568	16.1	ppb
[Cu-KED3	63	618.7		3.1	0.24552	2.8	ppb
[Cu-KED3	65	325.7		3.2	0.24788	4.1	ppb
[Zn-KED3	66	836.4		2.2	2.88895	2.1	ppb
> Ge-KED3	72	66170.9		0.9			ppb
> Ge-KED2	72	288654.9		2.0			ppb
[As-KED2	75	84.3		15.1	0.04432	57.7	ppb
> Ge-KED1	72	863418.3		2.9			ppb
[Se-KED1	77	440.7		12.2	-0.23169	189.1	ppb
[Se-KED1	78	16.6		9.8	0.00954	49.4	ppb
[Mo-KED2	95	28.7		24.5	0.00844	42.0	ppb
[Mo-KED2	98	61.7		21.9	0.01290	30.9	ppb
> Rh-KED2	103	378043.9		4.2			ppb
[Ag-KED2	107	11.7		17.8	-0.00036	70.4	ppb
[Ag-KED2	109	12.0		8.3	0.00017	91.2	ppb
[Cd-KED2	111	12.0		44.1	0.00580	96.3	ppb
[Cd-KED2	114	21.7		28.2	0.00507	54.6	ppb
[Sb-KED2	121	231.3		3.3	0.11604	4.5	ppb
[Sb-KED2	123	168.8		1.3	0.11285	4.9	ppb
[Ba-KED2	137	366.7		3.3	0.41289	2.7	ppb
> Lu-KED2	175	176999.9		3.4			ppb
[Tl-KED2	203	8.0		50.0	0.00013	617.1	ppb
[Tl-KED2	205	15.7		18.4	-0.00013	184.6	ppb
> Pb-KED2	208	276.3		7.3	0.01333	7.3	ppb
> Th-KED2	232	478766.9		1.0			ppb
[U-KED2	238	14.0		24.7	0.00054	45.5	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					104
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				94	
[	Al-KED2	27					
[>	Sc-KED2	45				97	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				93	
[>	Ge-KED2	72				95	
[	As-KED2	75					
[>	Ge-KED1	72				96	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				95	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				100	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				99	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 15:11:56
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCV.032
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6		1615222.5	3.4			ppb
[Be-STD1	9		245821.3	1.6	26.80967	1.9	ppb
[Mn-STD1	55		772363.9	2.0	26.76107	5.1	ppb
[> Ge-STD	72		1407490.3	3.4			ppb
[Al-KED2	27		11821.6	2.4	24.89758	1.3	ppb
[> Sc-KED2	45		87995.5	1.1			ppb
[V-KED3	51		19764.7	1.4	24.38824	0.9	ppb
| Cr-KED3	52		27483.1	1.3	24.79380	3.2	ppb
| Cr-KED3	53		3441.7	1.4	25.18311	3.4	ppb
| Fe-KED3	54		11450.8	0.7	248.68792	2.4	ppb
| Fe-KED3	56		219814.2	2.5	248.15396	4.3	ppb
| Co-KED3	59		64156.1	2.8	25.03084	4.7	ppb
| Ni-KED3	60		19249.0	1.2	24.52826	3.1	ppb
| Ni-KED3	62		3280.4	3.5	24.91676	2.5	ppb
| Cu-KED3	63		59493.0	2.0	24.87601	2.5	ppb
| Cu-KED3	65		30383.6	1.1	24.26530	2.4	ppb
| Zn-KED3	66		6246.4	2.2	24.25908	0.9	ppb
[> Ge-KED3	72		65286.9	2.0			ppb
[> Ge-KED2	72		294015.3	1.1			ppb
[As-KED2	75		12292.3	2.6	25.09517	2.6	ppb
[> Ge-KED1	72		868516.7	1.9			ppb
| Se-KED1	77		4157.9	2.9	26.83959	1.1	ppb
[Se-KED1	78		11815.9	2.0	26.87210	2.1	ppb
[Mo-KED2	95		25339.8	3.6	12.34536	1.2	ppb
| Mo-KED2	98		42278.6	1.9	12.10736	0.8	ppb
[> Rh-KED2	103		391963.7	2.4			ppb
| Ag-KED2	107		101386.9	0.9	12.32115	2.9	ppb
| Ag-KED2	109		96576.2	2.7	12.35771	2.9	ppb
| Cd-KED2	111		27259.3	2.1	24.76001	0.3	ppb
| Cd-KED2	114		63296.9	2.2	24.77818	1.0	ppb
| Sb-KED2	121		22106.4	0.3	12.48027	2.6	ppb
| Sb-KED2	123		16566.9	3.6	12.46200	1.7	ppb
[Ba-KED2	137		22187.2	2.9	24.69078	1.3	ppb
[> Lu-KED2	175		173330.7	3.4			ppb
| Tl-KED2	203		125959.7	1.9	25.17175	1.6	ppb
| Tl-KED2	205		301897.2	1.7	25.08488	2.5	ppb
[Pb-KED2	208		392295.8	1.0	24.89592	2.7	ppb
[> Th-KED2	232		487179.0	1.9			ppb
[U-KED2	238		352282.3	1.0	25.32559	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			103		
[	Be-STD1	9		107			
[	Mn-STD1	55		107			
[>	Ge-STD	72			94		
[	Al-KED2	27		100			
[>	Sc-KED2	45			98		
[	V-KED3	51		98			
|	Cr-KED3	52		99			
|	Cr-KED3	53		101			
|	Fe-KED3	54		99			
|	Fe-KED3	56		99			
|	Co-KED3	59		100			
|	Ni-KED3	60		98			
|	Ni-KED3	62		100			
|	Cu-KED3	63		100			
|	Cu-KED3	65		97			
|	Zn-KED3	66		97			
[>	Ge-KED3	72			92		
[>	Ge-KED2	72			96		
[	As-KED2	75		100			
[>	Ge-KED1	72			97		
|	Se-KED1	77		107			
[	Se-KED1	78		107			
[	Mo-KED2	95		99			
|	Mo-KED2	98		97			
[>	Rh-KED2	103			98		
|	Ag-KED2	107		99			
|	Ag-KED2	109		99			
|	Cd-KED2	111		99			
|	Cd-KED2	114		99			
|	Sb-KED2	121		100			
|	Sb-KED2	123		100			
[	Ba-KED2	137		99			
[>	Lu-KED2	175			98		
|	Ti-KED2	203		101			
|	Ti-KED2	205		100			
[	Pb-KED2	208		100			
[>	Th-KED2	232			100		
[U-KED2	238		101			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 15:15:47
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.033
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1577917.8		2.8			ppb
[Be-STD1	9	33.3		24.2	0.00034	251.4	ppb
[Mn-STD1	55	1212.1		4.4	0.00828	10.3	ppb
[> Ge-STD	72	1384399.6		3.7			ppb
[Al-KED2	27	305.3		5.1	0.08598	28.1	ppb
[> Sc-KED2	45	86525.6		1.6			ppb
[V-KED3	51	130.7		10.4	0.08420	17.0	ppb
[Cr-KED3	52	12.7		31.9	0.00089	418.4	ppb
[Cr-KED3	53	61.3		15.1	0.23432	33.1	ppb
[Fe-KED3	54	57.6		24.5	-0.06818	424.6	ppb
[Fe-KED3	56	1445.4		2.3	0.08735	49.7	ppb
[Co-KED3	59	9.7		21.5	0.00149	59.4	ppb
[Ni-KED3	60	9.7		23.9	0.00207	131.5	ppb
[Ni-KED3	62	2.7	114.6	0.00647		366.3	ppb
[Cu-KED3	63	27.3		53.9	0.00172	373.7	ppb
[Cu-KED3	65	14.0		18.9	0.00229	83.1	ppb
[Zn-KED3	66	86.3		3.5	-0.02480	69.6	ppb
[> Ge-KED3	72	65576.9		2.0			ppb
[> Ge-KED2	72	291116.0		0.3			ppb
[As-KED2	75	66.7		7.1	0.00625	150.7	ppb
[> Ge-KED1	72	852792.2		4.1			ppb
[Se-KED1	77	418.0		4.2	-0.36380	6.2	ppb
[Se-KED1	78	16.7		30.5	0.01008	115.5	ppb
[Mo-KED2	95	23.3		39.6	0.00550	83.9	ppb
[Mo-KED2	98	40.5		24.9	0.00629	40.2	ppb
[> Rh-KED2	103	385910.0		3.3			ppb
[Ag-KED2	107	35.0		35.7	0.00252	67.1	ppb
[Ag-KED2	109	36.3		23.1	0.00328	28.6	ppb
[Cd-KED2	111	8.7		46.6	0.00238	159.7	ppb
[Cd-KED2	114	14.9		33.6	0.00213	96.2	ppb
[Sb-KED2	121	37.3		27.5	0.00185	335.1	ppb
[Sb-KED2	123	27.0		44.3	0.00127	661.4	ppb
[Ba-KED2	137	10.7		10.8	0.00151	110.8	ppb
[> Lu-KED2	175	177585.4		2.3			ppb
[Ti-KED2	203	30.7		37.7	0.00452	46.6	ppb
[Ti-KED2	205	61.3		4.1	0.00357	8.1	ppb
[Pb-KED2	208	96.7		17.6	0.00217	54.9	ppb
[> Th-KED2	232	487154.8		1.9			ppb
[U-KED2	238	39.3		33.1	0.00234	37.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				101	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				92	
[	Al-KED2	27					
[>	Sc-KED2	45				97	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				92	
[>	Ge-KED2	72				95	
[	As-KED2	75					
[>	Ge-KED1	72				95	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				97	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				100	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				100	
[	U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Cr-KED3	53	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVW
 Sample Date/Time: Monday, February 26, 2018 15:19:39
 Sample Description:
 Autosampler Position: 4
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW.034
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1558228.7	1.7			ppb
[	Be-STD1	9	210.0	6.6	0.02038	9.5	ppb
[	Mn-STD1	55	7121.8	1.7	0.21756	2.3	ppb
[>	Ge-STD	72	1379009.6	2.8			ppb
[	Al-KED2	27	2042.5	4.1	3.86812	3.2	ppb
[>	Sc-KED2	45	87017.3	1.5			ppb
[	V-KED3	51	298.0	6.4	0.28882	6.9	ppb
[	Cr-KED3	52	229.7	9.2	0.19461	7.1	ppb
[	Cr-KED3	53	86.7	20.7	0.41871	34.4	ppb
[	Fe-KED3	54	146.9	2.1	1.86038	6.6	ppb
[	Fe-KED3	56	3158.7	1.6	2.00789	2.0	ppb
[	Co-KED3	59	55.3	6.8	0.01912	8.2	ppb
[	Ni-KED3	60	161.7	8.7	0.19393	8.0	ppb
[	Ni-KED3	62	15.3	27.2	0.10175	31.8	ppb
[	Cu-KED3	63	291.3	12.1	0.11081	10.4	ppb
[	Cu-KED3	65	130.0	4.7	0.09420	7.6	ppb
[	Zn-KED3	66	577.7	1.3	1.89441	4.6	ppb
[>	Ge-KED3	72	65877.6	2.5			ppb
[>	Ge-KED2	72	290358.1	2.6			ppb
[	As-KED2	75	314.3	4.3	0.52208	8.5	ppb
[>	Ge-KED1	72	857164.5	3.7			ppb
[	Se-KED1	77	608.7	4.0	1.03721	33.1	ppb
[	Se-KED1	78	464.7	0.2	1.04433	3.6	ppb
[	Mo-KED2	95	243.3	6.8	0.11418	7.4	ppb
[	Mo-KED2	98	368.7	10.3	0.10161	11.0	ppb
[>	Rh-KED2	103	386730.1	0.6			ppb
[	Ag-KED2	107	196.3	4.6	0.02234	4.6	ppb
[	Ag-KED2	109	160.0	10.5	0.01932	11.1	ppb
[	Cd-KED2	111	26.0	24.0	0.01828	31.4	ppb
[	Cd-KED2	114	58.7	4.5	0.01946	6.0	ppb
[	Sb-KED2	121	116.7	14.4	0.04720	20.4	ppb
[	Sb-KED2	123	81.7	11.0	0.04326	16.7	ppb
[	Ba-KED2	137	52.0	10.0	0.04812	12.8	ppb
[>	Lu-KED2	175	175393.9	3.9			ppb
[	Tl-KED2	203	94.7	8.5	0.01725	7.0	ppb
[	Tl-KED2	205	248.3	1.6	0.01900	5.3	ppb
[Pb-KED2	208	357.3	1.1	0.01859	3.8	ppb
[>	Th-KED2	232	475492.2	1.9			ppb
[U-KED2	238	280.7	7.1	0.02019	7.4	ppb

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QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6				100	
[	Be-STD1	9		102			
[	Mn-STD1	55		109			
[>	Ge-STD	72				92	
[	Al-KED2	27		97			
[>	Sc-KED2	45				97	
[	V-KED3	51		144			
|	Cr-KED3	52		97			
|	Cr-KED3	53		209			
|	Fe-KED3	54		93			
|	Fe-KED3	56		100			
|	Co-KED3	59		96			
|	Ni-KED3	60		97			
|	Ni-KED3	62		51			
|	Cu-KED3	63		111			
|	Cu-KED3	65		94			
|	Zn-KED3	66		95			
[>	Ge-KED3	72				93	
[>	Ge-KED2	72				95	
[	As-KED2	75		104			
[>	Ge-KED1	72				95	
|	Se-KED1	77		104			
[	Se-KED1	78		104			
[	Mo-KED2	95		114			
|	Mo-KED2	98		102			
[>	Rh-KED2	103				97	
|	Ag-KED2	107		112			
|	Ag-KED2	109		97			
|	Cd-KED2	111		91			
|	Cd-KED2	114		97			
|	Sb-KED2	121		94			
|	Sb-KED2	123		87			
[	Ba-KED2	137		96			
[>	Lu-KED2	175				99	
|	Tl-KED2	203		86			
|	Tl-KED2	205		95			
[	Pb-KED2	208		93			
[>	Th-KED2	232				98	
[U-KED2	238		101			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: LLCCVW
 Sample Date/Time: Monday, February 26, 2018 15:23:43
 Sample Description:
 Autosampler Position: 4
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW.035
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6		1601769.8	1.2			ppb
[Be-STD1	9		216.7	11.0	0.02047	14.2	ppb
[Mn-STD1	55		7016.4	3.7	0.21142	7.9	ppb
> Ge-STD	72		1394209.5	3.3			ppb
[Al-KED2	27		2135.8	5.5	4.11119	5.8	ppb
> Sc-KED2	45		86292.5	0.7			ppb
[V-KED3	51		302.3	3.8	0.28998	5.4	ppb
[Cr-KED3	52		225.3	5.1	0.18872	6.5	ppb
[Cr-KED3	53		87.3	10.8	0.41452	18.2	ppb
[Fe-KED3	54		151.6	5.5	1.92582	11.0	ppb
[Fe-KED3	56		3217.0	3.3	2.03136	6.0	ppb
[Co-KED3	59		58.7	11.1	0.02013	11.7	ppb
[Ni-KED3	60		145.7	2.1	0.17172	3.5	ppb
[Ni-KED3	62		28.0	12.4	0.19469	14.3	ppb
[Cu-KED3	63		256.0	8.9	0.09521	11.0	ppb
[Cu-KED3	65		132.7	11.6	0.09491	11.6	ppb
[Zn-KED3	66		597.3	2.6	1.94327	4.0	ppb
> Ge-KED3	72		66647.1	1.2			ppb
> Ge-KED2	72		290720.1	0.7			ppb
[As-KED2	75		300.7	6.2	0.49208	7.6	ppb
> Ge-KED1	72		877640.6	6.0			ppb
[Se-KED1	77		563.3	10.1	0.60247	71.7	ppb
[Se-KED1	78		466.9	12.9	1.02044	7.0	ppb
[Mo-KED2	95		223.3	18.8	0.10373	19.8	ppb
[Mo-KED2	98		350.5	4.9	0.09581	4.4	ppb
> Rh-KED2	103		388545.9	0.9			ppb
[Ag-KED2	107		178.0	4.9	0.01998	4.6	ppb
[Ag-KED2	109		160.0	15.0	0.01921	15.2	ppb
[Cd-KED2	111		20.3	19.9	0.01300	29.4	ppb
[Cd-KED2	114		55.8	6.5	0.01824	8.2	ppb
[Sb-KED2	121		130.7	15.3	0.05484	20.3	ppb
[Sb-KED2	123		86.9	6.9	0.04689	10.7	ppb
[Ba-KED2	137		51.3	21.9	0.04715	27.8	ppb
> Lu-KED2	175		173735.4	2.1			ppb
[Tl-KED2	203		106.7	10.3	0.01985	12.7	ppb
[Tl-KED2	205		238.0	7.3	0.01831	6.9	ppb
[Pb-KED2	208		346.7	6.1	0.01810	5.4	ppb
> Th-KED2	232		478337.4	1.4			ppb
[U-KED2	238		308.7	4.1	0.02212	4.2	ppb

8/15/18
 RRM
 Confirms

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		102			
[	Be-STD1	9	102				
[	Mn-STD1	55	106				
[>	Ge-STD	72		93			
[	Al-KED2	27	103				
[>	Sc-KED2	45		96			
[	V-KED3	51	145				
[	Cr-KED3	52	94				
[	Cr-KED3	53	207				
[	Fe-KED3	54	96				
[	Fe-KED3	56	102				
[	Co-KED3	59	101				
[	Ni-KED3	60	86				
[	Ni-KED3	62	97				
[	Cu-KED3	63	95				
[	Cu-KED3	65	95				
[	Zn-KED3	66	97				
[>	Ge-KED3	72		94			
[>	Ge-KED2	72		95			
[	As-KED2	75	98				
[>	Ge-KED1	72		98			
[	Se-KED1	77	60				
[	Se-KED1	78	102				
[	Mo-KED2	95	104				
[	Mo-KED2	98	96				
[>	Rh-KED2	103		97			
[	Ag-KED2	107	100				
[	Ag-KED2	109	96				
[	Cd-KED2	111	65				
[	Cd-KED2	114	91				
[	Sb-KED2	121	110				
[	Sb-KED2	123	94				
[	Ba-KED2	137	94				
[>	Lu-KED2	175		98			
[	Tl-KED2	203	99				
[	Tl-KED2	205	92				
[	Pb-KED2	208	91				
[>	Th-KED2	232		99			
[	U-KED2	238	111				

8/12/18

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Cd-KED2	111	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVW 2X
 Sample Date/Time: Monday, February 26, 2018 15:33:06
 Sample Description:
 Autosampler Position: 7
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW 2X.036
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1566891.1		1.2			ppb
[Be-STD1	9	398.7		11.2	0.04147	13.0	ppb
[Mn-STD1	55	12995.2		3.0	0.41911	3.2	ppb
> Ge-STD	72	1397983.7		2.9			ppb
[Al-KED2	27	3721.2		5.1	7.77928	2.6	ppb
> Sc-KED2	45	84378.6		3.2			ppb
> V-KED3	51	415.7		3.2	0.44065	4.6	ppb
[Cr-KED3	52	439.3		2.5	0.38807	4.0	ppb
[Cr-KED3	53	109.3		18.0	0.59228	22.4	ppb
[Fe-KED3	54	228.3		9.7	3.68821	12.2	ppb
[Fe-KED3	56	4776.8		1.0	3.90588	2.4	ppb
[Co-KED3	59	115.0		8.3	0.04279	7.8	ppb
[Ni-KED3	60	307.0		12.4	0.38373	14.4	ppb
[Ni-KED3	62	58.0		26.9	0.42817	26.7	ppb
[Cu-KED3	63	487.3		12.3	0.19544	14.5	ppb
[Cu-KED3	65	257.0		8.2	0.19775	10.3	ppb
[Zn-KED3	66	1026.0		3.5	3.70141	2.5	ppb
> Ge-KED3	72	64946.7		1.7			ppb
> Ge-KED2	72	284903.6		4.1			ppb
[As-KED2	75	516.3		7.4	0.96278	9.3	ppb
> Ge-KED1	72	843210.5		3.1			ppb
[Se-KED1	77	684.0		7.7	1.66487	16.0	ppb
[Se-KED1	78	840.6		0.4	1.94355	2.7	ppb
[Mo-KED2	95	398.0		12.3	0.19111	10.8	ppb
[Mo-KED2	98	688.0		10.4	0.19478	7.8	ppb
> Rh-KED2	103	385282.6		3.0			ppb
[Ag-KED2	107	336.7		6.2	0.03980	7.1	ppb
[Ag-KED2	109	324.0		6.4	0.04083	9.9	ppb
[Cd-KED2	111	43.3		24.9	0.03455	31.2	ppb
[Cd-KED2	114	106.5		11.7	0.03854	10.3	ppb
[Sb-KED2	121	188.7		6.2	0.08905	11.3	ppb
[Sb-KED2	123	146.1		3.0	0.09279	1.4	ppb
[Ba-KED2	137	99.3		22.2	0.10224	25.9	ppb
> Lu-KED2	175	173872.2		3.5			ppb
[Tl-KED2	203	179.3		5.5	0.03429	4.9	ppb
[Tl-KED2	205	466.3		6.0	0.03719	3.8	ppb
[Pb-KED2	208	659.3		4.3	0.03786	2.1	ppb
> Th-KED2	232	485511.1		1.6			ppb
[U-KED2	238	588.7		8.9	0.04196	8.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			100		
[	Be-STD1	9		104			
[	Mn-STD1	55		105			
[>	Ge-STD	72			93		
[	Al-KED2	27		97			
[>	Sc-KED2	45			94		
[	V-KED3	51		110			
|	Cr-KED3	52		97			
|	Cr-KED3	53		148			
|	Fe-KED3	54		92			
|	Fe-KED3	56		98			
|	Co-KED3	59		107			
|	Ni-KED3	60		96			
|	Ni-KED3	62		107			
|	Cu-KED3	63		98			
|	Cu-KED3	65		99			
|	Zn-KED3	66		93			
[>	Ge-KED3	72			92		
[>	Ge-KED2	72			93		
[	As-KED2	75		96			
[>	Ge-KED1	72			94		
|	Se-KED1	77		83			
[	Se-KED1	78		97			
[	Mo-KED2	95		96			
|	Mo-KED2	98		97			
[>	Rh-KED2	103			97		
|	Ag-KED2	107		100			
|	Ag-KED2	109		102			
|	Cd-KED2	111		86			
|	Cd-KED2	114		96			
|	Sb-KED2	121		89			
|	Sb-KED2	123		93			
[	Ba-KED2	137		102			
[>	Lu-KED2	175			98		
|	Tl-KED2	203		86			
|	Tl-KED2	205		93			
[	Pb-KED2	208		95			
[>	Th-KED2	232			100		
[U-KED2	238		105			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801357-001
 Sample Date/Time: Monday, February 26, 2018 15:42:43
 Sample Description:
 Autosampler Position: 321
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801357-001.037
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6		1508560.7	1.8			ppb
[Be-STD1	9		36.0	0.0	0.00083	9.3	ppb
[Mn-STD1	55		486091.7	1.6	17.21297	0.9	ppb
[> Ge-STD	72		1374780.0	2.1			ppb
[> Al-KED2	27		34410.4	2.8	78.45472	1.4	ppb
[> Sc-KED2	45		82604.0	3.6			ppb
[V-KED3	51		3396.4	1.6	4.28500	2.7	ppb
[Cr-KED3	52		288.0	4.2	0.25896	3.3	ppb
[Cr-KED3	53		90.7	22.2	0.47777	33.8	ppb
[Fe-KED3	54		2744.1	1.2	60.82092	1.7	ppb
[Fe-KED3	56		54133.0	1.4	62.21969	2.3	ppb
[Co-KED3	59		544.7	1.7	0.21808	2.0	ppb
[Ni-KED3	60		538.0	8.4	0.70151	9.6	ppb
[Ni-KED3	62		102.7	18.5	0.79653	19.9	ppb
[Cu-KED3	63		18719.6	2.2	8.11346	3.3	ppb
[Cu-KED3	65		9756.0	1.7	8.07500	1.8	ppb
[Zn-KED3	66		10813.4	1.2	43.86251	2.3	ppb
[> Ge-KED3	72		62934.3	1.0			ppb
[> Ge-KED2	72		274024.9	3.2			ppb
[As-KED2	75		253.7	8.1	0.42607	6.8	ppb
[> Ge-KED1	72		795764.5	2.1			ppb
[Se-KED1	77		494.0	4.9	0.46657	56.6	ppb
[Se-KED1	78		129.1	2.5	0.29229	2.4	ppb
[Mo-KED2	95		1759.4	6.3	0.93913	4.4	ppb
[Mo-KED2	98		3089.4	2.7	0.97039	2.2	ppb
[> Rh-KED2	103		355546.7	2.6			ppb
[Ag-KED2	107		100.3	16.2	0.01162	19.2	ppb
[Ag-KED2	109		82.0	8.8	0.01013	7.1	ppb
[> Cd-KED2	111		402.0	9.5	0.39653	7.4	ppb
[Cd-KED2	114		883.2	7.1	0.37730	6.1	ppb
[Sb-KED2	121		377.3	9.1	0.21577	11.6	ppb
[Sb-KED2	123		271.0	6.6	0.20579	4.9	ppb
[Ba-KED2	137		12377.0	0.8	15.18595	2.0	ppb
[> Lu-KED2	175		173917.8	2.8			ppb
[Tl-KED2	203		11.3	27.0	0.00083	78.2	ppb
[Tl-KED2	205		27.3	10.6	0.00086	30.4	ppb
[Pb-KED2	208		3722.5	1.5	0.23166	3.8	ppb
[> Th-KED2	232		479738.9	2.0			ppb
[U-KED2	238		988.7	3.6	0.07171	4.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6		96			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		92			
[	Al-KED2	27					
[>	Sc-KED2	45		92			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		89			
[>	Ge-KED2	72		90			
[	As-KED2	75					
[>	Ge-KED1	72		88			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		89			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801357-002
 Sample Date/Time: Monday, February 26, 2018 15:46:35
 Sample Description:
 Autosampler Position: 322
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801357-002.038
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1565595.9		2.1			ppb
[Be-STD1	9	190.0		13.7	0.01801	16.6	ppb
[Mn-STD1	55	387434.9		1.5	12.56652	3.4	ppb
> Ge-STD	72	1500338.1		2.0			ppb
> Al-KED2	27	160149.5		1.4	345.21167	2.3	ppb
> Sc-KED2	45	87862.0		0.9			ppb
[V-KED3	51	4364.3		2.7	5.34129	5.3	ppb
[Cr-KED3	52	244.7		6.6	0.21062	5.6	ppb
[Cr-KED3	53	87.3		21.2	0.42634	28.5	ppb
[Fe-KED3	54	20862.3		2.8	455.37138	5.2	ppb
[Fe-KED3	56	406678.9		1.6	461.46768	4.1	ppb
[Co-KED3	59	538.0		7.0	0.20832	9.8	ppb
[Ni-KED3	60	196.0		4.6	0.24043	7.4	ppb
[Ni-KED3	62	36.0		30.9	0.26066	32.8	ppb
[Cu-KED3	63	3674.5		3.5	1.53181	6.2	ppb
[Cu-KED3	65	1900.8		1.5	1.51354	3.9	ppb
[Zn-KED3	66	621.3		1.9	2.09120	2.1	ppb
> Ge-KED3	72	65150.0		2.6			ppb
> Ge-KED2	72	291940.8		2.9			ppb
[As-KED2	75	212.3		11.3	0.30688	15.1	ppb
> Ge-KED1	72	853694.9		4.7			ppb
[Se-KED1	77	452.7		5.0	-0.10559	205.9	ppb
[Se-KED1	78	48.3		11.1	0.08349	14.2	ppb
[Mo-KED2	95	340.7		3.3	0.15999	5.4	ppb
[Mo-KED2	98	541.8		4.6	0.14969	5.3	ppb
> Rh-KED2	103	392353.4		3.0			ppb
[Ag-KED2	107	119.7		21.2	0.01264	21.3	ppb
[Ag-KED2	109	116.0		7.7	0.01342	9.6	ppb
[Cd-KED2	111	12.7		4.6	0.00585	12.7	ppb
[Cd-KED2	114	15.5		20.8	0.00222	50.4	ppb
[Sb-KED2	121	53.3		21.7	0.01058	66.6	ppb
[Sb-KED2	123	47.8		10.5	0.01677	20.9	ppb
[Ba-KED2	137	12841.1		1.9	14.27541	1.4	ppb
> Lu-KED2	175	181737.3		1.9			ppb
[Tl-KED2	203	26.7		22.9	0.00366	33.5	ppb
[Tl-KED2	205	67.3		5.2	0.00392	6.7	ppb
[Pb-KED2	208	1637.0		2.0	0.09522	1.4	ppb
> Th-KED2	232	502458.4		0.6			ppb
[U-KED2	238	3116.3		3.0	0.21674	3.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			100		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72			100		
[	Al-KED2	27					
[>	Sc-KED2	45			98		
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72			92		
[>	Ge-KED2	72			96		
[	As-KED2	75					
[>	Ge-KED1	72			95		
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103			98		
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175			103		
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232			104		
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802015-03
 Sample Date/Time: Monday, February 26, 2018 15:50:26
 Sample Description:
 Autosampler Position: 323
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802015-03.039
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1514693.2		0.8			ppb
[Be-STD1	9	172.0		6.0	0.01662	7.0	ppb
[Mn-STD1	55	388518.8		1.2	12.49349	0.2	ppb
> Ge-STD	72	1512676.0		1.4			ppb
> Al-KED2	27	158082.2		3.6	340.33213	1.5	ppb
> Sc-KED2	45	87939.6		2.1			ppb
[V-KED3	51	4264.0		2.2	5.13256	2.8	ppb
[Cr-KED3	52	222.7		2.6	0.18777	3.1	ppb
[Cr-KED3	53	72.7		18.7	0.31158	30.8	ppb
[Fe-KED3	54	20911.0		1.1	449.15552	1.2	ppb
[Fe-KED3	56	406671.0		1.8	454.17996	2.3	ppb
[Co-KED3	59	545.3		6.6	0.20758	6.3	ppb
[Ni-KED3	60	211.0		7.1	0.25525	7.7	ppb
[Ni-KED3	62	42.7		13.5	0.30599	13.8	ppb
[Cu-KED3	63	3666.5		1.9	1.50358	1.6	ppb
[Cu-KED3	65	1829.8		1.6	1.43365	1.8	ppb
[Zn-KED3	66	670.7		1.5	2.24544	1.2	ppb
> Ge-KED3	72	66149.1		0.5			ppb
> Ge-KED2	72	289090.4		1.2			ppb
[As-KED2	75	196.7		2.8	0.27866	5.3	ppb
> Ge-KED1	72	859352.6		2.9			ppb
[Se-KED1	77	478.7		1.7	0.06024	72.3	ppb
[Se-KED1	78	48.4		15.0	0.08258	16.1	ppb
[Mo-KED2	95	308.0		11.7	0.14878	11.8	ppb
[Mo-KED2	98	571.2		7.1	0.16321	5.7	ppb
> Rh-KED2	103	380087.2		1.9			ppb
[Ag-KED2	107	113.3		1.0	0.01237	1.1	ppb
[Ag-KED2	109	104.7		13.9	0.01237	14.0	ppb
[Cd-KED2	111	8.0		50.0	0.00180	202.8	ppb
[Cd-KED2	114	15.3		34.1	0.00235	87.4	ppb
[Sb-KED2	121	56.0		3.6	0.01303	13.4	ppb
[Sb-KED2	123	39.3		5.8	0.01133	13.0	ppb
[Ba-KED2	137	12851.1		2.7	14.75316	4.7	ppb
> Lu-KED2	175	179272.6		2.4			ppb
[Tl-KED2	203	34.7		14.5	0.00526	18.4	ppb
[Tl-KED2	205	76.7		13.7	0.00476	20.5	ppb
[Pb-KED2	208	1577.0		4.8	0.09298	6.9	ppb
> Th-KED2	232	492358.9		1.6			ppb
[U-KED2	238	3078.3		2.9	0.21850	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		97			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		101			
[	Al-KED2	27					
[>	Sc-KED2	45		98			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		93			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
|>	Rh-KED2	103		95			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		101			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801357-002L
 Sample Date/Time: Monday, February 26, 2018 15:54:17
 Sample Description: 5X
 Autosampler Position: 324
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801357-002L.040
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1555918.5		1.8			ppb
[Be-STD1	9	52.0		17.6	0.00250	37.6	ppb
[Mn-STD1	55	76715.6		3.1	2.43333	0.5	ppb
> Ge-STD	72	1516225.2		2.8			ppb
> Al-KED2	27	31997.8		2.2	70.23326	3.2	ppb
> Sc-KED2	45	85768.0		3.9			ppb
[V-KED3	51	900.4		4.4	1.03368	3.1	ppb
[Cr-KED3	52	61.0		11.8	0.04428	12.6	ppb
[Cr-KED3	53	46.0		15.7	0.12133	44.9	ppb
[Fe-KED3	54	4323.6		1.0	92.75867	2.5	ppb
[Fe-KED3	56	82484.1		1.1	91.83644	3.9	ppb
[Co-KED3	59	117.7		11.5	0.04356	15.1	ppb
[Ni-KED3	60	42.7		25.1	0.04383	27.6	ppb
[Ni-KED3	62	11.3		56.7	0.07193	67.4	ppb
[Cu-KED3	63	778.7		4.9	0.31471	3.5	ppb
[Cu-KED3	65	381.3		5.3	0.29517	8.5	ppb
[Zn-KED3	66	203.7		4.1	0.43688	10.8	ppb
> Ge-KED3	72	65524.7		3.3			ppb
> Ge-KED2	72	288912.2		1.3			ppb
[As-KED2	75	85.7		6.8	0.04698	24.3	ppb
> Ge-KED1	72	865770.7		2.6			ppb
[Se-KED1	77	464.0		6.4	-0.07610	166.6	ppb
[Se-KED1	78	24.6		11.6	0.02775	20.0	ppb
[Mo-KED2	95	76.0		10.5	0.03117	7.6	ppb
[Mo-KED2	98	130.8		8.6	0.03234	12.7	ppb
> Rh-KED2	103	389323.1		4.2			ppb
[Ag-KED2	107	31.3		6.6	0.00200	12.9	ppb
[Ag-KED2	109	35.3		1.6	0.00313	8.2	ppb
[Cd-KED2	111	8.0		37.5	0.00163	156.0	ppb
[Cd-KED2	114	11.7		14.3	0.00081	91.9	ppb
[Sb-KED2	121	22.0		15.7	-0.00715	22.5	ppb
[Sb-KED2	123	21.0		17.4	-0.00327	73.4	ppb
[Ba-KED2	137	2527.6		2.0	2.82437	2.3	ppb
> Lu-KED2	175	177194.2		1.1			ppb
[Tl-KED2	203	8.0		25.0	0.00013	302.6	ppb
[Tl-KED2	205	23.0		19.9	0.00046	84.3	ppb
[Pb-KED2	208	364.0		5.5	0.01876	6.4	ppb
> Th-KED2	232	490446.5		1.4			ppb
[U-KED2	238	664.0		2.0	0.04694	3.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		99			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		101			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		98			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		100			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801357-002A
 Sample Date/Time: Monday, February 26, 2018 15:58:08
 Sample Description: +20ppb +10ppb Ag
 Autosampler Position: 325
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801357-002A.041
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1569960.2			0.5			ppb
[Be-STD1	9	189727.9			1.9	21.28054	2.3	ppb
[Mn-STD1	55	1038741.2			1.1	32.92155	1.6	ppb
> Ge-STD	72	1537438.6			0.4			ppb
> Al-KED2	27	167201.5			2.4	365.05773	0.4	ppb *
> Sc-KED2	45	86737.9			2.2			ppb
[V-KED3	51	20322.4			1.5	25.03945	1.7	ppb
[Cr-KED3	52	22533.8			1.9	20.28752	1.7	ppb
[Cr-KED3	53	2845.0			3.5	20.73880	3.7	ppb
[Fe-KED3	54	21729.5			1.7	472.24870	1.7	ppb
[Fe-KED3	56	418864.4			0.6	473.29516	0.4	ppb *
[Co-KED3	59	52128.0			1.9	20.29432	1.7	ppb
[Ni-KED3	60	16005.6			2.0	20.35559	2.2	ppb
[Ni-KED3	62	2556.2			3.8	19.38463	3.6	ppb
[Cu-KED3	63	51120.0			1.1	21.33718	1.0	ppb
[Cu-KED3	65	26746.4			1.8	21.32140	1.7	ppb
[Zn-KED3	66	5882.9			1.4	22.79107	1.2	ppb
> Ge-KED3	72	65384.6			0.3			ppb
> Ge-KED2	72	287978.1			0.8			ppb
[As-KED2	75	9713.6			0.7	20.22088	0.8	ppb
> Ge-KED1	72	865099.4			3.1			ppb
[Se-KED1	77	3334.4			2.6	20.95086	4.6	ppb
[Se-KED1	78	9276.7			2.7	21.17379	1.0	ppb
[Mo-KED2	95	43490.8			1.3	21.66826	0.5	ppb
[Mo-KED2	98	73381.9			0.8	21.48566	1.2	ppb
> Rh-KED2	103	383460.7			1.8			ppb
[Ag-KED2	107	81548.8			1.1	10.12728	2.0	ppb
[Ag-KED2	109	77990.7			0.9	10.20007	1.6	ppb
[Cd-KED2	111	22136.5			2.3	20.55348	2.5	ppb
[Cd-KED2	114	51028.9			2.5	20.41693	1.7	ppb
[Sb-KED2	121	36150.4			1.4	20.87068	2.3	ppb
[Sb-KED2	123	27716.6			2.3	21.32929	1.9	ppb
[Ba-KED2	137	31776.0			2.4	36.15594	2.5	ppb
> Lu-KED2	175	183075.7			1.1			ppb
[Tl-KED2	203	103858.8			0.6	19.64504	1.6	ppb
[Tl-KED2	205	249862.6			1.7	19.64635	1.5	ppb
[Pb-KED2	208	324300.7			0.9	19.47358	0.8	ppb
> Th-KED2	232	494904.8			0.6			ppb
[U-KED2	238	290481.6			0.6	20.55472	1.3	ppb

* 9x, 2A
 M 2/27/18

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		100			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		103			
[	Al-KED2	27					
[>	Sc-KED2	45		97			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		94			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		96			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802015-04
 Sample Date/Time: Monday, February 26, 2018 16:01:59
 Sample Description:
 Autosampler Position: 326
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802015-04.042
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6		1518221.6		4.0			ppb
[Be-STD1	9		22362.8		1.5	2.59243	2.6	ppb
[Mn-STD1	55		1118201.0		3.2	36.09202	1.6	ppb
[> Ge-STD	72		1509623.3		2.4			ppb
[> Al-KED2	27		199485.9		3.9	435.36422	1.3	ppb
[> Sc-KED2	45		86780.6		2.7			ppb
[V-KED3	51		23033.6		0.9	28.89789	2.6	ppb
[Cr-KED3	52		10878.1		1.8	9.96141	1.5	ppb
[Cr-KED3	53		1370.1		1.6	10.05533	3.2	ppb
[Fe-KED3	54		21828.1		0.9	482.85485	2.0	ppb
[Fe-KED3	56		429955.2		1.2	494.68733	3.7	ppb
[Co-KED3	59		61726.7		0.6	24.46386	2.9	ppb
[Ni-KED3	60		18809.4		1.9	24.35780	4.3	ppb
[Ni-KED3	62		3179.0		2.0	24.54850	4.0	ppb
[Cu-KED3	63		31613.6		2.7	13.42960	4.2	ppb
[Cu-KED3	65		16367.0		0.8	13.27887	3.2	ppb
[Zn-KED3	66		6555.2		1.6	25.89366	1.7	ppb
[> Ge-KED3	72		64262.9		2.5			ppb
[> Ge-KED2	72		287291.6		2.9			ppb
[As-KED2	75		23544.7		1.4	49.33401	1.9	ppb
[> Ge-KED1	72		848719.6		3.5			ppb
[Se-KED1	77		7157.8		3.3	49.97116	5.0	ppb
[Se-KED1	78		21688.9		3.0	50.51187	2.6	ppb
[Mo-KED2	95		43527.6		3.0	21.53529	1.7	ppb
[Mo-KED2	98		73891.8		2.7	21.48300	1.5	ppb
[> Rh-KED2	103		386076.6		1.3			ppb
[Ag-KED2	107		98391.0		0.9	12.13452	0.6	ppb
[Ag-KED2	109		94584.8		1.3	12.28498	0.8	ppb
[Cd-KED2	111		26761.7		3.3	24.67475	2.4	ppb
[Cd-KED2	114		63380.9		2.3	25.18774	1.8	ppb
[Sb-KED2	121		17208.4		3.3	9.85497	3.1	ppb
[Sb-KED2	123		12871.0		3.4	9.82726	3.3	ppb
[Ba-KED2	137		104252.0		0.7	117.84623	1.8	ppb
[> Lu-KED2	175		180765.9		1.3			ppb
[Tl-KED2	203		247772.3		0.6	47.46665	1.3	ppb
[Tl-KED2	205		596128.1		1.8	47.47168	0.9	ppb
[Pb-KED2	208		774599.3		1.2	47.11127	0.2	ppb
[> Th-KED2	232		493788.3		1.6			ppb
[U-KED2	238		301801.6		1.1	21.40413	0.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					97
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				101	
[	Al-KED2	27					
[>	Sc-KED2	45					97
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72					91
[>	Ge-KED2	72					94
[	As-KED2	75					
[>	Ge-KED1	72					94
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103					97
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175					102
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232					102
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801357-001
 Sample Date/Time: Monday, February 26, 2018 16:05:50
 Sample Description:
 Autosampler Position: 327
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801357-001.043
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1541968.2		4.8			ppb
[Be-STD1	9	27.3		37.5	-0.00023	529.4	ppb
[Mn-STD1	55	467843.7		1.0	16.33168	2.2	ppb
> Ge-STD	72	1394829.8		2.7			ppb
> Al-KED2	27	16483.2		4.4	34.96427	3.7	ppb
> Sc-KED2	45	87940.2		0.9			ppb
[V-KED3	51	3362.4		1.4	4.17993	0.6	ppb
[Cr-KED3	52	544.0		4.7	0.49165	5.7	ppb
[Cr-KED3	53	111.3		18.7	0.62209	24.3	ppb
[Fe-KED3	54	1556.7		4.2	33.44351	5.0	ppb
[Fe-KED3	56	30888.7		0.9	34.32395	0.4	ppb
[Co-KED3	59	529.7		6.4	0.20897	6.1	ppb
[Ni-KED3	60	592.3		6.1	0.76217	6.9	ppb
[Ni-KED3	62	112.7		21.4	0.86089	20.9	ppb
[Cu-KED3	63	16859.3		1.2	7.20194	0.3	ppb
[Cu-KED3	65	8529.9		1.7	6.95938	0.8	ppb
[Zn-KED3	66	10071.5		1.1	40.24581	1.1	ppb
> Ge-KED3	72	63828.6		0.9			ppb
> Ge-KED2	72	282031.8		0.5			ppb
[As-KED2	75	247.0		11.7	0.39671	16.2	ppb
> Ge-KED1	72	846151.8		4.1			ppb
[Se-KED1	77	442.7		6.3	-0.14728	214.4	ppb
[Se-KED1	78	135.8		4.8	0.28875	0.9	ppb
[Mo-KED2	95	1733.4		3.1	0.91776	3.5	ppb
[Mo-KED2	98	2864.9		2.2	0.89157	1.4	ppb
> Rh-KED2	103	358606.2		1.2			ppb
[Ag-KED2	107	86.3		8.5	0.00964	11.3	ppb
[Ag-KED2	109	77.7		25.8	0.00946	31.0	ppb
[Cd-KED2	111	244.7		10.5	0.23712	9.7	ppb
[Cd-KED2	114	571.2		3.4	0.24063	4.0	ppb
[Sb-KED2	121	366.0		11.0	0.20643	11.6	ppb
[Sb-KED2	123	295.0		3.6	0.22388	5.1	ppb
[Ba-KED2	137	11071.6		1.6	13.46219	0.5	ppb
> Lu-KED2	175	177028.2		0.9			ppb
[Tl-KED2	203	30.7		18.8	0.00456	24.3	ppb
[Tl-KED2	205	79.0		28.7	0.00502	37.1	ppb
[Pb-KED2	208	3012.5		2.4	0.18331	3.4	ppb
> Th-KED2	232	482417.9		1.4			ppb
[U-KED2	238	468.0		10.4	0.03346	9.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		93			
[	Al-KED2	27					
[>	Sc-KED2	45		98			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		90			
[>	Ge-KED2	72		92			
[	As-KED2	75					
[>	Ge-KED1	72		94			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		90			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		100			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801357-002
 Sample Date/Time: Monday, February 26, 2018 16:09:41
 Sample Description:
 Autosampler Position: 328
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801357-002.044
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1529951.4		1.9			ppb
[Be-STD1	9	111.3		14.6	0.00945	21.1	ppb
[Mn-STD1	55	221619.4		1.7	7.20550	1.1	ppb
[> Ge-STD	72	1493130.4		1.7			ppb
[> Al-KED2	27	63630.5		3.1	136.11384	3.9	ppb
[> Sc-KED2	45	88331.0		2.4			ppb
[V-KED3	51	3675.8		0.7	4.44549	2.9	ppb
[Cr-KED3	52	190.7		9.7	0.16073	13.1	ppb
[Cr-KED3	53	60.7		28.0	0.22732	54.5	ppb
[Fe-KED3	54	7119.7		1.3	153.11971	2.1	ppb
[Fe-KED3	56	139974.0		2.2	156.46766	4.7	ppb
[Co-KED3	59	301.3		7.0	0.11467	9.8	ppb
[Ni-KED3	60	199.0		4.0	0.24203	6.5	ppb
[Ni-KED3	62	41.3		11.2	0.29827	12.0	ppb
[Cu-KED3	63	3847.9		3.8	1.58877	1.6	ppb
[Cu-KED3	65	1976.8		2.9	1.56123	5.3	ppb
[Zn-KED3	66	842.4		2.0	2.93582	2.0	ppb
[> Ge-KED3	72	65713.5		2.6			ppb
[> Ge-KED2	72	294599.2		2.2			ppb
[As-KED2	75	181.0		9.2	0.23873	13.2	ppb
[> Ge-KED1	72	862892.6		3.0			ppb
[Se-KED1	77	485.3		2.9	0.09609	157.3	ppb
[Se-KED1	78	48.5		14.5	0.08250	15.3	ppb
[Mo-KED2	95	352.0		3.5	0.16388	4.9	ppb
[Mo-KED2	98	596.5		4.6	0.16369	4.2	ppb
[> Rh-KED2	103	396142.1		4.1			ppb
[Ag-KED2	107	107.7		5.7	0.01111	4.3	ppb
[Ag-KED2	109	95.0		14.7	0.01057	11.9	ppb
[Cd-KED2	111	11.7		26.2	0.00477	48.2	ppb
[Cd-KED2	114	17.8		31.7	0.00314	76.9	ppb
[Sb-KED2	121	56.0		14.3	0.01183	47.1	ppb
[Sb-KED2	123	38.5		9.7	0.00958	40.4	ppb
[Ba-KED2	137	10939.5		1.2	12.05678	5.0	ppb
[> Lu-KED2	175	178872.6		0.8			ppb
[Tl-KED2	203	22.0		15.7	0.00282	22.8	ppb
[Tl-KED2	205	56.7		8.7	0.00315	13.6	ppb
[Pb-KED2	208	681.7		6.1	0.03809	7.4	ppb
[> Th-KED2	232	490160.2		1.4			ppb
[U-KED2	238	2716.3		2.4	0.19360	2.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					
[	Be-STD1	9				98	
[	Mn-STD1	55					
[>	Ge-STD	72				100	
[	Al-KED2	27					
[>	Sc-KED2	45				99	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				93	
[>	Ge-KED2	72				97	
[	As-KED2	75					
[>	Ge-KED1	72				96	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				99	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				101	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				101	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-020
 Sample Date/Time: Monday, February 26, 2018 16:13:33
 Sample Description:
 Autosampler Position: 303
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-020.045
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1534360.9		2.5			ppb
[Be-STD1	9	64.0		0.0	0.00397	4.6	ppb
[Mn-STD1	55	47142359.3		3.1	1613.55262	1.8	ppb
> Ge-STD	72	1425793.5		4.8			ppb
[Al-KED2	27	2898.0		4.4	5.74882	4.4	ppb
> Sc-KED2	45	86834.6		3.3			ppb
[V-KED3	51	13503.4		2.9	17.19016	4.4	ppb
[Cr-KED3	52	465.7		2.2	0.42338	2.5	ppb
[Cr-KED3	53	235.3		15.0	1.57349	15.4	ppb
[Fe-KED3	54	428087.7		1.6	9650.36716	2.9	ppb
[Fe-KED3	56	8604116.0		3.4	10084.57600	1.9	ppb
[Co-KED3	59	12751.7		1.3	5.13393	2.4	ppb
[Ni-KED3	60	11452.9		2.7	15.06796	4.3	ppb
[Ni-KED3	62	1866.1		3.5	14.63284	3.0	ppb
[Cu-KED3	63	7121.8		2.4	3.06624	2.4	ppb
[Cu-KED3	65	3621.8		0.8	2.97873	0.9	ppb
[Zn-KED3	66	1557.1		3.1	5.97534	3.3	ppb
> Ge-KED3	72	63220.9		1.6			ppb
> Ge-KED2	72	280734.2		1.2			ppb
[As-KED2	75	572.3		7.9	1.09758	7.6	ppb
> Ge-KED1	72	846328.9		2.1			ppb
[Se-KED1	77	452.0		10.3	-0.08953	310.1	ppb
[Se-KED1	78	36.7		15.2	0.05729	24.7	ppb
[Mo-KED2	95	1730.1		1.9	0.90257	2.5	ppb
[Mo-KED2	98	2974.1		1.7	0.91222	0.7	ppb
> Rh-KED2	103	363931.8		1.9			ppb
[Ag-KED2	107	23.0		7.5	0.00118	18.4	ppb
[Ag-KED2	109	21.7		5.3	0.00156	9.8	ppb
[Cd-KED2	111	14.3		52.8	0.00830	86.3	ppb
[Cd-KED2	114	19.0		21.7	0.00421	45.4	ppb
[Sb-KED2	121	122.7		18.8	0.05510	25.8	ppb
[Sb-KED2	123	103.8		7.1	0.06498	6.7	ppb
[Ba-KED2	137	36052.1		3.3	43.22136	2.9	ppb
> Lu-KED2	175	181993.3		2.3			ppb
[Tl-KED2	203	14.7		20.8	0.00137	47.1	ppb
[Tl-KED2	205	28.3		11.3	0.00083	26.7	ppb
[Pb-KED2	208	2176.1		4.3	0.12765	4.1	ppb
> Th-KED2	232	492080.4		0.6			ppb
[U-KED2	238	123.3		15.4	0.00829	15.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6					98
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72					95
[	Al-KED2	27					
[>	Sc-KED2	45					97
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72					89
[>	Ge-KED2	72					92
[	As-KED2	75					
[>	Ge-KED1	72					94
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103					91
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175					103
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232					101
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-021
 Sample Date/Time: Monday, February 26, 2018 16:17:25
 Sample Description:
 Autosampler Position: 308
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-021.046
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1546335.0		1.8			ppb
[Be-STD1	9	42.7		14.3	0.00149	52.1	ppb
[Mn-STD1	55	11171.7		4.3	0.33728	5.1	ppb
[> Ge-STD	72	1466391.8		2.0			ppb
[Al-KED2	27	1480.7		0.7	2.59429	4.0	ppb
[> Sc-KED2	45	88464.3		3.6			ppb
[V-KED3	51	1936.1		3.7	2.34221	3.6	ppb
[Cr-KED3	52	231.7		3.0	0.20063	6.1	ppb
[Cr-KED3	53	67.3		15.2	0.28496	28.7	ppb
[Fe-KED3	54	849.5		5.7	17.38479	3.6	ppb
[Fe-KED3	56	16497.9		0.3	17.36587	3.0	ppb
[Co-KED3	59	399.7		5.6	0.15527	8.7	ppb
[Ni-KED3	60	3083.7		1.6	3.95667	2.0	ppb
[Ni-KED3	62	519.3		8.2	3.97244	8.9	ppb
[Cu-KED3	63	17019.5		1.9	7.17588	2.5	ppb
[Cu-KED3	65	8688.3		0.9	6.99924	3.8	ppb
[Zn-KED3	66	26869.2		1.4	106.55981	1.9	ppb
[> Ge-KED3	72	64693.9		2.9			ppb
[> Ge-KED2	72	291506.0		2.1			ppb
[As-KED2	75	168.0		7.8	0.21555	9.3	ppb
[> Ge-KED1	72	863708.8		2.6			ppb
[Se-KED1	77	484.7		10.2	0.08139	338.3	ppb
[Se-KED1	78	38.2		5.9	0.05889	7.9	ppb
[Mo-KED2	95	926.0		1.9	0.45260	2.2	ppb
[Mo-KED2	98	1590.8		1.4	0.45751	1.3	ppb
[> Rh-KED2	103	385827.5		0.4			ppb
[Ag-KED2	107	26.0		20.4	0.00138	47.8	ppb
[Ag-KED2	109	21.0		8.2	0.00130	17.1	ppb
[Cd-KED2	111	220.7		3.9	0.19801	4.1	ppb
[Cd-KED2	114	493.5		6.5	0.19245	6.4	ppb
[Sb-KED2	121	266.0		4.7	0.13309	5.1	ppb
[Sb-KED2	123	187.5		2.0	0.12432	1.9	ppb
[Ba-KED2	137	12045.7		0.8	13.61379	0.5	ppb
[> Lu-KED2	175	179679.4		1.5			ppb
[TI-KED2	203	46.7		2.5	0.00756	3.7	ppb
[TI-KED2	205	107.0		3.4	0.00717	5.7	ppb
[Pb-KED2	208	308.3		0.7	0.01504	2.6	ppb
[> Th-KED2	232	498183.5		1.4			ppb
[U-KED2	238	221.3		8.2	0.01508	8.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		99			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		98			
[	Al-KED2	27					
[>	Sc-KED2	45		99			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		96			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		97			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		101			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		103			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 16:21:19
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCV.047
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1551685.1		1.1			ppb
[	Be-STD1	9	229178.5		1.1	26.01139	2.2	ppb
[	Mn-STD1	55	774049.6		3.4	25.67342	1.7	ppb
[>	Ge-STD	72	1468370.1		1.9			ppb
[	Al-KED2	27	11761.8		4.3	24.94128	2.4	ppb
[>	Sc-KED2	45	87408.1		3.6			ppb
[	V-KED3	51	20416.2		0.9	24.27856	2.2	ppb
|	Cr-KED3	52	28445.6		0.6	24.72482	2.4	ppb
|	Cr-KED3	53	3524.4		1.9	24.83834	1.9	ppb
|	Fe-KED3	54	11589.8		0.0	242.49351	1.9	ppb
|	Fe-KED3	56	224115.0		1.7	243.69545	2.6	ppb
|	Co-KED3	59	66304.9		1.0	24.92040	2.7	ppb
|	Ni-KED3	60	20439.3		1.3	25.09244	2.1	ppb
|	Ni-KED3	62	3403.7		3.3	24.91469	2.7	ppb
|	Cu-KED3	63	60760.5		5.4	24.47708	5.1	ppb
|	Cu-KED3	65	31785.0		1.4	24.45525	0.5	ppb
|	Zn-KED3	66	6538.2		1.7	24.47404	1.8	ppb
[>	Ge-KED3	72	67753.0		1.8			ppb
[>	Ge-KED2	72	298300.4		3.0			ppb
[	As-KED2	75	12275.3		4.6	24.69021	1.9	ppb
[>	Ge-KED1	72	884152.9		4.0			ppb
|	Se-KED1	77	4085.9		6.7	25.77300	3.4	ppb
[	Se-KED1	78	11435.9		0.7	25.57380	4.5	ppb
[	Mo-KED2	95	25944.2		1.5	12.29502	1.4	ppb
|	Mo-KED2	98	43924.1		2.7	12.23230	2.8	ppb
[>	Rh-KED2	103	403038.5		0.7			ppb
|	Ag-KED2	107	104555.0		1.7	12.35162	1.6	ppb
|	Ag-KED2	109	101450.2		3.0	12.62116	2.6	ppb
|	Cd-KED2	111	27824.1		1.3	24.57680	0.7	ppb
|	Cd-KED2	114	64282.8		1.0	24.47133	0.8	ppb
|	Sb-KED2	121	22184.6		2.3	12.17439	2.1	ppb
|	Sb-KED2	123	17034.1		2.3	12.46267	1.8	ppb
[	Ba-KED2	137	22953.8		0.8	24.84281	0.4	ppb
[>	Lu-KED2	175	178142.1		2.8			ppb
|	Tl-KED2	203	127788.3		4.0	24.83580	2.2	ppb
|	Tl-KED2	205	310117.4		0.8	25.06911	2.2	ppb
[	Pb-KED2	208	404210.9		1.0	24.95353	2.1	ppb
[>	Th-KED2	232	495893.2		2.2			ppb
[	U-KED2	238	353635.3		1.3	24.97628	1.3	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				99	
[	Be-STD1	9	104				
[	Mn-STD1	55	103				
[>	Ge-STD	72				98	
[	Al-KED2	27	100				
[>	Sc-KED2	45				98	
[	V-KED3	51	97				
[	Cr-KED3	52	99				
[	Cr-KED3	53	99				
[	Fe-KED3	54	97				
[	Fe-KED3	56	97				
[	Co-KED3	59	100				
[	Ni-KED3	60	100				
[	Ni-KED3	62	100				
[	Cu-KED3	63	98				
[	Cu-KED3	65	98				
[	Zn-KED3	66	98				
[>	Ge-KED3	72				95	
[>	Ge-KED2	72				98	
[	As-KED2	75	99				
[>	Ge-KED1	72				98	
[	Se-KED1	77	103				
[	Se-KED1	78	102				
[	Mo-KED2	95	98				
[	Mo-KED2	98	98				
[>	Rh-KED2	103				101	
[	Ag-KED2	107	99				
[	Ag-KED2	109	101				
[	Cd-KED2	111	98				
[	Cd-KED2	114	98				
[	Sb-KED2	121	97				
[	Sb-KED2	123	100				
[	Ba-KED2	137	99				
[>	Lu-KED2	175				101	
[	Tl-KED2	203	99				
[	Tl-KED2	205	100				
[	Pb-KED2	208	100				
[>	Th-KED2	232				102	
[U-KED2	238	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 16:25:11
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.048
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1544409.7	3.3			ppb
[	Be-STD1	9	32.7	35.3	0.00037	380.7	ppb
[	Mn-STD1	55	2700.3	23.7	0.05486	37.7	ppb
[>	Ge-STD	72	1474343.4	1.0			ppb
[	Al-KED2	27	289.3	4.5	0.05080	36.6	ppb
[>	Sc-KED2	45	86579.8	3.8			ppb
[	V-KED3	51	100.0	8.7	0.04461	23.8	ppb
|	Cr-KED3	52	12.0	22.0	0.00010	2451.9	ppb
|	Cr-KED3	53	44.7	10.3	0.10573	32.1	ppb
|	Fe-KED3	54	69.0	16.5	0.15733	153.8	ppb
|	Fe-KED3	56	1682.1	3.0	0.32443	18.2	ppb
|	Co-KED3	59	9.7	47.8	0.00142	124.5	ppb
|	Ni-KED3	60	6.3	24.1	-0.00225	84.7	ppb
|	Ni-KED3	62	2.7	43.3	0.00587	146.2	ppb
|	Cu-KED3	63	24.0	16.7	0.00009	1845.6	ppb
|	Cu-KED3	65	12.3	36.6	0.00084	422.8	ppb
|	Zn-KED3	66	91.7	16.6	-0.00979	595.9	ppb
[>	Ge-KED3	72	66635.0	0.2			ppb
[>	Ge-KED2	72	295066.1	1.8			ppb
[	As-KED2	75	71.0	18.6	0.01299	190.0	ppb
[>	Ge-KED1	72	879026.4	4.2			ppb
|	Se-KED1	77	450.0	7.0	-0.22492	92.2	ppb
|	Se-KED1	78	14.7	27.6	0.00430	179.9	ppb
|	Mo-KED2	95	22.7	10.2	0.00498	18.9	ppb
|	Mo-KED2	98	34.3	35.5	0.00435	77.0	ppb
[>	Rh-KED2	103	391473.4	2.0			ppb
|	Ag-KED2	107	40.7	51.8	0.00309	79.6	ppb
|	Ag-KED2	109	39.3	30.6	0.00360	41.0	ppb
|	Cd-KED2	111	13.3	21.7	0.00648	41.1	ppb
|	Cd-KED2	114	15.1	76.8	0.00206	214.1	ppb
|	Sb-KED2	121	43.3	16.2	0.00484	72.0	ppb
|	Sb-KED2	123	27.6	7.9	0.00162	75.8	ppb
[	Ba-KED2	137	14.3	38.4	0.00536	110.6	ppb
[>	Lu-KED2	175	179211.5	2.5			ppb
|	Tl-KED2	203	18.0	0.0	0.00205	4.2	ppb
|	Tl-KED2	205	48.0	21.8	0.00246	37.3	ppb
[	Pb-KED2	208	98.3	5.1	0.00220	8.3	ppb
[>	Th-KED2	232	487510.3	1.7			ppb
[	U-KED2	238	23.3	48.7	0.00120	70.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				99	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72				98	
[	Al-KED2	27					
[>	Sc-KED2	45				97	
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72				94	
[>	Ge-KED2	72				97	
[	As-KED2	75					
[>	Ge-KED1	72				98	
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103				98	
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175				101	
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232				101	
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801202-022
 Sample Date/Time: Monday, February 26, 2018 16:29:04
 Sample Description:
 Autosampler Position: 309
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801202-022.049
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1517306.9		0.6			ppb
[Be-STD1	9	74.7		27.4	0.00528	43.7	ppb
[Mn-STD1	55	19721081.2		1.7	657.85491	2.8	ppb
> Ge-STD	72	1462602.6		2.2			ppb
[Al-KED2	27	8035.9		3.1	17.08946	0.4	ppb
> Sc-KED2	45	86247.7		2.8			ppb
[V-KED3	51	2958.0		2.9	3.63593	2.9	ppb
[Cr-KED3	52	463.3		3.0	0.41335	2.7	ppb
[Cr-KED3	53	194.7		2.1	1.23904	1.9	ppb
[Fe-KED3	54	338589.0		1.9	7492.53400	1.3	ppb
[Fe-KED3	56	6923990.7		2.0	7969.78281	1.3	ppb
[Co-KED3	59	10523.5		1.3	4.15910	0.7	ppb
[Ni-KED3	60	1324.7		3.1	1.70196	3.8	ppb
[Ni-KED3	62	230.0		3.1	1.75895	3.6	ppb
[Cu-KED3	63	9467.1		1.2	4.00560	1.9	ppb
[Cu-KED3	65	4971.5		1.4	4.01776	0.8	ppb
[Zn-KED3	66	2082.5		1.5	7.96076	1.3	ppb
> Ge-KED3	72	64380.4		0.7			ppb
> Ge-KED2	72	285743.1		2.0			ppb
[As-KED2	75	498.7		3.0	0.92104	2.1	ppb
> Ge-KED1	72	855389.9		2.9			ppb
[Se-KED1	77	491.3		10.7	0.16417	170.4	ppb
[Se-KED1	78	48.6		9.0	0.08403	15.0	ppb
[Mo-KED2	95	3743.8		1.3	1.93754	1.1	ppb
[Mo-KED2	98	6282.3		5.3	1.91028	4.0	ppb
> Rh-KED2	103	368144.1		2.3			ppb
[Ag-KED2	107	60.7		50.4	0.00608	69.0	ppb
[Ag-KED2	109	46.7		9.7	0.00494	15.2	ppb
[Cd-KED2	111	17.0		21.2	0.01083	34.7	ppb
[Cd-KED2	114	26.4		14.8	0.00721	25.6	ppb
[Sb-KED2	121	260.0		12.7	0.13658	12.1	ppb
[Sb-KED2	123	190.0		11.1	0.13313	11.7	ppb
[Ba-KED2	137	17438.6		1.7	20.66408	1.5	ppb
> Lu-KED2	175	177592.0		2.0			ppb
[Tl-KED2	203	10.7		57.3	0.00066	184.6	ppb
[Tl-KED2	205	39.0		18.5	0.00176	36.4	ppb
[Pb-KED2	208	2735.1		0.9	0.16555	2.3	ppb
> Th-KED2	232	482718.1		2.0			ppb
[U-KED2	238	355.3		10.8	0.02533	12.8	ppb

*CONFIRMS
2/27/18*

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		97			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		98			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		94			
[	As-KED2	75					
[>	Ge-KED1	72		95			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		92			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		100			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801300-001
 Sample Date/Time: Monday, February 26, 2018 16:32:57
 Sample Description: 2X
 Autosampler Position: 329
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801300-001.050
 User Name: RRM
 Batch ID: D

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1430546.6			2.6			ppb
[Be-STD1	9	26.7			8.7	-0.00009	305.2	ppb
[Mn-STD1	55	64056.7			2.9	2.44360	2.4	ppb
> Ge-STD	72	1260746.3			0.7			ppb
[Al-KED2	27	1404.7			2.4	2.76436	2.6	ppb
> Sc-KED2	45	79600.8			1.3			ppb
[V-KED3	51	319.7			9.6	0.39186	10.9	ppb
[Cr-KED3	52	456.0			5.2	0.47670	4.9	ppb
[Cr-KED3	53	72.0			19.4	0.41246	30.4	ppb
[Fe-KED3	54	170.5			23.4	3.08972	33.6	ppb
[Fe-KED3	56	3863.9			1.3	3.64967	2.6	ppb
[Co-KED3	59	107.7			1.4	0.04746	1.4	ppb
[Ni-KED3	60	876.4			0.8	1.31263	1.1	ppb
[Ni-KED3	62	144.0			11.9	1.28188	11.4	ppb
[Cu-KED3	63	1274.1			2.3	0.62141	2.6	ppb
[Cu-KED3	65	659.3			5.3	0.61509	5.9	ppb
[Zn-KED3	66	304.3			5.0	1.05748	7.4	ppb
> Ge-KED3	72	55118.5			0.6			ppb
> Ge-KED2	72	246463.5			1.6			ppb
[As-KED2	75	214.7			5.6	0.39353	6.3	ppb
> Ge-KED1	72	739871.5			1.3			ppb
[Se-KED1	77	450.0			2.5	0.38391	25.4	ppb
[Se-KED1	78	131.6			9.6	0.32341	11.5	ppb
[Mo-KED2	95	3539.1			1.6	2.13444	2.0	ppb
[Mo-KED2	98	6191.0			2.2	2.19436	0.6	ppb
> Rh-KED2	103	316051.6			2.8			ppb
[Ag-KED2	107	16.0			31.3	0.00057	122.7	ppb
[Ag-KED2	109	15.3			15.1	0.00101	38.5	ppb
[Cd-KED2	111	14.0			12.4	0.01015	22.8	ppb
[Cd-KED2	114	31.6			26.6	0.01149	34.3	ppb
[Sb-KED2	121	259.3			6.9	0.16232	9.1	ppb
[Sb-KED2	123	201.2			6.7	0.16915	10.0	ppb
[Ba-KED2	137	12299.0			1.7	16.97509	1.1	ppb
> Lu-KED2	175	165382.8			2.4			ppb
[Tl-KED2	203	24.0			28.9	0.00361	43.8	ppb
[Tl-KED2	205	69.7			4.6	0.00466	6.7	ppb
[Pb-KED2	208	358.0			9.1	0.01996	9.1	ppb
> Th-KED2	232	460549.3			1.3			ppb
[U-KED2	238	19291.7			0.8	1.46649	0.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		91			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		84			
[	Al-KED2	27					
[>	Sc-KED2	45		89			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		78			
[>	Ge-KED2	72		81			
[	As-KED2	75					
[>	Ge-KED1	72		82			
|	Se-KED1	77					
|	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		79			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		93			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		95			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: P7204894
 Sample Date/Time: Monday, February 26, 2018 16:36:48
 Sample Description:
 Autosampler Position: 330
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\P7204894.051
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6		1611067.5	1.3			ppb
[Be-STD1	9		246.7	99.5	0.02335	113.0	ppb
[Mn-STD1	55		31409.8	103.7	1.06925	106.5	ppb
[> Ge-STD	72		1403465.8	3.2			ppb
[Al-KED2	27		694.4	4.4	0.95773	4.5	ppb
[> Sc-KED2	45		85451.5	1.9			ppb
[V-KED3	51		103.7	3.7	0.05183	11.4	ppb
[Cr-KED3	52		26.0	0.0	0.01297	2.7	ppb
[Cr-KED3	53		48.0	18.2	0.13757	48.3	ppb
[Fe-KED3	54		64.6	12.9	0.09272	183.4	ppb
[Fe-KED3	56		1584.4	2.6	0.25400	13.3	ppb
[Co-KED3	59		8.7	24.0	0.00112	75.5	ppb
[Ni-KED3	60		11.7	9.9	0.00474	34.2	ppb
[Ni-KED3	62		4.0	50.0	0.01632	90.4	ppb
[Cu-KED3	63		51.3	11.9	0.01176	22.9	ppb
[Cu-KED3	65		21.0	17.2	0.00800	38.6	ppb
[Zn-KED3	66		133.7	11.6	0.16360	36.7	ppb
[> Ge-KED3	72		65215.9	1.5			ppb
[> Ge-KED2	72		288897.3	0.5			ppb
[As-KED2	75		76.0	3.5	0.02682	19.8	ppb
[> Ge-KED1	72		861083.5	1.6			ppb
[Se-KED1	77		394.0	2.7	-0.56920	19.5	ppb
[Se-KED1	78		17.3	28.3	0.01135	103.7	ppb
[Mo-KED2	95		10.0	52.9	-0.00111	235.1	ppb
[Mo-KED2	98		19.9	42.3	0.00036	690.7	ppb
[> Rh-KED2	103		384578.0	0.9			ppb
[Ag-KED2	107		10.7	44.3	-0.00051	112.5	ppb
[Ag-KED2	109		9.7	31.6	-0.00016	253.2	ppb
[Cd-KED2	111		7.7	32.8	0.00145	161.7	ppb
[Cd-KED2	114		14.7	39.7	0.00208	115.4	ppb
[Sb-KED2	121		30.0	23.1	-0.00233	175.1	ppb
[Sb-KED2	123		22.2	36.7	-0.00207	312.1	ppb
[Ba-KED2	137		18.3	8.3	0.01023	18.9	ppb
[> Lu-KED2	175		175491.1	1.3			ppb
[Tl-KED2	203		4.7	65.5	-0.00051	117.6	ppb
[Tl-KED2	205		14.0	37.8	-0.00026	174.8	ppb
[Pb-KED2	208		63.0	10.4	0.00012	358.5	ppb
[> Th-KED2	232		485800.3	0.8			ppb
[U-KED2	238		10.7	54.1	0.00029	144.7	ppb

*Done
3/1/18*

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		103			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		94			
[	Al-KED2	27					
[>	Sc-KED2	45		95			
[	V-KED3	51					
[	Cr-KED3	52					
[	Cr-KED3	53					
[	Fe-KED3	54					
[	Fe-KED3	56					
[	Co-KED3	59					
[	Ni-KED3	60					
[	Ni-KED3	62					
[	Cu-KED3	63					
[	Cu-KED3	65					
[	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		96			
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
[	Mo-KED2	98					
[>	Rh-KED2	103		96			
[	Ag-KED2	107					
[	Ag-KED2	109					
[	Cd-KED2	111					
[	Cd-KED2	114					
[	Sb-KED2	121					
[	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		99			
[	Tl-KED2	203					
[	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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out of limits

LABWORKS - Summary Report

Sample ID: P7138151
 Sample Date/Time: Monday, February 26, 2018 16:40:39
 Sample Description:
 Autosampler Position: 331
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\P7138151.052
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1661790.4			3.6			ppb
[Be-STD1	9	1814.1			12.4	-0.00140	15.1	ppb
[Mn-STD1	55	1814.1			3.5	0.02843	3.0	ppb
[> Ge-STD	72	1407929.9			3.1			ppb
[Al-KED2	27	520.0			6.5	0.57359	11.2	ppb
[> Sc-KED2	45	85244.3			1.1			ppb
[V-KED3	51	147.7			16.7	0.10819	27.6	ppb
| Cr-KED3	52	26.3			7.9	0.01353	13.5	ppb
| Cr-KED3	53	62.7			26.6	0.25034	48.9	ppb
| Fe-KED3	54	71.3			11.3	0.25657	72.0	ppb
| Fe-KED3	56	1626.8			4.2	0.32206	21.6	ppb
| Co-KED3	59	4.3			35.3	-0.00056	108.3	ppb
| Ni-KED3	60	11.3			39.8	0.00446	131.1	ppb
| Ni-KED3	62	3.3			34.6	0.01164	75.9	ppb
| Cu-KED3	63	24.7			18.7	0.00070	285.3	ppb
| Cu-KED3	65	22.3			21.2	0.00923	41.3	ppb
| Zn-KED3	66	144.0			3.5	0.21065	9.8	ppb
[> Ge-KED3	72	64514.3			0.6			ppb
[> Ge-KED2	72	290301.3			1.8			ppb
[As-KED2	75	77.7			3.0	0.02955	17.6	ppb
[> Ge-KED1	72	865276.8			3.5			ppb
| Se-KED1	77	478.0			3.7	0.03430	604.8	ppb
[Se-KED1	78	13.7			7.8	0.00270	54.9	ppb
[Mo-KED2	95	10.7			57.3	-0.00072	430.6	ppb
[Mo-KED2	98	18.5			33.3	0.00000	66220.4	ppb
[> Rh-KED2	103	382720.2			1.4			ppb
| Ag-KED2	107	11.3			20.4	-0.00042	65.5	ppb
| Ag-KED2	109	6.7			17.3	-0.00055	30.0	ppb
| Cd-KED2	111	8.3			42.1	0.00210	154.4	ppb
| Cd-KED2	114	11.0			34.3	0.00060	264.2	ppb
| Sb-KED2	121	26.0			13.3	-0.00460	39.3	ppb
| Sb-KED2	123	19.7			18.8	-0.00395	74.5	ppb
[Ba-KED2	137	13.3			24.1	0.00466	83.9	ppb
[> Lu-KED2	175	174399.2			1.5			ppb
| Tl-KED2	203	4.7			65.5	-0.00050	124.5	ppb
| Tl-KED2	205	5.3			47.2	-0.00097	21.2	ppb
[Pb-KED2	208	44.7			23.5	-0.00101	64.9	ppb
[> Th-KED2	232	486554.7			1.4			ppb
[U-KED2	238	7.3			41.7	0.00005	469.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		106			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		94			
[	Al-KED2	27					
[>	Sc-KED2	45		95			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		96			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: P7198465
 Sample Date/Time: Monday, February 26, 2018 16:44:30
 Sample Description:
 Autosampler Position: 332
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\P7198465.053
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1575424.4	1.4			ppb
[	Be-STD1	9	18.0	29.4	-0.00137	41.4	ppb
[	Mn-STD1	55	1300.1	3.3	0.01204	5.4	ppb
[>	Ge-STD	72	1364739.8	1.9			ppb
[	Al-KED2	27	461.3	7.1	0.42564	14.9	ppb
[>	Sc-KED2	45	86729.6	2.5			ppb
[	V-KED3	51	135.0	3.9	0.09305	6.8	ppb
|	Cr-KED3	52	28.3	8.2	0.01547	15.3	ppb
|	Cr-KED3	53	68.0	8.8	0.29243	15.8	ppb
|	Fe-KED3	54	53.2	16.4	-0.14048	123.0	ppb
|	Fe-KED3	56	1503.4	0.7	0.18716	16.8	ppb
|	Co-KED3	59	5.0	20.0	-0.00029	124.3	ppb
|	Ni-KED3	60	6.0	16.7	-0.00239	55.0	ppb
|	Ni-KED3	62	0.7	173.2	-0.00879	102.5	ppb
|	Cu-KED3	63	28.7	64.8	0.00235	324.8	ppb
|	Cu-KED3	65	16.0	32.5	0.00419	103.8	ppb
|	Zn-KED3	66	93.0	7.5	0.00848	314.3	ppb
[>	Ge-KED3	72	64281.7	1.7			ppb
[>	Ge-KED2	72	289887.9	1.1			ppb
[	As-KED2	75	75.3	14.1	0.02488	88.4	ppb
[>	Ge-KED1	72	857400.4	2.7			ppb
|	Se-KED1	77	434.7	3.0	-0.25457	66.6	ppb
[	Se-KED1	78	15.4	20.6	0.00689	97.1	ppb
[	Mo-KED2	95	12.7	74.6	0.00031	1537.4	ppb
|	Mo-KED2	98	15.8	14.7	-0.00077	73.7	ppb
[>	Rh-KED2	103	377655.0	3.7			ppb
|	Ag-KED2	107	7.7	78.6	-0.00088	81.7	ppb
|	Ag-KED2	109	7.0	51.5	-0.00050	92.7	ppb
|	Cd-KED2	111	7.0	49.5	0.00096	345.2	ppb
|	Cd-KED2	114	7.1	70.3	-0.00098	195.0	ppb
|	Sb-KED2	121	16.7	25.0	-0.00984	25.9	ppb
|	Sb-KED2	123	15.0	37.5	-0.00756	52.5	ppb
[	Ba-KED2	137	8.7	29.0	-0.00051	613.3	ppb
[>	Lu-KED2	175	172985.3	1.8			ppb
|	Tl-KED2	203	4.7	49.5	-0.00050	91.3	ppb
|	Tl-KED2	205	9.3	16.4	-0.00063	20.6	ppb
[	Pb-KED2	208	43.7	22.9	-0.00105	63.3	ppb
[>	Th-KED2	232	479905.2	0.7			ppb
[	U-KED2	238	8.7	13.3	0.00015	53.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		101			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		91			
[	Al-KED2	27					
[>	Sc-KED2	45		97			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		95			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		95			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: P7211143
 Sample Date/Time: Monday, February 26, 2018 16:48:22
 Sample Description:
 Autosampler Position: 333
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\P7211143.054
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1608373.8	2.8			ppb
[	Be-STD1	9	28.0	25.8	-0.00029	292.6	ppb
[	Mn-STD1	55	1449.4	4.0	0.01652	11.1	ppb
[>	Ge-STD	72	1387681.1	0.5			ppb
[	Al-KED2	27	641.3	4.6	0.82415	4.7	ppb
[>	Sc-KED2	45	86420.4	2.4			ppb
[	V-KED3	51	158.7	9.3	0.11934	16.0	ppb
[	Cr-KED3	52	24.7	6.2	0.01169	11.2	ppb
[	Cr-KED3	53	76.7	18.3	0.34764	31.1	ppb
[	Fe-KED3	54	62.6	16.3	0.04695	491.9	ppb
[	Fe-KED3	56	1465.7	2.2	0.11369	35.7	ppb
[	Co-KED3	59	4.3	70.5	-0.00057	210.4	ppb
[	Ni-KED3	60	15.0	33.3	0.00897	73.9	ppb
[	Ni-KED3	62	2.7	86.6	0.00638	276.4	ppb
[	Cu-KED3	63	36.0	19.2	0.00525	51.9	ppb
[	Cu-KED3	65	28.7	21.3	0.01406	35.9	ppb
[	Zn-KED3	66	123.3	11.1	0.12100	40.9	ppb
[>	Ge-KED3	72	65438.6	1.4			ppb
[>	Ge-KED2	72	289395.5	1.3			ppb
[	As-KED2	75	83.0	7.9	0.04105	27.9	ppb
[>	Ge-KED1	72	858025.8	4.9			ppb
[	Se-KED1	77	438.0	3.2	-0.23079	73.7	ppb
[	Se-KED1	78	16.0	20.7	0.00832	71.1	ppb
[	Mo-KED2	95	6.0	33.3	-0.00305	33.9	ppb
[	Mo-KED2	98	8.1	47.0	-0.00306	35.9	ppb
[>	Rh-KED2	103	379824.3	1.3			ppb
[	Ag-KED2	107	11.3	18.4	-0.00041	62.0	ppb
[	Ag-KED2	109	9.7	15.8	-0.00015	136.5	ppb
[	Cd-KED2	111	5.3	57.3	-0.00066	430.6	ppb
[	Cd-KED2	114	8.0	68.2	-0.00060	357.7	ppb
[	Sb-KED2	121	22.7	36.7	-0.00645	72.1	ppb
[	Sb-KED2	123	12.5	7.0	-0.00951	7.2	ppb
[	Ba-KED2	137	15.0	17.6	0.00663	42.2	ppb
[>	Lu-KED2	175	172289.4	0.5			ppb
[	Tl-KED2	203	2.0	100.0	-0.00103	38.8	ppb
[	Tl-KED2	205	9.0	22.2	-0.00066	26.0	ppb
[	Pb-KED2	208	88.0	10.4	0.00179	33.1	ppb
[>	Th-KED2	232	486823.4	1.2			ppb
[	U-KED2	238	4.0	100.0	-0.00019	149.8	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			103		
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		93			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		95			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
|>	Rh-KED2	103		95			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		97			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802192-01
 Sample Date/Time: Monday, February 26, 2018 16:52:13
 Sample Description:
 Autosampler Position: 334
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802192-01.055
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1562379.9	0.6			ppb
[	Be-STD1	9	17.3	48.0	-0.00142	66.8	ppb
[	Mn-STD1	55	3819.8	0.6	0.10051	8.2	ppb
[>	Ge-STD	72	1384321.9	6.1			ppb
[	Al-KED2	27	792.4	5.9	1.18243	9.3	ppb
[>	Sc-KED2	45	85143.3	1.3			ppb
[	V-KED3	51	122.7	12.2	0.07645	22.9	ppb
|	Cr-KED3	52	50.0	11.1	0.03498	13.4	ppb
|	Cr-KED3	53	59.3	20.6	0.22490	41.7	ppb
|	Fe-KED3	54	64.6	5.3	0.10453	69.2	ppb
|	Fe-KED3	56	1684.1	1.7	0.38286	12.8	ppb
|	Co-KED3	59	7.7	45.8	0.00075	184.9	ppb
|	Ni-KED3	60	32.3	7.8	0.03141	10.0	ppb
|	Ni-KED3	62	4.7	24.7	0.02178	39.6	ppb
|	Cu-KED3	63	60.7	14.9	0.01588	25.4	ppb
|	Cu-KED3	65	32.7	29.1	0.01752	43.7	ppb
|	Zn-KED3	66	154.3	6.6	0.24998	15.2	ppb
[>	Ge-KED3	72	64701.2	0.9			ppb
[>	Ge-KED2	72	285090.9	1.2			ppb
[	As-KED2	75	69.0	12.6	0.01405	122.9	ppb
[>	Ge-KED1	72	854427.9	4.4			ppb
|	Se-KED1	77	455.3	0.7	-0.08834	185.4	ppb
[	Se-KED1	78	19.6	45.1	0.01643	110.5	ppb
[	Mo-KED2	95	18.0	19.2	0.00308	63.0	ppb
|	Mo-KED2	98	24.5	24.9	0.00182	97.4	ppb
[>	Rh-KED2	103	377108.3	3.1			ppb
|	Ag-KED2	107	15.0	43.7	0.00007	1276.2	ppb
|	Ag-KED2	109	9.3	32.7	-0.00018	249.2	ppb
|	Cd-KED2	111	5.3	47.2	-0.00061	396.1	ppb
|	Cd-KED2	114	9.1	16.8	-0.00011	650.2	ppb
|	Sb-KED2	121	15.3	27.2	-0.01067	20.1	ppb
|	Sb-KED2	123	14.4	12.1	-0.00791	21.2	ppb
[	Ba-KED2	137	12.0	52.0	0.00336	222.7	ppb
[>	Lu-KED2	175	173058.8	2.9			ppb
|	Tl-KED2	203	6.0	57.7	-0.00023	307.7	ppb
|	Tl-KED2	205	7.7	15.1	-0.00077	10.8	ppb
[	Pb-KED2	208	73.0	5.5	0.00081	16.1	ppb
[>	Th-KED2	232	480818.7	0.9			ppb
[	U-KED2	238	7.3	41.7	0.00005	422.5	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6		100			
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72		92			
[	Al-KED2 27					
[>	Sc-KED2 45		95			
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72		91			
[>	Ge-KED2 72		93			
[	As-KED2 75					
[>	Ge-KED1 72		95			
|	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103		95			
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175		98			
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232		99			
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802192-02
 Sample Date/Time: Monday, February 26, 2018 16:56:04
 Sample Description:
 Autosampler Position: 335
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802192-02.056
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1552505.2	2.3			ppb
[	Be-STD1	9	23116.7	1.1	2.61945	1.6	ppb
[	Mn-STD1	55	684002.6	1.3	24.80900	3.2	ppb
[>	Ge-STD	72	1343980.6	3.9			ppb
[	Al-KED2	27	43881.3	2.2	97.23049	1.8	ppb
[>	Sc-KED2	45	85136.5	3.9			ppb
[	V-KED3	51	19937.2	0.6	24.45275	1.4	ppb
|	Cr-KED3	52	10875.1	0.4	9.74202	1.2	ppb
|	Cr-KED3	53	1404.1	1.0	10.07818	0.9	ppb
|	Fe-KED3	54	2308.6	4.7	48.76181	4.4	ppb
|	Fe-KED3	56	44926.9	1.0	49.15310	0.4	ppb
|	Co-KED3	59	62073.4	4.3	24.05202	3.3	ppb
|	Ni-KED3	60	19021.0	2.3	24.07958	1.2	ppb
|	Ni-KED3	62	3045.7	2.1	22.99289	0.8	ppb
|	Cu-KED3	63	29000.1	4.5	12.04210	3.4	ppb
|	Cu-KED3	65	15022.9	3.6	11.91550	2.6	ppb
|	Zn-KED3	66	6339.7	1.5	24.47747	1.6	ppb
[>	Ge-KED3	72	65684.3	1.2			ppb
[>	Ge-KED2	72	285774.5	2.8			ppb
[	As-KED2	75	23494.3	1.7	49.48462	1.2	ppb
[>	Ge-KED1	72	858492.4	3.7			ppb
|	Se-KED1	77	7232.5	7.9	49.91122	9.1	ppb
[	Se-KED1	78	22087.2	3.1	50.84939	1.9	ppb
[	Mo-KED2	95	41292.9	0.5	21.01026	2.3	ppb
|	Mo-KED2	98	70318.0	0.3	21.02399	2.1	ppb
[>	Rh-KED2	103	375563.0	1.8			ppb
|	Ag-KED2	107	96915.4	1.8	12.28836	2.0	ppb
|	Ag-KED2	109	92275.5	1.9	12.32179	2.0	ppb
|	Cd-KED2	111	26375.3	1.8	25.00756	2.5	ppb
|	Cd-KED2	114	62655.8	1.6	25.60043	1.8	ppb
|	Sb-KED2	121	17524.7	1.3	10.31902	1.1	ppb
|	Sb-KED2	123	13201.5	2.2	10.36211	0.8	ppb
[	Ba-KED2	137	88216.9	1.1	102.50642	1.1	ppb
[>	Lu-KED2	175	175540.0	1.3			ppb
|	Tl-KED2	203	248294.7	1.3	48.97826	0.4	ppb
|	Tl-KED2	205	596839.3	1.2	48.94716	1.3	ppb
[	Pb-KED2	208	769436.6	0.2	48.19512	1.2	ppb
[>	Th-KED2	232	482133.5	1.6			ppb
[	U-KED2	238	291766.4	1.5	21.19188	0.5	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6		99			
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72		90			
[	Al-KED2 27					
[>	Sc-KED2 45		95			
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72		93			
[>	Ge-KED2 72		94			
[	As-KED2 75					
[>	Ge-KED1 72		95			
|	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103		94			
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175		99			
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232		99			
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802192-03

Sample Date/Time: Monday, February 26, 2018 16:59:55

Sample Description:

Autosampler Position: 336

Number of Replicates: 3

Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802192-03.057

User Name: RRM

Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1562209.6		1.9			ppb
[	Be-STD1	9	24314.7		2.0	2.73780	1.5	ppb
[	Mn-STD1	55	757748.0		1.3	26.86689	1.7	ppb
[>	Ge-STD	72	1374368.0		3.0			ppb
[	Al-KED2	27	45952.1		2.1	103.45220	4.2	ppb
[>	Sc-KED2	45	83885.6		4.8			ppb
[	V-KED3	51	20312.8		0.4	25.18747	0.8	ppb
|	Cr-KED3	52	11259.1		2.3	10.19733	2.8	ppb
|	Cr-KED3	53	1450.1		6.0	10.52822	5.2	ppb
|	Fe-KED3	54	2351.8		3.1	50.25484	2.1	ppb
|	Fe-KED3	56	46650.5		4.0	51.66508	3.2	ppb
|	Co-KED3	59	65754.8		3.3	25.76233	2.9	ppb
|	Ni-KED3	60	20029.4		4.1	25.63565	3.9	ppb
|	Ni-KED3	62	3301.0		3.0	25.19912	3.2	ppb
|	Cu-KED3	63	30906.7		1.9	12.97822	1.4	ppb
|	Cu-KED3	65	15627.2		1.5	12.53531	2.5	ppb
|	Zn-KED3	66	6611.9		1.4	25.82560	0.6	ppb
[>	Ge-KED3	72	64972.1		1.1			ppb
[>	Ge-KED2	72	284506.8		1.9			ppb
[	As-KED2	75	23710.0		2.9	50.14778	1.5	ppb
[>	Ge-KED1	72	858610.5		1.9			ppb
|	Se-KED1	77	7357.9		0.6	50.79812	1.5	ppb
[	Se-KED1	78	22438.0		1.9	51.63856	1.1	ppb
[	Mo-KED2	95	43123.0		2.5	21.73013	2.4	ppb
|	Mo-KED2	98	72369.6		3.1	21.42720	2.5	ppb
[>	Rh-KED2	103	379200.6		2.7			ppb
|	Ag-KED2	107	100137.5		2.1	12.57537	1.2	ppb
|	Ag-KED2	109	96143.8		1.0	12.71891	2.4	ppb
|	Cd-KED2	111	27059.6		1.7	25.41162	1.9	ppb
|	Cd-KED2	114	62785.7		2.4	25.40763	1.7	ppb
|	Sb-KED2	121	17797.1		1.1	10.38272	2.7	ppb
|	Sb-KED2	123	13489.8		1.4	10.49158	2.5	ppb
[	Ba-KED2	137	91742.1		2.5	105.58424	1.7	ppb
[>	Lu-KED2	175	171577.9		3.1			ppb
|	Tl-KED2	203	247831.9		0.5	50.04365	2.7	ppb
|	Tl-KED2	205	601106.3		0.2	50.46797	3.4	ppb
[	Pb-KED2	208	783679.3		1.1	50.24430	2.9	ppb
[>	Th-KED2	232	476667.5		1.3			ppb
[	U-KED2	238	289657.8		0.6	21.28290	1.8	ppb

Sample ID: KQ1802192-03

Report Date/Time: Tuesday, February 27, 2018 15:17:11

Page 1

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		100			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		92			
[	Al-KED2	27					
[>	Sc-KED2	45		94			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		93			
[	As-KED2	75					
[>	Ge-KED1	72		95			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		95			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		97			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		98			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: P7204894
 Sample Date/Time: Monday, February 26, 2018 17:03:48
 Sample Description: Rerun
 Autosampler Position: 330
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\P7204894.058
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1551219.9		2.4				ppb
[Be-STD1	9	22.7		35.7		-0.00081	106.5	ppb
[Mn-STD1	55	1347.4		8.9		0.01538	29.3	ppb
[> Ge-STD	72	1319919.7		0.5				ppb
[Al-KED2	27	734.0		0.9		1.03849	7.2	ppb
[> Sc-KED2	45	85957.4		3.8				ppb
[V-KED3	51	133.0		3.3		0.08782	7.5	ppb
[Cr-KED3	52	20.3		11.4		0.00782	27.6	ppb
[Cr-KED3	53	61.3		16.7		0.23374	28.0	ppb
[Fe-KED3	54	62.8		27.4		0.05338	723.7	ppb
[Fe-KED3	56	1429.1		1.1		0.07444	58.3	ppb
[Co-KED3	59	11.0		50.6		0.00198	103.7	ppb
[Ni-KED3	60	12.7		46.3		0.00588	123.8	ppb
[Ni-KED3	62	4.7		99.0		0.02195	165.1	ppb
[Cu-KED3	63	42.7		28.6		0.00800	57.9	ppb
[Cu-KED3	65	25.3		26.9		0.01139	47.5	ppb
[Zn-KED3	66	127.3		12.1		0.13688	36.2	ppb
[> Ge-KED3	72	65365.6		2.5				ppb
[> Ge-KED2	72	288673.6		3.4				ppb
[As-KED2	75	74.7		6.7		0.02445	59.8	ppb
[> Ge-KED1	72	851974.2		1.7				ppb
[Se-KED1	77	443.3		6.8		-0.17440	95.9	ppb
[Se-KED1	78	20.6		29.4		0.01960	75.2	ppb
[Mo-KED2	95	26.7		30.3		0.00708	54.0	ppb
[Mo-KED2	98	41.7		32.3		0.00663	55.7	ppb
[> Rh-KED2	103	386541.3		2.2				ppb
[Ag-KED2	107	34.7		18.5		0.00244	33.9	ppb
[Ag-KED2	109	38.0		27.9		0.00351	39.6	ppb
[Cd-KED2	111	13.3		28.4		0.00659	50.0	ppb
[Cd-KED2	114	15.4		21.0		0.00230	56.0	ppb
[Sb-KED2	121	16.0		21.7		-0.01049	16.9	ppb
[Sb-KED2	123	12.0		17.8		-0.00999	17.0	ppb
[Ba-KED2	137	25.7		22.2		0.01833	31.8	ppb
[> Lu-KED2	175	173390.1		1.6				ppb
[Tl-KED2	203	30.0		23.1		0.00457	32.1	ppb
[Tl-KED2	205	68.7		14.0		0.00430	19.8	ppb
[Pb-KED2	208	159.0		12.1		0.00627	21.9	ppb
[> Th-KED2	232	481621.5		0.6				ppb
[U-KED2	238	34.7		3.3		0.00204	4.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6		99			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		88			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		95			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		97			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 17:07:42
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCV.059
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1559141.8		3.7			ppb
[	Be-STD1	9	231167.5		4.2	26.10407	0.5	ppb
[	Mn-STD1	55	727023.8		4.9	25.10929	3.4	ppb
[>	Ge-STD	72	1410015.4		2.4			ppb
[	Al-KED2	27	11536.7		4.2	24.45535	4.3	ppb
[>	Sc-KED2	45	87434.6		3.5			ppb
[	V-KED3	51	19636.2		1.3	24.30354	0.1	ppb
|	Cr-KED3	52	27236.9		1.5	24.63892	0.9	ppb
|	Cr-KED3	53	3453.1		3.8	25.33475	3.4	ppb
|	Fe-KED3	54	11325.0		1.2	246.70016	2.5	ppb
|	Fe-KED3	56	218826.3		2.5	247.65820	1.4	ppb
|	Co-KED3	59	64141.1		3.1	25.08925	2.9	ppb
|	Ni-KED3	60	19154.5		2.9	24.47563	2.7	ppb
|	Ni-KED3	62	3178.4		5.4	24.22129	5.5	ppb
|	Cu-KED3	63	58753.9		1.4	24.63994	1.1	ppb
|	Cu-KED3	65	30422.7		0.4	24.36960	1.5	ppb
|	Zn-KED3	66	6406.4		1.8	24.97038	1.6	ppb
[>	Ge-KED3	72	65081.9		1.3			ppb
[>	Ge-KED2	72	292221.4		1.2			ppb
[	As-KED2	75	12076.8		1.7	24.80318	0.6	ppb
[>	Ge-KED1	72	846779.4		2.5			ppb
|	Se-KED1	77	3833.8		2.1	25.20317	2.2	ppb
[	Se-KED1	78	11279.0		3.7	26.30037	1.5	ppb
[	Mo-KED2	95	25007.2		0.9	12.54740	1.9	ppb
|	Mo-KED2	98	42040.2		0.9	12.39633	2.3	ppb
[>	Rh-KED2	103	380730.9		1.6			ppb
|	Ag-KED2	107	100725.6		1.4	12.59673	0.4	ppb
|	Ag-KED2	109	93999.7		2.7	12.37872	1.2	ppb
|	Cd-KED2	111	26897.6		0.7	25.15350	1.0	ppb
|	Cd-KED2	114	62001.8		1.6	24.98942	2.1	ppb
|	Sb-KED2	121	21814.6		0.6	12.67522	1.0	ppb
|	Sb-KED2	123	16651.2		2.7	12.89619	1.3	ppb
[	Ba-KED2	137	22368.5		0.8	25.63223	1.7	ppb
[>	Lu-KED2	175	173093.5		2.7			ppb
|	Tl-KED2	203	126104.2		1.3	25.23215	1.4	ppb
|	Tl-KED2	205	299950.1		1.6	24.95096	1.8	ppb
[	Pb-KED2	208	395174.6		0.9	25.11364	3.5	ppb
[>	Th-KED2	232	478947.7		0.3			ppb
[	U-KED2	238	351192.1		2.0	25.67767	2.0	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			100		
[	Be-STD1 9		104			
[	Mn-STD1 55		100			
[>	Ge-STD 72			94		
[	Al-KED2 27		98			
[>	Sc-KED2 45			98		
[	V-KED3 51		97			
|	Cr-KED3 52		99			
|	Cr-KED3 53		101			
|	Fe-KED3 54		99			
|	Fe-KED3 56		99			
|	Co-KED3 59		100			
|	Ni-KED3 60		98			
|	Ni-KED3 62		97			
|	Cu-KED3 63		99			
|	Cu-KED3 65		97			
|	Zn-KED3 66		100			
[>	Ge-KED3 72			92		
[>	Ge-KED2 72			96		
[	As-KED2 75		99			
[>	Ge-KED1 72			94		
|	Se-KED1 77		101			
[	Se-KED1 78		105			
[	Mo-KED2 95		100			
|	Mo-KED2 98		99			
[>	Rh-KED2 103			95		
|	Ag-KED2 107		101			
|	Ag-KED2 109		99			
|	Cd-KED2 111		101			
|	Cd-KED2 114		100			
|	Sb-KED2 121		101			
|	Sb-KED2 123		103			
[	Ba-KED2 137		103			
[>	Lu-KED2 175			98		
|	Tl-KED2 203		101			
|	Tl-KED2 205		100			
[	Pb-KED2 208		100			
[>	Th-KED2 232			99		
[U-KED2 238		103			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 17:11:33
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.060
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1635536.3	2.3			ppb
[	Be-STD1	9	16.7	42.1	-0.00157	50.9	ppb
[	Mn-STD1	55	1220.7	4.2	0.00686	14.0	ppb
[>	Ge-STD	72	1442178.0	2.8			ppb
[	Al-KED2	27	291.0	7.1	0.05153	75.2	ppb
[>	Sc-KED2	45	86936.8	1.4			ppb
[	V-KED3	51	132.0	19.3	0.08490	38.8	ppb
|	Cr-KED3	52	13.0	46.8	0.00109	504.3	ppb
|	Cr-KED3	53	53.3	17.3	0.17083	36.5	ppb
|	Fe-KED3	54	61.0	18.2	-0.00581	3827.6	ppb
|	Fe-KED3	56	1385.7	4.4	0.00712	1141.3	ppb
|	Co-KED3	59	11.3	13.5	0.00210	29.6	ppb
|	Ni-KED3	60	10.0	10.0	0.00243	56.3	ppb
|	Ni-KED3	62	3.3	69.3	0.01090	155.3	ppb
|	Cu-KED3	63	25.3	12.1	0.00072	188.0	ppb
|	Cu-KED3	65	17.3	33.8	0.00486	96.1	ppb
|	Zn-KED3	66	98.7	11.1	0.02043	221.5	ppb
[>	Ge-KED3	72	66123.0	1.2			ppb
[>	Ge-KED2	72	292436.9	0.6			ppb
[	As-KED2	75	68.0	17.9	0.00829	292.9	ppb
[>	Ge-KED1	72	875199.3	2.1			ppb
|	Se-KED1	77	443.3	10.7	-0.25884	136.9	ppb
[	Se-KED1	78	15.0	29.8	0.00549	183.4	ppb
[	Mo-KED2	95	25.3	16.4	0.00655	28.7	ppb
|	Mo-KED2	98	43.1	40.6	0.00726	74.2	ppb
[>	Rh-KED2	103	382912.0	2.1			ppb
|	Ag-KED2	107	38.7	16.8	0.00297	24.3	ppb
|	Ag-KED2	109	36.0	27.4	0.00328	37.1	ppb
|	Cd-KED2	111	8.0	33.1	0.00176	134.0	ppb
|	Cd-KED2	114	16.9	42.5	0.00293	94.9	ppb
|	Sb-KED2	121	35.3	17.3	0.00078	412.6	ppb
|	Sb-KED2	123	28.5	9.1	0.00285	87.4	ppb
[	Ba-KED2	137	10.7	10.8	0.00157	77.2	ppb
[>	Lu-KED2	175	178183.8	1.1			ppb
|	Tl-KED2	203	21.3	5.4	0.00271	7.3	ppb
|	Tl-KED2	205	64.0	28.3	0.00377	39.6	ppb
[	Pb-KED2	208	124.3	11.9	0.00385	24.0	ppb
[>	Th-KED2	232	487245.0	1.8			ppb
[	U-KED2	238	34.7	18.5	0.00201	24.5	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			104		
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72			96		
[	Al-KED2 27					
[>	Sc-KED2 45			97		
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72			93		
[>	Ge-KED2 72			96		
[	As-KED2 75					
[>	Ge-KED1 72			97		
|	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103			96		
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175			101		
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232			100		
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: LLCCVW
 Sample Date/Time: Monday, February 26, 2018 17:15:25
 Sample Description:
 Autosampler Position: 4
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW.061
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1551057.4	1.5			ppb
[Be-STD1	9	221.3	13.6	0.02177	16.2	ppb
[Mn-STD1	55	7141.8	1.4	0.21528	2.1	ppb
[> Ge-STD	72	1395622.9	3.3			ppb
[Al-KED2	27	2123.2	2.3	4.08457	4.6	ppb
[> Sc-KED2	45	86320.1	1.7			ppb
[V-KED3	51	286.3	3.5	0.27913	5.3	ppb *
[Cr-KED3	52	237.3	2.4	0.20441	2.8	ppb
[Cr-KED3	53	72.0	13.9	0.31615	23.9	ppb
[Fe-KED3	54	163.3	3.1	2.25989	5.3	ppb
[Fe-KED3	56	3105.0	2.4	1.99174	4.5	ppb
[Co-KED3	59	56.0	6.4	0.01964	6.5	ppb
[Ni-KED3	60	154.3	15.2	0.18731	16.3	ppb
[Ni-KED3	62	24.7	12.4	0.17413	12.9	ppb
[Cu-KED3	63	253.3	7.7	0.09663	9.2	ppb
[Cu-KED3	65	140.7	7.1	0.10394	7.3	ppb
[Zn-KED3	66	567.3	5.4	1.88126	6.8	ppb
[> Ge-KED3	72	65044.4	0.7			ppb
[> Ge-KED2	72	292009.5	2.1			ppb
[As-KED2	75	306.3	6.3	0.50088	6.3	ppb
[> Ge-KED1	72	869375.0	5.2			ppb
[Se-KED1	77	566.7	5.1	0.67086	55.1	ppb
[Se-KED1	78	443.4	1.9	0.98125	4.4	ppb
[Mo-KED2	95	255.3	8.6	0.12016	11.1	ppb
[Mo-KED2	98	365.1	9.6	0.10042	8.9	ppb
[> Rh-KED2	103	387056.1	2.0			ppb
[Ag-KED2	107	197.3	17.9	0.02242	17.9	ppb
[Ag-KED2	109	187.7	8.0	0.02288	7.3	ppb
[Cd-KED2	111	26.7	9.4	0.01888	12.2	ppb
[Cd-KED2	114	68.1	19.2	0.02316	21.0	ppb
[Sb-KED2	121	102.7	13.7	0.03904	17.7	ppb
[Sb-KED2	123	84.2	10.1	0.04506	15.1	ppb
[Ba-KED2	137	73.0	35.7	0.07146	39.7	ppb *
[> Lu-KED2	175	175409.8	1.2			ppb
[Tl-KED2	203	126.0	16.6	0.02341	16.4	ppb
[Tl-KED2	205	330.3	21.2	0.02566	21.2	ppb
[Pb-KED2	208	407.0	10.3	0.02167	10.7	ppb
[> Th-KED2	232	485424.3	2.6			ppb
[U-KED2	238	284.0	27.9	0.02009	30.2	ppb

*2x
 43
 2/27/18

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			99		
[	Be-STD1 9	109				
[	Mn-STD1 55	108				
[>	Ge-STD 72			93		
[	Al-KED2 27	102				
[>	Sc-KED2 45			96		
[	V-KED3 51	140				
|	Cr-KED3 52	102				
|	Cr-KED3 53	158				
|	Fe-KED3 54	113				
|	Fe-KED3 56	100				
|	Co-KED3 59	98				
|	Ni-KED3 60	94				
|	Ni-KED3 62	87				
|	Cu-KED3 63	97				
|	Cu-KED3 65	104				
|	Zn-KED3 66	94				
[>	Ge-KED3 72			92		
[>	Ge-KED2 72			96		
[	As-KED2 75	100				
[>	Ge-KED1 72			97		
|	Se-KED1 77	67				
[	Se-KED1 78	98				
[	Mo-KED2 95	120				
|	Mo-KED2 98	100				
[>	Rh-KED2 103			97		
|	Ag-KED2 107	112				
|	Ag-KED2 109	114				
|	Cd-KED2 111	94				
|	Cd-KED2 114	116				
|	Sb-KED2 121	78				
|	Sb-KED2 123	90				
[	Ba-KED2 137	143				
[>	Lu-KED2 175			99		
|	Tl-KED2 203	117				
|	Tl-KED2 205	128				
[	Pb-KED2 208	108				
[>	Th-KED2 232			100		
[	U-KED2 238	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ba-KED2	137	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVW
 Sample Date/Time: Monday, February 26, 2018 17:19:26
 Sample Description:
 Autosampler Position: 4
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW.062
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1594153.0	1.3			ppb
[	Be-STD1	9	201.3	6.4	0.01886	6.0	ppb
[	Mn-STD1	55	7014.4	2.4	0.20709	5.4	ppb
[>	Ge-STD	72	1417830.3	3.1			ppb
[	Al-KED2	27	2098.5	2.6	4.02268	5.1	ppb
[>	Sc-KED2	45	86473.3	2.0			ppb
[	V-KED3	51	297.7	5.0	0.28718	5.8	ppb
[	Cr-KED3	52	225.7	5.6	0.19067	7.2	ppb
[	Cr-KED3	53	93.3	12.9	0.46231	17.5	ppb
[	Fe-KED3	54	170.3	11.4	2.35541	18.9	ppb
[	Fe-KED3	56	3130.3	3.1	1.96450	7.6	ppb
[	Co-KED3	59	52.0	20.4	0.01773	22.0	ppb
[	Ni-KED3	60	161.3	6.7	0.19294	7.5	ppb
[	Ni-KED3	62	28.7	45.4	0.20198	49.8	ppb
[	Cu-KED3	63	282.0	6.5	0.10670	6.1	ppb
[	Cu-KED3	65	133.0	18.2	0.09603	19.2	ppb
[	Zn-KED3	66	593.0	3.0	1.94460	2.1	ppb
[>	Ge-KED3	72	66103.6	1.2			ppb
[>	Ge-KED2	72	285837.4	3.6			ppb
[	As-KED2	75	308.3	5.8	0.52043	11.8	ppb
[>	Ge-KED1	72	876821.9	3.7			ppb
[	Se-KED1	77	605.3	7.1	0.90420	29.9	ppb
[	Se-KED1	78	438.3	5.9	0.96049	6.4	ppb
[	Mo-KED2	95	218.0	13.2	0.10247	15.0	ppb
[	Mo-KED2	98	366.6	9.4	0.10158	7.4	ppb
[>	Rh-KED2	103	384179.3	2.5			ppb
[	Ag-KED2	107	178.0	5.9	0.02024	6.7	ppb
[	Ag-KED2	109	159.3	8.5	0.01937	7.9	ppb
[	Cd-KED2	111	29.0	35.8	0.02124	45.5	ppb
[	Cd-KED2	114	64.6	6.4	0.02200	9.0	ppb
[	Sb-KED2	121	116.7	2.6	0.04764	0.6	ppb
[	Sb-KED2	123	76.8	7.2	0.03981	8.3	ppb
[	Ba-KED2	137	73.7	38.3	0.07362	46.6	ppb
[>	Lu-KED2	175	174662.2	2.0			ppb
[	Tl-KED2	203	157.3	32.3	0.02989	36.0	ppb
[	Tl-KED2	205	321.7	34.3	0.02522	38.4	ppb
[	Pb-KED2	208	419.0	21.9	0.02263	28.0	ppb
[>	Th-KED2	232	491531.0	1.5			ppb
[	U-KED2	238	285.3	23.2	0.01989	25.2	ppb

continue
 2/27/18

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			102		
[	Be-STD1 9	94				
[	Mn-STD1 55	104				
[>	Ge-STD 72		95			
[	Al-KED2 27	101				
[>	Sc-KED2 45		97			
[	V-KED3 51	144				
[	Cr-KED3 52	95				
[	Cr-KED3 53	231				
[	Fe-KED3 54	118				
[	Fe-KED3 56	98				
[	Co-KED3 59	89				
[	Ni-KED3 60	96				
[	Ni-KED3 62	101				
[	Cu-KED3 63	107				
[	Cu-KED3 65	96				
[	Zn-KED3 66	97				
[>	Ge-KED3 72		93			
[>	Ge-KED2 72		94			
[	As-KED2 75	104				
[>	Ge-KED1 72		97			
[	Se-KED1 77	90				
[	Se-KED1 78	96				
[	Mo-KED2 95	102				
[	Mo-KED2 98	102				
[>	Rh-KED2 103		96			
[	Ag-KED2 107	101				
[	Ag-KED2 109	97				
[	Cd-KED2 111	106				
[	Cd-KED2 114	110				
[	Sb-KED2 121	95				
[	Sb-KED2 123	80				
[	Ba-KED2 137	147				
[>	Lu-KED2 175		99			
[	Tl-KED2 203	149				
[	Tl-KED2 205	126				
[	Pb-KED2 208	113				
[>	Th-KED2 232		101			
[	U-KED2 238	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ba-KED2	137	Out of Control
QC Std 6	Tl-KED2	203	Out of Control

*QC Std 6
2/27/18*

LABWORKS - Summary Report

Sample ID: LLCCVW 2X
 Sample Date/Time: Monday, February 26, 2018 17:23:18
 Sample Description:
 Autosampler Position: 7
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW 2X.063
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1586916.8		1.9			ppb
[Be-STD1	9	395.3		7.8	0.04053	9.6	ppb
[Mn-STD1	55	13003.9		3.5	0.42133	3.8	ppb
> Ge-STD	72	1391975.8		2.2			ppb
[Al-KED2	27	4062.6		3.8	8.33633	7.1	ppb
> Sc-KED2	45	86548.4		4.7			ppb
[V-KED3	51	430.0		6.1	0.45387	8.2	ppb
[Cr-KED3	52	458.7		4.0	0.40179	4.0	ppb
[Cr-KED3	53	112.7		5.4	0.61133	8.7	ppb
[Fe-KED3	54	242.4		8.6	3.95085	10.2	ppb
[Fe-KED3	56	4912.8		2.0	4.01191	4.1	ppb
[Co-KED3	59	104.3		10.2	0.03827	10.8	ppb
[Ni-KED3	60	326.0		2.3	0.40380	2.8	ppb
[Ni-KED3	62	56.7		10.8	0.41522	11.4	ppb
[Cu-KED3	63	504.0		6.3	0.20026	6.4	ppb
[Cu-KED3	65	250.7		10.9	0.19071	11.7	ppb
[Zn-KED3	66	1067.0		0.7	3.82741	1.3	ppb
> Ge-KED3	72	65524.3		1.0			ppb
> Ge-KED2	72	289661.9		2.0			ppb
[As-KED2	75	542.0		1.3	0.99759	3.6	ppb
> Ge-KED1	72	862426.5		3.0			ppb
[Se-KED1	77	720.7		5.8	1.82166	11.0	ppb
[Se-KED1	78	879.7		5.5	1.98872	5.6	ppb
[Mo-KED2	95	425.3		3.8	0.20112	5.5	ppb
[Mo-KED2	98	731.0		3.6	0.20375	4.8	ppb
> Rh-KED2	103	392524.2		1.9			ppb
[Ag-KED2	107	385.3		5.5	0.04496	7.5	ppb
[Ag-KED2	109	340.0		3.7	0.04201	2.3	ppb
[Cd-KED2	111	51.7		17.3	0.04124	20.2	ppb
[Cd-KED2	114	113.6		17.9	0.04069	21.5	ppb
[Sb-KED2	121	195.3		8.8	0.09071	12.1	ppb
[Sb-KED2	123	155.2		2.6	0.09755	1.8	ppb
[Ba-KED2	137	140.3		41.8	0.14613	46.6	ppb
> Lu-KED2	175	177517.4		2.1			ppb
[Tl-KED2	203	236.7		27.0	0.04479	28.8	ppb
[Tl-KED2	205	637.3		29.0	0.05043	31.4	ppb
[Pb-KED2	208	851.3		36.5	0.04908	40.9	ppb
> Th-KED2	232	482876.0		2.0			ppb
[U-KED2	238	803.4		44.4	0.05780	44.5	ppb

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1/26/18
1/27/18

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			101		
[	Be-STD1 9	101				
[	Mn-STD1 55	105				
[>	Ge-STD 72			93		
[	Al-KED2 27	104				
[>	Sc-KED2 45			97		
[	V-KED3 51	113				
[	Cr-KED3 52	100				
[	Cr-KED3 53	153				
[	Fe-KED3 54	99				
[	Fe-KED3 56	100				
[	Co-KED3 59	96				
[	Ni-KED3 60	101				
[	Ni-KED3 62	104				
[	Cu-KED3 63	100				
[	Cu-KED3 65	95				
[	Zn-KED3 66	96				
[>	Ge-KED3 72			92		
[>	Ge-KED2 72			95		
[	As-KED2 75	100				
[>	Ge-KED1 72			96		
[	Se-KED1 77	91				
[	Se-KED1 78	99				
[	Mo-KED2 95	101				
[	Mo-KED2 98	102				
[>	Rh-KED2 103			98		
[	Ag-KED2 107	112				
[	Ag-KED2 109	105				
[	Cd-KED2 111	103				
[	Cd-KED2 114	102				
[	Sb-KED2 121	91				
[	Sb-KED2 123	98				
[	Ba-KED2 137	146				
[>	Lu-KED2 175			100		
[	Tl-KED2 203	112				
[	Tl-KED2 205	126				
[	Pb-KED2 208	123				
[>	Th-KED2 232			100		
[	U-KED2 238	144				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 9	Ba-KED2	137	Out of Control
QC Std 9	U-KED2	238	Out of Control

A 1/27/18

LABWORKS - Summary Report

Sample ID: LLCCVW 2X
 Sample Date/Time: Monday, February 26, 2018 17:28:04
 Sample Description:
 Autosampler Position: 7
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW 2X.064
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1601213.6	0.5			ppb
[	Be-STD1	9	406.7	6.4	0.04135	6.6	ppb
[	Mn-STD1	55	12864.5	3.2	0.40699	2.4	ppb
[>	Ge-STD	72	1422095.6	4.0			ppb
[	Al-KED2	27	3775.2	3.8	7.82742	0.8	ppb
[>	Sc-KED2	45	85131.4	3.1			ppb
[	V-KED3	51	471.7	6.1	0.49224	6.6	ppb
[	Cr-KED3	52	428.3	7.4	0.36609	7.5	ppb
[	Cr-KED3	53	114.0	19.5	0.60256	26.8	ppb
[	Fe-KED3	54	262.6	4.2	4.26899	6.3	ppb
[	Fe-KED3	56	4853.2	1.2	3.82348	1.0	ppb
[	Co-KED3	59	112.3	11.5	0.04039	11.2	ppb
[	Ni-KED3	60	313.3	2.1	0.37899	1.8	ppb
[	Ni-KED3	62	58.7	12.9	0.42108	14.5	ppb
[	Cu-KED3	63	462.7	12.5	0.17902	14.2	ppb
[	Cu-KED3	65	252.7	3.8	0.18783	2.8	ppb
[	Zn-KED3	66	1056.7	6.6	3.69484	6.5	ppb
[>	Ge-KED3	72	66987.4	1.2			ppb
[>	Ge-KED2	72	292219.1	2.9			ppb
[	As-KED2	75	547.0	6.5	0.99722	5.5	ppb
[>	Ge-KED1	72	854027.4	1.0			ppb
[	Se-KED1	77	706.7	3.3	1.77328	12.7	ppb
[	Se-KED1	78	849.0	3.0	1.93731	4.0	ppb
[	Mo-KED2	95	426.7	0.3	0.19942	2.0	ppb
[	Mo-KED2	98	722.7	5.4	0.19895	4.0	ppb
[>	Rh-KED2	103	396875.5	2.0			ppb
[	Ag-KED2	107	324.3	2.6	0.03709	2.3	ppb
[	Ag-KED2	109	325.7	5.2	0.03972	4.6	ppb
[	Cd-KED2	111	50.0	11.1	0.03922	13.0	ppb
[	Cd-KED2	114	110.1	13.5	0.03880	15.9	ppb
[	Sb-KED2	121	204.0	7.4	0.09430	9.7	ppb
[	Sb-KED2	123	149.7	8.2	0.09220	8.7	ppb
[	Ba-KED2	137	96.7	6.0	0.09565	4.4	ppb
[>	Lu-KED2	175	175559.9	3.3			ppb
[	Tl-KED2	203	219.3	8.4	0.04178	5.4	ppb
[	Tl-KED2	205	484.7	4.8	0.03833	3.4	ppb
[	Pb-KED2	208	675.0	3.4	0.03845	1.1	ppb
[>	Th-KED2	232	485924.5	2.1			ppb
[	U-KED2	238	560.7	6.8	0.03995	8.0	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		102			
[	Be-STD1	9	103				
[	Mn-STD1	55	102				
[>	Ge-STD	72		95			
[	Al-KED2	27	98				
[>	Sc-KED2	45		95			
[	V-KED3	51	123				
|	Cr-KED3	52	92				
|	Cr-KED3	53	151				
|	Fe-KED3	54	107				
|	Fe-KED3	56	96				
|	Co-KED3	59	101				
|	Ni-KED3	60	95				
|	Ni-KED3	62	105				
|	Cu-KED3	63	90				
|	Cu-KED3	65	94				
|	Zn-KED3	66	92				
[>	Ge-KED3	72		94			
[>	Ge-KED2	72		96			
[	As-KED2	75	100				
[>	Ge-KED1	72		95			
|	Se-KED1	77	89				
[	Se-KED1	78	97				
[	Mo-KED2	95	100				
|	Mo-KED2	98	99				
[>	Rh-KED2	103		100			
|	Ag-KED2	107	93				
|	Ag-KED2	109	99				
|	Cd-KED2	111	98				
|	Cd-KED2	114	97				
|	Sb-KED2	121	94				
|	Sb-KED2	123	92				
[	Ba-KED2	137	96				
[>	Lu-KED2	175		99			
|	Tl-KED2	203	104				
|	Tl-KED2	205	96				
[	Pb-KED2	208	96				
[>	Th-KED2	232		100			
[U-KED2	238	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801267-004
 Sample Date/Time: Monday, February 26, 2018 17:31:56
 Sample Description:
 Autosampler Position: 337
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801267-004.065
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1609027.4	1.4			ppb
[	Be-STD1	9	27.3	8.4	-0.00038	65.4	ppb
[	Mn-STD1	55	7298.5	3.0	0.21369	0.5	ppb
[>	Ge-STD	72	1434789.4	2.8			ppb
[	Al-KED2	27	2181.5	3.8	4.18862	4.2	ppb
[>	Sc-KED2	45	86723.5	1.5			ppb
[	V-KED3	51	174.7	5.1	0.13740	6.8	ppb
|	Cr-KED3	52	148.0	7.1	0.12168	6.8	ppb
|	Cr-KED3	53	74.0	10.8	0.32370	18.8	ppb
|	Fe-KED3	54	391.2	10.9	7.14207	13.7	ppb
|	Fe-KED3	56	7852.2	2.6	7.28164	2.1	ppb
|	Co-KED3	59	13.0	61.1	0.00273	110.4	ppb
|	Ni-KED3	60	24.3	16.6	0.02058	26.0	ppb
|	Ni-KED3	62	8.0	66.1	0.04644	87.0	ppb
|	Cu-KED3	63	139.3	7.9	0.04796	9.0	ppb
|	Cu-KED3	65	61.7	33.4	0.04002	41.2	ppb
|	Zn-KED3	66	223.7	4.7	0.50967	9.5	ppb
[>	Ge-KED3	72	65920.4	0.8			ppb
[>	Ge-KED2	72	293219.2	2.1			ppb
[	As-KED2	75	74.0	4.9	0.02038	34.2	ppb
[>	Ge-KED1	72	871483.4	3.4			ppb
|	Se-KED1	77	498.0	3.2	0.15170	58.0	ppb
|	Se-KED1	78	15.7	6.0	0.00719	36.0	ppb
[	Mo-KED2	95	17.3	29.0	0.00225	103.9	ppb
|	Mo-KED2	98	30.2	29.5	0.00312	84.9	ppb
[>	Rh-KED2	103	397244.6	1.3			ppb
|	Ag-KED2	107	31.7	23.3	0.00196	43.5	ppb
|	Ag-KED2	109	32.3	9.9	0.00266	17.4	ppb
|	Cd-KED2	111	5.7	50.9	-0.00055	482.7	ppb
|	Cd-KED2	114	6.1	33.1	-0.00146	53.0	ppb
|	Sb-KED2	121	22.0	24.1	-0.00738	38.5	ppb
|	Sb-KED2	123	18.4	15.3	-0.00552	35.2	ppb
[	Ba-KED2	137	138.3	7.1	0.14146	8.6	ppb
[>	Lu-KED2	175	175235.4	1.7			ppb
|	Tl-KED2	203	5.3	78.1	-0.00038	218.9	ppb
|	Tl-KED2	205	21.0	40.7	0.00031	218.0	ppb
[	Pb-KED2	208	1063.7	0.7	0.06292	1.6	ppb
[>	Th-KED2	232	487799.5	0.9			ppb
[	U-KED2	238	15.3	32.8	0.00062	57.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		103			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		96			
[	Al-KED2	27					
[>	Sc-KED2	45		97			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		93			
[>	Ge-KED2	72		96			
[	As-KED2	75					
[>	Ge-KED1	72		97			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		100			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		99			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801267-004L
 Sample Date/Time: Monday, February 26, 2018 17:35:47
 Sample Description: 5X
 Autosampler Position: 338
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801267-004L.066
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1523280.3	2.9			ppb
[	Be-STD1	9	21.3	23.6	-0.00092	56.6	ppb
[	Mn-STD1	55	2357.5	3.6	0.04898	4.8	ppb
[>	Ge-STD	72	1378583.4	1.0			ppb
[	Al-KED2	27	2886.0	2.6	5.77389	3.8	ppb
[>	Sc-KED2	45	86138.6	1.9			ppb
[	V-KED3	51	164.0	5.6	0.12561	6.0	ppb
|	Cr-KED3	52	35.7	23.5	0.02158	35.2	ppb
|	Cr-KED3	53	72.0	16.7	0.31369	31.5	ppb
|	Fe-KED3	54	115.7	12.1	1.19678	22.6	ppb
|	Fe-KED3	56	2596.9	2.4	1.39275	3.7	ppb
|	Co-KED3	59	6.7	56.8	0.00030	466.8	ppb
|	Ni-KED3	60	12.0	14.4	0.00506	37.8	ppb
|	Ni-KED3	62	3.3	34.6	0.01138	80.0	ppb
|	Cu-KED3	63	46.0	13.0	0.00941	22.5	ppb
|	Cu-KED3	65	29.7	9.7	0.01481	16.0	ppb
|	Zn-KED3	66	128.3	3.1	0.14068	13.6	ppb
[>	Ge-KED3	72	65486.5	2.0			ppb
[>	Ge-KED2	72	289083.2	2.2			ppb
[	As-KED2	75	77.0	10.4	0.02874	52.8	ppb
[>	Ge-KED1	72	865966.9	3.9			ppb
|	Se-KED1	77	458.7	6.5	-0.11275	181.1	ppb
[	Se-KED1	78	13.9	52.6	0.00369	472.9	ppb
[	Mo-KED2	95	15.3	37.7	0.00166	171.9	ppb
|	Mo-KED2	98	9.8	27.9	-0.00255	31.3	ppb
[>	Rh-KED2	103	378575.8	1.3			ppb
|	Ag-KED2	107	18.7	18.8	0.00051	81.2	ppb
|	Ag-KED2	109	16.7	15.1	0.00079	45.8	ppb
|	Cd-KED2	111	7.3	20.8	0.00124	113.4	ppb
|	Cd-KED2	114	9.0	45.3	-0.00015	1098.0	ppb
|	Sb-KED2	121	14.0	0.0	-0.01144	1.0	ppb
|	Sb-KED2	123	9.1	48.3	-0.01214	27.7	ppb
[	Ba-KED2	137	30.0	23.3	0.02394	32.1	ppb
[>	Lu-KED2	175	173599.9	1.2			ppb
|	Tl-KED2	203	6.0	33.3	-0.00024	160.6	ppb
|	Tl-KED2	205	18.3	11.4	0.00011	146.5	ppb
[	Pb-KED2	208	252.3	6.3	0.01216	9.8	ppb
[>	Th-KED2	232	481096.0	2.3			ppb
[	U-KED2	238	3.3	69.3	-0.00024	68.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % R	Duplicate Rel. % Difference	Dilution % Difference
[>	Li-STD	6		97			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		92			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		92			
[>	Ge-KED2	72		95			
[	As-KED2	75					
[>	Ge-KED1	72		96			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		95			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801267-018
 Sample Date/Time: Monday, February 26, 2018 17:39:38
 Sample Description:
 Autosampler Position: 339
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801267-018.067
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1572170.2	2.2			ppb
[	Be-STD1	9	24.0	36.3	-0.00069	138.3	ppb
[	Mn-STD1	55	3108.3	5.0	0.07382	10.0	ppb
[>	Ge-STD	72	1401866.4	2.1			ppb
[	Al-KED2	27	1724.1	0.8	3.15720	4.2	ppb
[>	Sc-KED2	45	87517.2	4.0			ppb
[	V-KED3	51	161.0	8.8	0.11958	14.3	ppb
|	Cr-KED3	52	75.0	15.7	0.05611	18.4	ppb
|	Cr-KED3	53	63.3	7.9	0.24309	15.9	ppb
|	Fe-KED3	54	141.9	12.8	1.73084	21.9	ppb
|	Fe-KED3	56	3087.0	3.1	1.90562	7.2	ppb
|	Co-KED3	59	10.3	24.4	0.00169	56.3	ppb
|	Ni-KED3	60	19.7	17.9	0.01454	31.2	ppb
|	Ni-KED3	62	5.3	21.7	0.02590	32.4	ppb
|	Cu-KED3	63	81.3	21.2	0.02374	29.5	ppb
|	Cu-KED3	65	43.0	24.6	0.02497	32.2	ppb
|	Zn-KED3	66	4575.1	2.5	17.39884	2.9	ppb
[>	Ge-KED3	72	66293.1	0.8			ppb
[>	Ge-KED2	72	289542.2	3.0			ppb
[	As-KED2	75	80.7	7.9	0.03653	49.3	ppb
[>	Ge-KED1	72	858986.7	3.4			ppb
|	Se-KED1	77	468.0	3.3	-0.01753	188.3	ppb
[	Se-KED1	78	14.7	30.2	0.00535	184.3	ppb
[	Mo-KED2	95	16.7	61.6	0.00202	246.0	ppb
|	Mo-KED2	98	16.7	19.0	-0.00067	123.4	ppb
[>	Rh-KED2	103	392570.2	2.0			ppb
|	Ag-KED2	107	19.7	7.8	0.00056	41.6	ppb
|	Ag-KED2	109	19.3	31.2	0.00106	77.6	ppb
|	Cd-KED2	111	7.0	14.3	0.00070	137.2	ppb
|	Cd-KED2	114	9.1	20.9	-0.00028	251.9	ppb
|	Sb-KED2	121	21.3	19.5	-0.00757	34.0	ppb
|	Sb-KED2	123	12.5	39.1	-0.00975	40.0	ppb
[	Ba-KED2	137	994.4	1.4	1.09491	1.1	ppb
[>	Lu-KED2	175	173310.1	4.6			ppb
|	Tl-KED2	203	14.0	14.3	0.00138	38.0	ppb
|	Tl-KED2	205	61.7	7.5	0.00373	17.1	ppb
[	Pb-KED2	208	319.7	5.3	0.01651	11.5	ppb
[>	Th-KED2	232	481056.8	3.0			ppb
[	U-KED2	238	12.0	44.1	0.00039	98.6	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6		100			
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72		93			
[	Al-KED2 27					
[>	Sc-KED2 45		98			
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72		93			
[>	Ge-KED2 72		95			
[	As-KED2 75					
[>	Ge-KED1 72		95			
|	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103		98			
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175		98			
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232		99			
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802018-01
 Sample Date/Time: Monday, February 26, 2018 17:43:29
 Sample Description:
 Autosampler Position: 340
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802018-01.068
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1494017.1	2.0			ppb
[	Be-STD1	9	23.3	17.8	-0.00063	72.3	ppb
[	Mn-STD1	55	7920.2	2.5	0.25039	5.2	ppb
[>	Ge-STD	72	1357367.8	2.4			ppb
[	Al-KED2	27	805.7	6.8	1.20391	7.4	ppb
[>	Sc-KED2	45	85473.7	2.6			ppb
[	V-KED3	51	141.0	10.1	0.10154	17.9	ppb
|	Cr-KED3	52	20.3	22.2	0.00819	49.4	ppb
|	Cr-KED3	53	57.3	5.3	0.21455	8.9	ppb
|	Fe-KED3	54	72.1	6.9	0.28699	22.1	ppb
|	Fe-KED3	56	1664.1	3.3	0.38225	16.4	ppb
|	Co-KED3	59	8.7	26.6	0.00118	78.0	ppb
|	Ni-KED3	60	31.0	14.1	0.03008	14.9	ppb
|	Ni-KED3	62	3.3	34.6	0.01188	75.4	ppb
|	Cu-KED3	63	102.0	34.0	0.03356	40.0	ppb
|	Cu-KED3	65	47.7	6.1	0.03002	4.5	ppb
|	Zn-KED3	66	232.7	7.1	0.57162	6.9	ppb
[>	Ge-KED3	72	63961.3	2.9			ppb
[>	Ge-KED2	72	291440.0	0.9			ppb
[	As-KED2	75	81.7	10.6	0.03726	51.1	ppb
[>	Ge-KED1	72	843569.7	0.6			ppb
|	Se-KED1	77	425.3	6.9	-0.27546	73.8	ppb
[	Se-KED1	78	15.7	25.4	0.00823	114.3	ppb
[	Mo-KED2	95	14.7	43.8	0.00123	274.0	ppb
|	Mo-KED2	98	14.1	57.8	-0.00139	167.0	ppb
[>	Rh-KED2	103	386622.9	2.7			ppb
|	Ag-KED2	107	18.3	11.4	0.00042	48.8	ppb
|	Ag-KED2	109	15.7	9.8	0.00061	39.3	ppb
|	Cd-KED2	111	8.0	50.0	0.00178	217.4	ppb
|	Cd-KED2	114	11.0	59.5	0.00050	491.0	ppb
|	Sb-KED2	121	13.3	43.3	-0.01198	28.1	ppb
|	Sb-KED2	123	12.6	30.2	-0.00954	32.2	ppb
[	Ba-KED2	137	15.3	22.9	0.00668	53.9	ppb
[>	Lu-KED2	175	172056.6	0.7			ppb
|	Tl-KED2	203	6.7	17.3	-0.00009	245.2	ppb
|	Tl-KED2	205	16.7	36.7	-0.00002	3067.1	ppb
[	Pb-KED2	208	79.3	13.9	0.00124	56.5	ppb
[>	Th-KED2	232	485967.5	1.1			ppb
[	U-KED2	238	13.3	8.7	0.00048	15.4	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6		95			
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72		91			
[	Al-KED2 27					
[>	Sc-KED2 45		95			
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72		90			
[>	Ge-KED2 72		96			
[	As-KED2 75					
[>	Ge-KED1 72		94			
|	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103		97			
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175		97			
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232		100			
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801415-002
 Sample Date/Time: Monday, February 26, 2018 17:47:21
 Sample Description:
 Autosampler Position: 342
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801415-002.069
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1527043.9	2.3			ppb
[Be-STD1	9	26.0	15.4	-0.00038	116.9	ppb
[Mn-STD1	55	563250.0	0.5	19.66052	5.2	ppb
[> Ge-STD	72	1397222.9	4.8			ppb
[Al-KED2	27	11913.3	1.3	25.85864	1.1	ppb
[> Sc-KED2	45	85477.1	2.4			ppb
[V-KED3	51	2035.8	1.6	2.47888	2.6	ppb
[Cr-KED3	52	242.7	11.0	0.21170	12.8	ppb
[Cr-KED3	53	73.3	17.7	0.33221	31.1	ppb
[Fe-KED3	54	1619.2	2.6	34.51704	1.6	ppb
[Fe-KED3	56	32215.6	0.6	35.54735	1.7	ppb
[Co-KED3	59	197.7	2.9	0.07589	2.7	ppb
[Ni-KED3	60	281.0	6.8	0.35315	8.1	ppb
[Ni-KED3	62	46.0	19.0	0.34077	20.3	ppb
[Cu-KED3	63	580.7	4.3	0.23661	5.6	ppb
[Cu-KED3	65	289.3	4.0	0.22547	3.0	ppb
[Zn-KED3	66	128.7	5.5	0.15078	22.7	ppb
[> Ge-KED3	72	64383.1	1.2			ppb
[> Ge-KED2	72	278289.4	4.1			ppb
[> As-KED2	75	113.7	16.7	0.11418	32.2	ppb
[> Ge-KED1	72	841154.7	2.9			ppb
[Se-KED1	77	475.3	5.5	0.10969	118.5	ppb
[Se-KED1	78	33.3	14.7	0.05007	27.0	ppb
[Mo-KED2	95	2728.9	0.4	1.38685	1.7	ppb
[Mo-KED2	98	4740.1	2.9	1.41669	4.5	ppb
[> Rh-KED2	103	374448.9	1.8			ppb
[Ag-KED2	107	18.3	22.0	0.00050	99.5	ppb
[Ag-KED2	109	18.7	25.3	0.00107	57.7	ppb
[Cd-KED2	111	9.0	40.1	0.00291	117.7	ppb
[Cd-KED2	114	18.9	9.6	0.00395	22.5	ppb
[Sb-KED2	121	60.7	23.2	0.01627	50.7	ppb
[Sb-KED2	123	45.7	12.1	0.01681	22.3	ppb
[Ba-KED2	137	1254.1	3.6	1.45062	1.9	ppb
[> Lu-KED2	175	175973.8	1.9			ppb
[Ti-KED2	203	12.7	24.1	0.00106	58.1	ppb
[Ti-KED2	205	19.0	31.6	0.00015	336.9	ppb
[Pb-KED2	208	228.0	5.4	0.01041	4.9	ppb
[> Th-KED2	232	485450.3	1.6			ppb
[U-KED2	238	58.0	36.3	0.00370	40.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		93			
[	Al-KED2	27					
[>	Sc-KED2	45		95			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		91			
[	As-KED2	75					
[>	Ge-KED1	72		93			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		94			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		99			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802018-03
 Sample Date/Time: Monday, February 26, 2018 17:51:12
 Sample Description:
 Autosampler Position: 343
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802018-03.070
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1541944.4	2.4			ppb
[	Be-STD1	9	36.7	6.3	0.00081	33.1	ppb
[	Mn-STD1	55	551222.9	2.9	18.77805	5.9	ppb
[>	Ge-STD	72	1431292.6	4.2			ppb
[	Al-KED2	27	12475.8	5.5	26.31589	2.0	ppb
[>	Sc-KED2	45	87935.4	3.5			ppb
[	V-KED3	51	1982.5	1.2	2.41749	3.3	ppb
|	Cr-KED3	52	239.0	4.6	0.20851	3.3	ppb
|	Cr-KED3	53	67.3	1.7	0.28756	0.6	ppb
|	Fe-KED3	54	1591.3	1.8	33.97797	2.0	ppb
|	Fe-KED3	56	31922.0	2.4	35.27640	1.1	ppb
|	Co-KED3	59	186.3	7.1	0.07153	6.1	ppb
|	Ni-KED3	60	268.7	2.1	0.33784	3.7	ppb
|	Ni-KED3	62	45.3	18.4	0.33637	19.5	ppb
|	Cu-KED3	63	576.7	5.9	0.23530	5.7	ppb
|	Cu-KED3	65	301.0	4.5	0.23564	6.4	ppb
|	Zn-KED3	66	209.0	7.7	0.47429	17.0	ppb
[>	Ge-KED3	72	64256.2	2.0			ppb
[>	Ge-KED2	72	285496.2	1.3			ppb
[	As-KED2	75	112.3	7.4	0.10539	14.2	ppb
[>	Ge-KED1	72	845847.7	2.8			ppb
|	Se-KED1	77	429.3	5.9	-0.25177	84.5	ppb
[	Se-KED1	78	39.0	18.7	0.06253	24.8	ppb
[	Mo-KED2	95	2764.9	3.3	1.40016	4.1	ppb
[	Mo-KED2	98	4631.2	4.2	1.37798	3.2	ppb
[>	Rh-KED2	103	375819.7	1.2			ppb
|	Ag-KED2	107	15.0	17.6	0.00007	483.1	ppb
|	Ag-KED2	109	15.7	13.3	0.00066	38.9	ppb
|	Cd-KED2	111	9.3	16.4	0.00318	44.8	ppb
|	Cd-KED2	114	14.9	20.7	0.00229	57.6	ppb
|	Sb-KED2	121	67.3	6.9	0.02008	15.6	ppb
|	Sb-KED2	123	48.5	16.6	0.01892	33.7	ppb
[	Ba-KED2	137	1242.7	5.5	1.43250	5.6	ppb
[>	Lu-KED2	175	176774.7	0.5			ppb
|	Tl-KED2	203	9.3	12.4	0.00040	59.2	ppb
|	Tl-KED2	205	24.3	2.4	0.00057	9.3	ppb
[	Pb-KED2	208	218.3	9.3	0.00975	12.6	ppb
[>	Th-KED2	232	497557.9	2.0			ppb
[	U-KED2	238	58.0	9.1	0.00360	10.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		95			
[	Al-KED2	27					
[>	Sc-KED2	45		98			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		94			
[	As-KED2	75					
[>	Ge-KED1	72		94			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		94			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		100			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		103			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801415-002L
 Sample Date/Time: Monday, February 26, 2018 17:55:03
 Sample Description: 5X
 Autosampler Position: 344
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801415-002L.071
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1495080.8			2.4			ppb
[	Be-STD1	9		24.0		28.9	-0.00054	161.7	ppb
[	Mn-STD1	55	109853.1			3.4	3.87917	3.8	ppb
[>	Ge-STD	72	1369569.5			2.6			ppb
[	Al-KED2	27	2939.3			4.6	5.97200	7.1	ppb
[>	Sc-KED2	45	85144.8			3.4			ppb
[	V-KED3	51	474.7			3.6	0.51890	3.3	ppb
|	Cr-KED3	52	55.7			11.7	0.04039	14.2	ppb
|	Cr-KED3	53	70.0			14.8	0.30587	23.4	ppb
|	Fe-KED3	54	400.4			5.7	7.54763	8.1	ppb
|	Fe-KED3	56	7797.5			7.0	7.43207	9.4	ppb
|	Co-KED3	59	46.0			21.7	0.01595	26.5	ppb
|	Ni-KED3	60	58.3			8.8	0.06528	11.9	ppb
|	Ni-KED3	62	8.0			75.0	0.04752	95.9	ppb
|	Cu-KED3	63	132.7			16.3	0.04657	20.7	ppb
|	Cu-KED3	65	92.7			25.2	0.06642	30.3	ppb
|	Zn-KED3	66	104.0			9.8	0.05181	76.9	ppb
[>	Ge-KED3	72	64398.5			1.5			ppb
[>	Ge-KED2	72	284649.8			1.7			ppb
[	As-KED2	75	87.3			8.1	0.05324	28.8	ppb
[>	Ge-KED1	72	845653.4			4.7			ppb
|	Se-KED1	77	438.0			1.8	-0.18487	54.7	ppb
[	Se-KED1	78	17.7			31.6	0.01328	108.8	ppb
[	Mo-KED2	95	528.7			1.8	0.25818	2.3	ppb
|	Mo-KED2	98	922.6			3.3	0.26555	4.1	ppb
[>	Rh-KED2	103	382354.6			1.4			ppb
|	Ag-KED2	107	14.7			81.3	0.00000	59043.7	ppb
|	Ag-KED2	109	13.0			60.1	0.00029	366.0	ppb
|	Cd-KED2	111	8.7			24.0	0.00243	83.1	ppb
|	Cd-KED2	114	9.4			27.8	-0.00004	2699.4	ppb
|	Sb-KED2	121	25.3			25.4	-0.00492	79.1	ppb
|	Sb-KED2	123	17.7			13.7	-0.00547	37.4	ppb
[	Ba-KED2	137	250.0			5.1	0.27479	5.5	ppb
[>	Lu-KED2	175	174107.2			2.0			ppb
|	Tl-KED2	203	10.0			20.0	0.00056	76.6	ppb
|	Tl-KED2	205	16.3			63.7	-0.00005	1740.4	ppb
[	Pb-KED2	208	131.3			62.5	0.00450	117.5	ppb
[>	Th-KED2	232	480024.9			1.1			ppb
[	U-KED2	238	78.7			125.4	0.00521	136.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		96			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		91			
[	Al-KED2	27					
[>	Sc-KED2	45		95			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		93			
[	As-KED2	75					
[>	Ge-KED1	72		94			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		96			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		99			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801415-002A
 Sample Date/Time: Monday, February 26, 2018 17:58:54
 Sample Description:
 Autosampler Position: 345
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801415-002A.072
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1565544.7	2.3			ppb
[	Be-STD1	9	185527.0	1.0	20.87616	3.1	ppb
[	Mn-STD1	55	1156150.1	0.6	39.34555	2.3	ppb
[>	Ge-STD	72	1432452.3	2.2			ppb
[	Al-KED2	27	21657.1	4.3	47.31421	2.4	ppb
[>	Sc-KED2	45	85744.3	2.1			ppb
[	V-KED3	51	18083.8	1.8	23.10604	3.6	ppb
|	Cr-KED3	52	22103.1	2.0	20.64100	3.2	ppb
|	Cr-KED3	53	2722.3	6.1	20.59282	7.8	ppb
|	Fe-KED3	54	2551.1	1.6	56.35799	3.7	ppb
|	Fe-KED3	56	49094.2	1.0	56.18066	2.9	ppb
|	Co-KED3	59	51241.8	2.2	20.69475	3.9	ppb
|	Ni-KED3	60	15712.0	1.0	20.72633	3.0	ppb
|	Ni-KED3	62	2663.6	1.4	20.95179	2.7	ppb
|	Cu-KED3	63	46725.6	1.1	20.22879	2.9	ppb
|	Cu-KED3	65	24113.4	3.5	19.94478	5.4	ppb
|	Zn-KED3	66	4754.1	1.9	19.03955	1.3	ppb
[>	Ge-KED3	72	63061.3	2.1			ppb
[>	Ge-KED2	72	280851.9	2.5			ppb
[	As-KED2	75	9148.6	2.1	19.52423	0.8	ppb
[>	Ge-KED1	72	832295.6	3.0			ppb
|	Se-KED1	77	3021.7	2.0	19.53554	4.8	ppb
[	Se-KED1	78	8175.3	3.3	19.39042	0.9	ppb
[	Mo-KED2	95	44871.7	1.2	23.09686	0.3	ppb
|	Mo-KED2	98	75683.2	2.5	22.88968	1.5	ppb
[>	Rh-KED2	103	371159.0	1.4			ppb
|	Ag-KED2	107	78266.2	1.8	10.03976	1.1	ppb
|	Ag-KED2	109	73527.4	1.3	9.93603	2.8	ppb
|	Cd-KED2	111	20414.9	1.6	19.58453	2.6	ppb
|	Cd-KED2	114	47667.1	2.2	19.70354	1.6	ppb
|	Sb-KED2	121	34537.7	1.8	20.59492	0.4	ppb
|	Sb-KED2	123	26477.3	2.0	21.05023	1.7	ppb
[	Ba-KED2	137	20041.1	1.9	23.55240	0.9	ppb
[>	Lu-KED2	175	176226.3	0.6			ppb
|	Tl-KED2	203	100967.6	1.3	19.83774	0.8	ppb
|	Tl-KED2	205	241416.2	0.7	19.72059	1.3	ppb
[	Pb-KED2	208	312710.0	1.4	19.50782	1.8	ppb
[>	Th-KED2	232	486344.1	1.2			ppb
[	U-KED2	238	279075.3	1.6	20.09842	2.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		100			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		96			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		89			
[>	Ge-KED2	72		92			
[	As-KED2	75					
[>	Ge-KED1	72		93			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		93			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		99			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802018-04
 Sample Date/Time: Monday, February 26, 2018 18:02:45
 Sample Description:
 Autosampler Position: 346
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802018-04.073
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1556058.3			1.7			ppb
[	Be-STD1	9	22465.7			1.2	2.53932	0.5	ppb
[	Mn-STD1	55	1244902.8			1.4	43.11094	3.0	ppb
[>	Ge-STD	72	1408533.5			4.2			ppb
[	Al-KED2	27	56043.8			2.8	122.90905	1.4	ppb
[>	Sc-KED2	45	86117.8			4.2			ppb
[	V-KED3	51	21833.3			0.8	27.37752	0.3	ppb
|	Cr-KED3	52	10989.2			1.8	10.06266	2.4	ppb
|	Cr-KED3	53	1407.4			3.2	10.33030	3.0	ppb
|	Fe-KED3	54	3799.1			3.3	82.91820	2.8	ppb
|	Fe-KED3	56	73986.1			0.8	83.79755	1.4	ppb
|	Co-KED3	59	62440.5			2.1	24.73815	2.7	ppb
|	Ni-KED3	60	19100.1			0.6	24.71739	0.5	ppb
|	Ni-KED3	62	3122.3			5.5	24.10145	6.0	ppb
|	Cu-KED3	63	28543.2			0.0	12.11814	0.7	ppb
|	Cu-KED3	65	14917.8			2.6	12.09719	2.9	ppb
|	Zn-KED3	66	5789.5			1.1	22.82191	0.6	ppb
[>	Ge-KED3	72	64261.5			0.7			ppb
[>	Ge-KED2	72	283830.3			3.9			ppb
[	As-KED2	75	22656.3			2.2	48.05471	1.9	ppb
[>	Ge-KED1	72	839235.4			4.6			ppb
|	Se-KED1	77	6680.2			2.2	46.97243	3.3	ppb
[	Se-KED1	78	20245.2			0.3	47.72830	4.4	ppb
[	Mo-KED2	95	45583.3			1.8	23.13735	2.4	ppb
[	Mo-KED2	98	76806.0			1.7	22.91175	3.0	ppb
[>	Rh-KED2	103	376616.4			4.1			ppb
|	Ag-KED2	107	97053.0			2.4	12.27557	1.9	ppb
|	Ag-KED2	109	91205.2			0.3	12.15582	3.8	ppb
|	Cd-KED2	111	25503.1			0.6	24.13391	4.1	ppb
|	Cd-KED2	114	59302.3			1.2	24.18032	3.4	ppb
|	Sb-KED2	121	17007.5			1.7	9.99207	2.8	ppb
|	Sb-KED2	123	12991.1			1.8	10.17499	2.4	ppb
[	Ba-KED2	137	90649.8			2.4	105.07809	1.9	ppb
[>	Lu-KED2	175	176947.0			1.7			ppb
|	Tl-KED2	203	241216.4			1.4	47.20520	0.7	ppb
|	Tl-KED2	205	581089.2			1.9	47.27286	0.7	ppb
[	Pb-KED2	208	754598.8			1.1	46.88799	0.6	ppb
[>	Th-KED2	232	488540.9			1.5			ppb
[	U-KED2	238	294743.9			2.3	21.12573	1.2	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		99			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		94			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		91			
[>	Ge-KED2	72		93			
[	As-KED2	75					
[>	Ge-KED1	72		93			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		94			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		100			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: KQ1802018-02
 Sample Date/Time: Monday, February 26, 2018 18:06:38
 Sample Description:
 Autosampler Position: 341
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\KQ1802018-02.074
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1571304.8	0.6			ppb
[	Be-STD1	9	24297.3	1.5	2.71976	1.1	ppb
[	Mn-STD1	55	795476.2	3.1	27.07464	0.7	ppb
[>	Ge-STD	72	1431447.7	3.6			ppb
[	Al-KED2	27	45368.3	2.7	100.92671	4.3	ppb
[>	Sc-KED2	45	84867.7	4.5			ppb
[	V-KED3	51	20534.1	2.4	25.32528	2.4	ppb
|	Cr-KED3	52	11192.0	1.2	10.08095	0.7	ppb
|	Cr-KED3	53	1456.1	6.7	10.51843	6.8	ppb
|	Fe-KED3	54	2395.7	5.6	50.93569	5.2	ppb
|	Fe-KED3	56	47511.6	1.4	52.36726	1.4	ppb
|	Co-KED3	59	66797.3	3.4	26.03022	3.0	ppb
|	Ni-KED3	60	20026.7	3.1	25.49442	2.6	ppb
|	Ni-KED3	62	3411.7	2.4	25.90578	2.9	ppb
|	Cu-KED3	63	30511.2	1.3	12.74341	0.9	ppb
|	Cu-KED3	65	16149.5	1.2	12.88337	1.4	ppb
|	Zn-KED3	66	6844.6	2.2	26.60476	2.6	ppb
[>	Ge-KED3	72	65321.0	0.5			ppb
[>	Ge-KED2	72	287457.8	3.1			ppb
[	As-KED2	75	24067.9	3.0	50.38833	0.3	ppb
[>	Ge-KED1	72	863994.4	3.8			ppb
|	Se-KED1	77	7460.6	2.1	51.22798	1.9	ppb
[	Se-KED1	78	22951.0	3.2	52.49693	0.7	ppb
[	Mo-KED2	95	44461.8	1.5	22.25113	0.4	ppb
[	Mo-KED2	98	75219.0	3.0	22.11950	2.4	ppb
[>	Rh-KED2	103	381723.8	1.1			ppb
|	Ag-KED2	107	100399.2	0.8	12.52450	1.8	ppb
|	Ag-KED2	109	95820.0	1.4	12.58708	0.7	ppb
|	Cd-KED2	111	27179.2	1.8	25.34729	0.9	ppb
|	Cd-KED2	114	63688.3	0.9	25.60102	1.5	ppb
|	Sb-KED2	121	17433.3	2.4	10.09796	2.0	ppb
|	Sb-KED2	123	13277.7	3.9	10.25206	2.9	ppb
[	Ba-KED2	137	90040.3	2.7	102.91723	2.0	ppb
[>	Lu-KED2	175	172450.4	1.4			ppb
|	Tl-KED2	203	246502.6	0.5	49.50000	1.0	ppb
|	Tl-KED2	205	595735.2	1.0	49.73344	1.3	ppb
[	Pb-KED2	208	777221.1	0.3	49.55514	1.1	ppb
[>	Th-KED2	232	483327.1	0.7			ppb
[	U-KED2	238	306725.0	1.6	22.22201	0.9	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6		100			
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72		95			
[	Al-KED2 27					
[>	Sc-KED2 45		95			
[	V-KED3 51					
|	Cr-KED3 52					
|	Cr-KED3 53					
|	Fe-KED3 54					
|	Fe-KED3 56					
|	Co-KED3 59					
|	Ni-KED3 60					
|	Ni-KED3 62					
|	Cu-KED3 63					
|	Cu-KED3 65					
|	Zn-KED3 66					
[>	Ge-KED3 72		92			
[>	Ge-KED2 72		94			
[	As-KED2 75					
[>	Ge-KED1 72		96			
|	Se-KED1 77					
|	Se-KED1 78					
[	Mo-KED2 95					
|	Mo-KED2 98					
[>	Rh-KED2 103		96			
|	Ag-KED2 107					
|	Ag-KED2 109					
|	Cd-KED2 111					
|	Cd-KED2 114					
|	Sb-KED2 121					
|	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175		97			
|	Tl-KED2 203					
|	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232		100			
[U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 18:10:30
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCV.075
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1553224.1	1.9			ppb
[	Be-STD1	9	230993.3	0.7	26.19332	1.9	ppb
[	Mn-STD1	55	735382.6	2.6	25.57279	1.8	ppb
[>	Ge-STD	72	1400605.8	0.9			ppb
[	Al-KED2	27	11352.2	2.9	25.21007	1.5	ppb
[>	Sc-KED2	45	83518.1	4.3			ppb
[	V-KED3	51	19673.9	1.9	24.33822	0.9	ppb
|	Cr-KED3	52	27362.5	1.1	24.74177	0.8	ppb
|	Cr-KED3	53	3396.4	1.7	24.90401	0.5	ppb
|	Fe-KED3	54	11320.1	2.7	246.40143	1.7	ppb
|	Fe-KED3	56	217621.9	1.3	246.22908	2.1	ppb
|	Co-KED3	59	64255.5	1.5	25.12336	1.5	ppb
|	Ni-KED3	60	19536.7	0.5	24.95615	1.9	ppb
|	Ni-KED3	62	3201.7	3.5	24.38427	3.0	ppb
|	Cu-KED3	63	59707.9	1.5	25.03418	2.9	ppb
|	Cu-KED3	65	30878.7	1.7	24.72685	3.0	ppb
|	Zn-KED3	66	6486.5	0.6	25.27856	2.0	ppb
[>	Ge-KED3	72	65112.4	1.4			ppb
[>	Ge-KED2	72	284771.5	1.6			ppb
[	As-KED2	75	11752.8	1.0	24.77238	1.0	ppb
[>	Ge-KED1	72	864891.5	4.2			ppb
|	Se-KED1	77	4008.6	3.4	25.88557	2.0	ppb
[	Se-KED1	78	11168.2	1.9	25.51702	2.4	ppb
[	Mo-KED2	95	24535.7	4.4	12.09688	2.0	ppb
[	Mo-KED2	98	41983.6	3.6	12.17149	4.2	ppb
[>	Rh-KED2	103	387289.9	2.7			ppb
|	Ag-KED2	107	101550.0	1.4	12.48825	2.1	ppb
|	Ag-KED2	109	98122.3	2.6	12.70543	1.5	ppb
|	Cd-KED2	111	26762.1	2.6	24.60351	1.8	ppb
|	Cd-KED2	114	62489.3	1.6	24.76310	2.1	ppb
|	Sb-KED2	121	21868.7	1.0	12.49362	1.7	ppb
|	Sb-KED2	123	16497.8	1.4	12.56502	1.7	ppb
[	Ba-KED2	137	22533.4	3.1	25.37779	0.5	ppb
[>	Lu-KED2	175	173594.7	0.9			ppb
|	Tl-KED2	203	125980.5	1.6	25.13206	2.5	ppb
|	Tl-KED2	205	304570.8	2.1	25.25899	2.8	ppb
[	Pb-KED2	208	395009.3	1.6	25.01670	2.0	ppb
[>	Th-KED2	232	483468.9	1.2			ppb
[	U-KED2	238	343036.6	0.9	24.84738	0.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			99		
[	Be-STD1	9	105				
[	Mn-STD1	55	102				
[>	Ge-STD	72			93		
[	Al-KED2	27	101				
[>	Sc-KED2	45			93		
[	V-KED3	51	97				
[	Cr-KED3	52	99				
[	Cr-KED3	53	100				
[	Fe-KED3	54	99				
[	Fe-KED3	56	98				
[	Co-KED3	59	100				
[	Ni-KED3	60	100				
[	Ni-KED3	62	98				
[	Cu-KED3	63	100				
[	Cu-KED3	65	99				
[	Zn-KED3	66	101				
[>	Ge-KED3	72			92		
[>	Ge-KED2	72			93		
[	As-KED2	75	99				
[>	Ge-KED1	72			96		
[	Se-KED1	77	104				
[	Se-KED1	78	102				
[	Mo-KED2	95	97				
[	Mo-KED2	98	97				
[>	Rh-KED2	103			97		
[	Ag-KED2	107	100				
[	Ag-KED2	109	102				
[	Cd-KED2	111	98				
[	Cd-KED2	114	99				
[	Sb-KED2	121	100				
[	Sb-KED2	123	101				
[	Ba-KED2	137	102				
[>	Lu-KED2	175			98		
[	Tl-KED2	203	101				
[	Tl-KED2	205	101				
[	Pb-KED2	208	100				
[>	Th-KED2	232			100		
[U-KED2	238	99				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 18:14:22
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.076
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1501693.3			3.5			ppb
[	Be-STD1	9	44.7			17.0	0.00185	39.1	ppb
[	Mn-STD1	55	1285.4			5.2	0.01225	32.1	ppb
[>	Ge-STD	72	1345825.8			3.4			ppb
[	Al-KED2	27	280.3			3.2	0.03717	100.2	ppb
[>	Sc-KED2	45	85815.1			2.8			ppb
[	V-KED3	51	152.7			6.8	0.11425	12.1	ppb
[	Cr-KED3	52	12.3			26.1	0.00074	405.4	ppb
[	Cr-KED3	53	71.3			37.0	0.31510	63.4	ppb
[	Fe-KED3	54	55.7			21.4	-0.09049	294.7	ppb
[	Fe-KED3	56	1409.7			1.0	0.07001	25.2	ppb
[	Co-KED3	59	17.0			23.5	0.00442	35.4	ppb
[	Ni-KED3	60	9.7			21.5	0.00229	117.9	ppb
[	Ni-KED3	62	4.0			86.6	0.01673	159.0	ppb
[	Cu-KED3	63	28.0			32.7	0.00210	187.4	ppb
[	Cu-KED3	65	20.0			22.9	0.00733	50.9	ppb
[	Zn-KED3	66	96.3			5.9	0.01980	117.1	ppb
[>	Ge-KED3	72	64632.9			0.5			ppb
[>	Ge-KED2	72	291509.1			3.2			ppb
[	As-KED2	75	77.7			9.3	0.02929	69.8	ppb
[>	Ge-KED1	72	843347.8			4.0			ppb
[	Se-KED1	77	448.0			1.9	-0.09857	199.7	ppb
[	Se-KED1	78	17.3			9.1	0.01208	17.7	ppb
[	Mo-KED2	95	34.0			21.2	0.01096	30.1	ppb
[	Mo-KED2	98	48.5			27.7	0.00886	43.0	ppb
[>	Rh-KED2	103	380623.6			3.6			ppb
[	Ag-KED2	107	53.7			12.0	0.00491	21.6	ppb
[	Ag-KED2	109	53.3			15.3	0.00563	22.6	ppb
[	Cd-KED2	111	8.3			18.3	0.00218	79.6	ppb
[	Cd-KED2	114	23.7			9.2	0.00574	14.6	ppb
[	Sb-KED2	121	42.0			12.6	0.00476	46.9	ppb
[	Sb-KED2	123	27.2			24.6	0.00192	275.7	ppb
[	Ba-KED2	137	24.0			12.5	0.01688	14.9	ppb
[>	Lu-KED2	175	174792.5			2.2			ppb
[	Tl-KED2	203	58.7			20.8	0.01016	21.3	ppb
[	Tl-KED2	205	132.7			7.0	0.00951	6.9	ppb
[	Pb-KED2	208	217.7			4.9	0.00987	7.0	ppb
[>	Th-KED2	232	483421.6			2.4			ppb
[	U-KED2	238	80.7			14.1	0.00536	15.3	ppb

QC Calculated Values

IS Symbol	Analyte Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD 6			96		
[	Be-STD1 9					
[	Mn-STD1 55					
[>	Ge-STD 72			90		
[	Al-KED2 27					
[>	Sc-KED2 45			96		
[	V-KED3 51					
[	Cr-KED3 52					
[	Cr-KED3 53					
[	Fe-KED3 54					
[	Fe-KED3 56					
[	Co-KED3 59					
[	Ni-KED3 60					
[	Ni-KED3 62					
[	Cu-KED3 63					
[	Cu-KED3 65					
[	Zn-KED3 66					
[>	Ge-KED3 72			91		
[>	Ge-KED2 72			96		
[	As-KED2 75					
[>	Ge-KED1 72			94		
[	Se-KED1 77					
[	Se-KED1 78					
[	Mo-KED2 95					
[	Mo-KED2 98					
[>	Rh-KED2 103			95		
[	Ag-KED2 107					
[	Ag-KED2 109					
[	Cd-KED2 111					
[	Cd-KED2 114					
[	Sb-KED2 121					
[	Sb-KED2 123					
[	Ba-KED2 137					
[>	Lu-KED2 175			99		
[	Tl-KED2 203					
[	Tl-KED2 205					
[	Pb-KED2 208					
[>	Th-KED2 232			100		
[	U-KED2 238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Cr-KED3	53	Out of Control

LABWORKS - Summary Report

Sample ID: MoSTD
 Sample Date/Time: Monday, February 26, 2018 18:18:15
 Sample Description:
 Autosampler Position: 360
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\MoSTD.077
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1425551.7	2.6			ppb
[	Be-STD1	9	23.3	57.1	-0.00051	321.6	ppb
[	Mn-STD1	55	1386.7	3.6	0.00838	12.4	ppb
[>	Ge-STD	72	1580114.5	1.9			ppb
[	Al-KED2	27	433.7	8.6	0.40457	14.8	ppb
[>	Sc-KED2	45	83203.7	3.0			ppb
[	V-KED3	51	15.7	74.8	-0.05565	28.5	ppb
|	Cr-KED3	52	28.3	57.4	0.01715	93.5	ppb
|	Cr-KED3	53	8.0	90.1	-0.15319	37.9	ppb
|	Fe-KED3	54	87.2	16.9	0.73973	49.2	ppb
|	Fe-KED3	56	1581.1	13.4	0.39353	69.6	ppb
|	Co-KED3	59	23.7	59.8	0.00772	78.3	ppb
|	Ni-KED3	60	13.3	37.7	0.00822	85.0	ppb
|	Ni-KED3	62	4.7	99.0	0.02417	155.3	ppb
|	Cu-KED3	63	38.7	75.7	0.00776	172.1	ppb
|	Cu-KED3	65	19.0	53.4	0.00760	116.7	ppb
|	Zn-KED3	66	81.7	6.3	-0.01614	125.7	ppb
[>	Ge-KED3	72	60442.3	0.7			ppb
[>	Ge-KED2	72	277289.5	2.7			ppb
[	As-KED2	75	35.3	13.1	-0.05514	15.4	ppb
[>	Ge-KED1	72	814791.1	6.0			ppb
|	Se-KED1	77	396.7	6.4	-0.37767	71.3	ppb
[	Se-KED1	78	21.0	52.2	0.02181	108.1	ppb
[	Mo-KED2	95	101036.7	0.7	49.68586	1.9	ppb
|	Mo-KED2	98	170611.6	1.1	49.30072	2.0	ppb
[>	Rh-KED2	103	388626.2	1.8			ppb
|	Ag-KED2	107	55.3	10.4	0.00495	14.3	ppb
|	Ag-KED2	109	54.0	8.1	0.00555	12.2	ppb
|	Cd-KED2	111	25.7	31.7	0.01794	44.0	ppb
|	Cd-KED2	114	43.2	6.1	0.01323	6.5	ppb
|	Sb-KED2	121	9.3	32.7	-0.01433	11.5	ppb
|	Sb-KED2	123	14.2	26.7	-0.00839	32.3	ppb
[	Ba-KED2	137	13.0	23.1	0.00404	85.8	ppb
[>	Lu-KED2	175	181938.1	1.8			ppb
|	Tl-KED2	203	15.3	65.7	0.00146	126.6	ppb
|	Tl-KED2	205	49.3	11.9	0.00250	20.6	ppb
[	Pb-KED2	208	67.3	6.0	0.00024	126.9	ppb
[>	Th-KED2	232	488621.7	1.1			ppb
[	U-KED2	238	17.3	63.5	0.00077	105.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		91			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		105			
[	Al-KED2	27					
[>	Sc-KED2	45		93			
[	V-KED3	51					
[	Cr-KED3	52					
[	Cr-KED3	53					
[	Fe-KED3	54					
[	Fe-KED3	56					
[	Co-KED3	59					
[	Ni-KED3	60					
[	Ni-KED3	62					
[	Cu-KED3	63					
[	Cu-KED3	65					
[	Zn-KED3	66					
[>	Ge-KED3	72		85			
[>	Ge-KED2	72		91			
[	As-KED2	75					
[>	Ge-KED1	72		91			
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
[	Mo-KED2	98					
[>	Rh-KED2	103		97			
[	Ag-KED2	107					
[	Ag-KED2	109					
[	Cd-KED2	111					
[	Cd-KED2	114					
[	Sb-KED2	121					
[	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		103			
[	Tl-KED2	203					
[	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801415-003
 Sample Date/Time: Monday, February 26, 2018 18:22:08
 Sample Description:
 Autosampler Position: 347
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801415-003.078
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1521546.1		1.5			ppb
[Be-STD1	9	32.0		22.5	0.00032	245.9	ppb
[Mn-STD1	55	272419.0		2.1	9.43162	2.5	ppb
[> Ge-STD	72	1403851.9		1.3			ppb
[Al-KED2	27	23341.1		2.3	50.95575	1.3	ppb
[> Sc-KED2	45	85932.2		3.6			ppb
[V-KED3	51	2021.1		4.7	2.48028	6.5	ppb
| Cr-KED3	52	454.0		4.6	0.40779	3.6	ppb
| Cr-KED3	53	106.0		6.8	0.58220	11.2	ppb
| Fe-KED3	54	3116.2		2.5	68.18810	4.1	ppb
| Fe-KED3	56	63971.3		1.0	72.65492	1.8	ppb
| Co-KED3	59	239.0		10.6	0.09293	10.6	ppb
| Ni-KED3	60	194.3		3.7	0.24275	2.4	ppb
| Ni-KED3	62	38.0		27.9	0.28062	28.2	ppb
| Cu-KED3	63	706.7		2.5	0.29226	3.9	ppb
| Cu-KED3	65	377.3		6.9	0.29924	8.3	ppb
| Zn-KED3	66	277.3		9.7	0.75248	13.2	ppb
[> Ge-KED3	72	63912.7		1.5			ppb
[> Ge-KED2	72	281098.8		4.2			ppb
[As-KED2	75	109.3		8.4	0.10295	19.5	ppb
[> Ge-KED1	72	852920.7		5.2			ppb
| Se-KED1	77	516.7		6.7	0.36726	32.2	ppb
[Se-KED1	78	33.3		28.9	0.04825	39.3	ppb
[Mo-KED2	95	1140.7		1.3	0.57946	3.1	ppb
[Mo-KED2	98	1930.6		3.1	0.57657	1.3	ppb
[> Rh-KED2	103	372409.3		1.8			ppb
| Ag-KED2	107	29.3		38.0	0.00191	73.0	ppb
| Ag-KED2	109	26.7		15.2	0.00217	27.0	ppb
| Cd-KED2	111	10.0		34.6	0.00390	83.5	ppb
| Cd-KED2	114	14.1		39.6	0.00201	118.6	ppb
| Sb-KED2	121	54.7		29.6	0.01301	78.8	ppb
| Sb-KED2	123	45.9		2.7	0.01721	2.0	ppb
[Ba-KED2	137	1117.4		2.8	1.29915	3.6	ppb
[> Lu-KED2	175	173346.8		1.3			ppb
| Tl-KED2	203	12.7		50.8	0.00111	119.1	ppb
| Tl-KED2	205	25.0		6.9	0.00067	22.7	ppb
[Pb-KED2	208	437.0		6.6	0.02388	6.1	ppb
[> Th-KED2	232	484415.8		0.8			ppb
[U-KED2	238	68.7		17.6	0.00448	18.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		97			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		94			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		90			
[>	Ge-KED2	72		92			
[	As-KED2	75					
[>	Ge-KED1	72		95			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		93			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		98			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		100			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801415-006
 Sample Date/Time: Monday, February 26, 2018 18:25:59
 Sample Description:
 Autosampler Position: 348
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801415-006.079
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1537248.1			2.5			ppb
[	Be-STD1	9		47.3		20.8	0.00205	56.0	ppb
[	Mn-STD1	55	46285237.3			2.3	1599.99466	1.1	ppb
[>	Ge-STD	72	1410856.4			1.2			ppb
[	Al-KED2	27	3661.8			2.1	7.47344	3.1	ppb
[>	Sc-KED2	45	86243.0			2.4			ppb
[	V-KED3	51	330.3			3.5	0.34349	3.6	ppb
|	Cr-KED3	52	76.0			4.6	0.05994	4.2	ppb
|	Cr-KED3	53	110.7			15.6	0.62159	20.5	ppb
|	Fe-KED3	54	67368.4			1.3	1510.07761	2.2	ppb
|	Fe-KED3	56	1307128.6			1.7	1523.78188	2.2	ppb
|	Co-KED3	59	9546.9			3.1	3.82396	3.2	ppb
|	Ni-KED3	60	429.3			8.1	0.55204	8.0	ppb
|	Ni-KED3	62	76.0			4.6	0.57953	3.6	ppb
|	Cu-KED3	63	560.7			6.0	0.23135	7.3	ppb
|	Cu-KED3	65	293.3			8.2	0.23185	7.4	ppb
|	Zn-KED3	66	722.7			1.5	2.56432	2.5	ppb
[>	Ge-KED3	72	63526.9			1.2			ppb
[>	Ge-KED2	72	282396.7			0.9			ppb
[	As-KED2	75	413.3			1.6	0.75138	2.9	ppb
[>	Ge-KED1	72	840129.7			5.2			ppb
|	Se-KED1	77	457.3			1.8	-0.01653	715.1	ppb
[	Se-KED1	78	24.0			32.6	0.02750	56.0	ppb
[	Mo-KED2	95	309.3			6.1	0.15516	3.3	ppb
|	Mo-KED2	98	556.5			7.0	0.16543	10.4	ppb
[>	Rh-KED2	103	366392.4			3.0			ppb
|	Ag-KED2	107	24.3			16.6	0.00132	33.0	ppb
|	Ag-KED2	109	13.0			33.5	0.00036	171.7	ppb
|	Cd-KED2	111	22.0			4.5	0.01572	4.1	ppb
|	Cd-KED2	114	58.4			16.5	0.02065	19.8	ppb
|	Sb-KED2	121	70.7			27.5	0.02312	50.3	ppb
|	Sb-KED2	123	65.3			17.4	0.03348	26.9	ppb
[	Ba-KED2	137	4073.9			2.6	4.84431	3.8	ppb
[>	Lu-KED2	175	176077.3			1.4			ppb
|	Tl-KED2	203	22.7			18.4	0.00302	26.3	ppb
|	Tl-KED2	205	59.7			17.6	0.00347	23.5	ppb
[	Pb-KED2	208	6061.8			2.5	0.37466	1.2	ppb
[>	Th-KED2	232	488228.6			1.0			ppb
[	U-KED2	238	106.7			6.6	0.00717	7.7	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		98			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		94			
[	Al-KED2	27					
[>	Sc-KED2	45		96			
[	V-KED3	51					
|	Cr-KED3	52					
|	Cr-KED3	53					
|	Fe-KED3	54					
|	Fe-KED3	56					
|	Co-KED3	59					
|	Ni-KED3	60					
|	Ni-KED3	62					
|	Cu-KED3	63					
|	Cu-KED3	65					
|	Zn-KED3	66					
[>	Ge-KED3	72		90			
[>	Ge-KED2	72		93			
[	As-KED2	75					
[>	Ge-KED1	72		93			
|	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
|	Mo-KED2	98					
[>	Rh-KED2	103		92			
|	Ag-KED2	107					
|	Ag-KED2	109					
|	Cd-KED2	111					
|	Cd-KED2	114					
|	Sb-KED2	121					
|	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		99			
|	Tl-KED2	203					
|	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		101			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: K1801415-007
 Sample Date/Time: Monday, February 26, 2018 18:29:50
 Sample Description:
 Autosampler Position: 349
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\K1801415-007.080
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1564206.3			1.6			ppb
[Be-STD1	9	40.7			24.3	0.00121	96.4	ppb
[Mn-STD1	55	46006499.2			3.3	1564.57508	1.0	ppb
[> Ge-STD	72	1434531.7			4.0			ppb
[Al-KED2	27	10756.7			4.9	22.78660	1.6	ppb
[> Sc-KED2	45	87281.0			3.4			ppb
[V-KED3	51	3859.2			1.7	4.79150	2.1	ppb
[Cr-KED3	52	131.3			12.1	0.11011	11.8	ppb
[Cr-KED3	53	68.0			7.8	0.29435	15.1	ppb
[Fe-KED3	54	2553.2			5.9	55.45777	5.1	ppb
[Fe-KED3	56	47544.3			0.4	53.47295	2.1	ppb
[Co-KED3	59	5151.9			0.2	2.04536	1.5	ppb
[Ni-KED3	60	1050.0			2.4	1.35332	1.3	ppb
[Ni-KED3	62	167.3			1.8	1.28205	0.3	ppb
[Cu-KED3	63	1538.7			2.8	0.64596	1.3	ppb
[Cu-KED3	65	810.7			6.2	0.65115	6.5	ppb
[Zn-KED3	66	433.7			11.8	1.37639	12.9	ppb
[> Ge-KED3	72	64066.4			1.7			ppb
[> Ge-KED2	72	282876.8			1.3			ppb
[As-KED2	75	129.0			4.7	0.14339	11.5	ppb
[> Ge-KED1	72	855490.6			2.8			ppb
[Se-KED1	77	469.3			9.8	0.00570	5581.0	ppb
[Se-KED1	78	26.0			21.0	0.03131	34.9	ppb
[Mo-KED2	95	5428.4			3.1	2.78807	2.7	ppb
[Mo-KED2	98	9277.8			2.8	2.80028	1.1	ppb
[> Rh-KED2	103	371263.4			1.8			ppb
[Ag-KED2	107	22.3			22.1	0.00103	56.5	ppb
[Ag-KED2	109	19.0			22.9	0.00115	54.6	ppb
[Cd-KED2	111	25.0			22.3	0.01836	30.5	ppb
[Cd-KED2	114	48.1			0.8	0.01607	2.4	ppb
[Sb-KED2	121	187.3			15.2	0.09224	19.2	ppb
[Sb-KED2	123	152.3			1.3	0.10196	1.2	ppb
[Ba-KED2	137	1714.1			4.6	2.00390	3.6	ppb
[> Lu-KED2	175	178132.7			0.5			ppb
[TI-KED2	203	46.7			13.1	0.00764	16.1	ppb
[TI-KED2	205	107.3			5.7	0.00727	7.1	ppb
[Pb-KED2	208	501.7			6.6	0.02714	7.9	ppb
[> Th-KED2	232	493146.7			0.3			ppb
[U-KED2	238	128.7			11.2	0.00866	12.1	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6		100			
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72		96			
[	Al-KED2	27					
[>	Sc-KED2	45		97			
[	V-KED3	51					
[	Cr-KED3	52					
[	Cr-KED3	53					
[	Fe-KED3	54					
[	Fe-KED3	56					
[	Co-KED3	59					
[	Ni-KED3	60					
[	Ni-KED3	62					
[	Cu-KED3	63					
[	Cu-KED3	65					
[	Zn-KED3	66					
[>	Ge-KED3	72		90			
[>	Ge-KED2	72		93			
[	As-KED2	75					
[>	Ge-KED1	72		95			
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
[	Mo-KED2	98					
[>	Rh-KED2	103		93			
[	Ag-KED2	107					
[	Ag-KED2	109					
[	Cd-KED2	111					
[	Cd-KED2	114					
[	Sb-KED2	121					
[	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175		101			
[	Tl-KED2	203					
[	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232		102			
[U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCV
 Sample Date/Time: Monday, February 26, 2018 18:33:42
 Sample Description:
 Autosampler Position: 2
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCV.081
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens.	RSD	Conc. Mean	Conc. RSD	Sample Unit
> Li-STD	6	1582893.9			3.0			ppb
[Be-STD1	9	234738.7			3.1	26.11434	1.3	ppb
[Mn-STD1	55	763635.3			1.3	25.31240	1.9	ppb
> Ge-STD	72	1469791.6			2.1			ppb
[Al-KED2	27	11475.3			1.9	24.77151	3.1	ppb
> Sc-KED2	45	85884.8			2.4			ppb
[V-KED3	51	19939.9			1.5	24.43704	1.9	ppb
[Cr-KED3	52	27739.9			0.2	24.84766	1.5	ppb
[Cr-KED3	53	3442.4			1.8	25.00422	1.4	ppb
[Fe-KED3	54	11542.3			2.1	248.87390	0.7	ppb
[Fe-KED3	56	223613.2			0.6	250.64300	1.9	ppb
[Co-KED3	59	64693.9			1.9	25.05413	1.6	ppb
[Ni-KED3	60	19602.8			1.9	24.79914	1.4	ppb
[Ni-KED3	62	3243.0			7.1	24.47107	7.4	ppb
[Cu-KED3	63	59339.0			1.9	24.64567	3.5	ppb
[Cu-KED3	65	30786.5			1.0	24.41893	2.6	ppb
[Zn-KED3	66	6303.4			1.9	24.32059	3.1	ppb
> Ge-KED3	72	65736.9			1.6			ppb
> Ge-KED2	72	293484.5			2.5			ppb
[As-KED2	75	12062.8			3.0	24.66742	1.5	ppb
> Ge-KED1	72	876850.0			3.0			ppb
[Se-KED1	77	4006.6			2.0	25.46854	1.5	ppb
[Se-KED1	78	11197.9			3.6	25.21806	1.7	ppb
[Mo-KED2	95	24973.1			1.1	12.30686	1.5	ppb
[Mo-KED2	98	42401.3			1.9	12.27777	1.3	ppb
> Rh-KED2	103	387598.7			0.9			ppb
[Ag-KED2	107	100562.6			3.1	12.35158	2.2	ppb
[Ag-KED2	109	96752.6			1.2	12.51724	1.1	ppb
[Cd-KED2	111	26979.1			1.9	24.77873	1.0	ppb
[Cd-KED2	114	61897.8			0.9	24.50268	1.0	ppb
[Sb-KED2	121	21728.5			0.8	12.40098	1.7	ppb
[Sb-KED2	123	16434.5			1.3	12.50325	0.5	ppb
[Ba-KED2	137	22398.2			4.0	25.20500	3.4	ppb
> Lu-KED2	175	176124.0			2.1			ppb
[TI-KED2	203	126274.5			2.3	24.82545	1.2	ppb
[TI-KED2	205	302716.9			1.7	24.74305	0.6	ppb
[Pb-KED2	208	394970.8			1.3	24.65628	0.9	ppb
> Th-KED2	232	491906.7			1.7			ppb
[U-KED2	238	349909.8			1.2	24.91797	2.9	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6			101		
[	Be-STD1	9	104				
[	Mn-STD1	55	101				
[>	Ge-STD	72			98		
[	Al-KED2	27	99				
[>	Sc-KED2	45			96		
[	V-KED3	51	98				
[	Cr-KED3	52	99				
[	Cr-KED3	53	100				
[	Fe-KED3	54	100				
[	Fe-KED3	56	100				
[	Co-KED3	59	100				
[	Ni-KED3	60	99				
[	Ni-KED3	62	98				
[	Cu-KED3	63	99				
[	Cu-KED3	65	98				
[	Zn-KED3	66	97				
[>	Ge-KED3	72			93		
[>	Ge-KED2	72			96		
[	As-KED2	75	99				
[>	Ge-KED1	72			97		
[	Se-KED1	77	102				
[	Se-KED1	78	101				
[	Mo-KED2	95	98				
[	Mo-KED2	98	98				
[>	Rh-KED2	103			97		
[	Ag-KED2	107	99				
[	Ag-KED2	109	100				
[	Cd-KED2	111	99				
[	Cd-KED2	114	98				
[	Sb-KED2	121	99				
[	Sb-KED2	123	100				
[	Ba-KED2	137	101				
[>	Lu-KED2	175			99		
[	Tl-KED2	203	99				
[	Tl-KED2	205	99				
[	Pb-KED2	208	99				
[>	Th-KED2	232			101		
[U-KED2	238	100				

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: CCB
 Sample Date/Time: Monday, February 26, 2018 18:37:33
 Sample Description:
 Autosampler Position: 1
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\CCB.082
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1518209.2	2.8			ppb
[	Be-STD1	9	23.3	13.1	-0.00067	58.1	ppb
[	Mn-STD1	55	1256.7	2.0	0.01007	5.6	ppb
[>	Ge-STD	72	1378168.9	2.4			ppb
[	Al-KED2	27	304.3	4.7	0.09029	15.3	ppb
[>	Sc-KED2	45	85718.0	4.2			ppb
[	V-KED3	51	150.7	4.1	0.10931	8.2	ppb
|	Cr-KED3	52	11.0	0.0	-0.00061	46.6	ppb
|	Cr-KED3	53	78.7	25.5	0.36313	42.6	ppb
|	Fe-KED3	54	51.0	19.3	-0.21116	89.2	ppb
|	Fe-KED3	56	1401.1	3.6	0.03885	97.9	ppb
|	Co-KED3	59	4.3	48.0	-0.00060	128.0	ppb
|	Ni-KED3	60	6.7	31.2	-0.00171	148.2	ppb
|	Ni-KED3	62	4.7	65.5	0.02099	105.8	ppb
|	Cu-KED3	63	22.0	59.6	-0.00047	1208.7	ppb
|	Cu-KED3	65	12.3	23.4	0.00102	234.1	ppb
|	Zn-KED3	66	94.3	14.1	0.00707	748.2	ppb
[>	Ge-KED3	72	65499.6	2.9			ppb
[>	Ge-KED2	72	290354.9	2.5			ppb
[	As-KED2	75	72.7	13.6	0.01893	95.0	ppb
[>	Ge-KED1	72	862376.6	4.5			ppb
|	Se-KED1	77	462.0	10.2	-0.07900	298.3	ppb
[	Se-KED1	78	16.4	22.9	0.00894	77.2	ppb
[	Mo-KED2	95	28.7	10.7	0.00827	15.9	ppb
|	Mo-KED2	98	35.7	34.4	0.00503	68.9	ppb
[>	Rh-KED2	103	381766.7	2.2			ppb
|	Ag-KED2	107	77.0	65.2	0.00773	79.2	ppb
|	Ag-KED2	109	73.0	78.4	0.00812	90.8	ppb
|	Cd-KED2	111	21.7	53.3	0.01448	72.4	ppb
|	Cd-KED2	114	40.7	72.0	0.01244	92.6	ppb
|	Sb-KED2	121	38.0	9.1	0.00241	74.4	ppb
|	Sb-KED2	123	30.5	17.6	0.00438	85.1	ppb
[	Ba-KED2	137	15.0	57.7	0.00650	148.5	ppb
[>	Lu-KED2	175	174350.0	1.7			ppb
|	Tl-KED2	203	39.3	43.8	0.00634	51.7	ppb
|	Tl-KED2	205	117.7	26.0	0.00828	28.3	ppb
[	Pb-KED2	208	172.7	23.2	0.00704	33.1	ppb
[>	Th-KED2	232	488749.5	1.2			ppb
[	U-KED2	238	96.0	22.0	0.00639	22.4	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				97	
[	Be-STD1	9					
[	Mn-STD1	55					
[>	Ge-STD	72			92		
[	Al-KED2	27					
[>	Sc-KED2	45			96		
[	V-KED3	51					
[	Cr-KED3	52					
[	Cr-KED3	53					
[	Fe-KED3	54					
[	Fe-KED3	56					
[	Co-KED3	59					
[	Ni-KED3	60					
[	Ni-KED3	62					
[	Cu-KED3	63					
[	Cu-KED3	65					
[	Zn-KED3	66					
[>	Ge-KED3	72			92		
[>	Ge-KED2	72			95		
[	As-KED2	75					
[>	Ge-KED1	72			96		
[	Se-KED1	77					
[	Se-KED1	78					
[	Mo-KED2	95					
[	Mo-KED2	98					
[>	Rh-KED2	103			96		
[	Ag-KED2	107					
[	Ag-KED2	109					
[	Cd-KED2	111					
[	Cd-KED2	114					
[	Sb-KED2	121					
[	Sb-KED2	123					
[	Ba-KED2	137					
[>	Lu-KED2	175			98		
[	Tl-KED2	203					
[	Tl-KED2	205					
[	Pb-KED2	208					
[>	Th-KED2	232			101		
[	U-KED2	238					

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Cr-KED3	53	Out of Control

LABWORKS - Summary Report

Sample ID: LLCCVW
 Sample Date/Time: Monday, February 26, 2018 18:41:25
 Sample Description:
 Autosampler Position: 4
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW.083
 User Name: RRM
 Batch ID:

Concentration Results

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[>	Li-STD	6	1553643.6	2.4			ppb
[	Be-STD1	9	201.3	5.1	0.01947	8.3	ppb
[	Mn-STD1	55	6925.7	5.6	0.19988	6.6	ppb
[>	Ge-STD	72	1442057.0	2.2			ppb
[	Al-KED2	27	2084.2	2.2	4.04739	2.4	ppb
[>	Sc-KED2	45	85394.9	2.7			ppb
[	V-KED3	51	299.0	5.3	0.29192	6.1	ppb
[	Cr-KED3	52	235.7	10.6	0.20133	11.5	ppb
[	Cr-KED3	53	77.3	12.8	0.35092	20.0	ppb
[	Fe-KED3	54	132.7	7.6	1.56612	13.2	ppb
[	Fe-KED3	56	3097.7	1.7	1.95664	3.8	ppb
[	Co-KED3	59	44.3	12.4	0.01494	13.8	ppb
[	Ni-KED3	60	156.3	5.9	0.18824	5.8	ppb
[	Ni-KED3	62	31.3	3.7	0.22322	3.5	ppb
[	Cu-KED3	63	266.0	10.1	0.10103	10.6	ppb
[	Cu-KED3	65	128.0	5.6	0.09302	6.3	ppb
[	Zn-KED3	66	602.7	7.5	2.00225	8.5	ppb
[>	Ge-KED3	72	65543.3	0.5			ppb
[>	Ge-KED2	72	284757.9	1.7			ppb
[	As-KED2	75	290.0	1.2	0.48265	1.6	ppb
[>	Ge-KED1	72	844211.7	2.3			ppb
[	Se-KED1	77	596.0	5.3	1.00609	30.1	ppb
[	Se-KED1	78	458.7	2.5	1.04633	4.3	ppb
[	Mo-KED2	95	214.7	2.8	0.10119	3.1	ppb
[	Mo-KED2	98	353.0	1.5	0.09819	1.6	ppb
[>	Rh-KED2	103	382545.7	2.9			ppb
[	Ag-KED2	107	166.0	10.0	0.01881	7.9	ppb
[	Ag-KED2	109	166.7	14.3	0.02038	12.1	ppb
[	Cd-KED2	111	26.3	11.0	0.01886	14.0	ppb
[	Cd-KED2	114	57.6	14.4	0.01931	18.8	ppb
[	Sb-KED2	121	112.0	1.8	0.04529	6.6	ppb
[	Sb-KED2	123	95.3	6.6	0.05432	5.0	ppb
[	Ba-KED2	137	45.3	7.1	0.04119	10.7	ppb
[>	Lu-KED2	175	175866.6	2.2			ppb
[	Tl-KED2	203	120.7	10.1	0.02235	11.7	ppb
[	Tl-KED2	205	261.7	3.8	0.02001	3.4	ppb
[	Pb-KED2	208	348.0	2.5	0.01794	5.0	ppb
[>	Th-KED2	232	486884.3	1.4			ppb
[	U-KED2	238	286.0	5.0	0.02009	5.3	ppb

2x
 m 2/27/18

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				99	
[	Be-STD1	9		97			
[	Mn-STD1	55		100			
[>	Ge-STD	72				96	
[	Al-KED2	27		101			
[>	Sc-KED2	45				95	
[	V-KED3	51		146			
[	Cr-KED3	52		101			
[	Cr-KED3	53		175			
[	Fe-KED3	54		78			
[	Fe-KED3	56		98			
[	Co-KED3	59		75			
[	Ni-KED3	60		94			
[	Ni-KED3	62		112			
[	Cu-KED3	63		101			
[	Cu-KED3	65		93			
[	Zn-KED3	66		100			
[>	Ge-KED3	72				92	
[>	Ge-KED2	72				93	
[	As-KED2	75		97			
[>	Ge-KED1	72				94	
[	Se-KED1	77		101			
[	Se-KED1	78		105			
[	Mo-KED2	95		101			
[	Mo-KED2	98		98			
[>	Rh-KED2	103				96	
[	Ag-KED2	107		94			
[	Ag-KED2	109		102			
[	Cd-KED2	111		94			
[	Cd-KED2	114		97			
[	Sb-KED2	121		91			
[	Sb-KED2	123		109			
[	Ba-KED2	137		82			
[>	Lu-KED2	175				99	
[	Tl-KED2	203		112			
[	Tl-KED2	205		100			
[	Pb-KED2	208		90			
[>	Th-KED2	232				100	
[U-KED2	238		100			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
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LABWORKS - Summary Report

Sample ID: LLCCVW 2X
 Sample Date/Time: Monday, February 26, 2018 18:45:17
 Sample Description:
 Autosampler Position: 7
 Number of Replicates: 3
 Dataset File: C:\NexIONData\DataSet\022618A1\LLCCVW 2X.084
 User Name: RRM
 Batch ID:

Concentration Results

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Conc. Mean	Conc. RSD	Sample Unit
[> Li-STD	6	1484338.3	2.9			ppb
[Be-STD1	9	368.0	12.7	0.04030	14.0	ppb
[Mn-STD1	55	12394.0	2.6	0.41286	1.9	ppb
[> Ge-STD	72	1352048.5	3.8			ppb
[Al-KED2	27	3741.2	1.2	7.82384	1.0	ppb
[> Sc-KED2	45	84414.7	1.4			ppb
[V-KED3	51	451.3	7.6	0.50116	9.9	ppb
[Cr-KED3	52	417.7	4.4	0.37895	3.6	ppb
[Cr-KED3	53	122.7	7.4	0.71877	10.6	ppb
[Fe-KED3	54	235.5	6.9	3.99871	10.0	ppb
[Fe-KED3	56	4778.8	1.8	4.06190	1.0	ppb
[Co-KED3	59	107.7	7.1	0.04115	8.4	ppb
[Ni-KED3	60	290.3	6.8	0.37241	7.5	ppb
[Ni-KED3	62	56.0	9.4	0.42629	10.6	ppb
[Cu-KED3	63	483.3	7.1	0.19934	8.4	ppb
[Cu-KED3	65	245.3	4.5	0.19382	5.6	ppb
[Zn-KED3	66	1001.0	4.4	3.71691	5.8	ppb
[> Ge-KED3	72	63152.6	1.1			ppb
[> Ge-KED2	72	288322.8	3.3			ppb
[As-KED2	75	510.7	4.2	0.93663	1.9	ppb
[> Ge-KED1	72	849324.8	4.4			ppb
[Se-KED1	77	665.3	0.5	1.49845	13.3	ppb
[Se-KED1	78	857.7	2.2	1.97106	5.8	ppb
[Mo-KED2	95	448.7	7.2	0.21721	6.8	ppb
[Mo-KED2	98	723.8	6.6	0.20629	7.0	ppb
[> Rh-KED2	103	383885.6	0.7			ppb
[Ag-KED2	107	319.3	5.6	0.03779	6.2	ppb
[Ag-KED2	109	314.7	4.5	0.03968	4.1	ppb
[Cd-KED2	111	47.0	12.9	0.03793	14.7	ppb
[Cd-KED2	114	118.3	4.0	0.04347	5.0	ppb
[Sb-KED2	121	211.3	11.0	0.10237	13.7	ppb
[Sb-KED2	123	147.2	11.4	0.09410	14.4	ppb
[> Ba-KED2	137	117.3	53.2	0.12301	58.3	ppb
[> Lu-KED2	175	173267.3	2.7			ppb
[Tl-KED2	203	308.0	60.2	0.05993	60.7	ppb
[Tl-KED2	205	628.3	42.7	0.05067	42.9	ppb
[Pb-KED2	208	820.0	35.0	0.04811	36.8	ppb
[> Th-KED2	232	487118.9	1.5			ppb
[U-KED2	238	599.3	16.7	0.04255	15.6	ppb

QC Calculated Values

IS Symbol	Analyte	Mass	QC Std % Recovery	IS % Recovery	Spike % RDuplicate	Rel. % Difference	Dilution % Difference
[>	Li-STD	6				95	
[	Be-STD1	9		101			
[	Mn-STD1	55		103			
[>	Ge-STD	72				90	
[	Al-KED2	27		98			
[>	Sc-KED2	45				94	
[	V-KED3	51		125			
[	Cr-KED3	52		95			
[	Cr-KED3	53		180			
[	Fe-KED3	54		100			
[	Fe-KED3	56		102			
[	Co-KED3	59		103			
[	Ni-KED3	60		93			
[	Ni-KED3	62		107			
[	Cu-KED3	63		100			
[	Cu-KED3	65		97			
[	Zn-KED3	66		93			
[>	Ge-KED3	72				89	
[>	Ge-KED2	72				95	
[	As-KED2	75		94			
[>	Ge-KED1	72				94	
[	Se-KED1	77		75			
[	Se-KED1	78		99			
[	Mo-KED2	95		109			
[	Mo-KED2	98		103			
[>	Rh-KED2	103				96	
[	Ag-KED2	107		94			
[	Ag-KED2	109		99			
[	Cd-KED2	111		95			
[	Cd-KED2	114		109			
[	Sb-KED2	121		102			
[	Sb-KED2	123		94			
[	Ba-KED2	137		123			
[>	Lu-KED2	175				98	
[	Tl-KED2	203		150			
[	Tl-KED2	205		127			
[	Pb-KED2	208		120			
[>	Th-KED2	232				100	
[	U-KED2	238		106			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 9	TI-KED2	203	Out of Control

Service Request: K1801267, K1801988, K1802191

Instrument ID # K-ICP-MS-05
 Calibration 031518AMS05
 STAR LIMS Run # 583685

Cal Std: MS23-24-B
 ICV Std: MS23-22-B
 LLICV Std: MS23-24-C
 I.S. Solution: MS22-89-A
 Tune Standard: MS22-83-D
 Pipette I.D. CH21996, CH84849, MS1000, MS500, MS250

ICSA: MS23-23-M
 ICSAB: MS23-23-N

ICP-MS Data Review Form

	Yes	No	NA
1. Appropriate standardization completed	<u> X </u>	<u> </u>	<u> </u>
2. ICV in control (+/- 10%)	<u> X </u>	<u> </u>	<u> </u>
3. CCV's in control (+/- 10%)	<u> X </u>	<u> </u>	<u> </u>
4. ICB/CCB's below MRL	<u> X </u>	<u> </u>	<u> </u>
5. LLICV standard analyzed and in control	<u> X </u>	<u> </u>	<u> </u>
6. ICS standards within 20% of true value	<u> X </u>	<u> </u>	<u> </u>
6. All analytes within instrument linear range	<u> X </u>	<u> </u>	<u> </u>
7. Adequate rinse out time allowed	<u> X </u>	<u> </u>	<u> </u>
8. Internal standards in control	<u> X </u>	<u> </u>	<u> </u>
9. Interferences checked	<u> X </u>	<u> </u>	<u> </u>
10. Was the run terminated? If so, why.	<u> </u>	<u> X </u>	<u> </u>

Comments: K1801267: Salty sample required a dilution.

Primary Review by Date 3/15/18
 Secondary Review by Date 3/16/18

Data Review Form

Instrument ID#: K-ICP-MS-05
DataFile Name: R:\ICP\WIP\DATA\K-ICP-MS-05 (Agilent)\031518A.csv
RUNNO: 583685

K1801267

K1801267-017MS - Metals T - 6020

MS Recovery

6020/METALS_T - 9 Be [No Gas] - Recovery: 132 Limits: 75 -
125

K1801988

No exceptions to report.

K1802191

No exceptions to report.

Primary Approver: _____
Secondary Approver: 30 3/16/18 3/15/18

ALS Environmental - Laboratory Note Sheet

ICP-MS Analytical Run # 583685

LLICVW → RN 5b Al, Fe, Sb, U = NR/6020A
IC5AB → RN Bad He IS.
1267-15 Mn, As, Mo, Sb >4x
CCP @ 8:51 Cu MRL = 0.2ppb X ut return
LL @ 9:08 → 2x Cu

~~3C
3/16/18~~

Comments/Notes:

Analyst: <i>B. J. [Signature]</i>	Date: 3/15/18
Reviewed: <i>B. J. [Signature]</i>	Date: 3/16/18

- Calibration (54 items)

		Sample					
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
+	1		001CALB.	3/15/2018 7:20:56 AM	CalBlk	Prime	
+	2		002CALB.	3/15/2018 7:23:30 AM	CalBlk	Rinse	
+	3		003CALB.	3/15/2018 7:26:04 AM	CalBlk	Blank	
+	4		004CALB.	3/15/2018 7:28:38 AM	CalStd	25ppb	
+	5		005_ICV.d	3/15/2018 7:31:12 AM	ICV	ICV	
+	6		006_CCV.	3/15/2018 7:33:46 AM	CCV	CCV	
+	7		007_ICB.d	3/15/2018 7:36:13 AM	ICB	ICB	
+	8		008_CCB.	3/15/2018 7:38:41 AM	CCB	CCB	
+	9		009LICV.d	3/15/2018 7:41:07 AM	LLICV	LLICVW	
+	10		010LICV.d	3/15/2018 7:43:35 AM	LLICV	LLICVW	
+	11		011ICSA.d	3/15/2018 7:46:01 AM	ICSA	ICSA	
+	12		012ICSB.d	3/15/2018 7:48:28 AM	ICSB	ICSAB	
+	13		013ICSB.d	3/15/2018 7:56:40 AM	ICSB	ICSAB	
+	14		014_PB.d	3/15/2018 8:02:34 AM	PB	KQ1803090-0	
+	15		015_LCS.d	3/15/2018 8:05:00 AM	LCS	KQ1803090-0	
+	16		016SMPL.	3/15/2018 8:07:27 AM	Sample	K1801267-008	20X
+	17		017_ARF.d	3/15/2018 8:09:53 AM	AllRef	K1801267-017	10X
+	18		018SMPL.	3/15/2018 8:12:27 AM	Sample	KQ1803090-0	10X
+	19		019SMPL.	3/15/2018 8:14:53 AM	Sample	K1801267-017	50X
+	20		020_PDS.d	3/15/2018 8:17:20 AM	PDS	K1801267-017	10X
+	21		021SMPL.	3/15/2018 8:22:05 AM	Sample	KQ1803090-0	10X
+	22		022SMPL.	3/15/2018 8:26:52 AM	Sample	K1801988-001	
+	23		023_CCV.	3/15/2018 8:29:24 AM	CCV	CCV	
+	24		024_CCB.	3/15/2018 8:31:49 AM	CCB	CCB	
+	25		025_CCB.	3/15/2018 8:36:34 AM	CCB	CCB	
+	26		026SMPL.	3/15/2018 8:39:03 AM	Sample	K1801988-002	
+	27		027SMPL.	3/15/2018 8:48:48 AM	Sample	K1801988-003	
+	28		028SMPL.	3/15/2018 8:51:12 AM	Sample	K1801988-004	
+	29		029SMPL.	3/15/2018 8:53:36 AM	Sample	K1801988-001	D
+	30		030SMPL.	3/15/2018 8:56:02 AM	Sample	K1801988-002	D
+	31		031SMPL.	3/15/2018 8:58:28 AM	Sample	K1801988-003	D
+	32		032SMPL.	3/15/2018 9:00:54 AM	Sample	K1801988-004	D
+	33		033_CCV.	3/15/2018 9:03:21 AM	CCV	CCV	
+	34		034_CCB.	3/15/2018 9:05:49 AM	CCB	CCB	

Sample							
		Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment
+ 35		<input type="checkbox"/>	035LCCV.	3/15/2018 9:08:25 AM	LLCCV	LLCCVW	
+ 36		<input type="checkbox"/>	036SMPL.	3/15/2018 9:11:03 AM	Sample	LLCCVW 2X	
+ 37		<input type="checkbox"/>	037_PB.d	3/15/2018 9:13:29 AM	PB	KQ1803182-0	
+ 38		<input type="checkbox"/>	038_LCS.d	3/15/2018 9:15:56 AM	LCS	KQ1803182-0	
+ 39		<input type="checkbox"/>	039SMPL.	3/15/2018 9:18:22 AM	Sample	K1802191-001	R
+ 40		<input type="checkbox"/>	040_ARF.d	3/15/2018 9:20:49 AM	AllRef	K1802191-002	R
+ 41		<input type="checkbox"/>	041SMPL.	3/15/2018 9:23:16 AM	Sample	KQ1803182-0	
+ 42		<input type="checkbox"/>	042_Spk.d	3/15/2018 9:25:42 AM	Spike	KQ1803182-0	
+ 43		<input type="checkbox"/>	043SMPL.	3/15/2018 9:28:08 AM	Sample	K1802191-003	R
+ 44		<input type="checkbox"/>	044SMPL.	3/15/2018 9:30:36 AM	Sample	K1802191-004	R
+ 45		<input type="checkbox"/>	045SMPL.	3/15/2018 9:33:03 AM	Sample	K1802191-005	R
+ 46		<input type="checkbox"/>	046_CCV.	3/15/2018 9:35:29 AM	CCV	CCV	
+ 47		<input type="checkbox"/>	047_CCB.	3/15/2018 9:37:56 AM	CCB	CCB	
+ 48		<input type="checkbox"/>	048SMPL.	3/15/2018 9:40:24 AM	Sample	K1802191-001	D
+ 49		<input type="checkbox"/>	049SMPL.	3/15/2018 9:42:51 AM	Sample	K1802191-002	D
+ 50		<input type="checkbox"/>	050SMPL.	3/15/2018 9:45:18 AM	Sample	K1802191-003	D
+ 51		<input type="checkbox"/>	051SMPL.	3/15/2018 9:47:43 AM	Sample	K1802191-004	D
+ 52		<input type="checkbox"/>	052SMPL.	3/15/2018 9:50:12 AM	Sample	K1802191-005	D
+ 53		<input type="checkbox"/>	053_CCV.	3/15/2018 9:52:38 AM	CCV	CCV	
- 54		<input type="checkbox"/>	054_CCB.	3/15/2018 9:55:06 AM	CCB	CCB	

Analyte				
	Name	Mass	ISTD	Tune Mode
+ 1	Be	9	45	No Gas
+ 2	Al	27	45	No Gas
+ 3	V	51	72	He
+ 4	Cr	52	72	He
+ 5	Cr	53	72	He
+ 6	Mn	55	72	He
+ 7	Fe	56	72	He
+ 8	Co	59	72	He
+ 9	Ni	60	72	He
+ 10	Cu	63	72	He
+ 11	Cu	65	72	He
+ 12	Zn	66	72	He
+ 13	As	75	72	He

Analyte					
	Name	Mass	ISTD	Tune Mode	
+	14	Se	77	72	H2
+	15	Se	78	72	H2
+	16	Mo	95	115	He
+	17	Ag	107	115	He
+	18	Ag	109	115	He
+	19	Cd	111	115	He
+	20	Sb	121	115	He
+	21	Ba	138	115	He
+	22	Tl	205	175	He
+	23	[Pb]	206	175	He
+	24	[Pb]	207	175	He
+	25	Pb	208	175	He
+	26	U	238	232	He
+	27	Li	6		No Gas
+	28	Sc	45		No Gas
+	29	Ge	72		He
+	30	Ge	72		H2
+	31	In	115		He
+	32	Lu	175		He
+	33	Th	232		He

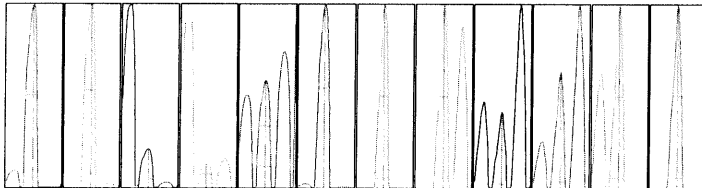
US EPA Tune Check Sample Report

Batch Folder D:\Data\Experiments 2018\031518.b
Report Comment ALS Tune
Instrument Name G3281A JP13482848

[No Gas]	Mass	Count	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
	7	134875	2.32	5.00	
	9	44279	2.08	5.00	
	24	155448	2.30	5.00	
	25	21536	1.62	5.00	
	26	24609	1.53	5.00	
	59	204302	2.08	5.00	
	115	277461	2.00	5.00	
	206	66783	2.08	5.00	
	207	58857	2.00	5.00	
	208	142557	2.27	5.00	
	209	221323	2.44	5.00	
	238	295803	1.83	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	135041	129497	137548	136114	136178
9	44136	42813	44660	45301	44483
24	155861	149188	157791	157472	156929
25	21651	20936	21843	21583	21666
26	24650	23952	24782	24787	24875
59	205266	196818	207354	206035	206035
115	279458	267764	281021	280924	278139
206	67529	64393	67835	67365	66794
207	59652	56942	59579	59613	58498
208	143962	137042	145145	144239	142400
209	221288	212066	225663	224116	223483
238	296954	286424	300370	298336	296932

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	23148	7.00	6.9 - 7.1		0.781	0.900	
9	7688	9.00	8.9 - 9.1		0.764	0.900	
24	26621	23.95	23.9 - 24.1		0.739	0.900	
25	3555	24.90	24.9 - 25.1		0.749	0.900	
26	4142	25.90	25.9 - 26.1		0.742	0.900	
59	36932	58.90	58.9 - 59.1		0.745	0.900	
115	56710	114.95	114.9 - 115.1		0.725	0.900	
206	13988	206.00	205.9 - 206.1		0.757	0.900	
207	12304	207.00	206.9 - 207.1		0.765	0.900	
208	29637	208.00	207.9 - 208.1		0.765	0.900	
209	46603	209.00	208.9 - 209.1		0.768	0.900	
238	60472	238.00	237.9 - 238.1		0.810	0.900	

X% = 5 Integration Time [sec] = 0.1 Acquisition Time [sec] = 279 Y Axis = Linear

Tune Parameters

Plasma Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.57	L/min			
RF Matching	1.76	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	7.5	V			
Extract 2	-160.0	V	Cell Entrance	-30	V			
Omega Bias	-80	V	Cell Exit	-50	V			
Deflect	13.0	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	200	V			
Energy Discrimination	5.0	V						

Calibration Blank Report

Sample Table

Sample Name Blank
Data File Name 003CALB.d
Data Path Name D:\Data\Experiments 2018\031518A.b
Acq Date Time 2018-03-15T07:26:04-07:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Be	9	No Gas	19	95.96
Al	27	No Gas	8806	0.04
V	51	He	62	72.42
Cr	52	He	95	25.39
Cr	53	He	53	173.42
Mn	55	He	7	1299.04
Fe	56	He	680	0.22
Co	59	He	13	496.22
Ni	60	He	52	86.70
Cu	63	He	263	10.43
Cu	65	He	107	6.71
Zn	66	He	63	146.08
As	75	He	9	445.13
Se	77	H2	677	2.44
Se	78	H2	8	98.23
Mo	95	He	17	207.85
Ag	107	He	15	222.22
Ag	109	He	7	1299.04
Cd	111	He	1	4296.16
Sb	121	He	38	108.14
Ba	138	He	43	134.02
Tl	205	He	52	38.99
[Pb]	206	He	99	30.12
[Pb]	207	He	82	34.54
Pb	208	He	372	3.25
U	238	He	70	133.83

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	No Gas	2946370	1.54
Sc	45	No Gas	6643625	1.69
Ge	72	He	96230	1.61
Ge	72	H2	925938	1.12
In	115	He	846980	0.94
Lu	175	He	2286194	2.02
Th	232	He	4043279	2.97

Calibration Standard Report

Sample Table

Sample Name 25ppb
 Data File Name 004CAL.S.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:28:38-07:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Be	9	No Gas	182904	0.00
Al	27	No Gas	682322	0.00
V	51	He	64909	0.00
Cr	52	He	88240	0.00
Cr	53	He	11057	0.03
Mn	55	He	35253	0.01
Fe	56	He	666754	0.00
Co	59	He	154877	0.00
Ni	60	He	43700	0.00
Cu	63	He	125446	0.00
Cu	65	He	62216	0.00
Zn	66	He	16291	0.01
As	75	He	9189	0.02
Se	77	H2	5311	0.07
Se	78	H2	14443	0.01
Mo	95	He	28425	0.01
Ag	107	He	102417	0.00
Ag	109	He	100007	0.00
Cd	111	He	23697	0.00
Sb	121	He	27870	0.01
Ba	138	He	115789	0.00
Tl	205	He	418306	0.00
[Pb]	206	He	140647	0.00
[Pb]	207	He	125447	0.00
Pb	208	He	563855	0.00
U	238	He	634863	0.00

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	3000550	2.95	2946370	101.84	70	125	
Sc	45	No Gas	6661016	1.10	6643625	100.26	70	125	
Ge	72	He	96378	1.72	96230	100.15	70	125	
Ge	72	H2	921494	1.13	925938	99.52	70	125	
In	115	He	841319	1.79	846980	99.33	70	125	
Lu	175	He	2314117	1.54	2286194	101.22	70	125	
Th	232	He	3961217	1.31	4043279	97.97	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name ICV
 Data File Name 005_ICV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:31:12-07:00
 Sample Type ICV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	2.672	1.559	18946	0.79	2.5	107	
Al	27	No Gas	103.219	0.491	2701880	0.57	100	103	
V	51	He	26.629	0.961	67613	1.35	25	107	
Cr	52	He	10.733	3.139	37097	2.36	10	107	
Cr	53	He	10.208	2.467	4444	0.26	10	102	
Mn	55	He	27.096	4.838	37367	5.30	25	108	
Fe	56	He	54.146	1.753	141731	0.99	50	108	
Co	59	He	26.781	1.492	162232	1.13	25	107	
Ni	60	He	26.619	1.234	45498	1.07	25	106	
Cu	63	He	13.143	2.252	64605	0.89	12.5	105	
Cu	65	He	13.216	1.403	32224	3.63	12.5	106	
Zn	66	He	26.057	3.201	16608	4.81	25	104	
As	75	He	26.202	1.473	9419	2.32	25	105	
Se	77	H2	27.179	7.332	5721	6.68	25	109	
Se	78	H2	26.070	1.126	15076	1.84	25	104	
Mo	95	He	26.264	0.699	60816	1.61	25	105	
Ag	107	He	12.591	2.059	105097	2.43	12.5	101	
Ag	109	He	12.878	1.243	104955	2.07	12.5	103	
Cd	111	He	12.894	1.427	12453	2.10	12.5	103	
Sb	121	He	13.038	0.236	29612	0.75	12.5	104	
Ba	138	He	103.389	0.862	487745	0.14	100	103	
Tl	205	He	26.602	1.248	436350	1.39	25	106	
[Pb]	206	He	26.239	0.872	144713	0.93	25	105	
[Pb]	207	He	27.025	1.017	132942	0.93	25	108	
Pb	208	He	26.638	1.042	588991	0.83	25	107	
U	238	He	26.079	0.260	682268	1.71	25	104	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2912554	2.27	2946370	98.85	70	125	
Sc	45	No Gas	6451524	1.05	6643625	97.11	70	125	
Ge	72	He	94257	2.27	96230	97.95	70	125	
Ge	72	H2	922364	1.19	925938	99.61	70	125	
In	115	He	857043	0.91	846980	101.19	70	125	
Lu	175	He	2268375	0.45	2286194	99.22	70	125	
Th	232	He	4080425	1.45	4043279	100.92	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 006_CCV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:33:46-07:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.752	4.717	180270	0.15	25	103	
Al	27	No Gas	25.733	4.726	671764	0.19	25	103	
V	51	He	24.871	2.407	63752	0.83	25	99	
Cr	52	He	24.820	3.444	86481	2.17	25	99	
Cr	53	He	23.710	1.490	10357	2.72	25	95	
Mn	55	He	24.915	4.572	34675	3.16	25	100	
Fe	56	He	249.606	2.612	657170	0.95	250	100	
Co	59	He	25.160	2.132	153871	0.43	25	101	
Ni	60	He	24.725	2.848	42664	1.15	25	99	
Cu	63	He	24.595	0.841	121860	0.89	25	98	
Cu	65	He	24.782	2.638	60881	1.30	25	99	
Zn	66	He	24.851	5.412	15981	3.80	25	99	
As	75	He	25.052	3.469	9089	1.96	25	100	
Se	77	H2	26.208	4.900	5488	3.62	25	105	
Se	78	H2	24.497	0.954	14034	0.87	25	98	
Mo	95	He	12.761	0.970	28860	0.70	12.5	102	
Ag	107	He	12.307	0.653	100308	0.80	12.5	98	
Ag	109	He	12.587	0.940	100162	0.94	12.5	101	
Cd	111	He	25.035	1.142	23608	0.75	25	100	
Sb	121	He	12.302	2.044	27283	1.61	12.5	98	
Ba	138	He	25.071	1.680	115530	1.72	25	100	
Tl	205	He	24.970	1.295	414391	1.29	25	100	
[Pb]	206	He	24.886	0.814	138873	1.01	25	100	
[Pb]	207	He	24.820	1.916	123538	1.52	25	99	
Pb	208	He	24.876	1.490	556541	1.19	25	100	
U	238	He	24.963	0.711	640597	0.66	25	100	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2920036	2.18	2946370	99.11	70	125	
Sc	45	No Gas	6382673	4.79	6643625	96.07	70	125	
Ge	72	He	95162	1.69	96230	98.89	70	125	
Ge	72	H2	913757	0.76	925938	98.68	70	125	
In	115	He	836875	0.57	846980	98.81	70	125	
Lu	175	He	2295109	0.56	2286194	100.39	70	125	
Th	232	He	4002702	0.33	4043279	99.00	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name ICB
 Data File Name 007_ICB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:36:13-07:00
 Sample Type ICB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.004	40.9	46	22.8	0.02	
Al	27	No Gas	0.014	164.0	8904	4.5	4	
V	51	He	-0.002	-105.4	55	9.1	0.2	
Cr	52	He	0.002	410.7	102	32.0	0.2	
Cr	53	He	-0.044	-75.9	33	45.8	0.2	
Mn	55	He	0.012	70.2	23	49.5	0.2	
Fe	56	He	0.060	64.7	827	13.5	2	
Co	59	He	0.001	126.5	19	36.7	0.02	
Ni	60	He	0.009	124.2	67	30.4	0.2	
Cu	63	He	-0.023	-22.9	143	16.1	0.1	
Cu	65	He	0.000	-86584.8	105	25.2	0.1	
Zn	66	He	0.011	521.8	70	57.1	2	
As	75	He	-0.011	-28.3	5	20.0	0.5	
Se	77	H2	0.676	62.8	803	8.1	10	
Se	78	H2	0.003	149.1	9	24.7	1	
Mo	95	He	0.000	-53458.1	17	20.0	0.1	
Ag	107	He	0.001	304.7	20	75.0	0.02	
Ag	109	He	0.001	286.2	17	173.2	0.02	
Cd	111	He	0.004	50.7	6	39.6	0.02	
Sb	121	He	0.012	62.8	65	26.9	0.05	
Ba	138	He	0.005	92.7	67	31.2	0.05	
Tl	205	He	0.007	22.8	172	17.6	0.02	
[Pb]	206	He	0.002	123.2	113	13.2	0.02	
[Pb]	207	He	0.003	46.5	99	5.9	0.02	
Pb	208	He	0.001	105.7	405	6.4	0.02	
U	238	He	0.001	55.2	90	11.1	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2980004	1.13	2946370	101.14	70	125	
Sc	45	No Gas	6450322	2.10	6643625	97.09	70	125	
Ge	72	He	94679	2.57	96230	98.39	70	125	
Ge	72	H2	928297	1.79	925938	100.25	70	125	
In	115	He	849637	1.21	846980	100.31	70	125	
Lu	175	He	2305564	1.92	2286194	100.85	70	125	
Th	232	He	4057381	1.40	4043279	100.35	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 008_CCB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:38:41-07:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	128.7	20	7.8	0.02	
Al	27	No Gas	0.022	89.2	9037	5.4	4	
V	51	He	-0.006	-97.0	43	37.1	0.2	
Cr	52	He	0.007	8.7	117	2.5	0.2	
Cr	53	He	-0.058	-61.0	27	57.3	0.2	
Mn	55	He	0.003	2.2	10	0.0	0.2	
Fe	56	He	0.075	52.4	853	11.9	2	
Co	59	He	0.000	847.4	13	25.0	0.02	
Ni	60	He	-0.008	-82.5	37	32.8	0.2	
Cu	63	He	-0.020	-40.3	157	25.8	0.1	
Cu	65	He	-0.010	-59.6	80	16.5	0.1	
Zn	66	He	-0.012	-202.2	53	28.6	2	
As	75	He	-0.011	-87.7	5	75.3	0.5	
Se	77	H2	0.327	79.3	723	5.2	10	
Se	78	H2	0.000	3933.1	8	54.3	1	
Mo	95	He	0.000	-420.3	16	24.8	0.1	
Ag	107	He	-0.001	-50.3	5	100.0	0.02	
Ag	109	He	0.000	12049.7	7	173.2	0.02	
Cd	111	He	0.002	104.3	4	67.3	0.02	
Sb	121	He	0.004	42.6	46	8.3	0.05	
Ba	138	He	0.001	833.7	47	65.5	0.05	
Tl	205	He	0.001	149.9	72	42.1	0.02	
[Pb]	206	He	-0.003	-10.0	84	1.1	0.02	
[Pb]	207	He	-0.001	-233.4	79	10.8	0.02	
Pb	208	He	-0.001	-108.7	361	3.9	0.02	
U	238	He	-0.001	-121.2	47	61.9	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2902827	1.62	2946370	98.52	70	125	
Sc	45	No Gas	6385924	1.50	6643625	96.12	70	125	
Ge	72	He	93255	0.79	96230	96.91	70	125	
Ge	72	H2	909197	1.40	925938	98.19	70	125	
In	115	He	838447	0.54	846980	98.99	70	125	
Lu	175	He	2299122	1.52	2286194	100.57	70	125	
Th	232	He	4001376	0.77	4043279	98.96	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name LLICVW
 Data File Name 009LICV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:41:07-07:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

See Review
 3/15/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.018	5.251	150	7.69	0.02	89	
Al	27	No Gas	3.793	5.746	111376	1.82	4	95	
V	51	He	0.166	5.024	487	3.61	0.2	83	
Cr	52	He	0.186	15.633	740	12.51	0.2	93	
Cr	53	He	0.134	81.625	110	41.66	-1	-13	
Mn	55	He	0.182	20.331	260	19.23	0.2	91	
Fe	56	He	1.939	2.605	5768	0.96	2	97	
Co	59	He	0.020	53.380	136	47.71	0.02	100	
Ni	60	He	0.177	10.714	356	7.97	0.2	88	
Cu	63	He	0.077	10.188	640	5.41	0.1	77	
Cu	65	He	0.084	21.996	312	16.15	0.1	84	
Zn	66	He	1.666	9.658	1130	10.77	2	83	
As	75	He	0.493	10.595	187	10.16	0.5	99	
Se	77	H2	1.017	47.282	860	9.23	-1	-102	
Se	78	H2	0.976	9.033	571	9.43	1	98	
Mo	95	He	0.094	18.124	232	15.75	0.1	94	
Ag	107	He	0.022	23.835	193	20.90	0.02	108	
Ag	109	He	0.022	26.693	187	24.75	0.02	112	
Cd	111	He	0.021	24.007	21	23.45	0.02	103	
Sb	121	He	0.065	21.847	184	18.48	0.05	131	LLICV Failed
Ba	138	He	0.041	16.694	237	12.91	0.05	83	
Tl	205	He	0.021	2.878	407	2.56	0.02	107	
[Pb]	206	He	0.016	20.434	189	9.69	0.02	81	
[Pb]	207	He	0.016	16.312	162	7.85	0.02	80	
Pb	208	He	0.018	7.601	784	3.83	0.02	91	
U	238	He	0.018	7.070	547	6.93	0.02	91	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	3028429	2.63	2946370	102.79	70	125	
Sc	45	No Gas	6690471	3.77	6643625	100.71	70	125	
Ge	72	He	95081	1.59	96230	98.81	70	125	
Ge	72	H2	920670	1.55	925938	99.43	70	125	
In	115	He	846759	1.19	846980	99.97	70	125	
Lu	175	He	2299174	0.15	2286194	100.57	70	125	
Th	232	He	4060410	0.81	4043279	100.42	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name LLICVW
 Data File Name 010LICV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:43:35-07:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.018	6.665	147	5.00	0.02	90	
Al	27	No Gas	3.882	1.020	110561	1.84	4	97	
V	51	He	0.176	13.481	513	9.85	0.2	88	
Cr	52	He	0.213	8.338	840	5.95	0.2	106	
Cr	53	He	0.109	80.450	100	36.06	-1	-11	
Mn	55	He	0.215	19.107	307	16.41	0.2	107	
Fe	56	He	2.158	10.804	6378	7.45	2	108	
Co	59	He	0.017	19.897	117	17.84	0.02	84	
Ni	60	He	0.204	13.807	406	11.86	0.2	102	
Cu	63	He	0.083	9.332	673	4.54	0.1	83	
Cu	65	He	0.086	22.319	320	17.19	0.1	86	
Zn	66	He	1.965	15.811	1327	12.82	2	98	
As	75	He	0.465	6.974	179	7.04	0.5	93	
Se	77	H2	1.502	39.091	947	12.01	-1	-150	
Se	78	H2	0.948	5.661	552	5.18	1	95	
Mo	95	He	0.099	5.063	243	4.94	0.1	99	
Ag	107	He	0.020	20.858	185	18.92	0.02	102	
Ag	109	He	0.021	6.855	173	6.66	0.02	103	
Cd	111	He	0.019	4.295	20	3.88	0.02	96	
Sb	121	He	0.050	8.565	150	6.67	0.05	100	
Ba	138	He	0.063	30.962	337	26.79	0.05	125	
Tl	205	He	0.020	17.634	378	14.01	0.02	98	
[Pb]	206	He	0.014	3.695	179	2.34	0.02	72	
[Pb]	207	He	0.018	28.058	174	14.39	0.02	92	
Pb	208	He	0.017	15.124	758	6.74	0.02	86	
U	238	He	0.016	4.404	483	4.78	0.02	78	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2948507	1.73	2946370	100.07	70	125	
Sc	45	No Gas	6492593	0.90	6643625	97.73	70	125	
Ge	72	He	95728	2.32	96230	99.48	70	125	
Ge	72	H2	916465	0.69	925938	98.98	70	125	
In	115	He	851605	0.27	846980	100.55	70	125	
Lu	175	He	2296736	1.44	2286194	100.46	70	125	
Th	232	He	4095759	1.37	4043279	101.30	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA
 Data File Name 011ICSA.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:46:01-07:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	QC Flag
Be	9	No Gas	0.002	82.9	30	34.4	
Al	27	No Gas	19495.540	1.4	479147060	1.4	
V	51	He	0.027	12.8	120	8.3	
Cr	52	He	0.613	5.2	2062	2.8	
Cr	53	He	0.475	31.9	240	26.0	
Mn	55	He	0.942	8.4	1220	7.1	
Fe	56	He	49635.159	2.6	120936692	1.9	
Co	59	He	0.630	5.3	3582	3.2	
Ni	60	He	0.542	7.9	913	5.4	
Cu	63	He	0.624	10.7	3097	8.2	
Cu	65	He	0.674	4.4	1630	5.7	
Zn	66	He	0.616	16.2	423	14.2	
As	75	He	0.062	17.2	29	10.3	
Se	77	H2	0.723	33.4	747	5.4	
Se	78	H2	0.036	34.4	26	25.3	
Mo	95	He	53.111	2.9	111624	2.2	
Ag	107	He	0.008	33.0	77	26.4	
Ag	109	He	0.008	10.1	63	9.1	
Cd	111	He	0.022	5.4	21	3.7	
Sb	121	He	0.029	15.5	93	8.6	
Ba	138	He	0.935	3.5	4044	2.7	
Tl	205	He	0.007	5.8	162	4.7	
[Pb]	206	He	0.084	4.3	541	2.7	
[Pb]	207	He	0.079	6.1	453	4.9	
Pb	208	He	0.086	1.8	2184	1.1	
U	238	He	0.000	-5134.0	67	48.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2681752	0.95	2946370	91.02	70	125	
Sc	45	No Gas	6076427	0.19	6643625	91.46	70	125	
Ge	72	He	88154	2.22	96230	91.61	70	125	
Ge	72	H2	852667	0.22	925938	92.09	70	125	
In	115	He	778167	1.35	846980	91.88	70	125	
Lu	175	He	2181361	0.90	2286194	95.41	70	125	
Th	232	He	3823946	1.89	4043279	94.58	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB
 Data File Name 012ICSB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:48:28-07:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

See report
 3/31/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.002	93.977	28	38.88	-1	-0.2	
Al	27	No Gas	18684.184	2.319	452622673	1.19	20000	93.4	
V	51	He	61.397	26.651	115616	6.56	50	122.8	ICSB Failed
Cr	52	He	60.216	27.772	153797	5.71	50	120.4	ICSB Failed
Cr	53	He	58.903	29.540	18744	4.57	50	117.8	
Mn	55	He	61.409	25.362	62989	7.69	50	122.8	ICSB Failed
Fe	56	He	58753.786	26.637	113591958	6.55	50000	117.5	
Co	59	He	59.787	26.361	268897	6.80	50	119.6	
Ni	60	He	58.970	26.610	74752	6.60	50	117.9	
Cu	63	He	57.846	26.601	210425	6.79	50	115.7	
Cu	65	He	57.120	26.389	103104	6.95	50	114.2	
Zn	66	He	29.261	24.360	13893	8.59	25	117.0	
As	75	He	30.499	28.345	8106	5.40	25	122.0	ICSB Failed
Se	77	H2	25.738	7.216	4824	4.40	25	103.0	
Se	78	H2	24.133	2.684	12352	0.71	25	96.5	
Mo	95	He	64,624	24.757	108465	7.13	50	129.2	ICSB Failed
Ag	107	He	14.340	25.915	86582	6.14	12.5	114.7	
Ag	109	He	14.480	24.486	85592	7.30	12.5	115.8	
Cd	111	He	29.493	26.780	20569	5.36	25	118.0	
Sb	121	He	0.027	34.007	73	17.49	-1	-2.7	
Ba	138	He	1.250	22.542	4327	9.16	-1	-125.0	
Tl	205	He	0.006	75.571	113	16.70	-1	-0.6	
[Pb]	206	He	0.111	27.842	547	8.21	-1	-11.1	
[Pb]	207	He	0.101	25.657	447	9.42	-1	-10.1	
Pb	208	He	0.107	28.443	2104	7.68	-1	-10.7	
U	238	He	0.001	333.634	73	69.98	-1	-0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2603790	3.29	2946370	88.37	70	125	
Sc	45	No Gas	5992473	3.47	6643625	90.20	70	125	
Ge	72	He	73657	28.49	96230	76.54	70	125	
Ge	72	H2	816625	2.02	925938	88.19	70	125	
In	115	He	650956	27.59	846980	76.86	70	125	
Lu	175	He	1827246	27.51	2286194	79.93	70	125	
Th	232	He	3305222	26.92	4043279	81.75	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB
 Data File Name 013ICSB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T07:56:40-07:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.002	32.350	29	12.91	-1	-0.2	
Al	27	No Gas	19153.335	1.245	470392860	1.20	20000	95.8	
V	51	He	51.297	1.323	120667	2.23	50	102.6	
Cr	52	He	49.619	2.241	158632	1.77	50	99.2	
Cr	53	He	50.291	1.199	20109	2.28	50	100.6	
Mn	55	He	51.604	2.729	65943	3.01	50	103.2	
Fe	56	He	49035.922	2.088	118409542	2.36	50000	98.1	
Co	59	He	49.925	0.925	280300	1.57	50	99.8	
Ni	60	He	48.939	1.512	77479	1.22	50	97.9	
Cu	63	He	47.947	1.453	217820	0.64	50	95.9	
Cu	65	He	47.021	2.837	105949	2.11	50	94.0	
Zn	66	He	24.796	0.854	14643	0.32	25	99.2	
As	75	He	25.408	2.598	8464	2.75	25	101.6	
Se	77	H2	25.330	6.683	4871	5.69	25	101.3	
Se	78	H2	23.674	1.792	12401	1.01	25	94.7	
Mo	95	He	54.517	1.603	110907	1.31	50	109.0	
Ag	107	He	12.134	0.812	88996	0.66	12.5	97.1	
Ag	109	He	12.525	1.451	89700	2.02	12.5	100.2	
Cd	111	He	25.237	0.551	21417	0.72	25	100.9	
Sb	121	He	0.030	41.242	93	25.74	-1	-3.0	
Ba	138	He	1.007	7.718	4214	8.08	-1	-100.7	
Tl	205	He	0.007	16.011	160	11.27	-1	-0.7	
[Pb]	206	He	0.086	7.156	543	6.37	-1	-8.6	
[Pb]	207	He	0.087	17.707	482	14.75	-1	-8.7	
Pb	208	He	0.087	7.877	2174	6.83	-1	-8.7	
U	238	He	0.001	391.538	80	64.95	-1	-0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2625643	1.78	2946370	89.11	70	125	
Sc	45	No Gas	6073045	2.30	6643625	91.41	70	125	
Ge	72	He	87343	1.17	96230	90.76	70	125	
Ge	72	H2	835547	1.03	925938	90.24	70	125	
In	115	He	753124	0.91	846980	88.92	70	125	
Lu	175	He	2153299	0.63	2286194	94.19	70	125	
Th	232	He	3808390	1.38	4043279	94.19	70	125	

Sample Report

Sample Table

Sample Name KQ1803090-01
 Data File Name 014_PB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:02:34-07:00
 Sample Type PB
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	-0.001	-9.74	14	0.00	
Al	27	No Gas	0.621	8.93	24025	0.00	
V	51	He	-0.014	-61.14	25	-0.05	
Cr	52	He	0.014	126.82	137	0.01	
Cr	53	He	-0.081	-44.41	17	-0.49	
Mn	55	He	0.017	125.23	30	0.06	
Fe	56	He	3.231	7.05	8879	0.04	PB Main CR1 Failed
Co	59	He	0.002	131.46	27	0.01	
Ni	60	He	0.002	339.22	53	0.00	
Cu	63	He	0.017	85.47	330	0.01	
Cu	65	He	0.015	92.33	138	0.01	
Zn	66	He	0.027	298.64	77	0.04	
As	75	He	-0.009	-32.73	5	-0.17	
Se	77	H2	0.440	136.42	730	0.06	
Se	78	H2	0.003	156.02	9	0.04	
Mo	95	He	0.000	2101.10	17	0.00	
Ag	107	He	0.001	119.40	23	0.00	
Ag	109	He	0.002	242.34	23	0.01	
Cd	111	He	0.002	32.93	4	0.07	
Sb	121	He	-0.002	-157.96	32	-0.01	
Ba	138	He	0.003	300.26	57	0.01	
Tl	205	He	-0.001	-112.81	35	0.00	
[Pb]	206	He	0.008	42.19	144	0.01	
[Pb]	207	He	0.009	21.65	127	0.01	
Pb	208	He	0.009	29.45	559	0.00	
U	238	He	-0.001	-77.51	43	0.00	

NR

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2861085	1.84	2946370	97.11	70	125	
Sc	45	No Gas	6257502	2.12	6643625	94.19	70	125	
Ge	72	He	92185	2.01	96230	95.80	70	125	
Ge	72	H2	891804	0.31	925938	96.31	70	125	
In	115	He	836948	1.66	846980	98.82	70	125	
Lu	175	He	2276505	2.61	2286194	99.58	70	125	
Th	232	He	4044759	1.55	4043279	100.04	70	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name KQ1803090-02
 Data File Name 015_LCS.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:05:00-07:00
 Sample Type LCS
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	2.589	1.793	16925	1.38	2.5	103.6	
Al	27	No Gas	100.018	0.555	2413513	1.39	100	100.0	
V	51	He	25.015	2.001	61025	2.20	25	100.1	
Cr	52	He	10.300	4.317	34202	3.64	10	103.0	
Cr	53	He	10.090	5.210	4221	4.21	10	100.9	
Mn	55	He	24.941	1.916	33045	2.66	25	99.8	
Fe	56	He	55.257	1.125	138955	0.70	50	110.5	
Co	59	He	25.360	1.449	147593	0.65	25	101.4	
Ni	60	He	25.296	0.245	41544	1.46	25	101.2	
Cu	63	He	12.538	1.805	59236	1.81	12.5	100.3	
Cu	65	He	12.527	2.198	29335	1.22	12.5	100.2	
Zn	66	He	24.792	5.894	15174	5.05	25	99.2	
As	75	He	48.319	1.777	16678	1.49	50	96.6	
Se	77	H2	49.714	3.305	9373	2.62	50	99.4	
Se	78	H2	48.788	0.175	26692	0.75	50	97.6	
Mo	95	He	21.632	2.650	46289	2.53	20	108.2	
Ag	107	He	12.419	1.219	95793	1.34	12.5	99.4	
Ag	109	He	12.589	1.436	94807	1.22	12.5	100.7	
Cd	111	He	24.894	1.323	22216	0.93	25	99.6	
Sb	121	He	9.920	2.988	20828	2.78	10	99.2	
Ba	138	He	102.638	2.591	447436	2.15	100	102.6	
Tl	205	He	49.455	2.479	795811	0.96	50	98.9	
[Pb]	206	He	48.695	1.756	263441	1.39	50	97.4	
[Pb]	207	He	50.078	2.142	241644	1.52	50	100.2	
Pb	208	He	49.571	2.047	1075162	1.40	50	99.1	
U	238	He	21.142	1.138	534849	1.78	20	105.7	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2764495	2.01	2946370	93.83	70	125	
Sc	45	No Gas	5946477	0.97	6643625	89.51	70	125	
Ge	72	He	90546	1.26	96230	94.09	70	125	
Ge	72	H2	872820	0.58	925938	94.26	70	125	
In	115	He	791991	0.56	846980	93.51	70	125	
Lu	175	He	2226210	2.12	2286194	97.38	70	125	
Th	232	He	3945918	1.82	4043279	97.59	70	125	

Sample Report

Sample Table

Sample Name K1801267-008
 Data File Name 016SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:07:27-07:00
 Sample Type Sample
 Dilution 1
 Comment 20X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	231.44	22	0.00	
Al	27	No Gas	16.810	0.50	456352	0.00	
V	51	He	0.495	9.32	1367	0.04	
Cr	52	He	0.113	14.17	502	0.02	
Cr	53	He	0.021	63.40	63	0.03	
Mn	55	He	17.592	1.37	25235	0.07	
Fe	56	He	71.796	0.78	195287	0.04	
Co	59	He	0.026	17.53	176	0.01	
Ni	60	He	0.227	13.44	456	0.05	
Cu	63	He	0.228	5.37	1430	0.02	
Cu	65	He	0.277	14.28	808	0.03	
Zn	66	He	0.700	4.83	527	0.13	
As	75	He	4.567	0.83	1715	0.27	
Se	77	H2	0.788	8.61	860	0.09	
Se	78	H2	0.031	48.91	27	0.12	
Mo	95	He	11.315	0.79	25857	0.04	
Ag	107	He	0.006	34.68	65	0.01	
Ag	109	He	0.004	61.08	40	0.01	
Cd	111	He	0.009	11.35	10	0.09	
Sb	121	He	5.380	1.48	12075	0.04	
Ba	138	He	4.480	2.88	20894	0.02	
Tl	205	He	0.009	13.64	200	0.00	
[Pb]	206	He	0.548	2.04	3162	0.02	
[Pb]	207	He	0.521	1.59	2679	0.02	
Pb	208	He	0.534	0.57	12353	0.00	
U	238	He	0.277	6.33	6955	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2901993	3.15	2946370	98.49	70	125	
Sc	45	No Gas	6583866	1.41	6643625	99.10	70	125	
Ge	72	He	98028	1.55	96230	101.87	70	125	
Ge	72	H2	967570	1.37	925938	104.50	70	125	
In	115	He	845507	1.33	846980	99.83	70	125	
Lu	175	He	2300457	2.07	2286194	100.62	70	125	
Th	232	He	3886626	1.42	4043279	96.13	70	125	

All Reference Sample Report

Sample Table

Sample Name K1801267-017
 Data File Name 017_ARF.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:09:53-07:00
 Sample Type AllRef
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.001	102.30	27	0.00	
Al	27	No Gas	18.742	0.64	517765	0.00	
V	51	He	0.611	5.73	1782	0.03	
Cr	52	He	0.191	9.29	833	0.02	
Cr	53	He	0.173	29.16	140	0.12	
Mn	55	He	13.816	3.17	21083	0.07	
Fe	56	He	77.189	2.21	223309	0.03	
Co	59	He	0.065	7.70	448	0.01	
Ni	60	He	0.303	2.97	630	0.05	
Cu	63	He	0.550	11.15	3264	0.02	
Cu	65	He	0.518	14.54	1507	0.03	
Zn	66	He	1.161	7.92	883	0.13	
As	75	He	34.267	2.54	13627	0.25	
Se	77	H2	1.338	44.89	967	0.14	
Se	78	H2	0.038	42.98	31	0.12	
Mo	95	He	67.379	0.20	158801	0.04	
Ag	107	He	0.005	43.88	55	0.01	
Ag	109	He	0.004	60.85	40	0.01	
Cd	111	He	0.016	19.81	17	0.09	
Sb	121	He	32.136	1.08	74251	0.04	
Ba	138	He	6.265	0.52	30132	0.02	
Tl	205	He	0.002	49.44	95	0.00	
[Pb]	206	He	0.622	2.49	3744	0.02	
[Pb]	207	He	0.637	3.21	3411	0.02	
Pb	208	He	0.633	2.37	15249	0.00	
U	238	He	0.430	1.77	11178	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	3029648	0.21	2946370	102.83	70	125	
Sc	45	No Gas	6712607	0.75	6643625	101.04	70	125	
Ge	72	He	104315	2.04	96230	108.40	70	125	
Ge	72	H2	966348	0.95	925938	104.36	70	125	
In	115	He	872468	0.73	846980	103.01	70	125	
Lu	175	He	2410182	2.62	2286194	105.42	70	125	
Th	232	He	4028108	1.86	4043279	99.62	70	125	

Sample Report

Sample Table

Sample Name KQ1803090-03
 Data File Name 018SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:12:27-07:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.001	171.06	23	0.00	
Al	27	No Gas	18.306	1.70	494828	0.00	
V	51	He	0.580	7.21	1678	0.03	
Cr	52	He	0.166	14.70	733	0.02	
Cr	53	He	0.134	65.48	120	0.11	
Mn	55	He	13.767	3.70	20833	0.07	
Fe	56	He	75.202	1.68	215845	0.03	
Co	59	He	0.064	11.79	439	0.01	
Ni	60	He	0.318	9.13	651	0.05	
Cu	63	He	0.685	2.16	3967	0.02	
Cu	65	He	0.694	13.18	1970	0.04	
Zn	66	He	1.270	15.59	950	0.13	
As	75	He	32.966	1.29	13003	0.25	
Se	77	H2	1.115	8.09	957	0.12	
Se	78	H2	0.029	45.16	27	0.11	
Mo	95	He	63.471	1.40	152338	0.04	
Ag	107	He	0.009	16.17	97	0.01	
Ag	109	He	0.009	39.39	83	0.01	
Cd	111	He	0.014	28.20	15	0.09	
Sb	121	He	30.270	1.79	71219	0.04	
Ba	138	He	5.860	1.97	28709	0.02	
Tl	205	He	0.000	130.90	57	0.00	
[Pb]	206	He	0.632	3.46	3837	0.02	
[Pb]	207	He	0.601	4.31	3255	0.02	
Pb	208	He	0.611	1.29	14865	0.00	
U	238	He	0.430	2.75	11228	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2978573	3.02	2946370	101.09	70	125	
Sc	45	No Gas	6565332	1.75	6643625	98.82	70	125	
Ge	72	He	103456	3.00	96230	107.51	70	125	
Ge	72	H2	1002063	0.32	925938	108.22	70	125	
In	115	He	888702	2.46	846980	104.93	70	125	
Lu	175	He	2431740	1.25	2286194	106.37	70	125	
Th	232	He	4051913	2.22	4043279	100.21	70	125	

Sample Report

Sample Table

Sample Name K1801267-017L
 Data File Name 019SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:14:53-07:00
 Sample Type Sample
 Dilution 1
 Comment 50X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	-0.001	-98.12	14	-0.01	
Al	27	No Gas	4.052	0.69	118847	0.00	
V	51	He	0.154	7.29	495	0.03	
Cr	52	He	0.045	9.30	272	0.02	
Cr	53	He	-0.008	-914.08	53	-0.01	
Mn	55	He	2.828	14.66	4284	0.07	
Fe	56	He	15.848	3.47	46032	0.03	
Co	59	He	0.012	18.01	97	0.01	
Ni	60	He	0.069	18.76	186	0.04	
Cu	63	He	0.276	12.20	1763	0.02	
Cu	65	He	0.293	12.01	895	0.03	
Zn	66	He	0.272	25.61	257	0.11	
As	75	He	6.842	3.81	2705	0.25	
Se	77	H2	1.018	51.48	917	0.11	
Se	78	H2	-0.003	-48.08	6	-0.06	
Mo	95	He	13.151	2.04	32284	0.04	
Ag	107	He	0.001	293.32	25	0.00	
Ag	109	He	0.005	53.81	53	0.01	
Cd	111	He	0.004	36.99	6	0.07	
Sb	121	He	6.327	2.02	15252	0.04	
Ba	138	He	1.189	2.91	5995	0.02	
Tl	205	He	0.000	-428.85	55	0.00	
[Pb]	206	He	0.145	5.70	989	0.01	
[Pb]	207	He	0.141	3.10	855	0.02	
Pb	208	He	0.144	2.02	3926	0.00	
U	238	He	0.087	1.74	2484	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	3062023	0.58	2946370	103.93	70	125	
Sc	45	No Gas	6708269	0.50	6643625	100.97	70	125	
Ge	72	He	103425	1.33	96230	107.48	70	125	
Ge	72	H2	979967	0.27	925938	105.84	70	125	
In	115	He	908528	1.01	846980	107.27	70	125	
Lu	175	He	2505817	2.90	2286194	109.61	70	125	
Th	232	He	4312071	1.90	4043279	106.65	70	125	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name K1801267-017A
 Data File Name 020_PDS.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:17:20-07:00
 Sample Type PDS
 Dilution 1
 Comment 10X
 QC Ref File Name 017_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	52.036	0.740	405692	1.35	50	104	
Al	27	No Gas	68.479	2.071	1975478	2.43	50	99	
V	51	He	53.035	3.350	158320	1.09	50	105	
Cr	52	He	49.682	2.606	201629	0.50	50	99	
Cr	53	He	49.137	2.701	24945	3.12	50	98	
Mn	55	He	64.581	1.263	104780	2.15	50	102	
Fe	56	He	126.519	1.716	388651	1.72	50	99	
Co	59	He	47.968	1.777	341874	0.69	50	96	
Ni	60	He	46.853	0.357	94194	2.04	50	93	
Cu	63	He	46.137	1.199	266148	1.59	50	91	
Cu	65	He	45.821	1.146	131106	1.64	50	91	
Zn	66	He	46.619	2.084	34893	2.57	50	91	
As	75	He	84.335	1.730	35643	1.60	50	100	
Se	77	H2	45.739	5.525	10527	5.34	50	89	
Se	78	H2	46.229	0.090	30689	0.75	50	92	
Mo	95	He	117.202	1.556	301056	0.59	50	100	
Ag	107	He	8.522	0.683	78948	1.71	10	85	
Ag	109	He	8.616	1.147	77913	0.96	10	86	
Cd	111	He	46.612	1.430	49948	0.49	50	93	
Sb	121	He	78.502	0.579	197652	1.58	50	93	
Ba	138	He	56.890	1.136	297841	0.93	50	101	
Tl	205	He	45.803	1.919	856912	1.33	50	92	
[Pb]	206	He	46.345	1.536	291468	0.73	50	91	
[Pb]	207	He	45.804	1.767	256941	0.40	50	90	
Pb	208	He	46.181	1.445	1164462	0.65	50	91	
U	238	He	52.592	1.633	1484612	0.55	50	104	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	3198589	1.21	2946370	108.56	70	125	
Sc	45	No Gas	7098175	0.73	6643625	106.84	70	125	
Ge	72	He	110908	2.37	96230	115.25	70	125	
Ge	72	H2	1059046	0.71	925938	114.38	70	125	
In	115	He	951134	1.90	846980	112.30	70	125	
Lu	175	He	2587835	1.65	2286194	113.19	70	125	
Th	232	He	4403862	1.22	4043279	108.92	70	125	

Sample Report

Sample Table

Sample Name KQ1803090-04
 Data File Name 021SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:22:05-07:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.320	2.25	2533	0.01	
Al	27	No Gas	26.795	1.79	784571	0.00	
V	51	He	3.041	1.68	8859	0.03	
Cr	52	He	1.172	1.29	4712	0.02	
Cr	53	He	1.171	8.41	633	0.18	
Mn	55	He	15.086	0.33	23707	0.06	
Fe	56	He	76.680	0.35	228417	0.03	
Co	59	He	2.317	2.26	16007	0.01	
Ni	60	He	2.434	0.47	4793	0.05	
Cu	63	He	1.924	2.50	11030	0.02	
Cu	65	He	1.972	0.97	5578	0.04	
Zn	66	He	3.066	11.42	2290	0.13	
As	75	He	36.202	1.18	14822	0.24	
Se	77	H2	5.380	19.19	1840	0.29	
Se	78	H2	4.369	3.25	2789	0.16	
Mo	95	He	63.284	1.86	158891	0.04	
Ag	107	He	0.999	1.42	9063	0.01	
Ag	109	He	1.013	1.49	8959	0.01	
Cd	111	He	2.254	2.35	2362	0.10	
Sb	121	He	29.848	1.40	73468	0.04	
Ba	138	He	14.919	3.35	76373	0.02	
Tl	205	He	4.350	0.46	81186	0.01	
[Pb]	206	He	4.780	1.31	30073	0.02	
[Pb]	207	He	4.867	1.24	27305	0.02	
Pb	208	He	4.838	1.52	121997	0.00	
U	238	He	2.367	0.31	66155	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	3269756	2.01	2946370	110.98	70	125	
Sc	45	No Gas	7154413	3.51	6643625	107.69	70	125	
Ge	72	He	107386	1.24	96230	111.59	70	125	
Ge	72	H2	1015856	1.57	925938	109.71	70	125	
In	115	He	929499	0.44	846980	109.74	70	125	
Lu	175	He	2579679	0.49	2286194	112.84	70	125	
Th	232	He	4355113	1.29	4043279	107.71	70	125	

Sample Report

Sample Table

Sample Name K1801988-001
 Data File Name 022SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:26:52-07:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.190	4.54	1267	0.02	
Al	27	No Gas	6295.467	0.87	152307488	0.00	
V	51	He	17.767	0.73	40674	0.04	
Cr	52	He	17.054	1.86	53079	0.03	
Cr	53	He	16.362	6.27	6391	0.26	
Mn	55	He	260.494	0.69	323661	0.08	
Fe	56	He	11169.570	0.82	26230515	0.04	
Co	59	He	5.853	2.54	31965	0.02	
Ni	60	He	13.268	1.84	20459	0.06	
Cu	63	He	87.785	1.24	387675	0.02	
Cu	65	He	86.983	0.83	190532	0.05	
Zn	66	He	577.446	1.40	330367	0.17	
As	75	He	2.529	1.20	826	0.31	
Se	77	H2	1.086	59.97	777	0.14	
Se	78	H2	0.145	7.67	81	0.18	
Mo	95	He	4.707	2.90	9889	0.05	
Ag	107	He	0.069	9.93	533	0.01	
Ag	109	He	0.064	36.08	477	0.01	
Cd	111	He	0.792	1.14	694	0.11	
Sb	121	He	5.098	1.55	10516	0.05	
Ba	138	He	458.312	2.65	1959348	0.02	
Tl	205	He	0.044	7.39	767	0.01	
[Pb]	206	He	25.757	2.62	142198	0.02	
[Pb]	207	He	24.825	2.80	122247	0.02	
Pb	208	He	25.340	2.88	560865	0.00	
U	238	He	0.252	7.11	6668	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2679725	1.19	2946370	90.95	70	125	
Sc	45	No Gas	5981250	0.20	6643625	90.03	70	125	
Ge	72	He	84938	1.36	96230	88.26	70	125	
Ge	72	H2	818468	0.60	925938	88.39	70	125	
In	115	He	777002	2.61	846980	91.74	70	125	
Lu	175	He	2271699	2.76	2286194	99.37	70	125	
Th	232	He	4080365	3.18	4043279	100.92	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 023_CCV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:29:24-07:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.387	2.085	155443	0.49	25	102	
Al	27	No Gas	26.077	1.694	595386	0.94	25	104	
V	51	He	24.170	5.385	56259	2.91	25	97	
Cr	52	He	24.058	3.968	76140	1.43	25	96	
Cr	53	He	24.193	5.815	9593	4.19	25	97	
Mn	55	He	24.799	3.290	31355	0.74	25	99	
Fe	56	He	244.653	3.358	585106	1.01	250	98	
Co	59	He	24.484	3.186	136022	1.62	25	98	
Ni	60	He	24.520	2.874	38436	0.55	25	98	
Cu	63	He	24.836	4.360	111739	2.26	25	99	
Cu	65	He	24.312	3.750	54249	1.21	25	97	
Zn	66	He	23.968	3.650	14006	1.13	25	96	
As	75	He	24.082	4.885	7936	2.38	25	96	
Se	77	H2	24.205	2.935	4634	3.06	25	97	
Se	78	H2	24.551	1.140	12728	0.84	25	98	
Mo	95	He	11.775	2.850	25608	1.41	12.5	94	
Ag	107	He	11.607	3.004	90959	0.52	12.5	93	
Ag	109	He	11.889	3.099	90962	0.31	12.5	95	
Cd	111	He	23.932	2.920	21700	0.58	25	96	
Sb	121	He	11.758	5.310	25071	3.64	12.5	94	
Ba	138	He	24.504	3.591	108554	0.91	25	98	
Tl	205	He	24.259	4.360	407535	1.66	25	97	
[Pb]	206	He	23.756	4.676	134187	1.81	25	95	
[Pb]	207	He	23.563	4.478	118731	2.05	25	94	
Pb	208	He	23.780	4.524	538519	1.29	25	95	
U	238	He	23.971	5.353	630224	0.91	25	96	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2647210	2.54	2946370	89.85	70	125	
Sc	45	No Gas	5576348	2.52	6643625	83.94	70	125	
Ge	72	He	86462	2.51	96230	89.85	70	125	
Ge	72	H2	826917	0.52	925938	89.31	70	125	
In	115	He	805138	3.17	846980	95.06	70	125	
Lu	175	He	2325943	4.34	2286194	101.74	70	125	
Th	232	He	4107824	4.90	4043279	101.60	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 024_CCB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:31:49-07:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.003	54.4	37	29.9	0.02	
Al	27	No Gas	0.090	21.0	9833	4.2	4	
V	51	He	0.014	67.4	90	25.5	0.2	
Cr	52	He	0.015	24.9	137	8.4	0.2	
Cr	53	He	-0.062	-46.0	23	49.5	0.2	
Mn	55	He	0.008	54.9	17	34.6	0.2	
Fe	56	He	0.374	15.3	1530	9.2	2	
Co	59	He	0.005	52.8	40	36.3	0.02	
Ni	60	He	-0.011	-51.0	31	27.0	0.2	
Cu	63	He	0.120	19.8	787	14.1	0.1	CCB Failed
Cu	65	He	0.152	15.5	442	12.6	0.1	CCB Failed
Zn	66	He	0.043	118.3	83	36.7	2	
As	75	He	-0.017	-45.5	3	94.4	0.5	
Se	77	H2	0.291	238.5	657	17.8	10	
Se	78	H2	0.005	60.4	9	16.4	1	
Mo	95	He	0.005	102.3	26	39.8	0.1	
Ag	107	He	0.002	140.4	27	65.8	0.02	
Ag	109	He	0.002	127.0	20	86.6	0.02	
Cd	111	He	0.005	30.9	6	24.1	0.02	
Sb	121	He	0.010	9.3	58	4.3	0.05	
Ba	138	He	0.016	52.8	110	32.8	0.05	
Tl	205	He	0.007	12.4	167	8.7	0.02	
[Pb]	206	He	0.007	39.6	140	11.9	0.02	
[Pb]	207	He	0.007	59.6	116	17.1	0.02	
Pb	208	He	0.008	7.7	558	2.8	0.02	
U	238	He	0.001	256.3	87	43.7	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2721340	0.13	2946370	92.36	70	125	
Sc	45	No Gas	5813979	0.44	6643625	87.51	70	125	
Ge	72	He	87926	0.66	96230	91.37	70	125	
Ge	72	H2	832459	0.73	925938	89.90	70	125	
In	115	He	802012	0.81	846980	94.69	70	125	
Lu	175	He	2285471	0.27	2286194	99.97	70	125	
Th	232	He	4105386	1.75	4043279	101.54	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 025_CCB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:36:34-07:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

8/3/15/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	134.9	20	20.5	0.02	
Al	27	No Gas	0.057	16.6	9406	2.1	4	
V	51	He	0.010	195.9	82	57.9	0.2	
Cr	52	He	0.004	65.8	102	7.5	0.2	
Cr	53	He	0.025	291.0	60	50.0	0.2	
Mn	55	He	0.005	80.2	13	43.3	0.2	
Fe	56	He	0.121	25.2	940	7.7	2	
Co	59	He	0.000	-370.4	11	45.8	0.02	
Ni	60	He	-0.008	-115.0	37	39.6	0.2	
Cu	63	He	0.107	36.3	747	24.8	0.2	
Cu	65	He	0.119	20.9	377	15.7	0.2	
Zn	66	He	0.024	215.9	73	41.7	2	
As	75	He	0.000	-3494.1	8	34.6	0.5	
Se	77	H2	0.066	738.1	643	13.9	10	
Se	78	H2	-0.001	-489.4	7	34.6	1	
Mo	95	He	0.004	51.5	26	19.9	0.1	
Ag	107	He	0.000	-100.2	12	24.7	0.02	
Ag	109	He	0.001	56.9	17	34.6	0.02	
Cd	111	He	0.001	65.8	2	26.6	0.02	
Sb	121	He	0.001	733.2	38	24.0	0.05	
Ba	138	He	0.008	25.8	80	12.5	0.05	
Tl	205	He	0.000	-4949.5	52	31.1	0.02	
[Pb]	206	He	0.003	25.3	118	2.9	0.02	
[Pb]	207	He	0.006	19.6	112	4.5	0.02	
Pb	208	He	0.005	31.3	477	6.7	0.02	
U	238	He	-0.001	-54.2	40	43.3	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2858818	1.28	2946370	97.03	70	125	
Sc	45	No Gas	6037578	0.50	6643625	90.88	70	125	
Ge	72	He	90215	0.53	96230	93.75	70	125	
Ge	72	H2	864701	0.91	925938	93.39	70	125	
In	115	He	817835	0.90	846980	96.56	70	125	
Lu	175	He	2301508	1.03	2286194	100.67	70	125	
Th	232	He	4132640	1.12	4043279	102.21	70	125	

Sample Report

Sample Table

Sample Name K1801988-002
 Data File Name 026SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:39:03-07:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.103	1.40	714	0.01	
Al	27	No Gas	3839.084	2.30	95981719	0.00	
V	51	He	9.974	3.34	24049	0.04	
Cr	52	He	11.199	3.81	36697	0.03	
Cr	53	He	10.989	9.33	4527	0.24	
Mn	55	He	140.445	3.35	183616	0.08	
Fe	56	He	6438.409	1.79	15912230	0.04	
Co	59	He	2.997	1.87	17233	0.02	
Ni	60	He	6.561	0.88	10676	0.06	
Cu	63	He	41.160	3.27	191390	0.02	
Cu	65	He	40.738	2.18	93966	0.04	
Zn	66	He	287.284	2.59	172987	0.17	
As	75	He	1.321	5.73	458	0.29	
Se	77	H2	0.474	96.49	693	0.07	
Se	78	H2	0.106	10.73	63	0.17	
Mo	95	He	2.925	4.07	6353	0.05	
Ag	107	He	0.034	17.09	277	0.01	
Ag	109	He	0.028	7.28	220	0.01	
Cd	111	He	0.518	3.77	470	0.11	
Sb	121	He	2.977	3.54	6356	0.05	
Ba	138	He	234.104	2.66	1033877	0.02	
Tl	205	He	0.024	15.19	457	0.01	
[Pb]	206	He	15.179	1.91	85079	0.02	
[Pb]	207	He	14.588	1.42	72934	0.02	
Pb	208	He	14.969	1.97	336358	0.00	
U	238	He	0.138	4.46	3757	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2796137	2.80	2946370	94.90	70	125	
Sc	45	No Gas	6182525	2.31	6643625	93.06	70	125	
Ge	72	He	89424	3.37	96230	92.93	70	125	
Ge	72	H2	840031	0.36	925938	90.72	70	125	
In	115	He	802577	2.03	846980	94.76	70	125	
Lu	175	He	2304490	1.82	2286194	100.80	70	125	
Th	232	He	4166157	1.59	4043279	103.04	70	125	

Sample Report

Sample Table

Sample Name K1801988-003
 Data File Name 027SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:48:48-07:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.162	2.91	1142	0.01	
Al	27	No Gas	6148.042	2.23	156846684	0.00	
V	51	He	13.693	0.94	33556	0.04	
Cr	52	He	11.940	4.18	39779	0.03	
Cr	53	He	12.031	6.90	5041	0.24	
Mn	55	He	203.420	4.80	270361	0.08	
Fe	56	He	8732.926	3.54	21937480	0.04	
Co	59	He	4.972	5.42	29042	0.02	
Ni	60	He	10.522	4.64	17367	0.06	
Cu	63	He	83.143	3.15	392784	0.02	
Cu	65	He	83.352	3.00	195329	0.04	
Zn	66	He	477.012	2.67	292002	0.16	
As	75	He	1.962	6.77	688	0.29	
Se	77	H2	1.424	12.97	887	0.16	
Se	78	H2	0.141	3.20	84	0.17	
Mo	95	He	3.286	4.17	7083	0.05	
Ag	107	He	0.062	17.12	493	0.01	
Ag	109	He	0.063	11.35	483	0.01	
Cd	111	He	0.532	1.06	478	0.11	
Sb	121	He	4.930	3.61	10428	0.05	
Ba	138	He	284.867	4.94	1248360	0.02	
Tl	205	He	0.034	11.59	627	0.01	
[Pb]	206	He	19.134	2.70	108254	0.02	
[Pb]	207	He	18.323	2.21	92462	0.02	
Pb	208	He	18.793	2.18	426260	0.00	
U	238	He	0.194	2.13	5288	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2855015	0.68	2946370	96.90	70	125	
Sc	45	No Gas	6307051	0.35	6643625	94.93	70	125	
Ge	72	He	90888	1.48	96230	94.45	70	125	
Ge	72	H2	871965	0.14	925938	94.17	70	125	
In	115	He	796537	1.88	846980	94.04	70	125	
Lu	175	He	2326286	0.47	2286194	101.75	70	125	
Th	232	He	4201618	1.60	4043279	103.92	70	125	

Sample Report

Sample Table

Sample Name K1801988-004
 Data File Name 028SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:51:12-07:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.272	2.61	1888	0.01	
Al	27	No Gas	9474.845	2.57	240094690	0.00	
V	51	He	24.609	1.71	59299	0.04	
Cr	52	He	29.877	0.49	97846	0.03	
Cr	53	He	29.672	0.81	12168	0.24	
Mn	55	He	460.619	0.20	602641	0.08	
Fe	56	He	13785.784	0.35	34087554	0.04	
Co	59	He	6.729	1.81	38697	0.02	
Ni	60	He	16.105	1.90	26141	0.06	
Cu	63	He	85.365	0.76	396926	0.02	
Cu	65	He	84.914	1.13	195858	0.04	
Zn	66	He	1075.333	1.04	647749	0.17	
As	75	He	2.969	2.46	1020	0.29	
Se	77	H2	0.639	65.70	720	0.09	
Se	78	H2	0.186	8.61	105	0.18	
Mo	95	He	4.011	4.03	8579	0.05	
Ag	107	He	0.103	18.68	807	0.01	
Ag	109	He	0.108	11.04	820	0.01	
Cd	111	He	1.213	1.75	1082	0.11	
Sb	121	He	3.660	5.22	7694	0.05	
Ba	138	He	379.495	3.37	1651429	0.02	
Tl	205	He	0.060	9.78	1045	0.01	
[Pb]	206	He	53.268	1.20	297681	0.02	
[Pb]	207	He	50.849	0.74	253482	0.02	
Pb	208	He	51.938	1.26	1163697	0.00	
U	238	He	0.389	3.96	10390	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2668401	1.20	2946370	90.57	70	125	
Sc	45	No Gas	6265891	1.03	6643625	94.31	70	125	
Ge	72	He	89434	1.28	96230	92.94	70	125	
Ge	72	H2	839003	1.13	925938	90.61	70	125	
In	115	He	790907	2.09	846980	93.38	70	125	
Lu	175	He	2299363	1.40	2286194	100.58	70	125	
Th	232	He	4131031	2.20	4043279	102.17	70	125	

Sample Report

Sample Table

Sample Name K1801988-001
 Data File Name 029SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:53:36-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.002	55.82	30	0.01	
Al	27	No Gas	27.811	0.30	681260	0.00	
V	51	He	0.294	11.02	758	0.04	
Cr	52	He	0.370	6.64	1287	0.03	
Cr	53	He	0.242	22.18	147	0.16	
Mn	55	He	29.188	4.83	37862	0.08	
Fe	56	He	31.525	2.54	77906	0.04	
Co	59	He	0.314	4.71	1802	0.02	
Ni	60	He	2.436	2.06	3962	0.06	
Cu	63	He	15.058	2.06	69621	0.02	
Cu	65	He	15.359	1.21	35206	0.04	
Zn	66	He	137.872	2.14	82398	0.17	
As	75	He	0.526	5.45	186	0.28	
Se	77	H2	0.501	90.06	707	0.07	
Se	78	H2	0.068	16.07	43	0.16	
Mo	95	He	5.041	2.29	10851	0.05	
Ag	107	He	0.000	-1943.46	13	0.00	
Ag	109	He	0.000	1472.73	7	0.00	
Cd	111	He	0.183	10.76	165	0.11	
Sb	121	He	2.637	6.33	5588	0.05	
Ba	138	He	157.025	3.08	687760	0.02	
Tl	205	He	0.007	40.86	170	0.00	
[Pb]	206	He	0.104	3.32	676	0.02	
[Pb]	207	He	0.096	5.74	558	0.02	
Pb	208	He	0.099	2.02	2587	0.00	
U	238	He	0.005	37.82	213	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2681183	0.58	2946370	91.00	70	125	
Sc	45	No Gas	5985841	1.17	6643625	90.10	70	125	
Ge	72	He	88676	0.70	96230	92.15	70	125	
Ge	72	H2	849405	1.57	925938	91.73	70	125	
In	115	He	795936	1.53	846980	93.97	70	125	
Lu	175	He	2291887	0.41	2286194	100.25	70	125	
Th	232	He	4091695	0.76	4043279	101.20	70	125	

Sample Report

Sample Table

Sample Name K1801988-002
 Data File Name 030SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:56:02-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.001	32.10	27	0.01	
Al	27	No Gas	53.586	1.79	1339157	0.00	
V	51	He	0.269	15.47	707	0.04	
Cr	52	He	0.475	11.16	1648	0.03	
Cr	53	He	0.481	23.85	247	0.19	
Mn	55	He	14.079	7.38	18500	0.08	
Fe	56	He	70.468	1.97	175779	0.04	
Co	59	He	0.174	5.35	1020	0.02	
Ni	60	He	1.309	5.68	2179	0.06	
Cu	63	He	8.292	2.99	38978	0.02	
Cu	65	He	8.112	1.47	18902	0.04	
Zn	66	He	74.274	1.99	45046	0.16	
As	75	He	0.295	9.94	110	0.27	
Se	77	H2	0.165	287.58	657	0.03	
Se	78	H2	0.054	10.01	36	0.15	
Mo	95	He	2.451	2.30	5388	0.05	
Ag	107	He	0.000	-427.78	12	0.00	
Ag	109	He	0.002	147.16	20	0.01	
Cd	111	He	0.133	5.15	123	0.11	
Sb	121	He	1.253	2.21	2728	0.05	
Ba	138	He	110.685	1.39	494413	0.02	
Tl	205	He	0.005	32.41	130	0.00	
[Pb]	206	He	0.155	2.37	974	0.02	
[Pb]	207	He	0.146	3.35	818	0.02	
Pb	208	He	0.151	0.90	3784	0.00	
U	238	He	0.003	26.68	150	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2838291	1.67	2946370	96.33	70	125	
Sc	45	No Gas	6141259	0.83	6643625	92.44	70	125	
Ge	72	He	89940	3.33	96230	93.46	70	125	
Ge	72	H2	859806	1.17	925938	92.86	70	125	
In	115	He	811481	0.72	846980	95.81	70	125	
Lu	175	He	2318535	1.74	2286194	101.41	70	125	
Th	232	He	4138741	2.15	4043279	102.36	70	125	

Sample Report

Sample Table

Sample Name K1801988-003
 Data File Name 031SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T08:58:28-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.003	49.12	36	0.01	
Al	27	No Gas	52.773	9.79	1327348	0.00	
V	51	He	0.344	11.05	907	0.04	
Cr	52	He	0.447	12.86	1585	0.03	
Cr	53	He	0.368	42.36	203	0.18	
Mn	55	He	9.750	5.27	13058	0.07	
Fe	56	He	59.060	3.01	150094	0.04	
Co	59	He	0.144	1.54	862	0.02	
Ni	60	He	1.903	4.14	3206	0.06	
Cu	63	He	14.342	2.87	68459	0.02	
Cu	65	He	14.916	3.09	35305	0.04	
Zn	66	He	102.040	4.86	62946	0.16	
As	75	He	0.428	9.55	158	0.27	
Se	77	H2	0.463	187.09	720	0.06	
Se	78	H2	0.066	17.53	43	0.15	
Mo	95	He	3.481	1.41	7762	0.04	
Ag	107	He	0.000	513.11	18	0.00	
Ag	109	He	0.002	149.30	23	0.01	
Cd	111	He	0.105	9.30	99	0.11	
Sb	121	He	2.671	2.03	5859	0.05	
Ba	138	He	100.707	0.23	456696	0.02	
Tl	205	He	0.004	20.24	128	0.00	
[Pb]	206	He	0.133	9.15	870	0.02	
[Pb]	207	He	0.125	6.08	731	0.02	
Pb	208	He	0.128	0.72	3356	0.00	
U	238	He	0.004	22.72	183	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2824870	1.19	2946370	95.88	70	125	
Sc	45	No Gas	6185367	1.28	6643625	93.10	70	125	
Ge	72	He	91572	2.48	96230	95.16	70	125	
Ge	72	H2	874950	1.21	925938	94.49	70	125	
In	115	He	823820	0.51	846980	97.27	70	125	
Lu	175	He	2374500	0.60	2286194	103.86	70	125	
Th	232	He	4168630	1.04	4043279	103.10	70	125	

Sample Report

Sample Table

Sample Name K1801988-004
 Data File Name 032SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:00:54-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Fail

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.002	28.91	29	0.01	
Al	27	No Gas	22.598	0.29	547639	0.00	
V	51	He	0.511	13.67	1287	0.04	
Cr	52	He	0.709	2.40	2407	0.03	
Cr	53	He	0.606	34.57	297	0.20	
Mn	55	He	68.151	1.32	89056	0.08	
Fe	56	He	10.380	0.32	26264	0.04	
Co	59	He	0.440	2.43	2541	0.02	
Ni	60	He	2.499	1.20	4092	0.06	
Cu	63	He	8.997	3.76	41998	0.02	
Cu	65	He	8.787	1.16	20329	0.04	
Zn	66	He	170.198	1.54	102448	0.17	
As	75	He	0.739	2.96	260	0.28	
Se	77	H2	0.638	138.67	353	0.18	
Se	78	H2	0.235	64.34	55	0.43	
Mo	95	He	4.860	1.07	10496	0.05	
Ag	107	He	0.000	-734.94	13	0.00	
Ag	109	He	0.003	55.63	27	0.01	
Cd	111	He	0.190	2.73	173	0.11	
Sb	121	He	2.196	2.83	4675	0.05	
Ba	138	He	126.461	0.34	555754	0.02	
Tl	205	He	0.006	29.25	155	0.00	
[Pb]	206	He	0.067	7.25	469	0.01	
[Pb]	207	He	0.068	7.80	418	0.02	
Pb	208	He	0.067	5.18	1861	0.00	
U	238	He	0.066	13.81	1743	0.00	

3/15/18

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2619156	1.43	2946370	88.89	70	125	
Sc	45	No Gas	5905897	1.09	6643625	88.90	70	125	
Ge	72	He	89316	0.73	96230	92.82	70	125	
Ge	72	H2	430179	46.39	925938	46.46	70	125	Flag
In	115	He	798363	0.84	846980	94.26	70	125	
Lu	175	He	2273517	0.71	2286194	99.45	70	125	
Th	232	He	3974815	2.43	4043279	98.31	70	125	



Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 033_CCV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:03:21-07:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.388	2.446	173721	0.92	25	102	
Al	27	No Gas	25.534	1.104	651761	1.63	25	102	
V	51	He	24.871	4.151	61569	4.00	25	99	
Cr	52	He	24.740	3.278	83257	3.10	25	99	
Cr	53	He	24.006	3.440	10123	3.33	25	96	
Mn	55	He	25.719	3.005	34575	2.81	25	103	
Fe	56	He	253.158	1.482	643724	1.28	250	101	
Co	59	He	25.492	1.859	150565	1.69	25	102	
Ni	60	He	25.260	3.302	42095	3.12	25	101	
Cu	63	He	24.947	2.051	119352	1.82	25	100	
Cu	65	He	24.912	2.113	59106	1.88	25	100	
Zn	66	He	24.207	4.957	15040	4.88	25	97	
As	75	He	24.801	2.979	8692	2.84	25	99	
Se	77	H2	23.522	4.983	4751	3.80	25	94	
Se	78	H2	24.553	2.300	13381	1.81	25	98	
Mo	95	He	12.405	0.442	27925	0.55	12.5	99	
Ag	107	He	12.281	1.603	99635	2.29	12.5	98	
Ag	109	He	12.406	0.745	98264	1.44	12.5	99	
Cd	111	He	24.773	0.758	23252	1.22	25	99	
Sb	121	He	12.198	0.356	26929	0.79	12.5	98	
Ba	138	He	25.046	1.438	114878	2.12	25	100	
Tl	205	He	25.306	1.855	431095	0.79	25	101	
[Pb]	206	He	24.935	2.748	142825	1.94	25	100	
[Pb]	207	He	24.382	1.637	124579	0.83	25	98	
Pb	208	He	24.768	1.610	568821	0.69	25	99	
U	238	He	24.402	0.631	652746	1.12	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2923559	1.73	2946370	99.23	70	125	
Sc	45	No Gas	6231853	2.41	6643625	93.80	70	125	
Ge	72	He	91883	0.23	96230	95.48	70	125	
Ge	72	H2	869273	0.53	925938	93.88	70	125	
In	115	He	832947	0.70	846980	98.34	70	125	
Lu	175	He	2356138	1.08	2286194	103.06	70	125	
Th	232	He	4172165	0.70	4043279	103.19	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 034_CCB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:05:49-07:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.003	45.5	40	24.1	0.02	
Al	27	No Gas	0.061	25.7	10010	3.3	4	
V	51	He	0.019	18.4	108	7.1	0.2	
Cr	52	He	0.006	61.3	112	9.3	0.2	
Cr	53	He	0.005	1495.5	53	57.3	0.2	
Mn	55	He	0.012	89.5	23	65.5	0.2	
Fe	56	He	0.205	29.6	1190	12.4	2	
Co	59	He	0.001	208.9	20	72.7	0.02	
Ni	60	He	0.005	139.2	60	20.0	0.2	
Cu	63	He	0.032	66.5	410	23.5	0.2	
Cu	65	He	0.045	28.4	212	13.4	0.2	
Zn	66	He	0.003	1093.9	63	32.9	2	
As	75	He	-0.009	-35.5	5	21.7	0.5	
Se	77	H2	0.585	109.5	730	15.4	10	
Se	78	H2	0.002	565.3	8	79.9	1	
Mo	95	He	0.001	210.7	19	27.0	0.1	
Ag	107	He	0.001	197.4	20	50.0	0.02	
Ag	109	He	0.000	289.7	10	100.0	0.02	
Cd	111	He	0.003	101.0	4	69.6	0.02	
Sb	121	He	0.008	53.0	55	16.4	0.05	
Ba	138	He	0.009	68.4	87	33.3	0.05	
Tl	205	He	0.004	47.6	120	25.3	0.02	
[Pb]	206	He	0.000	-2736.1	100	13.6	0.02	
[Pb]	207	He	-0.001	-318.9	79	19.5	0.02	
Pb	208	He	0.001	94.1	398	5.9	0.02	
U	238	He	0.000	-231.2	60	50.0	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2901976	2.96	2946370	98.49	70	125	
Sc	45	No Gas	6361844	0.77	6643625	95.76	70	125	
Ge	72	He	93539	1.55	96230	97.20	70	125	
Ge	72	H2	860799	0.87	925938	92.97	70	125	
In	115	He	838943	1.07	846980	99.05	70	125	
Lu	175	He	2325511	1.48	2286194	101.72	70	125	
Th	232	He	4150233	0.44	4043279	102.65	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVW
 Data File Name 035LCCV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:08:25-07:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.018	17.844	137	10.81	0.02	90	
Al	27	No Gas	3.949	6.492	105118	0.80	4	99	
V	51	He	0.225	8.672	595	14.65	0.2	112	
Cr	52	He	0.191	15.716	705	9.85	0.2	96	
Cr	53	He	0.109	66.948	93	34.44	-1	-11	
Mn	55	He	0.249	13.861	330	16.87	0.2	125	
Fe	56	He	2.286	14.307	6191	5.18	2	114	
Co	59	He	0.016	16.050	103	14.06	0.02	80	
Ni	60	He	0.195	13.849	360	12.04	0.2	97	
Cu	63	He	0.131	18.523	847	17.77	0.1	131	
Cu	65	He	0.128	7.008	390	3.85	0.1	128	
Zn	66	He	2.159	9.641	1343	6.71	2	108	
As	75	He	0.525	10.147	185	4.71	0.5	105	
Se	77	H2	0.448	71.466	700	9.90	-1	-45	
Se	78	H2	0.972	3.623	526	1.65	1	97	
Mo	95	He	0.102	20.801	233	11.16	0.1	102	
Ag	107	He	0.020	31.273	170	18.37	0.02	102	
Ag	109	He	0.022	30.388	170	32.75	0.02	108	
Cd	111	He	0.019	13.427	19	16.44	0.02	96	
Sb	121	He	0.062	35.529	165	23.67	0.05	124	
Ba	138	He	0.054	5.327	277	5.52	0.05	108	
Tl	205	He	0.020	17.856	362	8.33	0.02	98	
[Pb]	206	He	0.019	38.743	195	8.55	0.02	94	
[Pb]	207	He	0.018	9.542	169	8.95	0.02	92	
Pb	208	He	0.020	23.369	781	1.79	0.02	98	
U	238	He	0.016	36.183	483	29.06	0.02	80	

*see
 2x
 3/15/18*

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2907501	6.99	2946370	98.68	70	125	
Sc	45	No Gas	6089096	5.12	6643625	91.65	70	125	
Ge	72	He	88675	7.31	96230	92.15	70	125	
Ge	72	H2	852319	2.23	925938	92.05	70	125	
In	115	He	798734	9.70	846980	94.30	70	125	
Lu	175	He	2226371	10.87	2286194	97.38	70	125	
Th	232	He	4058699	10.60	4043279	100.38	70	125	

Sample Report

Sample Table

Sample Name LLCCVW 2X
 Data File Name 036SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:11:03-07:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.037	5.99	275	0.01	
Al	27	No Gas	8.139	4.83	215130	0.00	
V	51	He	0.377	7.01	1003	0.04	
Cr	52	He	0.360	6.60	1318	0.03	
Cr	53	He	0.452	29.32	243	0.19	
Mn	55	He	0.319	33.16	443	0.07	
Fe	56	He	3.809	1.34	10470	0.04	
Co	59	He	0.035	9.53	220	0.02	
Ni	60	He	0.355	13.88	651	0.05	
Cu	63	He	0.208	10.49	1260	0.02	
Cu	65	He	0.222	13.51	637	0.03	
Zn	66	He	3.483	13.99	2244	0.16	
As	75	He	0.837	5.14	306	0.27	
Se	77	H2	1.972	16.87	980	0.20	
Se	78	H2	1.768	1.73	970	0.18	
Mo	95	He	0.195	15.74	451	0.04	
Ag	107	He	0.036	7.67	303	0.01	
Ag	109	He	0.042	13.11	333	0.01	
Cd	111	He	0.035	12.98	34	0.10	
Sb	121	He	0.095	3.74	243	0.04	
Ba	138	He	0.102	15.96	507	0.02	
Tl	205	He	0.039	8.68	710	0.01	
[Pb]	206	He	0.035	16.32	297	0.01	
[Pb]	207	He	0.035	8.95	258	0.01	
Pb	208	He	0.036	5.90	1181	0.00	
U	238	He	0.035	11.10	1007	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2919855	2.92	2946370	99.10	70	125	
Sc	45	No Gas	6289750	4.24	6643625	94.67	70	125	
Ge	72	He	93151	1.98	96230	96.80	70	125	
Ge	72	H2	869240	0.54	925938	93.88	70	125	
In	115	He	823867	1.87	846980	97.27	70	125	
Lu	175	He	2314074	3.26	2286194	101.22	70	125	
Th	232	He	4139913	2.40	4043279	102.39	70	125	

Sample Report

Sample Table

Sample Name KQ1803182-01
 Data File Name 037_PB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:13:29-07:00
 Sample Type PB
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	-683.09	17	0.00	
Al	27	No Gas	0.606	2.34	23290	0.00	
V	51	He	0.004	143.82	67	0.01	
Cr	52	He	0.000	5459.03	90	0.00	
Cr	53	He	-0.008	-320.98	47	-0.02	
Mn	55	He	0.013	35.27	23	0.06	
Fe	56	He	0.277	11.70	1333	0.02	
Co	59	He	-0.001	-99.87	6	-0.02	
Ni	60	He	0.008	35.40	62	0.01	
Cu	63	He	0.035	51.29	410	0.01	
Cu	65	He	0.038	53.04	190	0.02	
Zn	66	He	0.191	79.77	177	0.11	
As	75	He	-0.008	-158.92	6	-0.14	
Se	77	H2	0.030	1786.64	623	0.00	
Se	78	H2	0.001	1563.41	7	0.01	
Mo	95	He	-0.001	-542.77	14	0.00	
Ag	107	He	0.000	-283.43	12	0.00	
Ag	109	He	-0.001	0.00	0	#DIV/0!	
Cd	111	He	0.002	102.69	3	0.06	
Sb	121	He	-0.002	-137.82	33	0.00	
Ba	138	He	0.018	67.73	120	0.01	
Tl	205	He	-0.001	-63.68	33	0.00	
[Pb]	206	He	-0.003	-42.35	82	0.00	
[Pb]	207	He	0.001	444.34	86	0.00	
Pb	208	He	0.000	-143.45	368	0.00	
U	238	He	-0.002	-47.05	30	-0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2865440	1.73	2946370	97.25	70	125	
Sc	45	No Gas	6165363	0.84	6643625	92.80	70	125	
Ge	72	He	90587	1.65	96230	94.14	70	125	
Ge	72	H2	846937	0.65	925938	91.47	70	125	
In	115	He	810926	1.07	846980	95.74	70	125	
Lu	175	He	2303652	1.32	2286194	100.76	70	125	
Th	232	He	4152714	0.46	4043279	102.71	70	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name KQ1803182-02
 Data File Name 038_LCS.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:15:56-07:00
 Sample Type LCS
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	2.635	1.015	17480	0.90	2.5	105.4	
Al	27	No Gas	102.706	2.957	2513654	1.05	100	102.7	
V	51	He	25.773	0.716	61507	0.97	25	103.1	
Cr	52	He	10.447	1.793	33948	2.86	10	104.5	
Cr	53	He	10.304	1.716	4217	3.02	10	103.0	
Mn	55	He	26.845	2.281	34786	0.82	25	107.4	
Fe	56	He	54.188	2.463	133297	0.84	50	108.4	
Co	59	He	26.630	1.296	151615	0.43	25	106.5	
Ni	60	He	26.101	0.208	41933	1.48	25	104.4	
Cu	63	He	13.333	4.351	61587	3.26	12.5	106.7	
Cu	65	He	13.317	1.959	30511	3.17	12.5	106.5	
Zn	66	He	26.590	0.957	15921	1.13	25	106.4	
As	75	He	50.203	1.313	16953	1.79	50	100.4	
Se	77	H2	50.664	4.266	9086	4.04	50	101.3	
Se	78	H2	51.598	1.581	26881	0.56	50	103.2	
Mo	95	He	20.753	0.578	44450	2.42	20	103.8	
Ag	107	He	12.880	2.871	99395	0.87	12.5	103.0	
Ag	109	He	13.084	1.727	98606	1.88	12.5	104.7	
Cd	111	He	26.179	1.522	23380	1.12	25	104.7	
Sb	121	He	10.462	2.410	21978	0.64	10	104.6	
Ba	138	He	106.646	1.485	465277	1.34	100	106.6	
Tl	205	He	53.178	0.463	862424	1.21	50	106.4	
[Pb]	206	He	52.096	0.660	284005	1.43	50	104.2	
[Pb]	207	He	52.999	1.045	257717	1.61	50	106.0	
Pb	208	He	52.719	0.476	1152273	1.25	50	105.4	
U	238	He	20.568	1.308	542161	1.32	20	102.8	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2852466	3.04	2946370	96.81	70	125	
Sc	45	No Gas	6034017	1.90	6643625	90.82	70	125	
Ge	72	He	88583	1.69	96230	92.05	70	125	
Ge	72	H2	831263	1.44	925938	89.78	70	125	
In	115	He	792743	2.58	846980	93.60	70	125	
Lu	175	He	2242873	0.78	2286194	98.11	70	125	
Th	232	He	4112180	2.54	4043279	101.70	70	125	

Sample Report

Sample Table

Sample Name K1802191-001
 Data File Name 039SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:18:22-07:00
 Sample Type Sample
 Dilution 1
 Comment R
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	86.88	19	0.00	
Al	27	No Gas	8.469	2.12	210457	0.00	
V	51	He	0.034	19.78	138	0.02	
Cr	52	He	0.102	15.06	418	0.02	
Cr	53	He	0.044	166.90	67	0.07	
Mn	55	He	3.276	7.70	4244	0.08	
Fe	56	He	25.552	2.73	63120	0.04	
Co	59	He	0.042	11.60	252	0.02	
Ni	60	He	0.399	3.60	688	0.06	
Cu	63	He	0.404	6.41	2100	0.02	
Cu	65	He	0.468	15.39	1165	0.04	
Zn	66	He	1.236	19.96	793	0.16	
As	75	He	0.112	22.18	46	0.24	
Se	77	H2	1.504	70.42	867	0.17	
Se	78	H2	0.358	10.63	195	0.18	
Mo	95	He	7.130	3.22	15294	0.05	
Ag	107	He	0.003	65.60	38	0.01	
Ag	109	He	0.004	43.40	33	0.01	
Cd	111	He	0.022	24.28	21	0.10	
Sb	121	He	0.200	6.14	455	0.04	
Ba	138	He	18.599	0.71	81280	0.02	
Tl	205	He	0.014	17.40	293	0.00	
[Pb]	206	He	0.008	19.41	144	0.01	
[Pb]	207	He	0.009	39.60	129	0.01	
Pb	208	He	0.007	7.73	529	0.00	
U	238	He	0.201	7.24	5394	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2704850	1.75	2946370	91.80	70	125	
Sc	45	No Gas	5916173	1.37	6643625	89.05	70	125	
Ge	72	He	88489	1.47	96230	91.96	70	125	
Ge	72	H2	840116	1.12	925938	90.73	70	125	
In	115	He	793594	1.69	846980	93.70	70	125	
Lu	175	He	2330437	0.93	2286194	101.94	70	125	
Th	232	He	4141702	1.18	4043279	102.43	70	125	

All Reference Sample Report

Sample Table

Sample Name K1802191-002
 Data File Name 040_ARF.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:20:49-07:00
 Sample Type AllRef
 Dilution 1
 Comment R
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	1268.75	17	0.00	
Al	27	No Gas	12.909	1.11	316480	0.00	
V	51	He	0.044	13.58	165	0.03	
Cr	52	He	0.103	4.16	430	0.02	
Cr	53	He	0.090	32.67	87	0.10	
Mn	55	He	2.294	4.79	3030	0.08	
Fe	56	He	23.120	2.53	58235	0.04	
Co	59	He	0.037	5.10	227	0.02	
Ni	60	He	0.342	3.42	607	0.06	
Cu	63	He	0.305	12.08	1673	0.02	
Cu	65	He	0.357	11.76	930	0.04	
Zn	66	He	1.204	13.72	790	0.15	
As	75	He	0.094	32.35	41	0.23	
Se	77	H2	0.996	19.38	790	0.13	
Se	78	H2	0.352	5.01	194	0.18	
Mo	95	He	4.386	1.91	9598	0.05	
Ag	107	He	-0.001	-47.59	8	-0.01	
Ag	109	He	0.002	0.59	20	0.01	
Cd	111	He	0.016	3.93	16	0.10	
Sb	121	He	0.143	9.98	342	0.04	
Ba	138	He	17.512	1.20	78005	0.02	
Tl	205	He	0.003	24.29	110	0.00	
[Pb]	206	He	0.008	39.07	143	0.01	
[Pb]	207	He	0.008	42.63	125	0.01	
Pb	208	He	0.009	25.52	577	0.00	
U	238	He	0.142	4.28	3841	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2699501	1.06	2946370	91.62	70	125	
Sc	45	No Gas	5911518	0.65	6643625	88.98	70	125	
Ge	72	He	90117	0.65	96230	93.65	70	125	
Ge	72	H2	848703	1.40	925938	91.66	70	125	
In	115	He	808832	0.41	846980	95.50	70	125	
Lu	175	He	2316098	0.68	2286194	101.31	70	125	
Th	232	He	4126333	1.17	4043279	102.05	70	125	

Sample Report

Sample Table

Sample Name KQ1803182-03
 Data File Name 041SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:23:16-07:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	-366.96	16	0.00	
Al	27	No Gas	11.054	1.06	272176	0.00	
V	51	He	0.023	68.35	110	0.02	
Cr	52	He	0.098	7.97	400	0.02	
Cr	53	He	0.080	84.90	80	0.10	
Mn	55	He	2.243	2.95	2877	0.08	
Fe	56	He	20.794	1.02	50925	0.04	
Co	59	He	0.034	9.26	202	0.02	
Ni	60	He	0.351	2.17	603	0.06	
Cu	63	He	0.331	11.56	1743	0.02	
Cu	65	He	0.353	2.95	893	0.04	
Zn	66	He	1.205	15.13	767	0.16	
As	75	He	0.104	19.87	43	0.24	
Se	77	H2	0.715	42.42	723	0.10	
Se	78	H2	0.347	16.74	187	0.19	
Mo	95	He	4.398	2.08	9539	0.05	
Ag	107	He	0.001	352.50	18	0.00	
Ag	109	He	0.000	-193.52	3	-0.01	
Cd	111	He	0.015	22.63	15	0.10	
Sb	121	He	0.150	14.84	354	0.04	
Ba	138	He	17.529	1.61	77401	0.02	
Tl	205	He	0.002	61.43	92	0.00	
[Pb]	206	He	0.008	50.22	145	0.01	
[Pb]	207	He	0.004	57.97	106	0.00	
Pb	208	He	0.007	9.25	537	0.00	
U	238	He	0.131	3.55	3587	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2689571	1.06	2946370	91.28	70	125	
Sc	45	No Gas	5912514	1.18	6643625	89.00	70	125	
Ge	72	He	87494	1.90	96230	90.92	70	125	
Ge	72	H2	827079	1.12	925938	89.32	70	125	
In	115	He	801799	1.33	846980	94.67	70	125	
Lu	175	He	2328078	3.39	2286194	101.83	70	125	
Th	232	He	4183263	1.27	4043279	103.46	70	125	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name KQ1803182-04
 Data File Name 042_Spk.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:25:42-07:00
 Sample Type Spike
 Dilution 1
 Comment
 QC Ref File Name 040_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	2.524	1.837	15708	1.36	2.5	101	
Al	27	No Gas	106.304	1.467	2441099	1.45	100	93	
V	51	He	24.605	0.787	57393	1.63	25	98	
Cr	52	He	9.821	1.273	31196	2.35	10	97	
Cr	53	He	9.425	2.672	3774	3.14	10	93	
Mn	55	He	27.355	0.381	34652	2.00	25	100	
Fe	56	He	72.614	1.578	174400	1.68	50	99	
Co	59	He	24.145	0.900	134369	1.69	25	96	
Ni	60	He	24.119	1.690	37870	1.13	25	95	
Cu	63	He	12.294	0.324	55550	2.59	12.5	96	
Cu	65	He	12.344	1.357	27644	1.96	12.5	96	
Zn	66	He	24.948	1.801	14606	3.30	25	95	
As	75	He	46.933	0.408	15492	2.23	50	94	
Se	77	H2	47.325	0.896	8376	1.67	50	93	
Se	78	H2	46.392	1.074	23739	0.38	50	92	
Mo	95	He	24.454	1.006	52319	1.51	20	100	
Ag	107	He	11.394	1.558	87866	1.02	12.5	91	
Ag	109	He	11.743	0.978	88425	1.52	12.5	94	
Cd	111	He	23.417	1.259	20895	1.35	25	94	
Sb	121	He	10.019	0.822	21033	0.55	10	99	
Ba	138	He	117.372	1.013	511632	1.41	100	100	
Tl	205	He	46.791	1.691	781805	0.66	50	94	
[Pb]	206	He	45.399	2.743	254973	1.74	50	91	
[Pb]	207	He	46.515	2.013	233033	0.88	50	93	
Pb	208	He	46.199	1.842	1040337	0.78	50	92	
U	238	He	20.059	0.928	530314	0.42	20	100	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2628946	0.48	2946370	89.23	70	125	
Sc	45	No Gas	5660097	0.50	6643625	85.20	70	125	
Ge	72	He	86583	2.37	96230	89.98	70	125	
Ge	72	H2	816435	1.37	925938	88.17	70	125	
In	115	He	791861	0.55	846980	93.49	70	125	
Lu	175	He	2311059	1.14	2286194	101.09	70	125	
Th	232	He	4123732	0.55	4043279	101.99	70	125	

Sample Report

Sample Table

Sample Name K1802191-003
 Data File Name 043SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:28:08-07:00
 Sample Type Sample
 Dilution 1
 Comment R
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	124.81	17	0.00	
Al	27	No Gas	3.613	0.88	90151	0.00	
V	51	He	0.023	46.43	108	0.02	
Cr	52	He	0.165	9.48	600	0.03	
Cr	53	He	0.102	28.45	87	0.12	
Mn	55	He	8.364	2.71	10460	0.08	
Fe	56	He	55.716	0.24	132199	0.04	
Co	59	He	0.043	17.38	250	0.02	
Ni	60	He	0.594	1.40	966	0.06	
Cu	63	He	0.290	21.06	1520	0.02	
Cu	65	He	0.327	24.00	817	0.04	
Zn	66	He	0.627	12.71	417	0.15	
As	75	He	0.076	38.23	33	0.23	
Se	77	H2	1.449	41.22	817	0.18	
Se	78	H2	0.347	7.33	180	0.19	
Mo	95	He	8.120	0.32	17200	0.05	
Ag	107	He	0.000	580.37	17	0.00	
Ag	109	He	0.003	72.79	30	0.01	
Cd	111	He	0.009	26.82	10	0.10	
Sb	121	He	0.188	4.84	424	0.04	
Ba	138	He	14.149	1.06	61059	0.02	
Tl	205	He	0.011	19.16	240	0.00	
[Pb]	206	He	0.005	37.53	127	0.00	
[Pb]	207	He	0.010	10.35	131	0.01	
Pb	208	He	0.007	14.28	538	0.00	
U	238	He	0.211	3.48	5578	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2574421	1.01	2946370	87.38	70	125	
Sc	45	No Gas	5655703	0.59	6643625	85.13	70	125	
Ge	72	He	85433	1.20	96230	88.78	70	125	
Ge	72	H2	798696	0.92	925938	86.26	70	125	
In	115	He	783488	0.53	846980	92.50	70	125	
Lu	175	He	2298209	1.08	2286194	100.53	70	125	
Th	232	He	4073374	0.57	4043279	100.74	70	125	

Sample Report

Sample Table

Sample Name K1802191-004
 Data File Name 044SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:30:36-07:00
 Sample Type Sample
 Dilution 1
 Comment R
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	-0.001	-82.65	13	0.00	
Al	27	No Gas	41.330	1.30	958935	0.00	
V	51	He	0.229	3.96	558	0.04	
Cr	52	He	0.221	6.77	748	0.03	
Cr	53	He	0.270	70.94	147	0.18	
Mn	55	He	42.962	5.03	51725	0.08	
Fe	56	He	115.507	1.29	263078	0.04	
Co	59	He	0.084	8.41	453	0.02	
Ni	60	He	0.149	15.19	267	0.06	
Cu	63	He	0.354	8.61	1733	0.02	
Cu	65	He	0.444	6.52	1030	0.04	
Zn	66	He	0.435	19.28	293	0.15	
As	75	He	0.305	16.00	104	0.29	
Se	77	H2	1.135	62.96	730	0.16	
Se	78	H2	0.275	13.61	138	0.20	
Mo	95	He	0.175	26.13	373	0.05	
Ag	107	He	0.000	460.80	17	0.00	
Ag	109	He	0.001	276.57	17	0.01	
Cd	111	He	0.006	21.37	6	0.09	
Sb	121	He	0.032	33.91	100	0.03	
Ba	138	He	6.055	1.46	25550	0.02	
Tl	205	He	0.004	74.03	123	0.00	
[Pb]	206	He	0.005	64.07	125	0.00	
[Pb]	207	He	0.005	63.50	105	0.00	
Pb	208	He	0.005	24.71	463	0.00	
U	238	He	0.022	7.41	620	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2661181	2.47	2946370	90.32	70	125	
Sc	45	No Gas	5691292	0.55	6643625	85.67	70	125	
Ge	72	He	82168	4.60	96230	85.39	70	125	
Ge	72	H2	760814	0.96	925938	82.17	70	125	
In	115	He	765866	6.28	846980	90.42	70	125	
Lu	175	He	2231840	5.59	2286194	97.62	70	125	
Th	232	He	3947013	4.70	4043279	97.62	70	125	

Sample Report

Sample Table

Sample Name K1802191-005
 Data File Name 045SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:33:03-07:00
 Sample Type Sample
 Dilution 1
 Comment R
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.001	191.84	19	0.00	
Al	27	No Gas	8.931	7.24	182343	0.00	
V	51	He	0.026	65.87	115	0.02	
Cr	52	He	0.114	16.96	440	0.03	
Cr	53	He	0.128	56.62	97	0.13	
Mn	55	He	3.180	3.92	3961	0.08	
Fe	56	He	25.938	1.73	61573	0.04	
Co	59	He	0.042	8.66	241	0.02	
Ni	60	He	0.448	4.82	737	0.06	
Cu	63	He	0.284	14.90	1487	0.02	
Cu	65	He	0.265	12.47	675	0.04	
Zn	66	He	1.441	14.14	880	0.16	
As	75	He	0.088	21.28	36	0.24	
Se	77	H2	1.159	50.18	827	0.14	
Se	78	H2	0.319	10.89	179	0.18	
Mo	95	He	6.988	0.89	14725	0.05	
Ag	107	He	-0.001	-343.72	10	-0.01	
Ag	109	He	0.000	-207.83	3	-0.01	
Cd	111	He	0.018	16.31	17	0.11	
Sb	121	He	0.174	10.76	394	0.04	
Ba	138	He	18.055	1.39	77492	0.02	
Tl	205	He	0.003	10.75	102	0.00	
[Pb]	206	He	0.012	23.12	168	0.01	
[Pb]	207	He	0.011	28.76	136	0.01	
Pb	208	He	0.013	12.12	662	0.00	
U	238	He	0.187	7.07	4898	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2298812	5.17	2946370	78.02	70	125	
Sc	45	No Gas	4887850	8.31	6643625	73.57	70	125	
Ge	72	He	85038	1.28	96230	88.37	70	125	
Ge	72	H2	858887	3.12	925938	92.76	70	125	
In	115	He	779368	0.13	846980	92.02	70	125	
Lu	175	He	2299837	0.45	2286194	100.60	70	125	
Th	232	He	4035509	1.10	4043279	99.81	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 046_CC.V.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:35:29-07:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	24.483	0.964	160677	0.46	25	98	
Al	27	No Gas	24.413	1.124	597876	0.73	25	98	
V	51	He	24.170	2.688	58030	2.16	25	97	
Cr	52	He	24.314	1.978	79359	1.37	25	97	
Cr	53	He	23.554	2.753	9633	1.73	25	94	
Mn	55	He	25.271	2.640	32948	2.18	25	101	
Fe	56	He	247.121	2.993	609389	2.20	250	99	
Co	59	He	24.423	1.701	139905	1.41	25	98	
Ni	60	He	24.189	3.304	39092	2.30	25	97	
Cu	63	He	24.116	4.997	111879	3.99	25	96	
Cu	65	He	24.371	2.605	56080	1.94	25	97	
Zn	66	He	23.689	2.896	14279	3.80	25	95	
As	75	He	23.736	2.571	8068	1.97	25	95	
Se	77	H2	24.724	0.117	4734	0.53	25	99	
Se	78	H2	24.229	1.571	12599	1.31	25	97	
Mo	95	He	12.132	2.171	26967	1.85	12.5	97	
Ag	107	He	11.950	0.513	95731	0.91	12.5	96	
Ag	109	He	12.004	2.248	93892	2.60	12.5	96	
Cd	111	He	24.306	1.822	22529	2.03	25	97	
Sb	121	He	11.986	1.713	26130	1.33	12.5	96	
Ba	138	He	24.482	2.809	110884	2.92	25	98	
Tl	205	He	24.595	1.094	424604	1.65	25	98	
[Pb]	206	He	24.168	1.004	140296	1.67	25	97	
[Pb]	207	He	24.042	1.568	124480	1.37	25	96	
Pb	208	He	24.254	1.325	564469	1.47	25	97	
U	238	He	24.401	1.991	658469	2.33	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2798849	1.01	2946370	94.99	70	125	
Sc	45	No Gas	5974993	0.51	6643625	89.94	70	125	
Ge	72	He	89119	1.07	96230	92.61	70	125	
Ge	72	H2	829350	0.50	925938	89.57	70	125	
In	115	He	822541	0.46	846980	97.11	70	125	
Lu	175	He	2387875	2.63	2286194	104.45	70	125	
Th	232	He	4209036	1.16	4043279	104.10	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 047_CCB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:37:56-07:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.002	44.2	29	19.2	0.02	
Al	27	No Gas	0.031	18.2	8540	1.2	4	
V	51	He	0.003	210.2	63	25.4	0.2	
Cr	52	He	0.004	134.1	100	15.0	0.2	
Cr	53	He	-0.055	-90.1	27	78.1	0.2	
Mn	55	He	0.001	802.7	7	86.6	0.2	
Fe	56	He	0.157	5.4	1003	4.0	2	
Co	59	He	0.000	303.9	14	48.0	0.02	
Ni	60	He	0.001	563.5	50	24.0	0.2	
Cu	63	He	0.039	20.3	417	11.1	0.2	
Cu	65	He	0.038	23.4	183	8.8	0.2	
Zn	66	He	-0.019	-277.8	47	68.9	2	
As	75	He	-0.009	-15.5	5	10.8	0.5	
Se	77	H2	0.590	101.9	693	12.4	10	
Se	78	H2	0.004	217.9	9	46.6	1	
Mo	95	He	0.004	77.8	24	28.4	0.1	
Ag	107	He	0.001	218.9	22	74.2	0.02	
Ag	109	He	0.000	269.7	10	100.0	0.02	
Cd	111	He	0.002	43.8	4	28.6	0.02	
Sb	121	He	0.002	396.1	40	41.0	0.05	
Ba	138	He	0.006	179.0	67	67.6	0.05	
Tl	205	He	0.004	6.5	120	0.0	0.02	
[Pb]	206	He	0.001	170.1	103	4.3	0.02	
[Pb]	207	He	0.001	238.5	86	10.7	0.02	
Pb	208	He	0.000	-386.6	371	8.8	0.02	
U	238	He	0.000	-360.2	67	37.7	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2745007	1.10	2946370	93.17	70	125	
Sc	45	No Gas	5876753	0.70	6643625	88.46	70	125	
Ge	72	He	87916	2.84	96230	91.36	70	125	
Ge	72	H2	818143	2.05	925938	88.36	70	125	
In	115	He	808758	1.48	846980	95.49	70	125	
Lu	175	He	2307158	3.60	2286194	100.92	70	125	
Th	232	He	4142840	2.93	4043279	102.46	70	125	

Sample Report

Sample Table

Sample Name K1802191-001
 Data File Name 048SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:40:24-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.002	17.97	30	0.01	
Al	27	No Gas	6.765	1.66	161530	0.00	
V	51	He	0.018	41.96	93	0.02	
Cr	52	He	0.098	8.47	385	0.03	
Cr	53	He	0.106	56.18	87	0.12	
Mn	55	He	1.168	16.22	1437	0.08	
Fe	56	He	9.395	3.76	22372	0.04	
Co	59	He	0.037	10.15	211	0.02	
Ni	60	He	0.438	5.91	710	0.06	
Cu	63	He	0.307	10.02	1563	0.02	
Cu	65	He	0.318	13.66	778	0.04	
Zn	66	He	2.024	13.76	1197	0.17	
As	75	He	0.117	14.25	45	0.26	
Se	77	H2	0.824	31.15	717	0.11	
Se	78	H2	0.337	3.14	176	0.19	
Mo	95	He	6.928	3.42	14700	0.05	
Ag	107	He	0.001	92.61	22	0.00	
Ag	109	He	0.003	3.03	30	0.01	
Cd	111	He	0.025	18.41	23	0.11	
Sb	121	He	0.175	7.74	398	0.04	
Ba	138	He	18.632	2.16	80513	0.02	
Tl	205	He	0.003	43.98	102	0.00	
[Pb]	206	He	0.002	105.26	114	0.00	
[Pb]	207	He	0.002	64.39	95	0.00	
Pb	208	He	0.002	32.38	435	0.00	
U	238	He	0.190	1.41	5138	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2603848	1.59	2946370	88.37	70	125	
Sc	45	No Gas	5630258	0.45	6643625	84.75	70	125	
Ge	72	He	83828	1.14	96230	87.11	70	125	
Ge	72	H2	799762	0.79	925938	86.37	70	125	
In	115	He	784914	2.44	846980	92.67	70	125	
Lu	175	He	2334692	2.28	2286194	102.12	70	125	
Th	232	He	4158670	1.93	4043279	102.85	70	125	

Sample Report

Sample Table

Sample Name K1802191-002
 Data File Name 049SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:42:51-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.001	29.74	20	0.00	
Al	27	No Gas	8.250	1.60	197028	0.00	
V	51	He	0.023	35.93	107	0.02	
Cr	52	He	0.093	29.03	377	0.02	
Cr	53	He	0.059	188.47	70	0.08	
Mn	55	He	0.578	1.32	727	0.08	
Fe	56	He	5.333	3.62	13162	0.04	
Co	59	He	0.019	30.70	117	0.02	
Ni	60	He	0.317	5.27	536	0.06	
Cu	63	He	0.285	5.32	1493	0.02	
Cu	65	He	0.311	8.65	778	0.04	
Zn	66	He	1.882	21.54	1133	0.17	
As	75	He	0.082	52.64	34	0.24	
Se	77	H2	1.663	41.61	853	0.19	
Se	78	H2	0.338	5.90	176	0.19	
Mo	95	He	4.431	1.73	9434	0.05	
Ag	107	He	0.000	-336.56	12	0.00	
Ag	109	He	0.001	54.56	17	0.01	
Cd	111	He	0.012	25.43	12	0.10	
Sb	121	He	0.153	15.51	354	0.04	
Ba	138	He	17.360	1.44	75235	0.02	
Tl	205	He	0.002	54.21	92	0.00	
[Pb]	206	He	-0.003	-23.63	84	0.00	
[Pb]	207	He	-0.001	-258.04	81	0.00	
Pb	208	He	-0.001	-56.99	351	0.00	
U	238	He	0.140	1.66	3794	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2536538	1.90	2946370	86.09	70	125	
Sc	45	No Gas	5680306	1.98	6643625	85.50	70	125	
Ge	72	He	85206	1.69	96230	88.54	70	125	
Ge	72	H2	800760	1.20	925938	86.48	70	125	
In	115	He	786958	0.43	846980	92.91	70	125	
Lu	175	He	2329215	0.58	2286194	101.88	70	125	
Th	232	He	4132520	0.82	4043279	102.21	70	125	

Sample Report

Sample Table

Sample Name K1802191-003
 Data File Name 050SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:45:18-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	-157.97	14	0.00	
Al	27	No Gas	3.315	2.10	81329	0.00	
V	51	He	0.011	23.26	78	0.01	
Cr	52	He	0.130	28.32	488	0.03	
Cr	53	He	0.181	21.53	117	0.15	
Mn	55	He	5.445	6.42	6765	0.08	
Fe	56	He	27.054	2.99	64025	0.04	
Co	59	He	0.049	8.40	277	0.02	
Ni	60	He	0.594	8.86	958	0.06	
Cu	63	He	0.267	11.23	1407	0.02	
Cu	65	He	0.300	5.12	750	0.04	
Zn	66	He	2.080	2.06	1243	0.17	
As	75	He	0.081	17.23	34	0.24	
Se	77	H2	1.505	31.37	823	0.18	
Se	78	H2	0.364	11.82	188	0.19	
Mo	95	He	7.990	2.66	16687	0.05	
Ag	107	He	0.000	1015.70	15	0.00	
Ag	109	He	0.003	147.31	27	0.01	
Cd	111	He	0.004	123.02	5	0.08	
Sb	121	He	0.223	3.62	491	0.05	
Ba	138	He	14.530	1.92	61808	0.02	
Tl	205	He	0.002	93.96	83	0.00	
[Pb]	206	He	0.000	660.99	101	0.00	
[Pb]	207	He	0.000	753.44	85	0.00	
Pb	208	He	0.002	79.81	417	0.00	
U	238	He	0.207	4.61	5538	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2474956	3.25	2946370	84.00	70	125	
Sc	45	No Gas	5519897	1.08	6643625	83.09	70	125	
Ge	72	He	84804	1.56	96230	88.13	70	125	
Ge	72	H2	796580	0.62	925938	86.03	70	125	
In	115	He	772402	1.10	846980	91.19	70	125	
Lu	175	He	2310844	0.22	2286194	101.08	70	125	
Th	232	He	4110614	1.42	4043279	101.67	70	125	

Sample Report

Sample Table

Sample Name K1802191-004
 Data File Name 051SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:47:43-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.000	401.62	17	0.00	
Al	27	No Gas	37.432	1.01	877971	0.00	
V	51	He	0.204	11.35	527	0.04	
Cr	52	He	0.224	9.19	790	0.03	
Cr	53	He	0.117	66.20	93	0.12	
Mn	55	He	39.708	0.58	50039	0.08	
Fe	56	He	95.372	2.48	227695	0.04	
Co	59	He	0.068	22.31	388	0.02	
Ni	60	He	0.154	4.70	287	0.05	
Cu	63	He	0.350	14.30	1800	0.02	
Cu	65	He	0.373	10.59	923	0.04	
Zn	66	He	1.741	15.79	1067	0.16	
As	75	He	0.299	10.48	106	0.28	
Se	77	H2	1.140	41.55	770	0.15	
Se	78	H2	0.277	4.95	146	0.19	
Mo	95	He	0.139	11.76	321	0.04	
Ag	107	He	0.001	178.77	23	0.00	
Ag	109	He	0.003	40.65	30	0.01	
Cd	111	He	0.005	20.00	6	0.08	
Sb	121	He	0.039	19.07	119	0.03	
Ba	138	He	5.974	1.49	26682	0.02	
Tl	205	He	0.000	773.22	57	0.00	
[Pb]	206	He	0.003	64.75	125	0.00	
[Pb]	207	He	0.007	25.45	122	0.01	
Pb	208	He	0.004	31.29	499	0.00	
U	238	He	0.024	9.94	737	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2630925	1.85	2946370	89.29	70	125	
Sc	45	No Gas	5748976	0.88	6643625	86.53	70	125	
Ge	72	He	86133	0.86	96230	89.51	70	125	
Ge	72	H2	802165	0.56	925938	86.63	70	125	
In	115	He	810326	1.63	846980	95.67	70	125	
Lu	175	He	2424143	1.84	2286194	106.03	70	125	
Th	232	He	4230574	1.42	4043279	104.63	70	125	

Sample Report

Sample Table

Sample Name K1802191-005
 Data File Name 052SMPL.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:50:12-07:00
 Sample Type Sample
 Dilution 1
 Comment D
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	-0.001	-64.32	12	-0.01	
Al	27	No Gas	6.777	1.22	158654	0.00	
V	51	He	0.026	60.43	113	0.02	
Cr	52	He	0.103	5.83	402	0.03	
Cr	53	He	0.052	126.68	67	0.08	
Mn	55	He	1.067	9.64	1327	0.08	
Fe	56	He	8.764	4.71	21097	0.04	
Co	59	He	0.037	19.60	214	0.02	
Ni	60	He	0.391	13.35	646	0.06	
Cu	63	He	0.280	0.56	1460	0.02	
Cu	65	He	0.287	1.75	720	0.04	
Zn	66	He	1.891	5.49	1133	0.17	
As	75	He	0.105	10.68	42	0.25	
Se	77	H2	1.715	62.33	843	0.20	
Se	78	H2	0.319	3.77	163	0.20	
Mo	95	He	6.688	4.45	14284	0.05	
Ag	107	He	-0.001	-132.19	10	-0.01	
Ag	109	He	-0.001	0.00	0	#DIV/0!	
Cd	111	He	0.015	28.54	15	0.10	
Sb	121	He	0.186	16.20	423	0.04	
Ba	138	He	18.079	3.76	78650	0.02	
Tl	205	He	0.001	72.49	72	0.00	
[Pb]	206	He	-0.001	-201.54	94	0.00	
[Pb]	207	He	0.000	510.20	87	0.00	
Pb	208	He	0.000	445.36	388	0.00	
U	238	He	0.188	1.71	5034	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2499326	1.30	2946370	84.83	70	125	
Sc	45	No Gas	5521212	1.73	6643625	83.11	70	125	
Ge	72	He	84626	1.01	96230	87.94	70	125	
Ge	72	H2	785435	1.32	925938	84.83	70	125	
In	115	He	790384	2.22	846980	93.32	70	125	
Lu	175	He	2337560	1.88	2286194	102.25	70	125	
Th	232	He	4114978	0.96	4043279	101.77	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 053_CCV.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:52:38-07:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.455	1.168	161626	0.09	25	102	
Al	27	No Gas	25.601	0.655	606263	0.60	25	102	
V	51	He	24.363	2.346	58493	1.93	25	97	
Cr	52	He	24.399	2.538	79635	2.29	25	98	
Cr	53	He	23.352	3.254	9556	4.89	25	93	
Mn	55	He	25.455	2.072	33185	0.57	25	102	
Fe	56	He	250.877	2.713	618596	1.52	250	100	
Co	59	He	24.549	2.353	140607	1.51	25	98	
Ni	60	He	24.691	3.284	39899	1.84	25	99	
Cu	63	He	24.329	2.000	112889	1.43	25	97	
Cu	65	He	24.405	1.760	56157	1.32	25	98	
Zn	66	He	24.660	3.259	14857	2.34	25	99	
As	75	He	24.541	1.408	8341	1.77	25	98	
Se	77	H2	25.908	4.600	4867	3.42	25	104	
Se	78	H2	24.644	0.931	12649	0.59	25	99	
Mo	95	He	12.018	0.877	26958	0.76	12.5	96	
Ag	107	He	11.895	1.891	96173	3.11	12.5	95	
Ag	109	He	12.070	0.214	95272	1.24	12.5	97	
Cd	111	He	24.625	0.236	23033	1.23	25	98	
Sb	121	He	12.312	1.300	27087	2.39	12.5	98	
Ba	138	He	24.893	1.281	113770	0.99	25	100	
Tl	205	He	25.527	1.945	439494	0.94	25	102	
[Pb]	206	He	25.219	2.127	145996	0.68	25	101	
[Pb]	207	He	24.708	3.310	127571	1.83	25	99	
Pb	208	He	24.992	2.424	580047	0.96	25	100	
U	238	He	24.845	3.061	678011	2.52	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2757718	0.52	2946370	93.60	70	125	
Sc	45	No Gas	5781249	1.21	6643625	87.02	70	125	
Ge	72	He	89123	1.93	96230	92.61	70	125	
Ge	72	H2	818667	0.62	925938	88.41	70	125	
In	115	He	830080	1.45	846980	98.00	70	125	
Lu	175	He	2381416	1.47	2286194	104.17	70	125	
Th	232	He	4257050	0.56	4043279	105.29	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 054_CCB.d
 Data Path Name D:\Data\Experiments 2018\031518A.b
 Acq Date Time 2018-03-15T09:55:06-07:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.002	9.5	29	6.0	0.02	
Al	27	No Gas	0.032	57.3	8509	7.0	4	
V	51	He	-0.003	-172.5	50	26.5	0.2	
Cr	52	He	0.018	68.9	148	26.2	0.2	
Cr	53	He	-0.038	-165.3	33	75.5	0.2	
Mn	55	He	0.016	54.9	27	43.3	0.2	
Fe	56	He	0.106	47.3	897	12.4	2	
Co	59	He	0.001	274.0	17	69.3	0.02	
Ni	60	He	-0.005	-98.3	41	20.4	0.2	
Cu	63	He	0.022	102.6	347	30.6	0.2	
Cu	65	He	0.027	52.2	162	21.7	0.2	
Zn	66	He	0.024	239.3	73	47.9	2	
As	75	He	-0.012	-29.8	4	26.6	0.5	
Se	77	H2	0.377	76.4	667	6.2	10	
Se	78	H2	0.001	525.6	7	34.3	1	
Mo	95	He	0.001	206.4	19	27.0	0.1	
Ag	107	He	0.001	48.9	25	20.0	0.02	
Ag	109	He	0.002	74.3	20	50.0	0.02	
Cd	111	He	0.004	31.6	5	23.6	0.02	
Sb	121	He	0.011	53.8	61	21.1	0.05	
Ba	138	He	0.010	57.3	87	29.0	0.05	
Tl	205	He	0.002	91.9	97	41.8	0.02	
[Pb]	206	He	-0.002	-62.9	89	8.7	0.02	
[Pb]	207	He	0.000	231.6	88	7.5	0.02	
Pb	208	He	0.000	-157.2	377	3.5	0.02	
U	238	He	0.001	139.1	97	29.9	0.02	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	2712288	0.21	2946370	92.06	70	125	
Sc	45	No Gas	5846342	1.94	6643625	88.00	70	125	
Ge	72	He	89795	2.12	96230	93.31	70	125	
Ge	72	H2	827485	1.07	925938	89.37	70	125	
In	115	He	835890	0.25	846980	98.69	70	125	
Lu	175	He	2381786	1.26	2286194	104.18	70	125	
Th	232	He	4289472	1.16	4043279	106.09	70	125	

Service Request:

K1801383, K1801138, K1801267, K1801219, K1801609, K1800847Sb), K1801023, K1801219 *2/21/18*

Instrument ID # K-ICP-MS-05

Calibration 022018BMS05

STAR LIMS Run # 580895

Cal Std: MS23-15-A

ICSA: MS23-12-I

ICV Std: MS23-11-L

ICSAB: MS23-12J

LLICV Std: MS23-11-M

I.S. Solution: MS22-89-A

Tune Standard: MS22-83-D

Pipette I.D. CH21996, CH84849, MS1000, MS500, MS250

ICP-MS Data Review Form

Yes No NA

- | | | | |
|--|---------------|---------------|---------------|
| 1. Appropriate standardization completed | <u> X </u> | <u> </u> | <u> </u> |
| 2. ICV in control (+/- 10%) | <u> X </u> | <u> </u> | <u> </u> |
| 3. CCV's in control (+/- 10%) | <u> X </u> | <u> </u> | <u> </u> |
| 4. ICB/CCB's below MRL | <u> X </u> | <u> </u> | <u> </u> |
| 5. LLICV standard analyzed and in control | <u> X </u> | <u> </u> | <u> </u> |
| 6. ICS standards within 20% of true value | <u> X </u> | <u> </u> | <u> </u> |
| 6. All analytes within instrument linear range | <u> X </u> | <u> </u> | <u> </u> |
| 7. Adequate rinse out time allowed | <u> X </u> | <u> </u> | <u> </u> |
| 8. Internal standards in control | <u> X </u> | <u> </u> | <u> </u> |
| 9. Interferences checked | <u> X </u> | <u> </u> | <u> </u> |
| 10. Was the run terminated? If so, why. | <u> </u> | <u> X </u> | <u> </u> |

Comments: K1801267: Report Zn/6010C.

LLCVS fails for Sb see review of K1800847.

Primary Review by *J*
Secondary Review by *SC*

Date 2/21/18
Date 2/21/18

Data Review Form

Instrument ID#: K-ICP-MS-05
DataFile Name: R:\ICP\WIP\DATA\K-ICP-MS-05 (Agilent)\022018B.csv
RUNNO: 580895

K1800847

No exceptions to report.

K1801023

No exceptions to report.

K1801138

K1801138-001MS - Metals T - 6020A

MS Recovery

6020A/Metals T - 121 Sb [He] - Recovery: 55 Limits: 75 - 125

PDS IS in control

K1801219

No exceptions to report.

K1801267

No exceptions to report.

K1801383

K1801383-005DUP - Metals T - 6020A

DUP RPD

6020A/Metals T - 52 Cr [He] - RPD: 21 Limit: 20

Rept + FLAC

K1801383-005MS - Metals T - 6020A

MS Recovery

6020A/Metals T - 121 Sb [He] - Recovery: 46 Limits: 75 - 125

PDS IS in control

K1801609

No exceptions to report.

Primary Approver: _____
Secondary Approver: *[Signature]* *2/21/18*

ALS Environmental - Laboratory Note Sheet

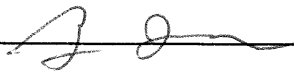

Service Request Number(s):

ICP-MS ANALYTICAL RUN 580895

LI-6 → NO GAS

Sample Number						
1383-MB	Cu =	0.203ppb	> 10X			
1383-1A	Mn =	N.R.				
1138-1A	Mn =	NA	MS = OK			
1267-1A	Mn, Pb =	NA	MS = OK			
1267	Zn / 6010C					
CV @ 11:57	→	RR → SE				
LL @ 12:05	X-cut Remov	→	1.0ppb Mn		Mn MRL = 1ppb	
	After	12:21	NO Zn / 6020A			
1609-MB	→	RR				
1609-1A	→	Ba = NA	> 4X			
1609-2	1/100	Ba				
LL @ 13:05	→	RR Cu	2ppb Mn			
JB only 847	1A	Ag not added				
2X	LL @ 14:08	Mn →	1ppb		X-cut Remov	
	X-cut	2X				

Comments/Notes:

Analyst:		Date:	2/20/18
Reviewed:			Date:	2/21/18

Sample							
	Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment	
1		001CALB.	2/20/2018 9:20:50 AM	CalBlk	Prime		
2		002CALB.	2/20/2018 9:23:53 AM	CalBlk	Rinse		
3		003CALB.	2/20/2018 9:26:56 AM	CalBlk	Blank		
4		004CALB.	2/20/2018 9:29:58 AM	CalStd	25ppb		
5		005_ICV.d	2/20/2018 9:33:00 AM	ICV	ICV		
6		006_CCV.	2/20/2018 9:36:02 AM	CCV	CCV		
7		007_ICB.d	2/20/2018 9:39:05 AM	ICB	ICB		
8		008_CCB.	2/20/2018 9:42:07 AM	CCB	CCB		
9		009LICV.d	2/20/2018 9:45:09 AM	LLICV	LLICVS		
10		010ICSA.d	2/20/2018 9:48:11 AM	ICSA	ICSA		
11		011ICSB.d	2/20/2018 9:51:13 AM	ICSB	ICSAB		
12		012_PB.d	2/20/2018 9:54:15 AM	PB	KQ1802002-03	5X	
13		013_QCS.	2/20/2018 9:57:18 AM	QCS	KQ1802002-04	20X	
14		014_ARF.d	2/20/2018 10:00:19 AM	AllRef	K1801383-005	5X	
15		015SMPL.	2/20/2018 10:03:23 AM	Sample	KQ1802002-01	5X	
16		016SMPL.	2/20/2018 10:06:26 AM	Sample	K1801383-005L	25X	
17		017_PDS.d	2/20/2018 10:09:29 AM	PDS	K1801383-005A	5X	
18		018_Spk.d	2/20/2018 10:12:31 AM	Spike	KQ1802002-02	5X	
19		019SMPL.	2/20/2018 10:15:33 AM	Sample	K1801383-001	5X	
20		020SMPL.	2/20/2018 10:18:37 AM	Sample	K1801383-002	5X	
21		021SMPL.	2/20/2018 10:21:41 AM	Sample	K1801383-003	5X	
22		022_CCV.	2/20/2018 10:24:43 AM	CCV	CCV		
23		023_CCB.	2/20/2018 10:27:46 AM	CCB	CCB		
24		024SMPL.	2/20/2018 10:30:50 AM	Sample	K1801383-004	5X	
25		025SMPL.	2/20/2018 10:33:53 AM	Sample	K1801383-006	5X	
26		026SMPL.	2/20/2018 10:36:55 AM	Sample	K1801383-007	5X	
27		027SMPL.	2/20/2018 10:39:59 AM	Sample	K1801383-008	5X	
28		028SMPL.	2/20/2018 10:42:57 AM	Sample	K1801383-009	5X	
29		029_CCV.	2/20/2018 10:45:56 AM	CCV	CCV		
30		030_CCB.	2/20/2018 10:48:54 AM	CCB	CCB		
31		031LCCV.	2/20/2018 10:51:53 AM	LLCCV	LLCCVS		
32		032_PB.d	2/20/2018 10:54:59 AM	PB	KQ1801650-03	5X	
33		033_QCS.	2/20/2018 10:57:58 AM	QCS	KQ1801650-04	20X	
34		034_ARF.d	2/20/2018 11:00:57 AM	AllRef	K1801138-001	5X	
35		035SMPL.	2/20/2018 11:03:56 AM	Sample	KQ1801650-04	5X	

Sample							
	Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment	
36		036SMPL.	2/20/2018 11:06:55 AM	Sample	K1801138-001L	25X	
37		037_PDS.d	2/20/2018 11:09:54 AM	PDS	K1801138-001A	5X	
38		038_Spk.d	2/20/2018 11:12:59 AM	Spike	KQ1801650-04	5X	
39		039SMPL.	2/20/2018 11:16:36 AM	Sample	K1801138-002	5X	
40		040_CC.V.	2/20/2018 11:19:34 AM	CCV	CCV		
41		041_CCB.	2/20/2018 11:22:32 AM	CCB	CCB		
42		042_PB.d	2/20/2018 11:29:47 AM	PB	KQ1801937-03	5X	
43		043_QCS.	2/20/2018 11:32:50 AM	QCS	KQ1801937-04	20X	
44		044_ARF.d	2/20/2018 11:35:49 AM	AllRef	K1801267-009	5X	
45		045SMPL.	2/20/2018 11:38:45 AM	Sample	KQ1801937-01	5X	
46		046SMPL.	2/20/2018 11:41:40 AM	Sample	K1801267-009L	25X	
47		047_PDS.d	2/20/2018 11:44:38 AM	PDS	K1801267-009A	5X	
48		048_Spk.d	2/20/2018 11:47:34 AM	Spike	KQ1801937-01	5X	
49		049SMPL.	2/20/2018 11:51:10 AM	Sample	K1801267-001	5X	
50		050SMPL.	2/20/2018 11:54:05 AM	Sample	K1801267-013	5X	
51		051_CC.V.	2/20/2018 11:57:02 AM	CCV	CCV		
52		052_CC.V.	2/20/2018 12:00:00 PM	CCV	CCV		
53		053_CCB.	2/20/2018 12:12:24 PM	CCB	CCB		
54		054LCCV.	2/20/2018 12:15:22 PM	LLCCV	LLCCVS		
55		055LCCV.	2/20/2018 12:18:34 PM	LLCCV	LLCCVS		
56		056SMPL.	2/20/2018 12:21:33 PM	Sample	LLCCVS 1.0 pp		
57		057_PB.d	2/20/2018 12:24:31 PM	PB	KQ1802144-01	10X	
58		058SMPL.	2/20/2018 12:27:29 PM	Sample	KQ1802144-02	10X	
59		059_PB.d	2/20/2018 12:32:02 PM	PB	KQ1802144-01	10X	
60		060_ARF.d	2/20/2018 12:35:00 PM	AllRef	K1801609-001	10X	
61		061SMPL.	2/20/2018 12:37:58 PM	Sample	KQ1802144-03	10X	
62		062SMPL.	2/20/2018 12:41:26 PM	Sample	K1801609-001L	10X	
63		063_PDS.d	2/20/2018 12:44:25 PM	PDS	K1801609-001A	10X	
64		064SMPL.	2/20/2018 12:47:24 PM	Sample	KQ1802144-03	10X	
65		065SMPL.	2/20/2018 12:53:37 PM	Sample	K1801609-002	10X	
66		066SMPL.	2/20/2018 12:56:36 PM	Sample	K1801609-003	10X	
67		067_CC.V.	2/20/2018 12:59:33 PM	CCV	CCV		
68		068_CCB.	2/20/2018 1:02:31 PM	CCB	CCB		
69		069LCCV.	2/20/2018 1:05:31 PM	LLCCV	LLCCVS		
70		070_QC1.d	2/20/2018 1:08:30 PM	QC1	LLCCVS 2X		

Sample							
	Rjct	Data File	Acq. Date-Time	Type	Sample Name	Comment	
71		071_QC1.d	2/20/2018 1:11:29 PM	QC1	LLCCVS 2X		
72		072_QC1.d	2/20/2018 1:14:28 PM	QC1	LLCCVS 2X		
73		073SMPL.	2/20/2018 1:17:26 PM	Sample	LLCCVS 1.0 pp		
74		074_PB.d	2/20/2018 1:20:25 PM	PB	KQ1802083-01	5X	
75		075_LCS.d	2/20/2018 1:23:24 PM	LCS	KQ1802083-02	20X	
76		076_ARF.d	2/20/2018 1:26:23 PM	AllRef	K1800847-001	5X	
77		077SMPL.	2/20/2018 1:29:22 PM	Sample	KQ1802083-03	5X	
78		078SMPL.	2/20/2018 1:32:20 PM	Sample	K1800847-001L	25X	
79		079_PDS.d	2/20/2018 1:35:18 PM	PDS	K1800847-001A	5X	
80		080_Spk.d	2/20/2018 1:38:16 PM	Spike	KQ1802083-04	5X	
81		081_CCV.	2/20/2018 1:41:14 PM	CCV	CCV		
82		082_CCB.	2/20/2018 1:44:14 PM	CCB	CCB		
83		083SMPL.	2/20/2018 1:47:13 PM	Sample	K1800847-002	5X	
84		084SMPL.	2/20/2018 1:50:12 PM	Sample	K1800847-003	5X	
85		085SMPL.	2/20/2018 1:53:10 PM	Sample	K1801023-001	5X	
86		086SMPL.	2/20/2018 1:56:09 PM	Sample	K1801023-002	5X	
87		087SMPL.	2/20/2018 1:59:06 PM	Sample	K1801023-003	5X	
88		088_CCV.	2/20/2018 2:02:04 PM	CCV	CCV		
89		089_CCB.	2/20/2018 2:05:03 PM	CCB	CCB		
90		090LCCV.	2/20/2018 2:08:02 PM	LLCCV	LLCCVS		
91		091LCCV.	2/20/2018 2:10:59 PM	LLCCV	LLCCVS		
92		092_QC1.d	2/20/2018 2:13:57 PM	QC1	LLCCVS 2X		
93		093SMPL.	2/20/2018 2:16:57 PM	Sample	LLCCVS 1.0 pp		
94		094_PB.d	2/20/2018 2:19:56 PM	PB	KQ1801858-04	5X	
95		095_QCS.	2/20/2018 2:22:56 PM	QCS	KQ1801858-05	20X	
96		096_ARF.d	2/20/2018 2:25:55 PM	AllRef	K1801219-001	5X	
97		097SMPL.	2/20/2018 2:28:53 PM	Sample	KQ1801858-01	5X	
98		098_SpD.d	2/20/2018 2:31:53 PM	Spike	KQ1801858-02	5X	
99		099_CCV.	2/20/2018 2:34:51 PM	CCV	CCV		
100		100_CCB.	2/20/2018 2:37:50 PM	CCB	CCB		

Analyte				
	Name	Mass	ISTD	Tune Mode
1	Be	9	6	No Gas
2	V	51	72	He
3	Cr	52	72	He

Analyte					
	Name	Mass	ISTD	Tune Mode	
+	4	Cr	53	72	He
+	5	Mn	55	72	He
+	6	Co	59	72	He
+	7	Ni	60	72	He
+	8	Ni	62	72	He
+	9	Cu	63	72	He
+	10	Cu	65	72	He
+	11	Zn	66	72	He
+	12	As	75	72	He
+	13	Se	77	72	H2
+	14	Se	78	72	H2
+	15	Mo	95	115	He
+	16	Mo	97	115	He
+	17	Mo	98	115	He
+	18	Ag	107	115	He
+	19	Ag	109	115	He
+	20	Cd	111	115	He
+	21	Cd	114	115	He
+	22	Sb	121	115	He
+	23	Sb	123	115	He
+	24	Ba	135	115	He
+	25	Ba	137	115	He
+	26	Tl	203	175	He
+	27	Tl	205	175	He
+	28	[Pb]	206	175	He
+	29	[Pb]	207	175	He
+	30	Pb	208	175	He
+	31	Li	6		No Gas
+	32	Sc	45		No Gas
+	33	Ge	72		He
+	34	Ge	72		H2
+	35	In	115		He
+	36	Lu	175		He

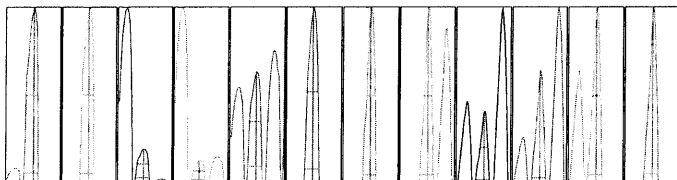
US EPA Tune Check Sample Report

Batch Folder D:\Data\Experiments 2018\022018.b
Report Comment ALS Tune
Instrument Name G3281A JP13482848

[No Gas] Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	200655	0.61	5.00	
9	69029	0.77	5.00	
24	257913	0.24	5.00	
25	34735	0.67	5.00	
26	40497	0.57	5.00	
59	353322	0.65	5.00	
115	405895	3.31	5.00	
206	76371	0.80	5.00	
207	67018	0.92	5.00	
208	163234	1.00	5.00	
209	256420	0.42	5.00	
238	332109	1.04	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	201980	201254	200509	198695	200835
9	69732	69074	69231	68821	68288
24	258387	258715	257810	257358	257297
25	35050	34798	34712	34719	34398
26	40544	40582	40800	40375	40182
59	356998	353891	351075	352218	352427
115	429475	403745	400992	398550	396710
206	77413	76300	76059	76271	75812
207	68034	67165	66660	66498	66734
208	165842	163802	161783	162409	162332
209	257146	256261	257337	256734	254621
238	337110	333434	332210	329066	328725

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width- X% (Flag)
7	33345	7.05	6.9 - 7.1		0.786	0.900	
9	11443	9.00	8.9 - 9.1		0.786	0.900	
24	42383	23.95	23.9 - 24.1		0.789	0.900	
25	5686	24.95	24.9 - 25.1		0.768	0.900	
26	6578	25.95	25.9 - 26.1		0.785	0.900	
59	62445	58.95	58.9 - 59.1		0.792	0.900	
115	81516	115.00	114.9 - 115.1		0.734	0.900	
206	16449	206.05	205.9 - 206.1		0.769	0.900	
207	14503	207.05	206.9 - 207.1		0.771	0.900	
208	35223	208.05	207.9 - 208.1		0.771	0.900	
209	54884	209.05	208.9 - 209.1		0.772	0.900	
238	68925	238.05	237.9 - 238.1		0.798	0.900	

X% = 5 Integration Time [sec] = 0.1 Acquisition Time [sec] = 279 Y Axis = Linear

Tune Parameters

Plasma Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1600	W	Carrier Gas	0.65	L/min			
RF Matching	1.76	V	Option Gas	0.0	%			
Smpl Depth	8.0	mm	Nebulizer Pump	0.10	rps			
S/C Temp	2	°C						

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Omega Lens	7.4	V			
Extract 2	-145.0	V	Cell Entrance	-30	V			
Omega Bias	-75	V	Cell Exit	-50	V			
Deflect	12.4	V						

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		3rd Gas Flow	0	%			
He Flow	0.0	mL/min	OctP Bias	-8.0	V			
H2 Flow	0.0	mL/min	OctP RF	200	V			
Energy Discrimination	5.0	V						

Calibration Blank Report

Sample Table

Sample Name Blank
Data File Name 003CALB.d
Data Path Name D:\Data\Experiments 2018\022018B.b
Acq Date Time 2018-02-20T09:26:56-08:00
Sample Type CalBlk
Level 1
Dilution 1
Comment

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Be	9	No Gas	13	454.66
V	51	He	113	6.86
Cr	52	He	291	4.04
Cr	53	He	69	39.95
Mn	55	He	210	4.54
Co	59	He	24	64.44
Ni	60	He	89	10.62
Ni	62	He	18	161.10
Cu	63	He	672	0.71
Cu	65	He	331	2.89
Zn	66	He	137	6.18
As	75	He	10	346.41
Se	77	H2	424	0.97
Se	78	H2	16	78.03
Mo	95	He	11	825.00
Mo	97	He	8	636.76
Mo	98	He	17	207.93
Ag	107	He	11	562.38
Ag	109	He	11	679.75
Cd	111	He	3	1111.11
Cd	114	He	8	622.22
Sb	121	He	103	19.98
Sb	123	He	77	11.29
Ba	135	He	4	976.72
Ba	137	He	6	1122.79
Tl	203	He	34	81.13
Tl	205	He	96	32.92
[Pb]	206	He	96	29.50
[Pb]	207	He	71	10.07
Pb	208	He	338	1.86

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD
Li	6	No Gas	1237359	0.59
Sc	45	No Gas	4599003	1.92
Ge	72	He	93707	0.96
Ge	72	H2	953332	0.62
In	115	He	851093	0.88
Lu	175	He	2126367	0.90

Calibration Standard Report

Sample Table

Sample Name 25ppb
 Data File Name 004CAL.S.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:29:58-08:00
 Sample Type CalStd
 Level 2
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	CPS	%RSD
Be	9	No Gas	94956	0.00
V	51	He	64005	0.00
Cr	52	He	87150	0.00
Cr	53	He	10668	0.02
Mn	55	He	36767	0.01
Co	59	He	156744	0.00
Ni	60	He	44173	0.00
Ni	62	He	6974	0.02
Cu	63	He	127855	0.00
Cu	65	He	62751	0.00
Zn	66	He	15994	0.01
As	75	He	9269	0.00
Se	77	H2	5536	0.05
Se	78	H2	16208	0.01
Mo	95	He	30439	0.00
Mo	97	He	20502	0.02
Mo	98	He	53754	0.00
Ag	107	He	114944	0.00
Ag	109	He	114071	0.00
Cd	111	He	26580	0.00
Cd	114	He	67439	0.00
Sb	121	He	30665	0.00
Sb	123	He	24905	0.00
Ba	135	He	10527	0.01
Ba	137	He	18913	0.01
Tl	203	He	183825	0.00
Tl	205	He	444705	0.00
[Pb]	206	He	143991	0.00
[Pb]	207	He	129578	0.00
Pb	208	He	592937	0.00

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1258684	2.07	1237359	101.72	70	125	
Sc	45	No Gas	4638962	2.31	4599003	100.87	70	125	
Ge	72	He	93178	1.14	93707	99.44	70	125	
Ge	72	H2	951993	0.12	953332	99.86	70	125	
In	115	He	835057	1.43	851093	98.12	70	125	
Lu	175	He	2165070	1.96	2126367	101.82	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name ICV
 Data File Name 005_ICV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:33:00-08:00
 Sample Type ICV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	2.584	2.801	9726	1.01	2.5	103	
V	51	He	25.539	1.060	65094	1.30	25	102	
Cr	52	He	10.208	1.095	35600	0.58	10	102	
Cr	53	He	10.440	2.667	4475	2.97	10	104	
Mn	55	He	24.747	2.099	36245	1.49	25	99	
Co	59	He	25.481	1.081	159047	0.95	25	102	
Ni	60	He	25.670	1.682	45153	1.18	25	103	
Ni	62	He	25.746	3.336	7148	2.75	25	103	
Cu	63	He	13.091	0.336	66970	0.58	12.5	105	
Cu	65	He	13.149	0.864	33014	1.34	12.5	105	
Zn	66	He	26.951	1.114	17160	1.67	25	108	
As	75	He	25.359	1.067	9362	1.23	25	101	
Se	77	H2	24.978	3.095	5547	1.26	25	100	
Se	78	H2	24.758	0.429	16099	1.36	25	99	
Mo	95	He	25.325	1.468	62075	0.91	25	101	
Mo	97	He	25.600	0.970	42259	0.74	25	102	
Mo	98	He	25.359	1.040	109776	0.55	25	101	
Ag	107	He	12.191	0.913	112866	0.92	12.5	98	
Ag	109	He	12.132	0.663	111467	0.40	12.5	97	
Cd	111	He	12.603	0.339	13493	0.37	12.5	101	
Cd	114	He	12.508	0.244	33976	0.95	12.5	100	
Sb	121	He	12.543	0.785	30978	0.37	12.5	100	
Sb	123	He	12.530	0.114	25135	0.79	12.5	100	
Ba	135	He	97.591	0.891	41359	1.39	100	98	
Ba	137	He	99.237	0.807	75563	1.41	100	99	
Tl	203	He	25.150	0.933	182143	0.37	25	101	
Tl	205	He	25.263	1.095	442550	1.27	25	101	
[Pb]	206	He	24.998	0.594	141804	1.44	25	100	
[Pb]	207	He	25.985	0.987	132664	1.02	25	104	
Pb	208	He	25.523	0.634	596224	0.80	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1245796	1.79	1237359	100.68	70	125	
Sc	45	No Gas	4689042	2.87	4599003	101.96	70	125	
Ge	72	He	92765	0.59	93707	99.00	70	125	
Ge	72	H2	954868	1.65	953332	100.16	70	125	
In	115	He	840690	0.70	851093	98.78	70	125	
Lu	175	He	2132137	1.28	2126367	100.27	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 006_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:36:02-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	24.575	2.663	94098	0.76	25	98	
V	51	He	25.197	0.912	64146	1.33	25	101	
Cr	52	He	25.157	1.919	87203	1.42	25	101	
Cr	53	He	25.515	1.676	10826	2.57	25	102	
Mn	55	He	24.472	4.883	35798	4.37	25	98	
Co	59	He	25.257	1.062	157457	1.19	25	101	
Ni	60	He	25.015	2.147	43957	2.94	25	100	
Ni	62	He	24.741	6.240	6865	7.01	25	99	
Cu	63	He	25.049	0.907	127386	1.15	25	100	
Cu	65	He	25.310	0.974	63164	0.14	25	101	
Zn	66	He	25.836	0.890	16436	1.89	25	103	
As	75	He	25.041	3.119	9232	2.33	25	100	
Se	77	H2	25.139	4.523	5536	4.23	25	101	
Se	78	H2	25.139	0.558	16213	0.22	25	101	
Mo	95	He	12.561	1.727	30809	1.33	12.5	100	
Mo	97	He	12.337	1.055	20378	0.67	12.5	99	
Mo	98	He	12.312	1.006	53330	0.70	12.5	98	
Ag	107	He	12.358	2.242	114451	1.20	12.5	99	
Ag	109	He	12.392	1.812	113896	0.74	12.5	99	
Cd	111	He	24.712	0.699	26467	0.53	25	99	
Cd	114	He	24.734	0.629	67206	0.70	25	99	
Sb	121	He	12.327	1.789	30464	2.54	12.5	99	
Sb	123	He	12.407	1.804	24899	2.03	12.5	99	
Ba	135	He	23.888	2.578	10133	3.54	25	96	
Ba	137	He	24.795	0.713	18893	1.58	25	99	
Tl	203	He	25.019	1.419	180955	0.74	25	100	
Tl	205	He	25.071	1.552	438595	1.40	25	100	
[Pb]	206	He	25.220	2.536	142850	1.48	25	101	
[Pb]	207	He	25.485	3.098	129918	1.98	25	102	
Pb	208	He	25.382	2.095	592079	0.93	25	102	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1269065	2.06	1237359	102.56	70	125	
Sc	45	No Gas	4655577	0.86	4599003	101.23	70	125	
Ge	72	He	92653	1.00	93707	98.88	70	125	
Ge	72	H2	947022	0.37	953332	99.34	70	125	
In	115	He	841096	1.08	851093	98.83	70	125	
Lu	175	He	2129462	1.85	2126367	100.15	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name ICB
 Data File Name 007_ICB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:39:05-08:00
 Sample Type ICB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.004	35.1	30	18.6	0.04	
V	51	He	-0.011	-33.2	84	12.1	0.4	
Cr	52	He	0.009	135.6	320	11.8	0.4	
Cr	53	He	0.026	161.7	80	23.2	0.4	
Mn	55	He	-0.031	-36.7	163	9.3	0.1	
Co	59	He	0.002	33.2	39	13.1	0.04	
Ni	60	He	0.007	88.2	101	10.1	0.4	
Ni	62	He	0.004	429.7	19	27.0	0.4	
Cu	63	He	-0.003	-310.5	657	7.6	0.2	
Cu	65	He	-0.012	-211.0	300	21.4	0.2	
Zn	66	He	-0.019	-144.9	124	13.5	1	
As	75	He	-0.005	-135.0	8	33.1	1	
Se	77	H2	0.069	43.2	440	1.1	20	
Se	78	H2	-0.005	-32.1	13	7.7	2	
Mo	95	He	0.002	59.8	17	20.0	0.1	
Mo	97	He	0.003	189.4	12	68.7	0.1	
Mo	98	He	0.002	115.4	27	43.3	0.1	
Ag	107	He	0.001	47.9	23	24.7	0.04	
Ag	109	He	0.001	50.9	21	24.1	0.04	
Cd	111	He	0.006	14.4	9	9.6	0.04	
Cd	114	He	0.006	36.4	24	25.3	0.04	
Sb	121	He	0.015	75.6	140	20.3	0.2	
Sb	123	He	0.010	21.4	98	4.3	0.1	
Ba	135	He	0.003	351.8	6	69.3	0.1	
Ba	137	He	0.007	91.0	11	45.8	0.1	
Tl	203	He	0.007	30.8	84	17.8	0.04	
Tl	205	He	0.010	12.1	279	7.7	0.04	
[Pb]	206	He	0.001	189.7	103	11.2	0.1	
[Pb]	207	He	0.005	66.1	100	18.6	0.1	
Pb	208	He	0.003	40.0	413	7.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1278431	2.06	1237359	103.32	70	125	
Sc	45	No Gas	4745224	1.21	4599003	103.18	70	125	
Ge	72	He	93481	0.97	93707	99.76	70	125	
Ge	72	H2	957425	0.74	953332	100.43	70	125	
In	115	He	852636	0.39	851093	100.18	70	125	
Lu	175	He	2158533	0.24	2126367	101.51	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 008_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:42:07-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	-40.7	12	4.7	0.04	
V	51	He	-0.011	-127.5	83	44.0	0.4	
Cr	52	He	-0.008	-116.4	260	12.6	0.4	
Cr	53	He	0.006	1522.6	71	54.7	0.4	
Mn	55	He	-0.008	-716.7	197	41.4	0.1	
Co	59	He	0.001	174.9	32	43.1	0.04	
Ni	60	He	0.014	106.0	113	23.3	0.4	
Ni	62	He	-0.011	-158.5	14	35.3	0.4	
Cu	63	He	-0.012	-118.8	606	12.3	0.2	
Cu	65	He	0.004	634.7	339	19.2	0.2	
Zn	66	He	-0.012	-489.1	128	30.2	1	
As	75	He	0.002	326.2	11	21.7	1	
Se	77	H2	0.053	376.2	434	8.8	20	
Se	78	H2	-0.008	-66.3	11	32.8	2	
Mo	95	He	0.000	83038.2	11	91.7	0.1	
Mo	97	He	0.002	149.7	11	45.8	0.1	
Mo	98	He	0.001	221.9	21	48.2	0.1	
Ag	107	He	0.000	203.1	14	48.0	0.04	
Ag	109	He	0.001	58.7	17	20.0	0.04	
Cd	111	He	0.001	152.8	4	28.4	0.04	
Cd	114	He	0.002	18.1	13	7.7	0.04	
Sb	121	He	0.008	99.1	121	15.8	0.1	
Sb	123	He	-0.003	-262.5	72	19.0	0.1	
Ba	135	He	-0.008	-57.9	1	173.2	0.1	
Ba	137	He	0.000	3797.8	6	34.7	0.1	
Tl	203	He	0.004	35.5	62	16.4	0.04	
Tl	205	He	0.002	43.8	133	10.9	0.04	
[Pb]	206	He	-0.003	-71.3	77	19.0	0.1	
[Pb]	207	He	0.003	50.6	84	8.2	0.1	
Pb	208	He	0.000	254.5	349	9.9	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1270487	3.22	1237359	102.68	70	125	
Sc	45	No Gas	4702054	1.18	4599003	102.24	70	125	
Ge	72	He	93072	0.61	93707	99.32	70	125	
Ge	72	H2	951536	0.82	953332	99.81	70	125	
In	115	He	845897	0.36	851093	99.39	70	125	
Lu	175	He	2120758	1.57	2126367	99.74	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name LLICVS
 Data File Name 009LICV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:45:09-08:00
 Sample Type LLICV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.041	7.841	169	5.33	0.04	103	
V	51	He	0.380	7.869	1086	6.91	0.4	95	
Cr	52	He	0.377	4.199	1605	3.23	0.4	94	
Cr	53	He	0.424	8.263	249	5.41	0.4	106	
Mn	55	He	0.082	46.170	330	16.03	0.1	82	
Co	59	He	0.043	21.019	296	18.92	0.04	108	
Ni	60	He	0.396	5.328	789	5.11	0.4	99	
Ni	62	He	0.327	10.055	109	9.35	0.4	82	
Cu	63	He	0.172	8.513	1549	5.76	0.2	86	
Cu	65	He	0.178	17.211	777	10.95	0.2	89	
Zn	66	He	0.973	2.304	756	2.43	1	97	
As	75	He	0.988	5.710	377	4.53	1	99	
Se	77	H2	1.903	9.821	812	5.26	2	95	
Se	78	H2	1.966	7.035	1287	6.98	2	98	
Mo	95	He	0.102	6.797	262	7.77	0.1	102	
Mo	97	He	0.080	21.029	140	18.60	0.1	80	
Mo	98	He	0.105	12.709	471	10.97	0.1	105	
Ag	107	He	0.041	12.052	390	11.31	0.04	102	
Ag	109	He	0.044	9.529	418	7.99	0.04	111	
Cd	111	He	0.037	12.516	43	11.98	0.04	93	
Cd	114	He	0.043	1.206	124	0.40	0.04	107	
Sb	121	He	0.096	4.431	338	3.00	0.1	96	
Sb	123	He	0.117	15.719	311	12.93	0.1	117	
Ba	135	He	0.097	5.920	46	4.23	0.1	97	
Ba	137	He	0.101	16.033	82	14.24	0.1	101	
Tl	203	He	0.039	22.740	321	21.61	0.04	98	
Tl	205	He	0.039	7.013	776	5.54	0.04	96	
[Pb]	206	He	0.107	1.805	707	2.87	0.1	107	
[Pb]	207	He	0.106	2.040	614	2.56	0.1	106	
Pb	208	He	0.107	0.997	2853	0.73	0.1	107	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1255668	2.04	1237359	101.48	70	125	
Sc	45	No Gas	4646722	1.26	4599003	101.04	70	125	
Ge	72	He	93433	1.11	93707	99.71	70	125	
Ge	72	H2	950269	0.55	953332	99.68	70	125	
In	115	He	840259	1.30	851093	98.73	70	125	
Lu	175	He	2145822	1.56	2126367	100.91	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name ICSA
 Data File Name 010ICSA.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:48:11-08:00
 Sample Type ICSA
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	QC Flag
Be	9	No Gas	0.000	-27.7	11	0.0	
V	51	He	0.029	33.2	177	12.4	
Cr	52	He	0.672	5.8	2498	5.1	
Cr	53	He	0.678	10.5	339	9.3	
Mn	55	He	0.793	22.4	1300	18.1	
Co	59	He	0.631	1.7	3785	1.3	
Ni	60	He	0.520	6.4	957	4.9	
Ni	62	He	0.604	15.2	177	13.6	
Cu	63	He	0.596	10.9	3518	8.1	
Cu	65	He	0.606	2.0	1752	2.4	
Zn	66	He	0.447	15.3	399	10.1	
As	75	He	0.041	26.3	24	15.0	
Se	77	H2	1.058	5.9	604	1.7	
Se	78	H2	0.035	64.7	37	38.1	
Mo	95	He	55.252	1.0	125118	0.5	
Mo	97	He	54.618	1.4	83297	1.4	
Mo	98	He	54.618	0.4	218444	0.9	
Ag	107	He	0.004	28.3	48	22.4	
Ag	109	He	0.008	28.7	76	24.3	
Cd	111	He	0.020	17.7	23	15.2	
Cd	114	He	0.022	10.3	61	8.7	
Sb	121	He	0.030	23.9	162	9.5	
Sb	123	He	0.026	16.9	118	7.0	
Ba	135	He	0.997	9.2	394	9.0	
Ba	137	He	0.954	4.3	676	4.4	
Tl	203	He	0.006	33.0	79	19.1	
Tl	205	He	0.006	26.2	188	14.2	
[Pb]	206	He	0.077	15.7	517	13.5	
[Pb]	207	He	0.083	13.0	478	11.0	
Pb	208	He	0.078	2.9	2082	3.3	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1158107	3.69	1237359	93.60	70	125	
Sc	45	No Gas	4389731	1.27	4599003	95.45	70	125	
Ge	72	He	88633	0.85	93707	94.58	70	125	
Ge	72	H2	898744	0.45	953332	94.27	70	125	
In	115	He	776754	0.54	851093	91.27	70	125	
Lu	175	He	2065011	1.39	2126367	97.11	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name ICSAB
 Data File Name 0111ICSB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:51:13-08:00
 Sample Type ICSB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.001	249.485	16	47.19	-1	-0.1	
V	51	He	51.486	0.627	127430	0.34	50	103.0	
Cr	52	He	50.062	1.329	168593	0.85	50	100.1	
Cr	53	He	50.224	0.763	20669	0.47	50	100.4	
Mn	55	He	48.684	1.543	69110	1.36	50	97.4	
Co	59	He	48.795	0.827	295989	0.27	50	97.6	
Ni	60	He	48.260	0.166	82435	0.65	50	96.5	
Ni	62	He	48.502	1.976	13074	1.50	50	97.0	
Cu	63	He	46.886	1.659	231446	1.32	50	93.8	
Cu	65	He	48.002	0.953	116288	0.47	50	96.0	
Zn	66	He	25.030	1.300	15497	0.56	25	100.1	
As	75	He	24.783	1.737	8892	1.34	25	99.1	
Se	77	H2	26.385	1.714	5635	1.27	25	105.5	
Se	78	H2	24.304	1.754	15259	1.41	25	97.2	
Mo	95	He	52.766	1.614	123082	1.53	50	105.5	
Mo	97	He	52.606	1.401	82638	1.30	50	105.2	
Mo	98	He	51.951	0.893	214015	0.71	50	103.9	
Ag	107	He	11.762	1.495	103630	1.27	12.5	94.1	
Ag	109	He	11.781	1.289	103012	1.01	12.5	94.2	
Cd	111	He	24.260	1.097	24716	0.93	25	97.0	
Cd	114	He	24.372	0.369	62996	0.15	25	97.5	
Sb	121	He	0.029	39.878	165	16.26	-1	-2.9	
Sb	123	He	0.030	31.089	129	13.89	-1	-3.0	
Ba	135	He	0.907	12.235	370	11.82	-1	-90.7	
Ba	137	He	0.954	5.021	696	4.98	-1	-95.4	
Tl	203	He	0.005	39.411	67	20.00	-1	-0.5	
Tl	205	He	0.004	26.622	168	11.64	-1	-0.4	
[Pb]	206	He	0.079	5.846	534	5.80	-1	-7.9	
[Pb]	207	He	0.074	5.408	442	5.45	-1	-7.4	
Pb	208	He	0.078	6.207	2130	6.04	-1	-7.8	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1203652	2.32	1237359	97.28	70	125	
Sc	45	No Gas	4503777	1.03	4599003	97.93	70	125	
Ge	72	He	90161	0.79	93707	96.22	70	125	
Ge	72	H2	921897	0.42	953332	96.70	70	125	
In	115	He	800088	0.28	851093	94.01	70	125	
Lu	175	He	2095191	1.33	2126367	98.53	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1802002-03
 Data File Name 012_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:54:15-08:00
 Sample Type PB
 Dilution 1
 Comment 5X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	-0.001	-21.2	9	11.1	0.04	
V	51	He	-0.011	-36.8	86	13.7	0.4	
Cr	52	He	0.076	10.5	564	6.1	0.4	
Cr	53	He	0.055	67.6	93	15.6	0.4	
Mn	55	He	0.045	87.8	280	22.3	0.1	
Co	59	He	0.004	28.3	53	16.5	0.04	
Ni	60	He	0.044	3.2	168	1.1	0.4	
Ni	62	He	0.023	75.2	24	20.8	0.4	
Cu	63	He	0.178	10.9	1600	4.8	0.2	
Cu	65	He	0.203	17.2	850	8.9	0.2	Flag
Zn	66	He	0.198	16.2	266	7.4	1	
As	75	He	-0.007	-18.9	8	7.5	1	
Se	77	H2	-0.028	-545.5	427	6.4	2	
Se	78	H2	-0.012	-81.3	9	69.4	2	
Mo	95	He	0.020	25.6	62	21.7	0.1	
Mo	97	He	0.024	9.1	48	8.1	0.1	
Mo	98	He	0.020	15.3	106	13.1	0.1	
Ag	107	He	0.001	36.8	20	16.7	0.04	
Ag	109	He	0.001	229.4	18	84.6	0.04	
Cd	111	He	0.004	13.5	8	7.5	0.04	
Cd	114	He	0.123	3.2	348	3.5	0.04	Flag
Sb	121	He	-0.009	-51.6	82	13.4	0.1	
Sb	123	He	-0.010	-2.8	57	1.7	0.1	
Ba	135	He	0.005	154.6	7	50.0	0.1	
Ba	137	He	0.008	55.5	12	28.6	0.1	
Tl	203	He	-0.001	-168.4	27	57.3	0.04	
Tl	205	He	-0.002	-42.2	61	27.5	0.04	
[Pb]	206	He	0.015	15.2	184	8.5	0.1	
[Pb]	207	He	0.014	18.9	147	8.2	0.1	
Pb	208	He	0.014	6.5	681	3.2	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1296503	1.78	1237359	104.78	70	125	
Sc	45	No Gas	4797558	1.11	4599003	104.32	70	125	
Ge	72	He	94711	1.50	93707	101.07	70	125	
Ge	72	H2	971924	0.99	953332	101.95	70	125	
In	115	He	860249	0.67	851093	101.08	70	125	
Lu	175	He	2203180	1.80	2126367	103.61	70	125	

Laboratory Control Sample (LCSS) Report

Sample Table

Sample Name KQ1802002-04
 Data File Name 013_QCS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T09:57:18-08:00
 Sample Type QCS
 Dilution 1
 Comment 20X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

*1.05g / 100ml
LCSS is in control*

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	38.224	1.967	144298	0.54	33	115.8	
V	51	He	56.166	0.555	145843	0.48	48.35	116.2	
Cr	52	He	102.535	0.663	361994	0.51	91	112.7	
Cr	53	He	103.252	1.597	44508	1.02	91	113.5	
Mn	55	He	220.177	1.605	327175	1.12	205	107.4	
Co	59	He	99.246	0.156	631645	0.65	81	122.5	
Ni	60	He	94.036	1.901	168430	1.31	74.5	126.2	QCS Main CR1 Failed
Ni	62	He	93.018	1.648	26290	0.86	74.5	124.9	
Cu	63	He	55.830	1.012	289033	0.65	53	105.3	
Cu	65	He	56.970	1.503	144736	0.79	53	107.5	
Zn	66	He	106.263	1.757	68580	1.17	95.3	111.5	
As	75	He	49.553	1.459	18644	1.12	49.25	100.6	
Se	77	H2	90.647	0.795	19321	0.70	77	117.7	
Se	78	H2	86.798	0.764	57302	0.84	77	112.7	
Mo	95	He	102.213	1.206	248857	0.28	82	124.7	
Mo	97	He	101.071	2.069	165706	0.72	82	123.3	
Mo	98	He	100.263	1.249	431114	0.32	82	122.3	
Ag	107	He	20.732	0.825	190684	1.79	20.45	101.4	
Ag	109	He	20.947	1.153	191175	0.68	20.45	102.4	
Cd	111	He	92.801	0.453	98687	1.04	73	127.1	QCS Main CR1 Failed
Cd	114	He	93.812	1.113	253086	0.41	73	128.5	QCS Main CR1 Failed
Sb	121	He	54.876	0.428	134308	1.07	52.5	104.5	
Sb	123	He	54.878	1.111	109098	0.90	52.5	104.5	
Ba	135	He	158.053	1.644	66532	0.18	154	102.6	
Ba	137	He	160.435	0.849	121358	1.60	154	104.2	
Tl	203	He	111.493	1.597	814882	0.72	87.5	127.4	
Tl	205	He	111.434	0.878	1970131	1.56	87.5	127.4	
[Pb]	206	He	66.385	1.264	379965	2.09	65	102.1	
[Pb]	207	He	63.863	0.763	329018	1.55	65	98.3	
Pb	208	He	65.504	1.183	1543951	1.10	65	100.8	

120%

121%

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1251137	2.20	1237359	101.11	70	125	
Sc	45	No Gas	4680106	1.89	4599003	101.76	70	125	
Ge	72	He	94597	0.80	93707	100.95	70	125	
Ge	72	H2	970095	0.08	953332	101.76	70	125	
In	115	He	835221	1.49	851093	98.14	70	125	
Lu	175	He	2152375	2.28	2126367	101.22	70	125	

All Reference Sample Report

Sample Table

Sample Name K1801383-005
 Data File Name 014_ARF.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:00:19-08:00
 Sample Type AllRef
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.568	5.22	2170	0.03	
V	51	He	164.317	2.04	434797	0.04	
Cr	52	He	78.491	1.58	282623	0.03	
Cr	53	He	78.388	3.16	34464	0.23	
Mn	55	He	934.699	2.23	1415399	0.07	
Co	59	He	29.970	2.69	194477	0.02	
Ni	60	He	59.574	1.15	108848	0.05	
Ni	62	He	60.472	2.04	17433	0.35	
Cu	63	He	69.159	2.06	364893	0.02	
Cu	65	He	70.622	1.83	182862	0.04	
Zn	66	He	88.444	0.66	58237	0.15	
As	75	He	18.525	1.24	7115	0.26	
Se	77	H2	0.788	21.69	586	0.13	
Se	78	H2	0.480	8.63	327	0.15	
Mo	95	He	1.001	1.78	2526	0.04	
Mo	97	He	0.999	4.34	1698	0.06	
Mo	98	He	0.967	1.11	4307	0.02	
Ag	107	He	0.071	0.89	683	0.01	
Ag	109	He	0.073	8.18	700	0.01	
Cd	111	He	0.339	4.38	375	0.09	
Cd	114	He	0.452	1.38	1266	0.04	
Sb	121	He	0.523	5.41	1423	0.04	
Sb	123	He	0.535	8.80	1175	0.05	
Ba	135	He	153.536	1.26	66669	0.23	
Ba	137	He	155.911	0.47	121632	0.13	
Tl	203	He	0.190	6.89	1472	0.01	
Tl	205	He	0.194	4.03	3643	0.01	
[Pb]	206	He	8.983	2.90	53165	0.02	
[Pb]	207	He	8.568	1.97	45645	0.02	
Pb	208	He	8.760	2.33	213518	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1257770	1.88	1237359	101.65	70	125	
Sc	45	No Gas	5122092	0.96	4599003	111.37	70	125	
Ge	72	He	96479	2.71	93707	102.96	70	125	
Ge	72	H2	953326	1.04	953332	100.00	70	125	
In	115	He	861374	0.66	851093	101.21	70	125	
Lu	175	He	2223244	3.53	2126367	104.56	70	125	

Sample Report

Sample Table

Sample Name KQ1802002-01
 Data File Name 015SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:03:23-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.543	1.35	2030	0.03	
V	51	He	167.781	1.37	433588	0.04	
Cr	52	He	95.802	1.57	336815	0.03	
Cr	53	He	98.207	1.31	42161	0.23	
Mn	55	He	985.793	0.22	1458095	0.07	
Co	59	He	32.101	1.87	203441	0.02	
Ni	60	He	67.139	1.93	119772	0.06	
Ni	62	He	65.796	2.66	18523	0.36	
Cu	63	He	69.164	0.34	356409	0.02	
Cu	65	He	69.667	0.92	176192	0.04	
Zn	66	He	92.701	1.21	59597	0.16	
As	75	He	17.942	1.78	6728	0.27	
Se	77	H2	1.046	16.59	639	0.16	
Se	78	H2	0.464	14.25	318	0.15	
Mo	95	He	1.012	2.09	2516	0.04	
Mo	97	He	1.004	6.31	1682	0.06	
Mo	98	He	1.058	3.48	4644	0.02	
Ag	107	He	0.068	1.69	646	0.01	
Ag	109	He	0.062	10.22	583	0.01	
Cd	111	He	0.371	0.58	405	0.09	
Cd	114	He	0.484	1.01	1335	0.04	
Sb	121	He	0.464	6.47	1257	0.04	
Sb	123	He	0.490	0.92	1067	0.05	
Ba	135	He	161.698	0.66	69222	0.23	
Ba	137	He	166.264	0.46	127881	0.13	
Tl	203	He	0.155	0.99	1180	0.01	
Tl	205	He	0.159	6.51	2927	0.01	
[Pb]	206	He	10.205	3.00	58922	0.02	
[Pb]	207	He	9.579	3.48	49768	0.02	
Pb	208	He	9.871	2.12	234706	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1230845	2.44	1237359	99.47	70	125	
Sc	45	No Gas	5131919	1.69	4599003	111.59	70	125	
Ge	72	He	94201	1.01	93707	100.53	70	125	
Ge	72	H2	954729	1.34	953332	100.15	70	125	
In	115	He	849260	0.44	851093	99.78	70	125	
Lu	175	He	2168766	2.08	2126367	101.99	70	125	

Sample Report

Sample Table

Sample Name K1801383-005L
 Data File Name 016SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:06:26-08:00
 Sample Type Sample
 Dilution 1
 Comment 25X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.116	4.45	440	0.03	
V	51	He	32.969	0.61	84592	0.04	
Cr	52	He	15.899	1.25	55681	0.03	
Cr	53	He	16.266	3.96	6983	0.23	
Mn	55	He	188.431	0.92	276565	0.07	
Co	59	He	6.174	0.89	38830	0.02	
Ni	60	He	12.322	1.15	21874	0.06	
Ni	62	He	12.268	3.65	3440	0.36	
Cu	63	He	14.218	0.66	73196	0.02	
Cu	65	He	14.443	1.02	36485	0.04	
Zn	66	He	18.376	1.74	11825	0.16	
As	75	He	3.743	6.44	1400	0.27	
Se	77	H2	0.121	168.35	451	0.03	
Se	78	H2	0.078	26.32	67	0.12	
Mo	95	He	0.224	7.83	553	0.04	
Mo	97	He	0.195	9.26	324	0.06	
Mo	98	He	0.195	6.73	851	0.02	
Ag	107	He	0.016	17.64	158	0.01	
Ag	109	He	0.015	3.15	147	0.01	
Cd	111	He	0.071	5.47	78	0.09	
Cd	114	He	0.092	5.32	255	0.04	
Sb	121	He	0.108	6.40	364	0.03	
Sb	123	He	0.114	2.55	301	0.04	
Ba	135	He	30.778	4.28	12882	0.24	
Ba	137	He	31.645	1.60	23801	0.13	
Tl	203	He	0.035	8.64	288	0.01	
Tl	205	He	0.031	8.52	650	0.00	
[Pb]	206	He	1.890	1.68	10896	0.02	
[Pb]	207	He	1.783	5.62	9234	0.02	
Pb	208	He	1.836	2.61	43536	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1222325	1.22	1237359	98.79	70	125	
Sc	45	No Gas	4837346	1.26	4599003	105.18	70	125	
Ge	72	He	93419	0.49	93707	99.69	70	125	
Ge	72	H2	956349	0.31	953332	100.32	70	125	
In	115	He	830485	2.25	851093	97.58	70	125	
Lu	175	He	2149856	3.53	2126367	101.10	70	125	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name K1801383-005A
 Data File Name 017_PDS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:09:29-08:00
 Sample Type PDS
 Dilution 1
 Comment 5X
 QC Ref File Name 014_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	51.646	2.203	190723	0.80	50	102	
V	51	He	207.768	1.660	534346	1.27	50	87	
Cr	52	He	125.016	3.905	437154	1.29	50	93	
Cr	53	He	126.548	2.371	54042	1.38	50	96	
Mn	55	He	950.855	3.294	1400049	4.39	50	32	Flag
Co	59	He	77.080	3.318	486008	0.97	50	94	
Ni	60	He	106.355	2.299	188766	1.24	50	94	
Ni	62	He	105.959	3.524	29670	1.84	50	91	
Cu	63	He	114.742	3.130	587821	0.73	50	91	
Cu	65	He	116.720	2.867	293471	0.37	50	92	
Zn	66	He	136.715	3.639	87373	1.10	50	97	
As	75	He	67.192	2.861	25045	0.80	50	97	
Se	77	H2	50.948	0.108	10771	1.39	50	100	
Se	78	H2	49.967	2.884	32155	1.50	50	99	
Mo	95	He	51.476	1.252	125885	1.03	50	101	
Mo	97	He	51.116	0.986	84186	0.83	50	100	
Mo	98	He	50.524	0.567	218214	0.56	50	99	
Ag	107	He	9.358	0.958	86455	1.83	10	93	
Ag	109	He	9.463	0.655	86762	1.54	10	94	
Cd	111	He	49.054	0.387	52395	0.70	50	97	
Cd	114	He	50.025	0.820	135555	0.62	50	99	
Sb	121	He	50.718	1.336	124679	1.40	50	100	
Sb	123	He	49.975	0.687	99793	0.49	50	99	
Ba	135	He	195.677	0.593	82739	0.94	50	84	
Ba	137	He	199.368	1.143	151459	1.11	50	87	
Tl	203	He	47.748	0.879	356525	0.66	50	95	
Tl	205	He	48.413	1.279	874405	1.88	50	96	
[Pb]	206	He	56.124	1.993	328101	1.30	50	94	
[Pb]	207	He	56.202	1.353	295760	1.06	50	95	
Pb	208	He	56.140	1.889	1351666	1.24	50	95	

NR-

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1224056	2.65	1237359	98.92	70	125	
Sc	45	No Gas	5003962	1.13	4599003	108.81	70	125	
Ge	72	He	93771	2.68	93707	100.07	70	125	
Ge	72	H2	945705	1.44	953332	99.20	70	125	
In	115	He	838855	1.08	851093	98.56	70	125	
Lu	175	He	2198305	0.76	2126367	103.38	70	125	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name KQ1802002-02
 Data File Name 018_Spk.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:12:31-08:00
 Sample Type Spike
 Dilution 1
 Comment 5X
 QC Ref File Name 014_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	21.881	1.931	78014	1.23	20	107	
V	51	He	369.627	0.841	915804	0.76	200	103	
Cr	52	He	163.618	0.420	551376	0.44	80	106	
Cr	53	He	164.827	1.934	67802	1.84	80	108	
Mn	55	He	1092.938	2.358	1549904	2.25	200	79	
Co	59	He	227.673	2.645	1383465	2.64	200	99	
Ni	60	He	273.208	1.548	467094	1.49	200	107	
Ni	62	He	274.815	0.589	74134	0.67	200	107	
Cu	63	He	167.539	1.078	826863	0.97	100	98	
Cu	65	He	170.139	1.366	412100	1.23	100	100	
Zn	66	He	301.232	0.580	185391	0.72	200	106	
As	75	He	225.877	1.895	81108	1.76	200	104	
Se	77	H2	203.188	0.604	40511	0.66	200	101	
Se	78	H2	198.296	1.144	123967	1.07	200	99	
Mo	95	He	200.176	1.373	466343	1.40	200	100	
Mo	97	He	198.357	0.603	311209	0.97	200	99	
Mo	98	He	199.524	1.076	820901	0.73	200	99	
Ag	107	He	19.976	0.438	175786	0.45	20	100	
Ag	109	He	19.788	0.910	172810	0.94	20	99	
Cd	111	He	20.620	1.698	20983	1.63	20	101	
Cd	114	He	20.688	0.332	53410	0.17	20	101	
Sb	121	He	92.291	0.998	216056	0.76	200	46	Flag
Sb	123	He	91.942	1.198	174841	0.74	200	46	Flag
Ba	135	He	549.465	2.366	221314	2.05	400	99	
Ba	137	He	559.980	1.208	405258	0.83	400	101	
Tl	203	He	40.375	1.453	289094	0.57	40	100	
Tl	205	He	40.723	1.692	705266	1.21	40	101	
[Pb]	206	He	208.251	1.111	1167278	0.26	200	100	
[Pb]	207	He	213.478	1.798	1077074	0.89	200	102	
Pb	208	He	209.751	1.887	4841917	1.02	200	100	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1181620	2.60	1237359	95.50	70	125	
Sc	45	No Gas	4908058	0.73	4599003	106.72	70	125	
Ge	72	He	90320	0.14	93707	96.39	70	125	
Ge	72	H2	918799	0.16	953332	96.38	70	125	
In	115	He	799123	0.45	851093	93.89	70	125	
Lu	175	He	2108149	0.92	2126367	99.14	70	125	

Sample Report

Sample Table

Sample Name K1801383-001
 Data File Name 019SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:15:33-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.459	4.56	1709	0.03	
V	51	He	123.938	1.36	311610	0.04	
Cr	52	He	161.712	1.11	552856	0.03	
Cr	53	He	162.712	2.26	67906	0.24	
Mn	55	He	768.674	1.44	1106092	0.07	
Co	59	He	17.586	1.11	108440	0.02	
Ni	60	He	54.322	1.48	94287	0.06	
Ni	62	He	54.820	3.69	15013	0.37	
Cu	63	He	46.390	1.01	232754	0.02	
Cu	65	He	47.183	1.89	116168	0.04	
Zn	66	He	57.983	2.13	36308	0.16	
As	75	He	12.579	2.34	4592	0.27	
Se	77	H2	1.148	12.55	651	0.18	
Se	78	H2	0.590	5.83	394	0.15	
Mo	95	He	0.719	1.37	1737	0.04	
Mo	97	He	0.743	12.79	1208	0.06	
Mo	98	He	0.719	3.67	3063	0.02	
Ag	107	He	0.115	3.17	1050	0.01	
Ag	109	He	0.113	2.45	1029	0.01	
Cd	111	He	0.482	3.34	509	0.09	
Cd	114	He	0.603	1.82	1610	0.04	
Sb	121	He	0.338	1.38	914	0.04	
Sb	123	He	0.330	4.98	722	0.05	
Ba	135	He	109.162	0.42	45307	0.24	
Ba	137	He	111.182	1.54	82903	0.13	
Tl	203	He	0.099	3.83	756	0.01	
Tl	205	He	0.103	5.19	1915	0.01	
[Pb]	206	He	8.650	0.26	49539	0.02	
[Pb]	207	He	8.292	2.62	42732	0.02	
Pb	208	He	8.444	0.63	199104	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1226450	3.21	1237359	99.12	70	125	
Sc	45	No Gas	4852147	1.89	4599003	105.50	70	125	
Ge	72	He	91636	1.11	93707	97.79	70	125	
Ge	72	H2	940570	0.20	953332	98.66	70	125	
In	115	He	823375	1.28	851093	96.74	70	125	
Lu	175	He	2149709	0.17	2126367	101.10	70	125	

Sample Report

Sample Table

Sample Name K1801383-002
 Data File Name 020SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:18:37-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.386	1.37	1446	0.03	
V	51	He	76.797	2.64	194204	0.04	
Cr	52	He	35.920	1.01	123723	0.03	
Cr	53	He	35.684	3.71	15028	0.24	
Mn	55	He	699.189	2.92	1011617	0.07	
Co	59	He	15.840	2.37	98218	0.02	
Ni	60	He	44.583	1.98	77836	0.06	
Ni	62	He	44.049	1.59	12138	0.36	
Cu	63	He	43.625	2.22	220145	0.02	
Cu	65	He	44.450	2.35	110084	0.04	
Zn	66	He	59.246	1.75	37308	0.16	
As	75	He	7.708	3.31	2833	0.27	
Se	77	H2	0.813	21.81	579	0.14	
Se	78	H2	0.289	3.07	200	0.14	
Mo	95	He	0.556	11.49	1356	0.04	
Mo	97	He	0.543	9.02	892	0.06	
Mo	98	He	0.557	3.94	2396	0.02	
Ag	107	He	0.052	6.80	484	0.01	
Ag	109	He	0.045	11.30	418	0.01	
Cd	111	He	0.327	2.65	349	0.09	
Cd	114	He	0.440	3.13	1186	0.04	
Sb	121	He	0.183	7.35	544	0.03	
Sb	123	He	0.220	7.05	509	0.04	
Ba	135	He	89.744	0.88	37533	0.24	
Ba	137	He	92.730	0.35	69679	0.13	
Tl	203	He	0.100	7.37	769	0.01	
Tl	205	He	0.093	5.30	1748	0.01	
[Pb]	206	He	7.662	3.36	44029	0.02	
[Pb]	207	He	7.273	2.63	37616	0.02	
Pb	208	He	7.452	2.55	176348	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1230218	1.20	1237359	99.42	70	125	
Sc	45	No Gas	4861123	1.42	4599003	105.70	70	125	
Ge	72	He	92152	0.60	93707	98.34	70	125	
Ge	72	H2	934697	0.66	953332	98.05	70	125	
In	115	He	829640	0.20	851093	97.48	70	125	
Lu	175	He	2157297	1.56	2126367	101.45	70	125	

Sample Report

Sample Table

Sample Name K1801383-003
 Data File Name 021SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:21:41-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.533	7.79	1944	0.03	
V	51	He	106.851	1.13	268300	0.04	
Cr	52	He	60.160	0.59	205587	0.03	
Cr	53	He	62.084	2.35	25914	0.24	
Mn	55	He	930.363	1.82	1336765	0.07	
Co	59	He	21.350	1.22	131463	0.02	
Ni	60	He	55.006	0.32	95354	0.06	
Ni	62	He	54.220	1.12	14833	0.37	
Cu	63	He	47.836	2.73	239626	0.02	
Cu	65	He	48.310	1.50	118778	0.04	
Zn	66	He	105.259	1.07	65720	0.16	
As	75	He	16.364	0.91	5962	0.27	
Se	77	H2	1.715	6.11	750	0.23	
Se	78	H2	1.208	2.50	773	0.16	
Mo	95	He	0.850	4.97	2043	0.04	
Mo	97	He	0.809	6.01	1311	0.06	
Mo	98	He	0.844	2.25	3583	0.02	
Ag	107	He	0.105	19.59	961	0.01	
Ag	109	He	0.099	14.05	899	0.01	
Cd	111	He	0.349	3.71	367	0.10	
Cd	114	He	0.456	2.48	1215	0.04	
Sb	121	He	0.553	0.97	1428	0.04	
Sb	123	He	0.551	8.03	1149	0.05	
Ba	135	He	124.730	0.99	51585	0.24	
Ba	137	He	128.369	1.87	95371	0.13	
Tl	203	He	0.128	2.74	961	0.01	
Tl	205	He	0.132	3.86	2411	0.01	
[Pb]	206	He	9.859	1.35	56127	0.02	
[Pb]	207	He	9.360	3.35	47943	0.02	
Pb	208	He	9.574	0.56	224434	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1202414	4.23	1237359	97.18	70	125	
Sc	45	No Gas	4928324	0.38	4599003	107.16	70	125	
Ge	72	He	91513	1.11	93707	97.66	70	125	
Ge	72	H2	922122	0.70	953332	96.73	70	125	
In	115	He	820430	1.20	851093	96.40	70	125	
Lu	175	He	2137513	1.31	2126367	100.52	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 022_CC.V.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:24:43-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	24.388	3.651	87506	1.13	25	98	
V	51	He	24.767	1.234	60116	0.66	25	99	
Cr	52	He	25.006	1.919	82648	1.57	25	100	
Cr	53	He	25.128	2.652	10164	2.00	25	101	
Mn	55	He	24.088	2.760	33600	1.78	25	96	
Co	59	He	24.863	0.481	147799	1.51	25	99	
Ni	60	He	25.202	0.391	42219	0.73	25	101	
Ni	62	He	25.348	1.791	6702	0.69	25	101	
Cu	63	He	24.849	0.550	120496	1.56	25	99	
Cu	65	He	25.469	0.429	60604	0.72	25	102	
Zn	66	He	25.283	0.939	15338	1.80	25	101	
As	75	He	24.959	2.018	8775	2.70	25	100	
Se	77	H2	24.863	1.564	5333	1.69	25	99	
Se	78	H2	24.889	0.851	15622	0.46	25	100	
Mo	95	He	12.269	0.844	29210	1.04	12.5	98	
Mo	97	He	11.995	2.121	19230	0.55	12.5	96	
Mo	98	He	12.218	0.695	51375	1.45	12.5	98	
Ag	107	He	12.159	2.479	109293	0.80	12.5	97	
Ag	109	He	12.248	0.975	109275	0.90	12.5	98	
Cd	111	He	24.400	1.347	25366	1.27	25	98	
Cd	114	He	24.476	1.390	64556	1.46	25	98	
Sb	121	He	12.153	1.863	29149	0.93	12.5	97	
Sb	123	He	12.012	2.581	23396	0.89	12.5	96	
Ba	135	He	23.388	2.711	9632	4.21	25	94	
Ba	137	He	24.109	2.422	17828	0.93	25	96	
Tl	203	He	24.600	0.126	174857	1.45	25	98	
Tl	205	He	24.576	1.095	422469	0.43	25	98	
[Pb]	206	He	24.643	0.387	137194	1.87	25	99	
[Pb]	207	He	24.628	1.685	123415	2.70	25	99	
Pb	208	He	24.599	1.396	563911	1.38	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1189624	3.04	1237359	96.14	70	125	
Sc	45	No Gas	4535053	1.49	4599003	98.61	70	125	
Ge	72	He	88343	1.11	93707	94.28	70	125	
Ge	72	H2	921712	1.26	953332	96.68	70	125	
In	115	He	816484	1.86	851093	95.93	70	125	
Lu	175	He	2092418	1.53	2126367	98.40	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 023_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:27:46-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.003	22.0	24	11.0	0.04	
V	51	He	-0.010	-49.3	83	16.0	0.4	
Cr	52	He	-0.002	-1014.3	272	20.8	0.4	
Cr	53	He	0.015	355.2	72	30.7	0.4	
Mn	55	He	-0.038	-76.8	147	27.6	0.1	
Co	59	He	0.002	174.5	33	52.0	0.04	
Ni	60	He	0.010	85.9	102	15.4	0.4	
Ni	62	He	-0.001	-2662.8	17	40.0	0.4	
Cu	63	He	-0.006	-84.6	612	4.9	0.2	
Cu	65	He	0.008	71.3	337	4.3	0.2	
Zn	66	He	-0.061	-74.3	93	28.3	1	
As	75	He	-0.002	-176.0	9	11.1	1	
Se	77	H2	-0.062	-176.0	402	4.7	20	
Se	78	H2	0.001	575.5	17	24.2	2	
Mo	95	He	0.002	255.9	14	66.6	0.1	
Mo	97	He	0.005	86.1	16	44.6	0.1	
Mo	98	He	0.002	61.0	24	20.8	0.1	
Ag	107	He	0.001	194.9	21	96.5	0.04	
Ag	109	He	0.000	-65.3	8	24.7	0.04	
Cd	111	He	0.002	53.8	5	24.4	0.04	
Cd	114	He	0.003	54.4	15	27.4	0.04	
Sb	121	He	-0.002	-249.5	94	11.2	0.1	
Sb	123	He	0.005	293.7	83	32.7	0.1	
Ba	135	He	-0.002	-358.9	3	100.1	0.1	
Ba	137	He	0.005	71.4	9	28.6	0.1	
Tl	203	He	0.006	43.6	74	24.7	0.04	
Tl	205	He	0.007	10.7	223	5.2	0.04	
[Pb]	206	He	0.002	120.2	109	15.7	0.1	
[Pb]	207	He	0.005	31.1	96	8.8	0.1	
Pb	208	He	0.004	41.4	417	9.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1160802	0.66	1237359	93.81	70	125	
Sc	45	No Gas	4580975	0.83	4599003	99.61	70	125	
Ge	72	He	89616	1.15	93707	95.63	70	125	
Ge	72	H2	931191	0.70	953332	97.68	70	125	
In	115	He	815379	0.51	851093	95.80	70	125	
Lu	175	He	2108592	1.15	2126367	99.16	70	125	

Sample Report

Sample Table

Sample Name K1801383-004
 Data File Name 024SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:30:50-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.362	3.56	1327	0.03	
V	51	He	90.738	0.14	226350	0.04	
Cr	52	He	60.431	1.09	205133	0.03	
Cr	53	He	61.325	1.58	25431	0.24	
Mn	55	He	576.735	2.48	823245	0.07	
Co	59	He	20.217	0.64	123664	0.02	
Ni	60	He	51.199	2.54	88166	0.06	
Ni	62	He	51.234	1.97	13924	0.37	
Cu	63	He	45.984	1.34	228880	0.02	
Cu	65	He	46.839	2.21	114412	0.04	
Zn	66	He	65.581	1.67	40724	0.16	
As	75	He	20.351	3.58	7364	0.28	
Se	77	H2	0.653	17.92	539	0.12	
Se	78	H2	0.354	11.38	237	0.15	
Mo	95	He	3.856	4.22	9140	0.04	
Mo	97	He	3.784	0.69	6041	0.06	
Mo	98	He	3.719	1.19	15566	0.02	
Ag	107	He	0.215	1.75	1931	0.01	
Ag	109	He	0.192	4.16	1712	0.01	
Cd	111	He	0.264	5.71	276	0.10	
Cd	114	He	0.371	3.86	980	0.04	
Sb	121	He	0.490	3.88	1264	0.04	
Sb	123	He	0.491	8.13	1023	0.05	
Ba	135	He	80.159	1.00	32819	0.24	
Ba	137	He	81.836	1.16	60198	0.14	
Tl	203	He	0.074	11.56	572	0.01	
Tl	205	He	0.080	3.80	1497	0.01	
[Pb]	206	He	6.453	1.70	36635	0.02	
[Pb]	207	He	6.192	1.05	31641	0.02	
Pb	208	He	6.283	0.67	146897	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1203622	2.63	1237359	97.27	70	125	
Sc	45	No Gas	4818763	0.56	4599003	104.78	70	125	
Ge	72	He	90903	0.23	93707	97.01	70	125	
Ge	72	H2	919819	0.85	953332	96.48	70	125	
In	115	He	812141	0.49	851093	95.42	70	125	
Lu	175	He	2130098	1.46	2126367	100.18	70	125	

Sample Report

Sample Table

Sample Name K1801383-006
 Data File Name 025SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:33:53-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.347	4.91	1270	0.03	
V	51	He	102.829	1.29	255954	0.04	
Cr	52	He	53.438	0.67	181057	0.03	
Cr	53	He	54.041	0.85	22374	0.24	
Mn	55	He	430.637	0.82	613477	0.07	
Co	59	He	16.294	1.45	99460	0.02	
Ni	60	He	36.251	1.18	62322	0.06	
Ni	62	He	35.905	4.05	9742	0.37	
Cu	63	He	40.675	1.72	202100	0.02	
Cu	65	He	41.603	1.85	101447	0.04	
Zn	66	He	56.099	0.66	34784	0.16	
As	75	He	17.745	1.26	6409	0.28	
Se	77	H2	0.689	26.07	554	0.12	
Se	78	H2	0.321	10.14	220	0.15	
Mo	95	He	0.703	9.04	1679	0.04	
Mo	97	He	0.769	3.13	1237	0.06	
Mo	98	He	0.757	1.56	3193	0.02	
Ag	107	He	0.053	19.89	482	0.01	
Ag	109	He	0.051	5.57	463	0.01	
Cd	111	He	0.215	2.15	226	0.10	
Cd	114	He	0.310	2.91	822	0.04	
Sb	121	He	0.464	1.63	1205	0.04	
Sb	123	He	0.459	7.88	963	0.05	
Ba	135	He	93.521	1.80	38410	0.24	
Ba	137	He	95.687	2.34	70603	0.14	
Tl	203	He	0.094	7.62	709	0.01	
Tl	205	He	0.095	3.69	1747	0.01	
[Pb]	206	He	8.631	2.26	48541	0.02	
[Pb]	207	He	8.201	1.64	41506	0.02	
Pb	208	He	8.392	2.30	194337	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1199794	3.59	1237359	96.96	70	125	
Sc	45	No Gas	4794413	3.47	4599003	104.25	70	125	
Ge	72	He	90716	0.81	93707	96.81	70	125	
Ge	72	H2	933867	1.79	953332	97.96	70	125	
In	115	He	814830	1.28	851093	95.74	70	125	
Lu	175	He	2111315	1.29	2126367	99.29	70	125	

Sample Report

Sample Table

Sample Name K1801383-007
 Data File Name 026SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:36:55-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.230	1.75	847	0.03	
V	51	He	53.273	3.25	134755	0.04	
Cr	52	He	27.218	1.67	93828	0.03	
Cr	53	He	27.616	2.75	11648	0.24	
Mn	55	He	301.320	1.37	436175	0.07	
Co	59	He	10.182	3.35	63147	0.02	
Ni	60	He	28.942	4.04	50556	0.06	
Ni	62	He	28.743	4.34	7925	0.36	
Cu	63	He	28.270	3.45	142888	0.02	
Cu	65	He	28.632	2.65	71027	0.04	
Zn	66	He	40.095	3.75	25292	0.16	
As	75	He	6.793	2.27	2499	0.27	
Se	77	H2	0.660	34.04	555	0.12	
Se	78	H2	0.271	6.81	191	0.14	
Mo	95	He	0.795	6.86	1927	0.04	
Mo	97	He	0.817	4.69	1333	0.06	
Mo	98	He	0.833	1.27	3565	0.02	
Ag	107	He	0.078	8.94	722	0.01	
Ag	109	He	0.074	9.05	683	0.01	
Cd	111	He	0.160	6.59	172	0.09	
Cd	114	He	0.240	3.37	648	0.04	
Sb	121	He	0.238	7.99	678	0.04	
Sb	123	He	0.240	5.56	547	0.04	
Ba	135	He	70.087	5.15	29220	0.24	
Ba	137	He	73.235	2.44	54865	0.13	
Tl	203	He	0.075	6.80	578	0.01	
Tl	205	He	0.067	4.46	1280	0.01	
[Pb]	206	He	4.606	3.20	26239	0.02	
[Pb]	207	He	4.474	4.60	22926	0.02	
Pb	208	He	4.529	4.58	106175	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1203923	2.81	1237359	97.30	70	125	
Sc	45	No Gas	4803700	2.25	4599003	104.45	70	125	
Ge	72	He	92174	1.46	93707	98.36	70	125	
Ge	72	H2	945107	0.51	953332	99.14	70	125	
In	115	He	827272	1.05	851093	97.20	70	125	
Lu	175	He	2136377	3.39	2126367	100.47	70	125	

Sample Report

Sample Table

Sample Name K1801383-008
 Data File Name 027SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:39:59-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.283	4.64	1028	0.03	
V	51	He	72.082	2.55	178036	0.04	
Cr	52	He	45.107	1.20	151667	0.03	
Cr	53	He	45.295	2.48	18615	0.24	
Mn	55	He	587.481	1.38	830251	0.07	
Co	59	He	14.724	1.12	89175	0.02	
Ni	60	He	35.596	1.05	60715	0.06	
Ni	62	He	35.143	0.83	9462	0.37	
Cu	63	He	37.954	0.83	187155	0.02	
Cu	65	He	38.241	0.35	92550	0.04	
Zn	66	He	49.534	0.88	30487	0.16	
As	75	He	8.356	1.84	3000	0.28	
Se	77	H2	0.544	17.41	523	0.10	
Se	78	H2	0.259	10.56	180	0.14	
Mo	95	He	0.692	7.23	1655	0.04	
Mo	97	He	0.622	13.78	1002	0.06	
Mo	98	He	0.655	2.31	2765	0.02	
Ag	107	He	0.092	5.31	833	0.01	
Ag	109	He	0.098	7.76	884	0.01	
Cd	111	He	0.304	4.37	318	0.10	
Cd	114	He	0.414	1.59	1097	0.04	
Sb	121	He	0.291	7.38	792	0.04	
Sb	123	He	0.318	9.55	691	0.05	
Ba	135	He	128.458	0.67	52742	0.24	
Ba	137	He	131.886	1.27	97288	0.14	
Tl	203	He	0.107	6.31	807	0.01	
Tl	205	He	0.099	4.08	1830	0.01	
[Pb]	206	He	6.002	1.40	34059	0.02	
[Pb]	207	He	5.671	0.95	28959	0.02	
Pb	208	He	5.851	1.20	136691	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1189793	1.45	1237359	96.16	70	125	
Sc	45	No Gas	4779596	0.96	4599003	103.93	70	125	
Ge	72	He	90004	0.70	93707	96.05	70	125	
Ge	72	H2	929814	1.02	953332	97.53	70	125	
In	115	He	814525	0.69	851093	95.70	70	125	
Lu	175	He	2128534	1.71	2126367	100.10	70	125	

Sample Report

Sample Table

Sample Name K1801383-009
 Data File Name 028SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:42:57-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.350	5.99	1264	0.03	
V	51	He	64.931	0.35	164213	0.04	
Cr	52	He	40.770	0.45	140374	0.03	
Cr	53	He	40.957	0.50	17239	0.24	
Mn	55	He	527.748	0.23	763645	0.07	
Co	59	He	19.871	0.96	123214	0.02	
Ni	60	He	36.875	1.24	64392	0.06	
Ni	62	He	36.131	1.39	9959	0.36	
Cu	63	He	35.024	1.45	176887	0.02	
Cu	65	He	35.635	2.10	88317	0.04	
Zn	66	He	52.416	2.18	33028	0.16	
As	75	He	9.011	2.06	3311	0.27	
Se	77	H2	0.609	9.65	537	0.11	
Se	78	H2	0.285	7.65	197	0.14	
Mo	95	He	0.644	3.04	1553	0.04	
Mo	97	He	0.621	10.35	1008	0.06	
Mo	98	He	0.654	0.41	2784	0.02	
Ag	107	He	0.063	5.95	577	0.01	
Ag	109	He	0.067	13.94	608	0.01	
Cd	111	He	0.230	3.25	244	0.09	
Cd	114	He	0.327	1.45	876	0.04	
Sb	121	He	0.325	8.17	882	0.04	
Sb	123	He	0.308	12.94	676	0.05	
Ba	135	He	86.256	1.40	35710	0.24	
Ba	137	He	88.161	1.45	65583	0.13	
Tl	203	He	0.091	8.41	691	0.01	
Tl	205	He	0.091	5.34	1690	0.01	
[Pb]	206	He	9.018	1.67	51074	0.02	
[Pb]	207	He	8.444	1.90	43040	0.02	
Pb	208	He	8.707	1.41	203056	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1185799	2.18	1237359	95.83	70	125	
Sc	45	No Gas	4805138	3.14	4599003	104.48	70	125	
Ge	72	He	92144	1.44	93707	98.33	70	125	
Ge	72	H2	933052	1.19	953332	97.87	70	125	
In	115	He	821330	0.89	851093	96.50	70	125	
Lu	175	He	2126330	0.60	2126367	100.00	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 029_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:45:56-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.139	3.328	84491	0.44	25	101	
V	51	He	25.099	0.982	59950	0.65	25	100	
Cr	52	He	25.056	1.332	81493	0.60	25	100	
Cr	53	He	25.190	3.292	10027	3.18	25	101	
Mn	55	He	24.623	0.676	33801	1.22	25	98	
Co	59	He	25.025	0.775	146381	0.34	25	100	
Ni	60	He	25.168	1.737	41494	2.53	25	101	
Ni	62	He	25.695	2.865	6687	3.24	25	103	
Cu	63	He	25.057	0.817	119562	1.39	25	100	
Cu	65	He	25.314	0.937	59276	0.84	25	101	
Zn	66	He	25.147	0.172	15012	0.95	25	101	
As	75	He	24.617	1.400	8516	0.61	25	98	
Se	77	H2	24.958	3.061	5302	1.87	25	100	
Se	78	H2	24.746	1.749	15390	1.40	25	99	
Mo	95	He	12.096	1.058	28001	0.75	12.5	97	
Mo	97	He	12.287	2.781	19158	3.25	12.5	98	
Mo	98	He	12.102	2.008	49470	0.92	12.5	97	
Ag	107	He	12.103	1.757	105790	0.75	12.5	97	
Ag	109	He	12.281	0.823	106552	1.55	12.5	98	
Cd	111	He	24.290	1.189	24552	0.09	25	97	
Cd	114	He	24.589	0.429	63059	0.74	25	98	
Sb	121	He	12.222	1.730	28505	1.33	12.5	98	
Sb	123	He	12.211	0.757	23129	0.44	12.5	98	
Ba	135	He	23.511	3.715	9409	2.77	25	94	
Ba	137	He	24.310	0.952	17483	1.84	25	97	
Tl	203	He	24.406	0.948	169239	0.84	25	98	
Tl	205	He	24.805	1.284	416027	1.19	25	99	
[Pb]	206	He	24.827	0.213	134837	0.12	25	99	
[Pb]	207	He	24.804	0.896	121252	1.07	25	99	
Pb	208	He	24.722	0.079	552925	0.26	25	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1114477	3.83	1237359	90.07	70	125	
Sc	45	No Gas	4496883	0.97	4599003	97.78	70	125	
Ge	72	He	86934	0.82	93707	92.77	70	125	
Ge	72	H2	913293	1.07	953332	95.80	70	125	
In	115	He	793839	1.16	851093	93.27	70	125	
Lu	175	He	2041291	0.21	2126367	96.00	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 030_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:48:54-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.002	11.1	18	3.1	0.04	
V	51	He	-0.003	-203.6	99	17.0	0.4	
Cr	52	He	0.003	231.9	283	7.1	0.4	
Cr	53	He	-0.024	-225.1	56	40.8	0.4	
Mn	55	He	-0.040	-118.4	143	46.5	0.1	
Co	59	He	0.000	-1143.5	22	45.8	0.04	
Ni	60	He	0.002	918.5	88	42.0	0.4	
Ni	62	He	-0.021	-124.0	11	62.5	0.4	
Cu	63	He	-0.028	-60.8	500	15.7	0.2	
Cu	65	He	-0.020	-150.6	264	24.9	0.2	
Zn	66	He	-0.028	-78.8	112	12.0	1	
As	75	He	-0.003	-91.2	8	13.9	1	
Se	77	H2	-0.016	-75.0	406	1.3	20	
Se	78	H2	-0.003	-147.2	14	18.9	2	
Mo	95	He	0.000	2450.8	11	124.9	0.1	
Mo	97	He	0.003	156.5	12	63.0	0.1	
Mo	98	He	0.004	78.5	32	39.2	0.1	
Ag	107	He	0.001	104.3	18	43.3	0.04	
Ag	109	He	0.001	97.9	16	32.7	0.04	
Cd	111	He	0.003	69.0	6	35.7	0.04	
Cd	114	He	0.003	20.9	15	10.3	0.04	
Sb	121	He	-0.001	-861.3	94	18.4	0.1	
Sb	123	He	0.007	186.5	86	28.9	0.1	
Ba	135	He	0.009	51.2	8	24.7	0.1	
Ba	137	He	0.005	25.7	9	10.8	0.1	
Tl	203	He	0.007	49.6	79	27.5	0.04	
Tl	205	He	0.006	19.4	202	10.6	0.04	
[Pb]	206	He	0.000	6172.6	93	27.0	0.1	
[Pb]	207	He	0.002	269.2	80	37.0	0.1	
Pb	208	He	0.004	36.6	408	8.2	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1138790	0.99	1237359	92.03	70	125	
Sc	45	No Gas	4395964	0.98	4599003	95.59	70	125	
Ge	72	He	88380	1.61	93707	94.32	70	125	
Ge	72	H2	919044	0.73	953332	96.40	70	125	
In	115	He	800102	1.33	851093	94.01	70	125	
Lu	175	He	2060729	1.21	2126367	96.91	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS
 Data File Name 031LLCCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:51:53-08:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.046	9.945	164	8.74	0.04	116	
V	51	He	0.383	9.981	1026	9.28	0.4	96	
Cr	52	He	0.409	6.613	1607	5.11	0.4	102	
Cr	53	He	0.371	8.539	212	6.35	0.4	93	
Mn	55	He	0.085	65.712	313	24.79	0.1	85	
Co	59	He	0.040	18.004	257	16.58	0.04	99	
Ni	60	He	0.388	4.960	726	4.27	0.4	97	
Ni	62	He	0.404	16.321	122	13.73	0.4	101	
Cu	63	He	0.177	11.094	1473	6.70	0.2	88	
Cu	65	He	0.187	11.974	748	6.69	0.2	94	
Zn	66	He	0.887	16.578	657	13.74	1	89	
As	75	He	0.999	5.155	357	5.05	1	100	
Se	77	H2	1.947	8.762	789	3.09	2	97	
Se	78	H2	1.980	4.817	1248	6.57	2	99	
Mo	95	He	0.097	11.395	237	11.18	0.1	97	
Mo	97	He	0.102	18.325	167	17.32	0.1	102	
Mo	98	He	0.107	5.839	454	5.20	0.1	107	
Ag	107	He	0.037	13.161	338	12.34	0.04	93	
Ag	109	He	0.038	5.934	342	5.36	0.04	95	
Cd	111	He	0.043	9.707	47	9.20	0.04	108	
Cd	114	He	0.042	6.866	115	6.67	0.04	104	
Sb	121	He	0.100	8.486	329	6.41	0.1	100	
Sb	123	He	0.108	12.030	278	8.66	0.1	108	
Ba	135	He	0.119	33.313	52	30.16	0.1	119	
Ba	137	He	0.124	11.024	95	10.67	0.1	124	
Tl	203	He	0.039	4.965	308	2.50	0.04	97	
Tl	205	He	0.037	9.865	731	10.16	0.04	93	
[Pb]	206	He	0.102	3.465	656	4.70	0.1	102	
[Pb]	207	He	0.104	9.658	588	10.34	0.1	104	
Pb	208	He	0.100	2.333	2611	3.85	0.1	100	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1090464	1.24	1237359	88.13	70	125	
Sc	45	No Gas	4362212	0.11	4599003	94.85	70	125	
Ge	72	He	87526	0.42	93707	93.40	70	125	
Ge	72	H2	914634	1.88	953332	95.94	70	125	
In	115	He	798954	0.45	851093	93.87	70	125	
Lu	175	He	2077992	1.95	2126367	97.72	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1801650-03
 Data File Name 032_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:54:59-08:00
 Sample Type PB
 Dilution 1
 Comment 5X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	-0.001	-113.0	9	32.7	0.04	
V	51	He	-0.014	-63.5	76	29.4	0.4	
Cr	52	He	-0.003	-100.7	272	3.9	0.4	
Cr	53	He	-0.036	-120.9	52	35.2	0.4	
Mn	55	He	-0.084	-5.1	83	6.9	0.1	
Co	59	He	-0.001	-442.9	20	86.6	0.04	
Ni	60	He	-0.014	-51.1	62	18.8	0.4	
Ni	62	He	0.014	179.1	21	32.9	0.4	
Cu	63	He	-0.020	-54.9	552	10.4	0.2	
Cu	65	He	-0.030	-67.5	249	20.5	0.2	
Zn	66	He	-0.019	-52.9	121	5.7	1	
As	75	He	-0.013	-93.4	5	87.2	1	
Se	77	H2	-0.085	-216.8	402	9.7	2	
Se	78	H2	-0.012	-50.5	9	43.7	2	
Mo	95	He	0.006	57.6	26	32.8	0.1	
Mo	97	He	-0.002	-63.5	4	43.4	0.1	
Mo	98	He	0.002	78.2	22	22.9	0.1	
Ag	107	He	0.000	-248.3	8	89.2	0.04	
Ag	109	He	0.000	-618.5	9	114.5	0.04	
Cd	111	He	-0.001	-55.6	2	12.4	0.04	
Cd	114	He	0.000	-210.5	6	27.7	0.04	
Sb	121	He	-0.017	-39.6	57	29.2	0.1	
Sb	123	He	-0.015	-32.5	44	22.2	0.1	
Ba	135	He	0.006	137.4	7	50.0	0.1	
Ba	137	He	0.004	146.7	8	52.9	0.1	
Tl	203	He	-0.002	-65.7	21	39.7	0.04	
Tl	205	He	-0.002	-36.3	61	16.7	0.04	
[Pb]	206	He	-0.002	-218.5	81	37.3	0.1	
[Pb]	207	He	-0.001	-129.2	64	7.9	0.1	
Pb	208	He	-0.001	-133.3	308	10.1	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1119200	2.70	1237359	90.45	70	125	
Sc	45	No Gas	4634764	1.85	4599003	100.78	70	125	
Ge	72	He	90942	0.94	93707	97.05	70	125	
Ge	72	H2	940569	0.98	953332	98.66	70	125	
In	115	He	812374	0.94	851093	95.45	70	125	
Lu	175	He	2076858	2.57	2126367	97.67	70	125	

Laboratory Control Sample (LCSS) Report

Sample Table

Sample Name KQ1801650-04
 Data File Name 033_QCS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T10:57:58-08:00
 Sample Type QCS
 Dilution 1
 Comment 20X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	35.815	3.165	116712	1.50	33	108.5	
V	51	He	50.063	0.292	121156	1.29	48.35	103.5	
Cr	52	He	92.606	0.587	304703	1.27	91	101.8	
Cr	53	He	94.214	0.709	37852	0.79	91	103.5	
Mn	55	He	204.735	2.340	283532	2.54	205	99.9	
Co	59	He	88.279	1.593	523532	1.26	81	109.0	
Ni	60	He	82.511	0.721	137736	0.97	74.5	110.8	
Ni	62	He	82.317	1.770	21682	0.51	74.5	110.5	
Cu	63	He	53.600	0.325	258630	1.65	53	101.1	
Cu	65	He	53.793	1.904	127366	1.15	53	101.5	
Zn	66	He	98.360	2.617	59166	2.58	95.3	103.2	
As	75	He	48.154	0.843	16883	0.68	49.25	97.8	
Se	77	H2	80.522	1.329	16187	1.60	77	104.6	
Se	78	H2	79.196	2.334	49168	1.83	77	102.9	
Mo	95	He	89.103	0.130	202768	0.59	82	108.7	
Mo	97	He	88.337	1.168	135386	1.76	82	107.7	
Mo	98	He	89.407	0.324	359322	0.67	82	109.0	
Ag	107	He	20.086	0.438	172658	0.99	20.45	98.2	
Ag	109	He	20.121	0.879	171639	0.63	20.45	98.4	
Cd	111	He	79.163	1.096	78680	1.28	73	108.4	
Cd	114	He	80.087	0.176	201945	0.73	73	109.7	
Sb	121	He	42.579	1.288	97414	1.02	52.5	81.1	
Sb	123	He	42.806	1.031	79551	0.89	52.5	81.5	
Ba	135	He	150.273	1.002	59129	1.28	154	97.6	
Ba	137	He	153.510	0.488	108526	1.13	154	99.7	
Tl	203	He	94.319	1.277	648577	0.79	87.5	107.8	
Tl	205	He	96.653	2.223	1607315	0.30	87.5	110.5	
[Pb]	206	He	65.376	3.582	351883	1.54	65	100.6	
[Pb]	207	He	62.245	3.478	301589	1.60	65	95.8	
Pb	208	He	63.748	2.954	1413276	0.96	65	98.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1080175	2.16	1237359	87.30	70	125	
Sc	45	No Gas	4440391	1.14	4599003	96.55	70	125	
Ge	72	He	88155	1.45	93707	94.08	70	125	
Ge	72	H2	912397	1.37	953332	95.71	70	125	
In	115	He	780569	0.64	851093	91.71	70	125	
Lu	175	He	2024887	2.02	2126367	95.23	70	125	

All Reference Sample Report

Sample Table

Sample Name K1801138-001
 Data File Name 034_ARF.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:00:57-08:00
 Sample Type AllRef
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.342	7.61	1117	0.03	
V	51	He	111.135	2.80	267181	0.04	
Cr	52	He	31.641	2.20	103659	0.03	
Cr	53	He	32.306	2.33	12944	0.25	
Mn	55	He	719.502	1.96	989919	0.07	
Co	59	He	15.988	0.93	94279	0.02	
Ni	60	He	25.336	0.67	42103	0.06	
Ni	62	He	25.559	1.62	6705	0.38	
Cu	63	He	26.155	1.50	125761	0.02	
Cu	65	He	26.678	2.19	62948	0.04	
Zn	66	He	87.927	1.12	52593	0.17	
As	75	He	12.573	1.19	4389	0.29	
Se	77	H2	0.536	38.46	510	0.11	
Se	78	H2	0.199	18.02	139	0.14	
Mo	95	He	0.600	0.76	1375	0.04	
Mo	97	He	0.675	7.81	1041	0.06	
Mo	98	He	0.595	5.10	2406	0.02	
Ag	107	He	0.035	8.10	308	0.01	
Ag	109	He	0.034	19.84	303	0.01	
Cd	111	He	0.054	11.89	57	0.10	
Cd	114	He	0.060	11.36	158	0.04	
Sb	121	He	0.119	24.10	366	0.03	
Sb	123	He	0.115	3.49	284	0.04	
Ba	135	He	79.395	3.39	31230	0.25	
Ba	137	He	79.785	2.46	56388	0.14	
Tl	203	He	0.110	8.68	792	0.01	
Tl	205	He	0.109	7.65	1917	0.01	
[Pb]	206	He	5.890	0.81	31949	0.02	
[Pb]	207	He	5.560	1.49	27141	0.02	
Pb	208	He	5.713	0.91	127592	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1073236	2.81	1237359	86.74	70	125	
Sc	45	No Gas	4588327	3.47	4599003	99.77	70	125	
Ge	72	He	87632	1.09	93707	93.52	70	125	
Ge	72	H2	909653	0.26	953332	95.42	70	125	
In	115	He	780447	1.16	851093	91.70	70	125	
Lu	175	He	2034461	1.39	2126367	95.68	70	125	

Sample Report

Sample Table

Sample Name KQ1801650-04
 Data File Name 035SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:03:56-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

101
32/2/16

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.320	6.24	1082	0.03	
V	51	He	108.920	1.10	262199	0.04	
Cr	52	He	31.478	0.23	103260	0.03	
Cr	53	He	32.360	2.69	12982	0.25	
Mn	55	He	717.685	0.70	988685	0.07	
Co	59	He	15.983	1.61	94358	0.02	
Ni	60	He	24.689	2.27	41076	0.06	
Ni	62	He	24.029	2.10	6311	0.38	
Cu	63	He	24.822	2.25	119528	0.02	
Cu	65	He	25.143	0.88	59419	0.04	
Zn	66	He	87.055	2.24	52133	0.17	
As	75	He	12.349	1.77	4316	0.29	
Se	77	H2	0.585	8.75	517	0.11	
Se	78	H2	0.180	8.59	127	0.14	
Mo	95	He	0.575	1.39	1320	0.04	
Mo	97	He	0.587	5.86	908	0.06	
Mo	98	He	0.553	1.44	2242	0.02	
Ag	107	He	0.032	15.15	283	0.01	
Ag	109	He	0.031	13.53	271	0.01	
Cd	111	He	0.046	7.38	49	0.09	
Cd	114	He	0.048	4.70	128	0.04	
Sb	121	He	0.115	11.92	358	0.03	
Sb	123	He	0.114	17.23	282	0.04	
Ba	135	He	78.383	0.60	30881	0.25	
Ba	137	He	79.990	0.93	56621	0.14	
Tl	203	He	0.082	5.73	607	0.01	
Tl	205	He	0.080	4.56	1447	0.01	
[Pb]	206	He	5.792	1.43	31658	0.02	
[Pb]	207	He	5.332	1.36	26233	0.02	
Pb	208	He	5.553	1.67	124963	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1110178	2.17	1237359	89.72	70	125	
Sc	45	No Gas	4695397	0.13	4599003	102.10	70	125	
Ge	72	He	87732	0.86	93707	93.62	70	125	
Ge	72	H2	906198	0.66	953332	95.06	70	125	
In	115	He	781528	0.77	851093	91.83	70	125	
Lu	175	He	2050131	2.40	2126367	96.41	70	125	

Sample Report

Sample Table

Sample Name K1801138-001L
 Data File Name 036SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:06:55-08:00
 Sample Type Sample
 Dilution 1
 Comment 25X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.062	12.24	221	0.03	
V	51	He	21.880	0.91	53779	0.04	
Cr	52	He	6.240	0.42	21091	0.03	
Cr	53	He	6.522	2.74	2719	0.24	
Mn	55	He	142.404	1.76	200151	0.07	
Co	59	He	3.251	0.53	19586	0.02	
Ni	60	He	5.210	1.64	8902	0.06	
Ni	62	He	5.199	1.14	1406	0.37	
Cu	63	He	5.361	0.08	26823	0.02	
Cu	65	He	5.377	1.99	13203	0.04	
Zn	66	He	18.306	3.17	11280	0.16	
As	75	He	2.530	5.60	908	0.28	
Se	77	H2	0.123	103.28	435	0.03	
Se	78	H2	0.023	35.46	30	0.08	
Mo	95	He	0.128	9.57	307	0.04	
Mo	97	He	0.117	6.67	190	0.06	
Mo	98	He	0.118	8.74	499	0.02	
Ag	107	He	0.008	15.31	79	0.01	
Ag	109	He	0.008	21.96	78	0.01	
Cd	111	He	0.010	32.88	13	0.08	
Cd	114	He	0.011	22.22	36	0.03	
Sb	121	He	0.014	76.78	128	0.01	
Sb	123	He	0.017	47.93	105	0.02	
Ba	135	He	15.965	3.04	6409	0.25	
Ba	137	He	15.976	2.20	11520	0.14	
Tl	203	He	0.024	4.65	202	0.01	
Tl	205	He	0.019	8.87	413	0.00	
[Pb]	206	He	1.191	0.36	6567	0.02	
[Pb]	207	He	1.139	2.40	5641	0.02	
Pb	208	He	1.160	0.31	26278	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1123996	1.06	1237359	90.84	70	125	
Sc	45	No Gas	4555360	0.80	4599003	99.05	70	125	
Ge	72	He	89437	1.78	93707	95.44	70	125	
Ge	72	H2	923484	0.93	953332	96.87	70	125	
In	115	He	795874	0.34	851093	93.51	70	125	
Lu	175	He	2043906	1.43	2126367	96.12	70	125	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name K1801138-001A
 Data File Name 037_PDS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:09:54-08:00
 Sample Type PDS
 Dilution 1
 Comment 5X
 QC Ref File Name 034_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

X NA MS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	51.868	3.675	174811	1.05	50	103	
V	51	He	155.842	0.478	379738	1.08	50	89	
Cr	52	He	79.191	2.370	262533	2.09	50	95	
Cr	53	He	79.576	2.142	32218	1.59	50	95	
Mn	55	He	730.158	0.828	1018239	1.31	50	21	Flag
Co	59	He	63.014	0.358	376528	0.95	50	94	
Ni	60	He	71.562	1.147	120358	0.24	50	92	
Ni	62	He	72.931	2.105	19356	1.49	50	95	
Cu	63	He	71.640	0.462	348023	0.66	50	91	
Cu	65	He	72.751	0.513	173449	0.82	50	92	
Zn	66	He	135.089	1.041	81817	0.19	50	94	
As	75	He	59.828	0.702	21131	0.82	50	95	
Se	77	H2	51.296	1.477	10354	2.20	50	102	
Se	78	H2	49.990	0.403	30729	0.97	50	100	
Mo	95	He	51.158	1.601	117206	1.30	50	101	
Mo	97	He	51.400	1.778	79302	0.83	50	101	
Mo	98	He	51.105	1.996	206766	0.97	50	101	
Ag	107	He	9.326	1.261	80706	0.77	10	93	
Ag	109	He	9.410	1.715	80811	0.66	10	94	
Cd	111	He	48.862	0.934	48893	0.50	50	98	
Cd	114	He	49.664	1.502	126072	0.43	50	99	
Sb	121	He	50.145	1.517	115479	0.56	50	100	
Sb	123	He	50.429	2.035	94332	1.24	50	101	
Ba	135	He	124.707	1.066	49399	0.28	50	91	
Ba	137	He	126.652	1.763	90145	2.00	50	94	
Tl	203	He	47.537	2.111	334584	0.43	50	95	
Tl	205	He	47.439	1.825	807705	1.72	50	95	
[Pb]	206	He	52.847	1.612	291286	1.64	50	94	
[Pb]	207	He	52.460	1.780	260269	1.48	50	94	
Pb	208	He	52.415	1.772	1189784	1.32	50	93	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1117577	3.29	1237359	90.32	70	125	
Sc	45	No Gas	4799437	1.82	4599003	104.36	70	125	
Ge	72	He	88812	1.09	93707	94.78	70	125	
Ge	72	H2	903075	0.79	953332	94.73	70	125	
In	115	He	785900	1.35	851093	92.34	70	125	
Lu	175	He	2072859	2.49	2126367	97.48	70	125	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name KQ1801650-04
 Data File Name 038_Spk.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:12:59-08:00
 Sample Type Spike
 Dilution 1
 Comment 5X
 QC Ref File Name 034_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

102
2/22/21/16

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	20.756	3.295	68158	0.20	20	102	
V	51	He	303.763	1.164	707430	0.83	200	96	
Cr	52	He	109.458	0.587	346822	1.54	80	97	
Cr	53	He	112.338	1.707	43456	1.80	80	100	
Mn	55	He	889.230	0.275	1185559	2.26	200	85	
Co	59	He	208.485	0.621	1190860	1.39	200	96	
Ni	60	He	216.089	0.868	347288	1.36	200	95	
Ni	62	He	214.467	1.567	54380	0.50	200	94	
Cu	63	He	117.270	0.583	544232	1.44	100	91	
Cu	65	He	118.379	0.814	269652	2.36	100	92	
Zn	66	He	277.353	1.583	160507	3.53	200	95	
As	75	He	201.823	0.946	68126	1.67	200	95	
Se	77	H2	194.433	1.816	36914	1.29	200	97	
Se	78	H2	188.661	1.031	112266	0.75	200	94	
Mo	95	He	186.265	0.170	426686	1.42	200	93	
Mo	97	He	188.666	0.570	291061	1.72	200	94	
Mo	98	He	186.326	1.338	753879	2.56	200	93	
Ag	107	He	18.126	0.528	156845	1.80	20	90	
Ag	109	He	18.282	0.088	156992	1.37	20	91	
Cd	111	He	18.872	0.510	18883	1.12	20	94	
Cd	114	He	34.086	0.602	86522	1.02	20	170	Flag
Sb	121	He	109.815	0.626	252780	1.85	200	55	Flag
Sb	123	He	108.451	0.584	202778	1.22	200	54	Flag
Ba	135	He	441.732	0.572	174965	1.90	400	91	
Ba	137	He	451.149	0.910	321076	2.26	400	93	
Tl	203	He	37.251	1.600	257704	1.60	40	93	
Tl	205	He	37.419	1.263	626108	1.10	40	93	
[Pb]	206	He	187.396	1.133	1014876	1.77	200	91	
[Pb]	207	He	193.605	0.275	943779	0.65	200	94	
Pb	208	He	190.339	1.006	4245464	1.67	200	92	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1088748	3.36	1237359	87.99	70	125	
Sc	45	No Gas	4671823	1.44	4599003	101.58	70	125	
Ge	72	He	84908	1.99	93707	90.61	70	125	
Ge	72	H2	874638	1.53	953332	91.75	70	125	
In	115	He	785762	1.35	851093	92.32	70	125	
Lu	175	He	2036658	0.88	2126367	95.78	70	125	

Sample Report

Sample Table

Sample Name K1801138-002
 Data File Name 039SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:16:36-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.303	4.03	1031	0.03	
V	51	He	107.101	0.62	256906	0.04	
Cr	52	He	33.510	0.42	109514	0.03	
Cr	53	He	34.328	3.32	13719	0.25	
Mn	55	He	609.164	0.48	836205	0.07	
Co	59	He	15.282	0.94	89901	0.02	
Ni	60	He	27.318	0.77	45278	0.06	
Ni	62	He	27.157	1.70	7105	0.38	
Cu	63	He	19.918	1.78	95690	0.02	
Cu	65	He	20.021	0.50	47210	0.04	
Zn	66	He	78.359	1.43	46769	0.17	
As	75	He	10.787	2.13	3758	0.29	
Se	77	H2	0.662	13.39	530	0.12	
Se	78	H2	0.361	12.45	237	0.15	
Mo	95	He	0.715	4.08	1640	0.04	
Mo	97	He	0.759	4.88	1172	0.06	
Mo	98	He	0.720	1.29	2916	0.02	
Ag	107	He	0.040	17.21	359	0.01	
Ag	109	He	0.046	3.41	407	0.01	
Cd	111	He	0.059	13.04	62	0.10	
Cd	114	He	0.081	3.00	211	0.04	
Sb	121	He	0.235	10.16	633	0.04	
Sb	123	He	0.252	5.25	541	0.05	
Ba	135	He	81.861	1.18	32281	0.25	
Ba	137	He	83.918	1.51	59452	0.14	
Tl	203	He	0.122	3.47	901	0.01	
Tl	205	He	0.126	5.61	2254	0.01	
[Pb]	206	He	6.974	3.38	38793	0.02	
[Pb]	207	He	6.369	2.22	31889	0.02	
Pb	208	He	6.646	2.04	152255	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1112911	0.64	1237359	89.94	70	125	
Sc	45	No Gas	4672607	1.03	4599003	101.60	70	125	
Ge	72	He	87419	0.77	93707	93.29	70	125	
Ge	72	H2	901930	0.73	953332	94.61	70	125	
In	115	He	782217	0.52	851093	91.91	70	125	
Lu	175	He	2088026	1.90	2126367	98.20	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 040_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:19:34-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	24.704	1.144	83364	1.15	25	99	
V	51	He	25.157	1.031	59710	0.99	25	101	
Cr	52	He	25.078	1.179	81051	0.93	25	100	
Cr	53	He	25.568	2.861	10113	2.92	25	102	
Mn	55	He	24.093	2.684	32865	2.39	25	96	
Co	59	He	24.916	1.810	144818	1.43	25	100	
Ni	60	He	25.200	1.682	41279	1.52	25	101	
Ni	62	He	25.673	2.849	6638	2.52	25	103	
Cu	63	He	25.024	2.091	118644	1.84	25	100	
Cu	65	He	25.160	0.767	58544	0.46	25	101	
Zn	66	He	24.786	0.742	14705	1.10	25	99	
As	75	He	24.676	1.491	8483	1.33	25	99	
Se	77	H2	24.650	2.496	5211	1.98	25	99	
Se	78	H2	24.398	0.251	15085	0.94	25	98	
Mo	95	He	12.192	1.736	28499	0.41	12.5	98	
Mo	97	He	11.835	3.108	18628	2.05	12.5	95	
Mo	98	He	11.942	1.517	49296	0.71	12.5	96	
Ag	107	He	12.181	1.925	107515	0.47	12.5	97	
Ag	109	He	12.022	2.721	105298	1.21	12.5	96	
Cd	111	He	24.069	1.032	24568	0.96	25	96	
Cd	114	He	24.074	0.538	62343	1.03	25	96	
Sb	121	He	11.997	1.502	28254	0.66	12.5	96	
Sb	123	He	12.019	1.207	22991	1.32	12.5	96	
Ba	135	He	23.103	2.010	9339	2.69	25	92	
Ba	137	He	23.904	0.299	17359	1.33	25	96	
Tl	203	He	24.443	1.259	170888	0.84	25	98	
Tl	205	He	24.544	0.507	415052	0.62	25	98	
[Pb]	206	He	24.577	0.601	134579	0.72	25	98	
[Pb]	207	He	24.631	1.255	121391	0.13	25	99	
Pb	208	He	24.594	0.902	554596	0.32	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1118054	1.16	1237359	90.36	70	125	
Sc	45	No Gas	4503107	1.61	4599003	97.91	70	125	
Ge	72	He	86383	0.38	93707	92.18	70	125	
Ge	72	H2	907835	0.70	953332	95.23	70	125	
In	115	He	801642	1.54	851093	94.19	70	125	
Lu	175	He	2058224	1.12	2126367	96.80	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 041_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:22:32-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.001	146.5	17	42.6	0.04	
V	51	He	-0.005	-99.7	94	11.3	0.4	
Cr	52	He	0.000	2451.0	274	10.5	0.4	
Cr	53	He	-0.037	-81.2	50	24.0	0.4	
Mn	55	He	-0.032	-44.1	153	13.6	0.1	
Co	59	He	0.001	309.8	29	63.5	0.04	
Ni	60	He	-0.001	-501.1	81	15.6	0.4	
Ni	62	He	0.004	608.6	18	39.0	0.4	
Cu	63	He	-0.013	-68.0	568	8.5	0.2	
Cu	65	He	-0.012	-149.3	282	14.3	0.2	
Zn	66	He	-0.021	-179.4	116	19.6	1	
As	75	He	-0.002	-957.0	9	74.2	1	
Se	77	H2	-0.223	-18.8	360	3.0	20	
Se	78	H2	-0.012	-8.9	8	6.9	2	
Mo	95	He	0.006	68.1	23	37.8	0.1	
Mo	97	He	0.000	749.7	8	49.5	0.1	
Mo	98	He	0.002	59.0	24	20.8	0.1	
Ag	107	He	0.000	115.2	13	25.0	0.04	
Ag	109	He	0.000	300.6	13	66.1	0.04	
Cd	111	He	0.000	262.8	3	16.7	0.04	
Cd	114	He	0.004	32.1	17	18.1	0.04	
Sb	121	He	0.006	60.1	109	6.9	0.1	
Sb	123	He	0.008	144.6	88	26.6	0.1	
Ba	135	He	0.001	1721.4	4	114.6	0.1	
Ba	137	He	0.005	68.2	9	28.6	0.1	
Tl	203	He	0.013	12.0	123	8.1	0.04	
Tl	205	He	0.011	9.7	282	7.9	0.04	
[Pb]	206	He	0.005	96.9	120	21.0	0.1	
[Pb]	207	He	0.004	110.8	89	25.0	0.1	
Pb	208	He	0.008	23.1	499	6.7	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1101835	1.46	1237359	89.05	70	125	
Sc	45	No Gas	4563504	1.65	4599003	99.23	70	125	
Ge	72	He	87941	1.21	93707	93.85	70	125	
Ge	72	H2	906948	0.76	953332	95.13	70	125	
In	115	He	796816	0.60	851093	93.62	70	125	
Lu	175	He	2058808	1.32	2126367	96.82	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1801937-03
 Data File Name 042_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:29:47-08:00
 Sample Type PB
 Dilution 1
 Comment 5X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	-4945.5	12	41.7	0.04	
V	51	He	-0.019	-65.7	62	46.2	0.4	
Cr	52	He	0.285	1.4	1227	2.4	0.4	
Cr	53	He	0.303	22.4	189	13.7	0.4	
Mn	55	He	0.002	1378.2	203	20.5	0.1	
Co	59	He	0.002	222.2	38	85.7	0.04	
Ni	60	He	-0.003	-706.1	80	39.7	0.4	
Ni	62	He	-0.005	-316.7	16	24.8	0.4	
Cu	63	He	-0.008	-250.6	602	13.5	0.2	
Cu	65	He	-0.010	-143.5	291	10.4	0.2	
Zn	66	He	0.007	340.9	134	9.4	1	
As	75	He	-0.017	-43.1	4	68.6	1	
Se	77	H2	-0.075	-82.1	402	3.0	2	
Se	78	H2	-0.007	-115.3	12	44.0	2	
Mo	95	He	0.003	93.6	19	40.7	0.1	
Mo	97	He	0.002	52.4	11	17.3	0.1	
Mo	98	He	0.007	41.5	43	26.6	0.1	
Ag	107	He	0.000	375.0	13	75.0	0.04	
Ag	109	He	0.002	46.6	26	27.1	0.04	
Cd	111	He	0.001	222.2	4	62.5	0.04	
Cd	114	He	0.000	-680.0	7	33.0	0.04	
Sb	121	He	-0.002	-167.7	93	9.9	0.1	
Sb	123	He	-0.012	-63.1	51	28.8	0.1	
Ba	135	He	0.011	208.5	9	108.3	0.1	
Ba	137	He	0.007	91.4	11	45.6	0.1	
Tl	203	He	0.001	143.2	42	27.7	0.04	
Tl	205	He	0.002	53.1	132	13.9	0.04	
[Pb]	206	He	0.004	18.5	120	2.8	0.1	
[Pb]	207	He	0.001	173.3	78	16.2	0.1	
Pb	208	He	0.006	9.1	481	3.8	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1111375	3.30	1237359	89.82	70	125	
Sc	45	No Gas	4652285	3.48	4599003	101.16	70	125	
Ge	72	He	89365	2.08	93707	95.37	70	125	
Ge	72	H2	936370	0.96	953332	98.22	70	125	
In	115	He	816370	0.49	851093	95.92	70	125	
Lu	175	He	2113599	1.10	2126367	99.40	70	125	

Laboratory Control Sample (LCSS) Report

Sample Table

Sample Name KQ1801937-04
 Data File Name 043_QCS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:32:50-08:00
 Sample Type QCS
 Dilution 1
 Comment 20X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	34.791	1.796	112921	0.29	33	105.4	
V	51	He	48.509	0.798	115361	1.23	48.35	100.3	
Cr	52	He	92.050	1.108	297629	1.70	91	101.2	
Cr	53	He	93.044	0.312	36735	0.51	91	102.2	
Mn	55	He	198.560	1.123	270217	1.33	205	96.9	
Co	59	He	84.866	1.399	494587	1.33	81	104.8	
Ni	60	He	79.675	2.264	130704	2.51	74.5	106.9	
Ni	62	He	80.720	2.167	20897	2.86	74.5	108.3	
Cu	63	He	53.792	0.765	255027	0.09	53	101.5	
Cu	65	He	54.125	1.564	125940	1.59	53	102.1	
Zn	66	He	97.338	1.529	57535	0.89	95.3	102.1	
As	75	He	49.173	1.172	16941	0.73	49.25	99.8	
Se	77	H2	79.817	0.520	15817	1.09	77	103.7	
Se	78	H2	79.021	0.798	48353	0.59	77	102.6	
Mo	95	He	88.109	0.807	196585	1.31	82	107.5	
Mo	97	He	87.670	1.020	131724	1.01	82	106.9	
Mo	98	He	86.875	0.921	342323	1.50	82	105.9	
Ag	107	He	20.453	0.613	172366	0.50	20.45	100.0	
Ag	109	He	20.409	0.481	170684	0.35	20.45	99.8	
Cd	111	He	78.129	0.549	76131	0.79	73	107.0	
Cd	114	He	79.428	0.647	196367	1.26	73	108.8	
Sb	121	He	41.770	0.253	93697	0.58	52.5	79.6	
Sb	123	He	41.852	1.197	76256	0.92	52.5	79.7	
Ba	135	He	153.240	1.194	59113	1.00	154	99.5	
Ba	137	He	157.527	1.413	109188	2.00	154	102.3	
Tl	203	He	94.742	1.338	647199	0.97	87.5	108.3	
Tl	205	He	95.196	3.472	1572386	1.42	87.5	108.8	
[Pb]	206	He	64.531	1.027	345173	1.27	65	99.3	
[Pb]	207	He	61.982	2.011	298390	0.49	65	95.4	
Pb	208	He	63.486	1.744	1398434	0.77	65	97.7	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1075630	1.71	1237359	86.93	70	125	
Sc	45	No Gas	4460469	2.81	4599003	96.99	70	125	
Ge	72	He	86623	0.80	93707	92.44	70	125	
Ge	72	H2	899152	0.64	953332	94.32	70	125	
In	115	He	765286	0.61	851093	89.92	70	125	
Lu	175	He	2011612	2.28	2126367	94.60	70	125	

All Reference Sample Report

Sample Table

Sample Name K1801267-009
 Data File Name 044_ARF.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:35:49-08:00
 Sample Type AllRef
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.616	3.70	2000	0.03	
V	51	He	140.176	2.17	329195	0.04	
Cr	52	He	42.910	2.10	137233	0.03	
Cr	53	He	43.221	0.96	16896	0.26	
Mn	55	He	399.476	0.71	537045	0.07	
Co	59	He	17.111	0.70	98562	0.02	
Ni	60	He	32.920	0.17	53412	0.06	
Ni	62	He	32.785	3.02	8395	0.39	
Cu	63	He	188.512	0.87	881672	0.02	
Cu	65	He	192.410	1.37	441626	0.04	
Zn	66	He	7029.920	1.85	4097462	0.17	AllRef Main CR1 Failed
As	75	He	25.099	1.19	8550	0.29	
Se	77	H2	1.634	10.96	709	0.23	
Se	78	H2	0.767	3.78	480	0.16	
Mo	95	He	4.851	3.36	10808	0.04	
Mo	97	He	4.714	2.35	7074	0.07	
Mo	98	He	4.780	0.95	18811	0.03	
Ag	107	He	2.159	0.86	18168	0.01	
Ag	109	He	2.207	0.58	18430	0.01	
Cd	111	He	32.938	0.98	32031	0.10	
Cd	114	He	32.974	0.56	81355	0.04	
Sb	121	He	3.421	1.25	7742	0.04	
Sb	123	He	3.366	0.90	6184	0.05	
Ba	135	He	205.817	1.01	79240	0.26	
Ba	137	He	207.641	0.83	143620	0.14	
Tl	203	He	0.271	4.07	1903	0.01	
Tl	205	He	0.265	3.15	4515	0.01	
[Pb]	206	He	262.342	2.29	1414693	0.02	
[Pb]	207	He	252.379	2.58	1224951	0.02	
Pb	208	He	254.351	2.08	5648914	0.00	

3/2/2018

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1070392	1.38	1237359	86.51	70	125	
Sc	45	No Gas	4588817	0.60	4599003	99.78	70	125	
Ge	72	He	85600	0.73	93707	91.35	70	125	
Ge	72	H2	890834	0.66	953332	93.44	70	125	
In	115	He	763733	0.93	851093	89.74	70	125	
Lu	175	He	2028688	2.54	2126367	95.41	70	125	

Sample Report

Sample Table

Sample Name KQ1801937-01
 Data File Name 045SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:38:45-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.589	1.99	1920	0.03	
V	51	He	141.178	0.03	336259	0.04	
Cr	52	He	53.964	2.34	174953	0.03	
Cr	53	He	55.296	2.18	21904	0.25	
Mn	55	He	399.423	1.25	544552	0.07	
Co	59	He	16.324	2.10	95351	0.02	
Ni	60	He	33.486	2.40	55094	0.06	
Ni	62	He	34.212	1.55	8885	0.39	
Cu	63	He	191.511	0.31	908341	0.02	
Cu	65	He	194.303	0.91	452285	0.04	
Zn	66	He	8279.812	1.72	4894206	0.17	>LDR
As	75	He	28.395	1.26	9808	0.29	
Se	77	H2	1.763	1.58	744	0.24	
Se	78	H2	0.784	0.88	497	0.16	
Mo	95	He	6.106	2.66	13861	0.04	
Mo	97	He	6.106	2.00	9335	0.07	
Mo	98	He	6.087	2.87	24401	0.02	
Ag	107	He	2.587	1.28	22176	0.01	
Ag	109	He	2.669	2.16	22706	0.01	
Cd	111	He	38.233	0.35	37883	0.10	
Cd	114	He	38.489	0.49	96755	0.04	
Sb	121	He	3.851	0.47	8868	0.04	
Sb	123	He	3.879	2.46	7252	0.05	
Ba	135	He	216.115	0.54	84770	0.25	
Ba	137	He	221.312	0.63	155969	0.14	
Tl	203	He	0.238	0.91	1677	0.01	
Tl	205	He	0.238	1.39	4056	0.01	
[Pb]	206	He	329.235	2.09	1777924	0.02	
[Pb]	207	He	326.422	1.21	1587096	0.02	
Pb	208	He	322.251	1.12	7167930	0.00	

2/20/18

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1073385	1.25	1237359	86.75	70	125	
Sc	45	No Gas	4672011	1.05	4599003	101.59	70	125	
Ge	72	He	86809	0.40	93707	92.64	70	125	
Ge	72	H2	903432	1.54	953332	94.77	70	125	
In	115	He	778146	0.19	851093	91.43	70	125	
Lu	175	He	2031393	1.47	2126367	95.53	70	125	

Sample Report

Sample Table

Sample Name K1801267-009L
 Data File Name 046SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:41:40-08:00
 Sample Type Sample
 Dilution 1
 Comment 25X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.123	5.93	414	0.03	
V	51	He	28.357	3.37	67141	0.04	
Cr	52	He	8.856	1.94	28736	0.03	
Cr	53	He	8.789	6.20	3514	0.25	
Mn	55	He	82.700	0.28	112126	0.07	
Co	59	He	3.545	1.76	20586	0.02	
Ni	60	He	7.105	0.83	11675	0.06	
Ni	62	He	6.892	3.35	1791	0.38	
Cu	63	He	39.947	1.37	188642	0.02	
Cu	65	He	40.409	1.91	93643	0.04	
Zn	66	He	1487.594	0.83	873363	0.17	
As	75	He	5.112	5.88	1760	0.29	
Se	77	H2	0.322	39.44	467	0.07	
Se	78	H2	0.156	19.11	112	0.14	
Mo	95	He	0.984	3.18	2259	0.04	
Mo	97	He	0.909	2.94	1405	0.06	
Mo	98	He	0.949	7.36	3842	0.02	
Ag	107	He	0.455	3.40	3935	0.01	
Ag	109	He	0.450	2.63	3864	0.01	
Cd	111	He	6.584	2.04	6570	0.10	
Cd	114	He	6.645	0.62	16826	0.04	
Sb	121	He	0.683	0.89	1661	0.04	
Sb	123	He	0.666	2.75	1312	0.05	
Ba	135	He	40.096	4.67	15839	0.25	
Ba	137	He	42.125	2.05	29891	0.14	
Tl	203	He	0.052	9.68	398	0.01	
Tl	205	He	0.050	12.53	930	0.01	
[Pb]	206	He	53.645	1.53	291937	0.02	
[Pb]	207	He	51.873	1.02	254116	0.02	
Pb	208	He	52.737	0.63	1182071	0.00	

2/20/18

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1084210	1.23	1237359	87.62	70	125	
Sc	45	No Gas	4429862	0.29	4599003	96.32	70	125	
Ge	72	He	86216	1.65	93707	92.01	70	125	
Ge	72	H2	907246	0.96	953332	95.17	70	125	
In	115	He	783539	1.49	851093	92.06	70	125	
Lu	175	He	2046365	1.00	2126367	96.24	70	125	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name K1801267-009A
 Data File Name 047_PDS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:44:38-08:00
 Sample Type PDS
 Dilution 1
 Comment 5X
 QC Ref File Name 044_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

X NA MS is in control

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	51.885	2.581	166638	0.94	50	103	
V	51	He	184.601	2.564	439639	0.51	50	89	
Cr	52	He	89.414	2.501	289719	0.24	50	93	
Cr	53	He	89.991	3.343	35605	1.57	50	94	
Mn	55	He	436.349	1.825	594921	0.83	50	74	Flag
Co	59	He	64.171	1.637	374871	1.72	50	94	
Ni	60	He	79.975	1.913	131488	1.11	50	94	
Ni	62	He	79.555	1.669	20646	2.91	50	94	
Cu	63	He	229.569	1.103	1089038	2.00	50	82	
Cu	65	He	233.095	1.279	542639	1.35	50	81	
Zn	66	He	6770.483	1.736	4003513	2.77	50	-519	Flag
As	75	He	72.209	1.900	24930	0.88	50	94	
Se	77	H2	52.137	2.472	10342	2.11	50	101	
Se	78	H2	50.012	0.420	30235	0.72	50	98	
Mo	95	He	53.383	2.364	121710	1.61	50	97	
Mo	97	He	52.846	1.179	81149	0.98	50	96	
Mo	98	He	52.830	1.657	212736	1.29	50	96	
Ag	107	He	11.194	0.295	96424	1.71	10	90	
Ag	109	He	11.217	0.934	95873	0.59	10	90	
Cd	111	He	78.592	0.924	78265	0.84	50	91	
Cd	114	He	79.863	1.175	201764	0.43	50	94	
Sb	121	He	52.021	0.669	119235	1.15	50	97	
Sb	123	He	51.938	0.469	96702	1.38	50	97	
Ba	135	He	244.061	0.817	96231	2.29	50	76	Flag
Ba	137	He	249.597	0.552	176798	1.04	50	84	
Tl	203	He	47.008	1.538	328732	0.83	50	93	
Tl	205	He	46.398	0.727	784855	1.19	50	92	
[Pb]	206	He	294.900	0.399	1614598	1.95	50	65	Flag
[Pb]	207	He	291.156	1.663	1434935	2.42	50	78	Flag
Pb	208	He	289.088	1.362	6519040	2.58	50	69	Flag

X
2/20/18

MR

X

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1064567	2.33	1237359	86.04	70	125	
Sc	45	No Gas	4606387	2.10	4599003	100.16	70	125	
Ge	72	He	86845	2.63	93707	92.68	70	125	
Ge	72	H2	888173	0.40	953332	93.17	70	125	
In	115	He	782154	1.48	851093	91.90	70	125	
Lu	175	He	2059100	1.76	2126367	96.84	70	125	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name KQ1801937-01
 Data File Name 048_Spk.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:47:34-08:00
 Sample Type Spike
 Dilution 1
 Comment 5X
 QC Ref File Name 044_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

102
3/2/2018

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	21.653	0.653	70177	1.30	20	105	
V	51	He	357.373	0.643	824800	0.40	200	109	
Cr	52	He	125.877	1.248	395182	0.41	80	104	
Cr	53	He	126.561	1.109	48509	0.46	80	104	
Mn	55	He	623.279	1.542	823433	1.49	200	112	
Co	59	He	218.236	1.612	1235229	0.94	200	101	
Ni	60	He	236.015	0.846	375880	0.64	200	102	
Ni	62	He	233.497	0.900	58678	1.19	200	100	
Cu	63	He	267.790	1.580	1230777	1.66	100	79	
Cu	65	He	274.822	1.003	619873	0.30	100	82	
Zn	66	He	7609.468	2.857	4358832	1.97	200	290	Flag
As	75	He	224.851	1.934	75209	1.59	200	100	
Se	77	H2	205.424	0.786	39127	1.09	200	102	
Se	78	H2	201.068	0.770	120097	0.77	200	100	
Mo	95	He	207.815	0.463	456143	0.64	200	101	
Mo	97	He	208.607	1.160	308346	0.50	200	102	
Mo	98	He	205.966	1.190	798393	0.77	200	101	
Ag	107	He	21.497	1.036	178231	0.73	20	97	
Ag	109	He	21.808	0.471	179442	0.70	20	98	
Cd	111	He	55.196	0.760	52915	0.57	20	111	
Cd	114	He	55.969	0.236	136132	0.85	20	115	
Sb	121	He	117.035	0.712	258112	0.20	200	57	Flag
Sb	123	He	116.108	1.037	208009	0.38	200	56	Flag
Ba	135	He	649.382	0.634	246444	0.68	400	111	
Ba	137	He	664.607	1.490	453150	0.89	400	114	
Tl	203	He	40.180	0.832	275241	0.54	40	100	
Tl	205	He	40.352	1.436	668557	0.92	40	100	
[Pb]	206	He	447.905	0.584	2401734	0.52	200	93	
[Pb]	207	He	444.431	1.580	2145067	0.56	200	96	
Pb	208	He	439.876	2.460	9713359	1.58	200	93	

3/2/2018

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1073751	0.85	1237359	86.78	70	125	
Sc	45	No Gas	4702242	0.54	4599003	102.24	70	125	
Ge	72	He	84137	1.00	93707	89.79	70	125	
Ge	72	H2	877841	0.34	953332	92.08	70	125	
In	115	He	752915	0.67	851093	88.46	70	125	
Lu	175	He	2016794	1.08	2126367	94.85	70	125	

Sample Report

Sample Table

Sample Name K1801267-001
 Data File Name 049SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:51:10-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.892	2.24	2862	0.03	
V	51	He	187.889	0.80	444612	0.04	
Cr	52	He	109.645	0.99	352939	0.03	
Cr	53	He	110.829	1.67	43558	0.25	
Mn	55	He	661.727	0.52	896237	0.07	
Co	59	He	25.226	0.97	146402	0.02	
Ni	60	He	109.885	0.72	179456	0.06	
Ni	62	He	110.224	0.30	28405	0.39	
Cu	63	He	404.872	2.38	1907318	0.02	
Cu	65	He	416.633	0.75	963269	0.04	
Zn	66	He	9340.853	1.53	5486038	0.17	>LDR
As	75	He	88.359	1.38	30305	0.29	
Se	77	H2	1.988	7.61	770	0.26	
Se	78	H2	1.236	0.59	758	0.16	
Mo	95	He	14.705	0.87	33016	0.04	
Mo	97	He	14.422	1.12	21807	0.07	
Mo	98	He	14.579	0.60	57807	0.03	
Ag	107	He	5.129	1.43	43492	0.01	
Ag	109	He	5.159	1.35	43411	0.01	
Cd	111	He	42.927	0.68	42083	0.10	
Cd	114	He	43.791	0.11	108916	0.04	
Sb	121	He	20.866	0.35	47135	0.04	
Sb	123	He	20.744	1.20	38059	0.05	
Ba	135	He	346.476	1.27	134453	0.26	
Ba	137	He	350.324	0.37	244266	0.14	
Tl	203	He	0.363	4.93	2555	0.01	
Tl	205	He	0.360	1.39	6135	0.01	
[Pb]	206	He	1117.353	0.64	6073774	0.02	
[Pb]	207	He	1080.926	0.45	5289252	0.02	
Pb	208	He	1093.479	0.55	24481535	0.00	

3 2/20/18

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1058513	1.82	1237359	85.55	70	125	
Sc	45	No Gas	4826588	1.41	4599003	104.95	70	125	
Ge	72	He	86253	0.18	93707	92.05	70	125	
Ge	72	H2	883128	0.31	953332	92.64	70	125	
In	115	He	769907	0.66	851093	90.46	70	125	
Lu	175	He	2044512	0.56	2126367	96.15	70	125	

Sample Report

Sample Table

Sample Name K1801267-013
 Data File Name 050SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:54:05-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.901	5.33	2871	0.03	
V	51	He	158.002	0.74	377986	0.04	
Cr	52	He	105.377	1.01	342917	0.03	
Cr	53	He	106.865	1.17	42461	0.25	
Mn	55	He	530.638	1.07	726570	0.07	
Co	59	He	21.154	1.43	124111	0.02	
Ni	60	He	58.625	0.74	96828	0.06	
Ni	62	He	58.898	3.19	15351	0.38	
Cu	63	He	239.762	0.87	1142086	0.02	
Cu	65	He	243.047	0.95	568191	0.04	
Zn	66	He	432.652	0.59	257001	0.17	
As	75	He	32.950	0.73	11431	0.29	
Se	77	H2	1.972	3.46	777	0.25	
Se	78	H2	0.884	5.81	553	0.16	
Mo	95	He	4.409	2.29	9957	0.04	
Mo	97	He	4.185	2.17	6366	0.07	
Mo	98	He	4.341	1.34	17314	0.03	
Ag	107	He	2.583	1.36	22021	0.01	
Ag	109	He	2.590	1.06	21913	0.01	
Cd	111	He	2.374	1.48	2342	0.10	
Cd	114	He	2.761	2.57	6910	0.04	
Sb	121	He	3.648	2.50	8361	0.04	
Sb	123	He	3.669	2.07	6824	0.05	
Ba	135	He	213.437	0.78	83268	0.26	
Ba	137	He	215.980	0.73	151391	0.14	
Tl	203	He	0.274	1.77	1986	0.01	
Tl	205	He	0.281	2.18	4927	0.01	
[Pb]	206	He	222.306	0.98	1239601	0.02	
[Pb]	207	He	218.059	0.85	1094512	0.02	
Pb	208	He	218.895	1.05	5026902	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1052155	2.46	1237359	85.03	70	125	
Sc	45	No Gas	4832820	2.03	4599003	105.08	70	125	
Ge	72	He	87194	0.21	93707	93.05	70	125	
Ge	72	H2	893924	1.69	953332	93.77	70	125	
In	115	He	773952	0.32	851093	90.94	70	125	
Lu	175	He	2097146	0.79	2126367	98.63	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 051_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T11:57:02-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

3/2/2018
 See
 Penman

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	24.245	1.130	76421	1.07	25	97	
V	51	He	24.100	2.207	53782	3.74	25	96	
Cr	52	He	23.935	2.097	72740	3.62	25	96	
Cr	53	He	24.570	1.357	9136	1.30	25	98	
Mn	55	He	23.827	3.117	30544	1.66	25	95	
Co	59	He	24.185	2.058	132147	3.31	25	97	
Ni	60	He	24.583	2.984	37862	4.46	25	98	
Ni	62	He	24.053	3.162	5849	4.65	25	96	
Cu	63	He	24.114	1.541	107491	2.71	25	96	
Cu	65	He	24.863	0.585	54380	1.51	25	99	
Zn	66	He	25.529	2.990	14234	3.90	25	102	
As	75	He	24.203	1.520	7820	1.64	25	97	
Se	77	H2	31.882	27.875	4945	0.91	25	128	
Se	78	H2	30.767	24.806	14234	0.91	25	123	CCV Failed
Mo	95	He	12.371	2.149	26225	2.57	12.5	99	
Mo	97	He	12.320	2.044	17586	0.93	12.5	99	
Mo	98	He	12.126	1.202	45395	1.64	12.5	97	
Ag	107	He	12.126	1.701	97088	2.98	12.5	97	
Ag	109	He	12.136	1.010	96412	1.68	12.5	97	
Cd	111	He	24.147	0.771	22354	2.15	25	97	
Cd	114	He	24.221	0.702	56897	3.12	25	97	
Sb	121	He	12.199	0.857	26064	3.49	12.5	98	
Sb	123	He	12.231	0.854	21220	3.10	12.5	98	
Ba	135	He	23.752	3.354	8714	5.97	25	95	
Ba	137	He	24.297	0.630	16002	2.13	25	97	
Tl	203	He	24.234	1.314	156999	2.22	25	97	
Tl	205	He	24.168	1.042	378730	2.36	25	97	
[Pb]	206	He	24.421	1.950	123905	2.11	25	98	
[Pb]	207	He	24.369	2.355	111290	2.65	25	97	
Pb	208	He	24.382	1.991	509445	2.08	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1044445	2.01	1237359	84.41	70	125	
Sc	45	No Gas	4125021	4.56	4599003	89.69	70	125	
Ge	72	He	81193	1.56	93707	86.65	70	125	
Ge	72	H2	705859	22.75	953332	74.04	70	125	
In	115	He	727065	2.64	851093	85.43	70	125	
Lu	175	He	1907189	2.07	2126367	89.69	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 052_CC.V.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:00:00-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	25.074	2.023	79793	0.72	25	100	
V	51	He	24.056	1.854	57046	1.32	25	96	
Cr	52	He	24.070	1.075	77733	0.90	25	96	
Cr	53	He	24.711	2.273	9766	1.68	25	99	
Mn	55	He	23.787	1.981	32422	1.76	25	95	
Co	59	He	24.315	1.275	141198	1.06	25	97	
Ni	60	He	24.419	1.091	39966	0.53	25	98	
Ni	62	He	24.316	1.994	6282	1.52	25	97	
Cu	63	He	24.468	1.059	115915	0.96	25	98	
Cu	65	He	24.734	0.780	57506	0.44	25	99	
Zn	66	He	24.831	1.561	14718	1.02	25	99	
As	75	He	24.008	1.550	8245	0.97	25	96	
Se	77	H2	24.429	3.030	5139	2.14	25	98	
Se	78	H2	23.846	1.389	14662	0.53	25	95	
Mo	95	He	12.086	1.285	27418	0.46	12.5	97	
Mo	97	He	11.909	1.787	18194	1.80	12.5	95	
Mo	98	He	12.095	1.216	48457	0.97	12.5	97	
Ag	107	He	12.180	0.478	104343	0.82	12.5	97	
Ag	109	He	12.142	2.086	103223	1.24	12.5	97	
Cd	111	He	24.221	1.640	23992	1.01	25	97	
Cd	114	He	24.198	0.758	60814	0.40	25	97	
Sb	121	He	12.205	0.666	27898	1.56	12.5	98	
Sb	123	He	12.031	2.179	22333	1.78	12.5	96	
Ba	135	He	23.778	1.700	9328	2.16	25	95	
Ba	137	He	24.322	0.182	17141	1.06	25	97	
Tl	203	He	24.176	2.357	166220	0.73	25	97	
Tl	205	He	24.165	3.007	401821	1.00	25	97	
[Pb]	206	He	24.363	3.144	131173	0.82	25	97	
[Pb]	207	He	24.090	2.848	116751	0.38	25	96	
Pb	208	He	24.185	2.941	536281	0.19	25	97	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1054655	2.24	1237359	85.23	70	125	
Sc	45	No Gas	4243029	1.60	4599003	92.26	70	125	
Ge	72	He	86305	0.59	93707	92.10	70	125	
Ge	72	H2	902892	0.86	953332	94.71	70	125	
In	115	He	777939	0.89	851093	91.40	70	125	
Lu	175	He	2024926	3.03	2126367	95.23	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 053_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:12:24-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	14239.3	12	27.6	0.04	
V	51	He	-0.005	-276.8	92	36.9	0.4	
Cr	52	He	0.003	408.7	278	13.6	0.4	
Cr	53	He	-0.009	-164.7	60	9.6	0.4	
Mn	55	He	-0.037	-90.1	143	32.2	0.1	
Co	59	He	0.001	265.9	31	72.9	0.04	
Ni	60	He	0.004	444.6	89	34.8	0.4	
Ni	62	He	-0.003	-805.1	16	44.6	0.4	
Cu	63	He	-0.036	-23.9	452	9.4	0.2	
Cu	65	He	-0.014	-210.2	273	24.4	0.2	
Zn	66	He	0.135	36.9	206	14.2	1	
As	75	He	-0.011	-80.5	5	60.3	1	
Se	77	H2	-0.032	-459.4	398	7.3	20	
Se	78	H2	-0.012	-60.6	8	57.3	2	
Mo	95	He	0.002	277.4	14	81.1	0.1	
Mo	97	He	0.000	299.4	8	24.7	0.1	
Mo	98	He	0.004	80.5	31	40.6	0.1	
Ag	107	He	0.001	154.3	20	76.4	0.04	
Ag	109	He	0.000	102.0	13	25.0	0.04	
Cd	111	He	0.001	251.0	3	43.3	0.04	
Cd	114	He	0.001	38.4	9	11.2	0.04	
Sb	121	He	0.001	1829.5	96	32.4	0.1	
Sb	123	He	0.003	201.9	76	11.3	0.1	
Ba	135	He	-0.002	-455.7	3	100.1	0.1	
Ba	137	He	0.005	85.2	8	34.6	0.1	
Tl	203	He	0.001	127.1	43	30.8	0.04	
Tl	205	He	-0.001	-262.7	82	30.4	0.04	
[Pb]	206	He	0.032	19.4	263	11.0	0.1	
[Pb]	207	He	0.032	3.9	226	1.7	0.1	
Pb	208	He	0.032	10.8	1039	5.5	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1077346	0.81	1237359	87.07	70	125	
Sc	45	No Gas	4547110	2.34	4599003	98.87	70	125	
Ge	72	He	86376	0.89	93707	92.18	70	125	
Ge	72	H2	908867	0.19	953332	95.34	70	125	
In	115	He	779148	1.80	851093	91.55	70	125	
Lu	175	He	2036646	3.15	2126367	95.78	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS
 Data File Name 054LLCCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:15:22-08:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.043	14.158	152	11.89	0.04	107	
V	51	He	0.375	0.403	992	0.19	0.4	94	
Cr	52	He	0.381	3.688	1492	3.21	0.4	95	
Cr	53	He	0.367	18.108	208	12.97	0.4	92	
Mn	55	He	-0.027	135.047	157	32.13	0.1	27	LLCCV Failed
Co	59	He	0.040	14.340	256	13.58	0.04	100	
Ni	60	He	0.398	20.143	731	17.38	0.4	100	
Ni	62	He	0.368	14.905	111	12.13	0.4	92	
Cu	63	He	0.141	13.456	1281	6.40	0.2	70	
Cu	65	He	0.164	24.621	683	13.10	0.2	82	
Zn	66	He	1.163	4.987	809	3.74	1	116	
As	75	He	0.998	3.741	351	3.48	1	100	
Se	77	H2	1.835	18.221	759	9.50	2	92	
Se	78	H2	1.980	0.888	1233	0.35	2	99	
Mo	95	He	0.093	16.437	221	16.60	0.1	93	
Mo	97	He	0.094	21.371	150	21.20	0.1	94	
Mo	98	He	0.107	14.682	442	13.82	0.1	107	
Ag	107	He	0.037	5.016	323	5.74	0.04	92	
Ag	109	He	0.036	6.933	319	6.04	0.04	91	
Cd	111	He	0.038	28.629	41	26.09	0.04	96	
Cd	114	He	0.040	8.431	107	6.82	0.04	99	
Sb	121	He	0.100	14.877	321	11.61	0.1	100	
Sb	123	He	0.097	21.658	250	14.44	0.1	97	
Ba	135	He	0.137	25.082	58	23.32	0.1	137	
Ba	137	He	0.110	10.853	82	10.40	0.1	110	
Tl	203	He	0.040	9.063	311	8.04	0.04	101	
Tl	205	He	0.033	4.405	649	3.72	0.04	83	
[Pb]	206	He	0.124	12.301	763	10.86	0.1	124	
[Pb]	207	He	0.134	8.338	719	7.42	0.1	134	
Pb	208	He	0.128	5.590	3172	3.89	0.1	128	

*see 1.0 ppb
3/2/2018*

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1083084	1.68	1237359	87.53	70	125	
Sc	45	No Gas	4427305	3.39	4599003	96.27	70	125	
Ge	72	He	86245	0.55	93707	92.04	70	125	
Ge	72	H2	903866	1.22	953332	94.81	70	125	
In	115	He	776455	1.16	851093	91.23	70	125	
Lu	175	He	2033729	2.96	2126367	95.64	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS
 Data File Name 055LLCCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:18:34-08:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

not used
 2/20/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.045	2.313	156	0.74	0.04	113	
V	51	He	0.424	2.494	1108	1.06	0.4	106	
Cr	52	He	0.377	0.851	1483	0.59	0.4	94	
Cr	53	He	0.406	9.917	223	8.31	0.4	102	
Mn	55	He	0.061	38.208	277	11.04	-1	-6	LLCCV Failed
Co	59	He	0.036	11.677	231	10.43	0.04	90	
Ni	60	He	0.349	1.275	652	1.64	0.4	87	
Ni	62	He	0.389	22.413	117	20.00	0.4	97	
Cu	63	He	0.171	11.744	1423	6.92	0.2	85	
Cu	65	He	0.164	7.721	684	4.52	0.2	82	
Zn	66	He	0.993	5.505	710	5.69	1	99	
As	75	He	0.984	2.939	347	2.51	1	98	
Se	77	H2	2.111	4.420	808	2.37	2	106	
Se	78	H2	1.927	0.756	1194	0.80	2	96	
Mo	95	He	0.099	10.671	234	11.49	0.1	99	
Mo	97	He	0.087	18.504	140	16.50	0.1	87	
Mo	98	He	0.106	5.684	438	5.07	0.1	106	
Ag	107	He	0.034	6.044	298	4.66	0.04	84	
Ag	109	He	0.035	7.104	308	8.13	0.04	88	
Cd	111	He	0.042	22.242	45	21.87	0.04	105	
Cd	114	He	0.039	9.912	106	8.91	0.04	98	
Sb	121	He	0.097	5.810	314	5.34	0.1	97	
Sb	123	He	0.106	4.177	267	3.48	0.1	106	
Ba	135	He	0.103	35.880	44	33.82	0.1	103	
Ba	137	He	0.102	11.513	77	9.96	0.1	102	
Tl	203	He	0.033	4.162	256	3.28	0.04	82	
Tl	205	He	0.038	18.721	718	15.82	0.04	95	
[Pb]	206	He	0.132	6.511	793	4.95	0.1	132	
[Pb]	207	He	0.117	10.995	626	9.02	0.1	117	
Pb	208	He	0.126	2.712	3078	1.49	0.1	126	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1063507	1.44	1237359	85.95	70	125	
Sc	45	No Gas	4475907	1.03	4599003	97.32	70	125	
Ge	72	He	86328	1.21	93707	92.13	70	125	
Ge	72	H2	898924	0.94	953332	94.29	70	125	
In	115	He	777505	1.27	851093	91.35	70	125	
Lu	175	He	2002258	0.96	2126367	94.16	70	125	

Sample Report

Sample Table

Sample Name LLCCVS 1.0 ppb
 Data File Name 056SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:21:33-08:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.955	1.39	3069	0.03	
V	51	He	0.990	1.78	2400	0.04	
Cr	52	He	0.982	2.53	3360	0.03	
Cr	53	He	0.923	6.24	418	0.22	
Mn	55	He	0.952	18.95	1453	0.07	
Co	59	He	0.951	3.39	5435	0.02	
Ni	60	He	1.236	5.35	2059	0.06	
Ni	62	He	1.137	11.72	303	0.37	
Cu	63	He	1.010	4.34	5272	0.02	
Cu	65	He	1.013	1.84	2595	0.04	
Zn	66	He	2.847	1.35	1763	0.16	
As	75	He	1.022	5.90	353	0.29	
Se	77	H2	0.911	18.19	566	0.16	
Se	78	H2	0.923	6.44	570	0.16	
Mo	95	He	0.527	6.56	1181	0.04	
Mo	97	He	0.522	2.39	789	0.07	
Mo	98	He	0.491	2.89	1945	0.03	
Ag	107	He	0.473	1.46	3985	0.01	
Ag	109	He	0.476	8.37	3978	0.01	
Cd	111	He	0.939	1.39	915	0.10	
Cd	114	He	0.966	1.56	2389	0.04	
Sb	121	He	0.498	2.93	1204	0.04	
Sb	123	He	0.510	1.82	994	0.05	
Ba	135	He	0.900	13.21	350	0.26	
Ba	137	He	0.990	6.63	689	0.14	
Tl	203	He	0.950	3.38	6355	0.01	
Tl	205	He	0.956	4.40	15469	0.01	
[Pb]	206	He	0.970	2.69	5144	0.02	
[Pb]	207	He	1.003	3.45	4770	0.02	
Pb	208	He	0.987	4.34	21498	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1060605	1.46	1237359	85.72	70	125	
Sc	45	No Gas	4377078	0.69	4599003	95.17	70	125	
Ge	72	He	84611	0.84	93707	90.29	70	125	
Ge	72	H2	883674	1.04	953332	92.69	70	125	
In	115	He	763024	0.74	851093	89.65	70	125	
Lu	175	He	1961001	2.59	2126367	92.22	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1802144-01
 Data File Name 057_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:24:31-08:00
 Sample Type PB
 Dilution 1
 Comment 10X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

3/2/2018

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	-0.001	-74.1	9	17.6	0.04	
V	51	He	-0.008	-208.8	83	45.4	0.4	
Cr	52	He	0.015	51.0	310	7.5	0.4	
Cr	53	He	0.026	36.1	72	5.3	0.4	
Mn	55	He	0.034	262.5	233	49.3	0.1	
Co	59	He	0.000	18820.6	22	67.6	0.04	
Ni	60	He	0.005	79.8	88	7.9	0.4	
Ni	62	He	-0.011	-499.9	13	100.0	0.4	
Cu	63	He	0.006	295.7	633	13.3	0.2	
Cu	65	He	0.009	216.8	320	15.3	0.2	
Zn	66	He	0.494	20.0	408	14.7	1	
As	75	He	0.005	314.2	11	48.1	1	
Se	77	H2	-0.056	-264.0	384	7.0	2	
Se	78	H2	-0.005	-135.7	12	36.3	2	
Mo	95	He	0.013	19.1	38	13.5	0.1	
Mo	97	He	0.006	210.6	16	118.0	0.1	
Mo	98	He	0.009	16.7	50	11.5	0.1	
Ag	107	He	0.000	188.0	13	50.0	0.04	
Ag	109	He	0.001	108.2	14	35.3	0.04	
Cd	111	He	0.001	109.6	4	37.5	0.04	
Cd	114	He	0.001	15.5	10	5.3	0.04	
Sb	121	He	0.120	49.2	353	35.9	0.1	Flag
Sb	123	He	0.138	46.6	314	35.8	0.1	Flag
Ba	135	He	-0.002	-3.9	3	0.0	0.1	
Ba	137	He	0.021	24.0	19	18.4	0.1	
Tl	203	He	0.004	22.7	57	10.2	0.04	
Tl	205	He	0.003	22.0	128	8.0	0.04	
[Pb]	206	He	0.046	23.8	324	17.2	0.1	
[Pb]	207	He	0.044	17.8	269	12.7	0.1	
Pb	208	He	0.046	14.4	1273	10.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1026667	2.96	1237359	82.97	70	125	
Sc	45	No Gas	4410136	2.66	4599003	95.89	70	125	
Ge	72	He	84467	1.00	93707	90.14	70	125	
Ge	72	H2	887301	0.80	953332	93.07	70	125	
In	115	He	748737	0.68	851093	87.97	70	125	
Lu	175	He	1934074	1.00	2126367	90.96	70	125	

Sample Report

Sample Table

Sample Name KQ1802144-02
 Data File Name 058SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:27:29-08:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.952	2.33	2872	0.03	
V	51	He	9.696	1.67	21376	0.05	
Cr	52	He	3.939	1.53	12001	0.03	
Cr	53	He	3.807	5.59	1445	0.26	
Mn	55	He	8.689	2.23	11094	0.08	
Co	59	He	9.450	0.86	50891	0.02	
Ni	60	He	9.473	1.43	14420	0.07	
Ni	62	He	9.360	0.46	2251	0.42	
Cu	63	He	4.946	1.16	22178	0.02	
Cu	65	He	5.020	3.32	11047	0.05	
Zn	66	He	10.727	3.56	5960	0.18	
As	75	He	18.890	1.69	6017	0.31	
Se	77	H2	19.177	1.97	3811	0.50	
Se	78	H2	19.046	1.04	10833	0.18	
Mo	95	He	0.031	13.98	72	0.04	
Mo	97	He	0.020	42.74	33	0.06	
Mo	98	He	0.015	14.86	69	0.02	
Ag	107	He	0.958	4.41	7387	0.01	
Ag	109	He	0.987	3.65	7553	0.01	
Cd	111	He	0.938	3.10	838	0.11	
Cd	114	He	0.972	1.17	2204	0.04	
Sb	121	He	10.313	1.14	21216	0.05	
Sb	123	He	10.391	2.06	17359	0.06	
Ba	135	He	19.017	3.05	6714	0.28	
Ba	137	He	19.910	2.25	12619	0.16	
Tl	203	He	3.942	1.15	24275	0.02	
Tl	205	He	3.964	0.79	59056	0.01	
[Pb]	206	He	9.678	1.18	46675	0.02	
[Pb]	207	He	9.917	1.62	43037	0.02	
Pb	208	He	9.783	1.29	194258	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	996292	1.01	1237359	80.52	70	125	
Sc	45	No Gas	4225687	2.26	4599003	91.88	70	125	
Ge	72	He	80008	0.64	93707	85.38	70	125	
Ge	72	H2	835005	0.55	953332	87.59	70	125	
In	115	He	699761	1.91	851093	82.22	70	125	
Lu	175	He	1810936	2.03	2126367	85.17	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1802144-01
 Data File Name 059_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:32:02-08:00
 Sample Type PB
 Dilution 1
 Comment 10X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.000	-1311.0	10	29.6	0.04	
V	51	He	0.004	374.8	107	28.6	0.4	
Cr	52	He	0.018	100.1	308	18.5	0.4	
Cr	53	He	0.037	94.2	73	16.4	0.4	
Mn	55	He	-0.031	-79.9	143	22.4	0.1	
Co	59	He	0.000	314.1	23	28.6	0.04	
Ni	60	He	0.009	134.8	91	20.1	0.4	
Ni	62	He	-0.004	-1386.7	14	93.3	0.4	
Cu	63	He	0.055	33.3	829	10.7	0.2	
Cu	65	He	0.040	56.2	374	13.0	0.2	
Zn	66	He	0.368	13.8	322	7.8	1	
As	75	He	0.002	608.0	9	40.6	1	
Se	77	H2	-0.254	-48.1	332	5.8	2	
Se	78	H2	-0.007	-51.5	10	20.1	2	
Mo	95	He	0.002	143.3	13	43.3	0.1	
Mo	97	He	0.006	47.1	14	26.7	0.1	
Mo	98	He	0.003	118.5	23	49.5	0.1	
Ag	107	He	0.003	54.1	34	39.1	0.04	
Ag	109	He	0.001	256.9	14	93.2	0.04	
Cd	111	He	0.000	-1107706.2	3	87.2	0.04	
Cd	114	He	0.001	54.6	9	16.7	0.04	
Sb	121	He	-0.011	-37.2	62	12.7	0.1	
Sb	123	He	-0.005	-79.1	55	13.9	0.1	
Ba	135	He	0.027	35.5	13	25.0	0.1	
Ba	137	He	0.028	15.2	22	11.5	0.1	
Tl	203	He	-0.001	-292.0	24	61.5	0.04	
Tl	205	He	-0.002	-47.6	47	35.7	0.04	
[Pb]	206	He	0.056	9.5	353	6.8	0.1	
[Pb]	207	He	0.064	9.7	342	8.2	0.1	
Pb	208	He	0.057	2.5	1432	2.6	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	979805	0.44	1237359	79.19	70	125	
Sc	45	No Gas	4150580	0.51	4599003	90.25	70	125	
Ge	72	He	81324	1.00	93707	86.79	70	125	
Ge	72	H2	850345	1.07	953332	89.20	70	125	
In	115	He	704991	1.05	851093	82.83	70	125	
Lu	175	He	1829990	0.77	2126367	86.06	70	125	

All Reference Sample Report

Sample Table

Sample Name K1801609-001
 Data File Name 060_ARF.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:35:00-08:00
 Sample Type AllRef
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.107	9.46	317	0.03	
V	51	He	11.513	1.31	24403	0.05	
Cr	52	He	1.599	3.52	4828	0.03	
Cr	53	He	1.761	3.98	673	0.26	
Mn	55	He	30.895	1.82	37512	0.08	
Co	59	He	1.099	3.21	5712	0.02	
Ni	60	He	2.191	3.56	3265	0.07	
Ni	62	He	2.228	5.33	527	0.42	
Cu	63	He	0.269	14.46	1682	0.02	
Cu	65	He	0.379	4.60	1054	0.04	
Zn	66	He	1.999	3.94	1160	0.17	
As	75	He	0.054	46.48	25	0.22	
Se	77	H2	-0.074	-107.42	344	-0.02	
Se	78	H2	0.019	89.39	24	0.08	
Mo	95	He	0.089	8.15	181	0.05	
Mo	97	He	0.089	6.17	122	0.07	
Mo	98	He	0.092	10.46	328	0.03	
Ag	107	He	0.003	34.92	31	0.01	
Ag	109	He	0.005	31.08	46	0.01	
Cd	111	He	0.001	248.53	3	0.03	
Cd	114	He	0.017	16.79	43	0.04	
Sb	121	He	0.041	24.79	161	0.03	
Sb	123	He	0.042	17.68	127	0.03	
Ba	135	He	621.418	1.62	209037	0.30	
Ba	137	He	637.152	1.31	385079	0.17	
Tl	203	He	0.021	13.17	151	0.01	
Tl	205	He	0.018	22.89	336	0.01	
[Pb]	206	He	0.265	7.00	1291	0.02	
[Pb]	207	He	0.264	9.75	1144	0.02	
Pb	208	He	0.266	3.55	5279	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	946822	0.85	1237359	76.52	70	125	
Sc	45	No Gas	4130012	0.89	4599003	89.80	70	125	
Ge	72	He	76977	0.70	93707	82.15	70	125	
Ge	72	H2	800784	0.47	953332	84.00	70	125	
In	115	He	667334	0.67	851093	78.41	70	125	
Lu	175	He	1721620	2.24	2126367	80.97	70	125	

Sample Report

Sample Table

Sample Name KQ1802144-03
 Data File Name 061SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:37:58-08:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.093	6.19	267	0.03	
V	51	He	10.899	0.54	21941	0.05	
Cr	52	He	1.554	4.71	4461	0.03	
Cr	53	He	1.545	6.24	568	0.27	
Mn	55	He	29.991	0.65	34582	0.09	
Co	59	He	1.063	3.35	5248	0.02	
Ni	60	He	2.100	0.69	2975	0.07	
Ni	62	He	1.995	8.47	449	0.44	
Cu	63	He	0.217	13.32	1392	0.02	
Cu	65	He	0.248	6.61	743	0.03	
Zn	66	He	2.275	4.12	1239	0.18	
As	75	He	0.048	31.20	22	0.22	
Se	77	H2	-0.300	-28.23	295	-0.10	
Se	78	H2	-0.006	-127.27	10	-0.06	
Mo	95	He	0.093	18.99	183	0.05	
Mo	97	He	0.070	20.27	94	0.07	
Mo	98	He	0.111	10.03	383	0.03	
Ag	107	He	0.005	35.92	44	0.01	
Ag	109	He	0.004	25.88	39	0.01	
Cd	111	He	0.001	30.49	3	0.03	
Cd	114	He	0.012	11.71	31	0.04	
Sb	121	He	0.018	69.39	113	0.02	
Sb	123	He	0.040	34.41	120	0.03	
Ba	135	He	603.470	1.18	196732	0.31	
Ba	137	He	609.668	1.19	357115	0.17	
Tl	203	He	0.013	26.26	102	0.01	
Tl	205	He	0.015	5.82	288	0.01	
[Pb]	206	He	0.244	1.79	1202	0.02	
[Pb]	207	He	0.241	4.40	1058	0.02	
Pb	208	He	0.239	1.54	4816	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	916377	0.30	1237359	74.06	70	125	
Sc	45	No Gas	4026144	1.17	4599003	87.54	70	125	
Ge	72	He	73099	2.12	93707	78.01	70	125	
Ge	72	H2	774976	1.33	953332	81.29	70	125	
In	115	He	646829	1.80	851093	76.00	70	125	
Lu	175	He	1732038	2.60	2126367	81.46	70	125	

Sample Report

Sample Table

Sample Name K1801609-001L
 Data File Name 062SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:41:26-08:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.020	31.30	66	0.03	
V	51	He	2.285	2.93	4747	0.05	
Cr	52	He	0.331	7.72	1149	0.03	
Cr	53	He	0.354	36.76	174	0.20	
Mn	55	He	5.878	4.97	7022	0.08	
Co	59	He	0.222	1.30	1128	0.02	
Ni	60	He	0.416	7.63	656	0.06	
Ni	62	He	0.357	12.19	93	0.38	
Cu	63	He	0.031	45.03	659	0.00	
Cu	65	He	0.037	43.53	336	0.01	
Zn	66	He	0.698	13.33	461	0.15	
As	75	He	0.005	356.68	9	0.05	
Se	77	H2	-0.202	-26.95	319	-0.06	
Se	78	H2	-0.004	-184.81	11	-0.04	
Mo	95	He	0.020	15.06	47	0.04	
Mo	97	He	0.022	24.48	34	0.06	
Mo	98	He	0.025	10.03	98	0.03	
Ag	107	He	0.001	74.51	18	0.01	
Ag	109	He	0.003	48.68	27	0.01	
Cd	111	He	0.001	122.38	3	0.03	
Cd	114	He	0.003	24.72	13	0.03	
Sb	121	He	0.000	1899.18	79	0.00	
Sb	123	He	-0.001	-722.87	57	0.00	
Ba	135	He	126.969	1.06	41663	0.30	
Ba	137	He	130.220	1.62	76770	0.17	
Tl	203	He	0.001	299.50	34	0.00	
Tl	205	He	0.001	107.38	101	0.00	
[Pb]	206	He	0.088	7.44	494	0.02	
[Pb]	207	He	0.079	16.94	394	0.02	
Pb	208	He	0.084	4.20	1922	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	932232	0.29	1237359	75.34	70	125	
Sc	45	No Gas	3945629	1.42	4599003	85.79	70	125	
Ge	72	He	74312	1.00	93707	79.30	70	125	
Ge	72	H2	793208	0.90	953332	83.20	70	125	
In	115	He	650943	0.16	851093	76.48	70	125	
Lu	175	He	1778371	0.23	2126367	83.63	70	125	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name K1801609-001A
 Data File Name 063_PDS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:44:25-08:00
 Sample Type PDS
 Dilution 1
 Comment 10X
 QC Ref File Name 060_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

X NA sample > 4x ms level

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	48.144	0.598	137903	0.78	50	96	
V	51	He	61.733	1.642	118613	1.81	50	100	
Cr	52	He	51.861	3.870	135561	2.76	50	101	
Cr	53	He	52.124	3.888	16648	2.63	50	101	
Mn	55	He	79.713	3.312	87727	1.17	50	98	
Co	59	He	50.502	2.676	237793	0.66	50	99	
Ni	60	He	52.017	2.178	68971	1.42	50	100	
Ni	62	He	52.604	3.448	11005	1.43	50	101	
Cu	63	He	49.634	1.860	190180	0.34	50	99	
Cu	65	He	49.938	2.107	93913	1.56	50	99	
Zn	66	He	52.470	2.268	25113	2.76	50	101	
As	75	He	48.454	1.143	13491	1.67	50	97	
Se	77	H2	49.555	2.355	8575	2.59	50	99	
Se	78	H2	49.750	1.594	26183	1.41	50	99	
Mo	95	He	50.660	4.683	93720	0.49	50	101	
Mo	97	He	50.255	4.080	62622	0.57	50	100	
Mo	98	He	50.112	4.016	163755	0.24	50	100	
Ag	107	He	9.767	3.602	68271	0.64	10	98	
Ag	109	He	9.805	3.930	68009	0.76	10	98	
Cd	111	He	48.811	4.488	39441	0.67	50	98	
Cd	114	He	49.869	3.664	102258	1.42	50	100	
Sb	121	He	49.775	2.877	92609	1.38	50	99	
Sb	123	He	49.186	4.428	74305	0.76	50	98	
Ba	135	He	652.537	3.087	208804	1.45	50	62	Flag
Ba	137	He	672.581	3.175	386675	1.27	50	71	Flag
Tl	203	He	48.386	7.286	285932	0.80	50	97	
Tl	205	He	48.450	6.938	692597	0.22	50	97	
[Pb]	206	He	48.557	7.155	224693	0.48	50	97	
[Pb]	207	He	48.924	7.841	203717	0.91	50	97	
Pb	208	He	48.829	7.898	930256	0.97	50	97	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	949114	1.29	1237359	76.70	70	125	
Sc	45	No Gas	3985090	1.80	4599003	86.65	70	125	
Ge	72	He	70010	2.18	93707	74.71	70	125	
Ge	72	H2	773198	0.33	953332	81.10	70	125	
In	115	He	635360	4.19	851093	74.65	70	125	
Lu	175	He	1745350	6.64	2126367	82.08	70	125	

Sample Report

Sample Table

Sample Name KQ1802144-08
 Data File Name 064SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:47:24-08:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

064
 2/22/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	1.117	1.16	3095	0.04	
V	51	He	20.877	2.21	41024	0.05	
Cr	52	He	5.581	3.54	15100	0.04	
Cr	53	He	5.931	4.96	1981	0.30	
Mn	55	He	39.256	3.44	44214	0.09	
Co	59	He	10.844	2.19	52182	0.02	
Ni	60	He	11.988	2.12	16291	0.07	
Ni	62	He	11.798	1.77	2534	0.47	
Cu	63	He	4.979	2.66	19946	0.02	
Cu	65	He	5.191	0.77	10200	0.05	
Zn	66	He	12.028	1.17	5962	0.20	
As	75	He	19.737	0.75	5618	0.35	
Se	77	H2	20.197	4.08	3639	0.56	
Se	78	H2	20.318	0.96	10531	0.19	
Mo	95	He	0.104	7.25	201	0.05	
Mo	97	He	0.116	24.36	150	0.08	
Mo	98	He	0.105	7.56	354	0.03	
Ag	107	He	0.992	0.26	6936	0.01	
Ag	109	He	0.967	4.51	6708	0.01	
Cd	111	He	0.994	2.56	805	0.12	
Cd	114	He	1.016	1.67	2086	0.05	
Sb	121	He	10.023	1.32	18692	0.05	
Sb	123	He	10.019	0.49	15173	0.07	
Ba	135	He	634.436	0.45	202820	0.31	
Ba	137	He	644.617	0.43	370276	0.17	
Tl	203	He	4.021	1.69	23766	0.02	
Tl	205	He	4.007	0.84	57296	0.01	
[Pb]	206	He	9.719	0.38	44994	0.02	
[Pb]	207	He	10.023	2.76	41737	0.02	
Pb	208	He	10.001	1.74	190594	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	915368	0.13	1237359	73.98	70	125	
Sc	45	No Gas	3867998	0.74	4599003	84.11	70	125	
Ge	72	He	71515	2.64	93707	76.32	70	125	
Ge	72	H2	760895	0.93	953332	79.81	70	125	
In	115	He	634242	0.75	851093	74.52	70	125	
Lu	175	He	1738240	2.30	2126367	81.75	70	125	

Sample Report

Sample Table

Sample Name K1801609-002
 Data File Name 065SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:53:37-08:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.091	5.73	272	0.03	
V	51	He	6.874	1.78	13527	0.05	
Cr	52	He	2.744	4.43	7515	0.04	
Cr	53	He	2.744	12.39	941	0.29	
Mn	55	He	5.447	7.57	6255	0.09	
Co	59	He	0.540	2.56	2608	0.02	
Ni	60	He	2.144	3.93	2959	0.07	
Ni	62	He	2.213	12.32	486	0.46	
Cu	63	He	0.172	10.62	1182	0.01	
Cu	65	He	0.504	15.61	1213	0.04	
Zn	66	He	3.367	3.09	1738	0.19	
As	75	He	0.052	24.79	22	0.23	
Se	77	H2	-0.211	-80.68	299	-0.07	
Se	78	H2	0.014	31.05	20	0.07	
Mo	95	He	0.232	9.41	442	0.05	
Mo	97	He	0.252	6.65	323	0.08	
Mo	98	He	0.248	3.48	831	0.03	
Ag	107	He	0.001	80.37	19	0.01	
Ag	109	He	0.002	68.62	23	0.01	
Cd	111	He	0.003	37.99	4	0.06	
Cd	114	He	0.017	5.80	41	0.04	
Sb	121	He	0.011	3.76	98	0.01	
Sb	123	He	0.013	73.06	79	0.02	
Ba	135	He	3051.584	1.35	987091	0.31	>LDR
Ba	137	He	3117.956	1.90	1812210	0.17	>LDR
Tl	203	He	0.021	17.11	152	0.01	
Tl	205	He	0.018	6.24	344	0.01	
[Pb]	206	He	0.247	8.02	1235	0.02	
[Pb]	207	He	0.265	1.12	1176	0.02	
Pb	208	He	0.251	3.79	5108	0.00	

3/2/2018

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	949249	1.21	1237359	76.72	70	125	
Sc	45	No Gas	3949632	1.68	4599003	85.88	70	125	
Ge	72	He	71300	2.25	93707	76.09	70	125	
Ge	72	H2	748681	4.12	953332	78.53	70	125	
In	115	He	641821	1.40	851093	75.41	70	125	
Lu	175	He	1760391	1.17	2126367	82.79	70	125	

Sample Report

Sample Table

Sample Name K1801609-003
 Data File Name 066SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:56:36-08:00
 Sample Type Sample
 Dilution 1
 Comment 10X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.068	9.07	198	0.03	
V	51	He	6.144	5.09	11883	0.05	
Cr	52	He	1.472	1.04	4061	0.04	
Cr	53	He	1.342	4.42	479	0.28	
Mn	55	He	64.594	1.32	71158	0.09	
Co	59	He	1.096	3.89	5182	0.02	
Ni	60	He	2.668	6.68	3599	0.07	
Ni	62	He	2.665	10.26	570	0.47	
Cu	63	He	0.080	11.75	810	0.01	
Cu	65	He	0.121	27.78	474	0.03	
Zn	66	He	3.457	5.74	1749	0.20	
As	75	He	0.031	68.14	16	0.19	
Se	77	H2	-0.234	-86.49	297	-0.08	
Se	78	H2	-0.002	-198.06	12	-0.01	
Mo	95	He	0.063	8.12	124	0.05	
Mo	97	He	0.060	19.96	80	0.07	
Mo	98	He	0.059	14.25	203	0.03	
Ag	107	He	0.002	18.57	19	0.01	
Ag	109	He	0.001	123.50	18	0.01	
Cd	111	He	0.003	61.61	5	0.07	
Cd	114	He	0.010	31.59	25	0.04	
Sb	121	He	0.003	376.48	82	0.00	
Sb	123	He	0.012	22.96	76	0.02	
Ba	135	He	766.144	1.19	244904	0.31	
Ba	137	He	780.361	1.63	448120	0.17	
Tl	203	He	0.011	16.00	93	0.01	
Tl	205	He	0.012	10.34	243	0.00	
[Pb]	206	He	0.165	8.74	839	0.02	
[Pb]	207	He	0.180	11.78	808	0.02	
Pb	208	He	0.169	6.38	3494	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	918532	1.05	1237359	74.23	70	125	
Sc	45	No Gas	3841990	3.32	4599003	83.54	70	125	
Ge	72	He	70018	2.04	93707	74.72	70	125	
Ge	72	H2	751000	0.26	953332	78.78	70	125	
In	115	He	634204	1.92	851093	74.52	70	125	
Lu	175	He	1740014	2.54	2126367	81.83	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 067_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T12:59:33-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	24.392	1.184	68200	0.66	25	98	
V	51	He	23.176	2.990	47189	0.62	25	93	
Cr	52	He	23.321	2.130	64678	0.95	25	93	
Cr	53	He	23.682	3.532	8037	1.28	25	95	
Mn	55	He	22.449	4.785	26271	2.39	25	90	
Co	59	He	23.201	3.257	115665	0.89	25	93	
Ni	60	He	23.398	2.591	32882	0.81	25	94	
Ni	62	He	22.957	5.815	5091	3.47	25	92	
Cu	63	He	23.097	2.919	93971	0.74	25	92	
Cu	65	He	23.473	1.638	46875	0.79	25	94	
Zn	66	He	23.953	1.133	12197	1.84	25	96	
As	75	He	22.768	1.121	6716	1.34	25	91	
Se	77	H2	23.167	0.485	4402	0.80	25	93	
Se	78	H2	23.036	1.049	12739	0.80	25	92	
Mo	95	He	12.285	0.964	22914	0.98	12.5	98	
Mo	97	He	12.108	2.350	15208	1.93	12.5	97	
Mo	98	He	12.019	1.745	39587	1.09	12.5	96	
Ag	107	He	12.307	1.408	86678	0.77	12.5	98	
Ag	109	He	12.429	0.745	86874	0.24	12.5	99	
Cd	111	He	24.340	1.437	19823	0.91	25	97	
Cd	114	He	24.296	0.716	50203	0.60	25	97	
Sb	121	He	12.033	0.568	22615	1.14	12.5	96	
Sb	123	He	12.222	0.841	18653	0.65	12.5	98	
Ba	135	He	23.630	2.702	7621	2.29	25	95	
Ba	137	He	24.208	1.417	14027	1.92	25	97	
Tl	203	He	24.487	0.255	144039	0.48	25	98	
Tl	205	He	24.722	0.181	351740	0.86	25	99	
[Pb]	206	He	24.674	0.661	113675	0.91	25	99	
[Pb]	207	He	24.566	1.392	101868	1.19	25	98	
Pb	208	He	24.485	0.741	464553	0.60	25	98	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	926405	0.91	1237359	74.87	70	125	
Sc	45	No Gas	3784330	1.96	4599003	82.29	70	125	
Ge	72	He	74126	2.34	93707	79.10	70	125	
Ge	72	H2	811968	0.42	953332	85.17	70	125	
In	115	He	639599	0.66	851093	75.15	70	125	
Lu	175	He	1731613	0.68	2126367	81.44	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 068_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:02:31-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.002	24.2	16	9.4	0.04	
V	51	He	-0.014	-44.4	62	22.3	0.4	
Cr	52	He	0.012	79.2	269	11.5	0.4	
Cr	53	He	-0.027	-94.3	47	18.9	0.4	
Mn	55	He	-0.095	-42.5	57	83.4	0.1	
Co	59	He	0.000	515.9	21	32.9	0.04	
Ni	60	He	0.022	37.6	103	11.6	0.4	
Ni	62	He	-0.039	-58.9	6	91.6	0.4	
Cu	63	He	-0.052	-19.3	328	13.8	0.2	
Cu	65	He	-0.070	-17.3	126	20.1	0.2	
Zn	66	He	0.006	1196.0	113	31.8	1	
As	75	He	-0.017	-52.8	3	88.2	1	
Se	77	H2	-0.098	-67.7	344	3.6	20	
Se	78	H2	0.000	-1066.2	14	18.4	2	
Mo	95	He	-0.002	-63.6	6	34.7	0.1	
Mo	97	He	-0.004	-39.2	1	173.2	0.1	
Mo	98	He	0.001	86.5	17	20.0	0.1	
Ag	107	He	0.001	66.2	14	26.7	0.04	
Ag	109	He	0.001	139.8	12	41.7	0.04	
Cd	111	He	-0.001	-244.5	2	96.4	0.04	
Cd	114	He	0.002	30.7	9	11.1	0.04	
Sb	121	He	0.026	58.3	129	23.0	0.1	
Sb	123	He	0.023	68.7	95	25.8	0.1	
Ba	135	He	0.050	81.0	20	66.7	0.1	
Ba	137	He	0.041	30.0	29	26.0	0.1	
Tl	203	He	0.003	88.2	50	37.1	0.04	
Tl	205	He	0.001	141.6	100	26.7	0.04	
[Pb]	206	He	0.023	26.8	192	15.2	0.1	
[Pb]	207	He	0.027	7.2	177	5.0	0.1	
Pb	208	He	0.024	6.1	749	3.4	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	962325	0.69	1237359	77.77	70	125	
Sc	45	No Gas	3823628	2.37	4599003	83.14	70	125	
Ge	72	He	75808	1.82	93707	80.90	70	125	
Ge	72	H2	811945	0.53	953332	85.17	70	125	
In	115	He	657170	0.59	851093	77.21	70	125	
Lu	175	He	1799085	0.44	2126367	84.61	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS
 Data File Name 069LLCCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:05:31-08:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

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QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.039	10.878	127	10.18	0.04	97	
V	51	He	0.359	4.254	841	3.68	0.4	90	
Cr	52	He	0.382	3.504	1321	3.01	0.4	96	
Cr	53	He	0.301	33.074	160	20.52	0.4	75	
Mn	55	He	-0.017	-231.096	150	33.33	-1	2	LLCCV Failed
Co	59	He	0.042	5.560	234	5.92	0.04	105	
Ni	60	He	0.380	11.016	619	9.16	0.4	95	
Ni	62	He	0.307	51.829	84	44.01	0.4	77	
Cu	63	He	0.126	20.375	1069	11.07	0.2	63	
Cu	65	He	0.130	2.791	533	2.50	0.2	65	LLCCV Failed
Zn	66	He	0.833	28.033	543	23.41	1	83	
As	75	He	0.901	9.710	281	9.40	1	90	
Se	77	H2	1.655	2.491	657	0.58	2	83	
Se	78	H2	1.800	3.930	1019	4.49	2	90	
Mo	95	He	0.106	9.908	213	10.25	0.1	106	
Mo	97	He	0.091	12.109	124	11.15	0.1	91	
Mo	98	He	0.108	10.149	381	10.58	0.1	108	
Ag	107	He	0.040	12.616	298	11.65	0.04	99	
Ag	109	He	0.037	7.834	277	7.33	0.04	93	
Cd	111	He	0.040	15.890	36	14.59	0.04	101	
Cd	114	He	0.043	12.882	97	11.65	0.04	107	
Sb	121	He	0.120	1.376	312	1.72	0.1	120	
Sb	123	He	0.128	3.391	262	1.91	0.1	128	
Ba	135	He	0.189	49.993	67	47.70	0.1	189	
Ba	137	He	0.092	14.551	59	13.83	0.1	92	
Tl	203	He	0.045	17.220	306	14.85	0.04	112	
Tl	205	He	0.035	10.791	610	8.25	0.04	89	
[Pb]	206	He	0.120	13.224	661	10.82	0.1	120	
[Pb]	207	He	0.119	12.599	578	10.13	0.1	119	
Pb	208	He	0.121	6.598	2696	5.08	0.1	121	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	987226	0.24	1237359	79.78	70	125	
Sc	45	No Gas	3885535	0.22	4599003	84.49	70	125	
Ge	72	He	76102	1.12	93707	81.21	70	125	
Ge	72	H2	821016	1.05	953332	86.12	70	125	
In	115	He	661697	0.75	851093	77.75	70	125	
Lu	175	He	1815076	1.25	2126367	85.36	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS 2X
 Data File Name 070_QC1.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:08:30-08:00
 Sample Type QC1
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.079	10.698	244	10.97	0.08	99	
V	51	He	0.807	2.474	1781	2.23	0.8	101	
Cr	52	He	0.809	4.373	2541	3.68	0.8	101	
Cr	53	He	0.865	17.048	357	13.96	0.8	108	
Mn	55	He	0.072	42.405	257	13.68	0.2	36	QC1 Main CR1 Failed
Co	59	He	0.076	9.131	409	8.98	0.08	95	
Ni	60	He	0.844	2.035	1292	1.47	0.8	106	
Ni	62	He	0.736	17.536	182	16.60	0.8	92	
Cu	63	He	0.364	8.723	2067	6.30	0.4	91	
Cu	65	He	0.327	12.394	939	9.34	0.4	82	
Zn	66	He	1.915	9.673	1107	8.69	2	96	
As	75	He	1.911	8.984	588	8.90	2	96	
Se	77	H2	3.902	4.575	1063	3.43	4	98	
Se	78	H2	4.099	1.926	2324	2.13	4	102	
Mo	95	He	0.211	17.128	411	16.86	0.2	105	
Mo	97	He	0.200	10.175	263	10.05	0.2	100	
Mo	98	He	0.223	6.923	763	6.16	0.2	111	
Ag	107	He	0.086	2.467	628	2.67	0.08	107	
Ag	109	He	0.090	5.149	653	4.68	0.08	113	
Cd	111	He	0.087	7.709	75	6.99	0.08	109	
Cd	114	He	0.092	7.326	201	7.50	0.08	115	
Sb	121	He	0.220	4.287	502	4.57	0.2	110	
Sb	123	He	0.249	19.385	448	16.97	0.2	125	
Ba	135	He	0.175	17.489	61	15.75	0.2	87	
Ba	137	He	0.234	5.282	143	4.19	0.2	117	
Tl	203	He	0.087	8.023	553	7.69	0.08	109	
Tl	205	He	0.083	4.464	1279	4.17	0.08	103	
[Pb]	206	He	0.240	6.334	1208	6.61	0.2	120	
[Pb]	207	He	0.249	2.349	1112	3.50	0.2	124	
Pb	208	He	0.230	3.490	4734	3.46	0.2	115	

2/21/18

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	971619	0.78	1237359	78.52	70	125	
Sc	45	No Gas	3827034	3.26	4599003	83.21	70	125	
Ge	72	He	76345	0.50	93707	81.47	70	125	
Ge	72	H2	828275	0.44	953332	86.88	70	125	
In	115	He	655311	0.97	851093	77.00	70	125	
Lu	175	He	1767791	1.35	2126367	83.14	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS 2X
 Data File Name 071_QC1.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:11:29-08:00
 Sample Type QC1
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

2/26/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.084	4.582	257	4.78	0.08	105	
V	51	He	0.763	4.384	1680	3.64	0.8	95	
Cr	52	He	0.839	1.762	2612	1.16	0.8	105	
Cr	53	He	0.751	10.273	316	8.98	0.8	94	
Mn	55	He	0.126	29.939	320	13.62	0.2	63	QC1 Main CR1 Failed
Co	59	He	0.084	10.836	451	10.89	0.08	105	
Ni	60	He	0.869	7.315	1321	7.38	0.8	109	
Ni	62	He	0.755	16.414	186	14.63	0.8	94	
Cu	63	He	0.366	6.347	2065	5.14	0.4	92	
Cu	65	He	0.352	16.102	984	12.22	0.4	88	
Zn	66	He	2.119	4.188	1207	4.34	2	106	
As	75	He	2.028	8.538	620	8.25	2	101	
Se	77	H2	4.013	0.809	1068	0.16	4	100	
Se	78	H2	3.905	2.177	2185	2.20	4	98	
Mo	95	He	0.187	10.916	367	11.06	0.2	93	
Mo	97	He	0.217	17.194	286	16.40	0.2	108	
Mo	98	He	0.196	2.978	674	3.02	0.2	98	
Ag	107	He	0.094	8.902	688	9.17	0.08	117	
Ag	109	He	0.078	4.925	570	5.00	0.08	98	
Cd	111	He	0.092	5.722	80	6.00	0.08	115	
Cd	114	He	0.088	4.770	193	4.96	0.08	110	
Sb	121	He	0.260	7.998	579	6.47	0.2	130	
Sb	123	He	0.232	8.720	423	7.06	0.2	116	
Ba	135	He	0.268	7.351	92	7.52	0.2	134	
Ba	137	He	0.223	20.055	137	19.01	0.2	111	
Tl	203	He	0.085	1.689	558	2.49	0.08	107	
Tl	205	He	0.080	3.569	1283	1.13	0.08	101	
[Pb]	206	He	0.222	2.670	1158	3.02	0.2	111	
[Pb]	207	He	0.229	4.732	1057	3.84	0.2	114	
Pb	208	He	0.221	1.665	4689	3.11	0.2	110	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	969615	0.73	1237359	78.36	70	125	
Sc	45	No Gas	3863342	2.68	4599003	84.00	70	125	
Ge	72	He	75947	0.54	93707	81.05	70	125	
Ge	72	H2	817062	0.37	953332	85.71	70	125	
In	115	He	657112	0.45	851093	77.21	70	125	
Lu	175	He	1820026	2.30	2126367	85.59	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS 2X
 Data File Name 072_QC1.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:14:28-08:00
 Sample Type QC1
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

2/21/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.089	13.572	271	12.91	0.08	111	
V	51	He	0.828	4.612	1797	2.90	0.8	104	
Cr	52	He	0.816	5.619	2520	5.43	0.8	102	
Cr	53	He	0.972	15.165	388	13.90	0.8	121	
Mn	55	He	0.095	31.410	280	12.88	0.2	47	QC1 Main CR1 Failed
Co	59	He	0.077	7.752	408	8.74	0.08	96	
Ni	60	He	0.866	5.480	1303	7.06	0.8	108	
Ni	62	He	0.837	24.093	202	23.33	0.8	105	
Cu	63	He	0.354	1.741	1989	1.44	0.4	88	
Cu	65	He	0.375	4.788	1019	1.89	0.4	94	
Zn	66	He	1.976	2.412	1120	0.60	2	99	
As	75	He	1.989	7.900	601	6.06	2	99	
Se	77	H2	4.105	1.875	1076	1.13	4	103	
Se	78	H2	3.958	2.291	2197	2.77	4	99	
Mo	95	He	0.200	6.471	381	6.68	0.2	100	
Mo	97	He	0.227	15.490	291	15.59	0.2	114	
Mo	98	He	0.225	4.871	754	5.08	0.2	113	
Ag	107	He	0.098	10.089	701	10.04	0.08	123	
Ag	109	He	0.089	8.557	631	8.86	0.08	111	
Cd	111	He	0.087	4.954	73	5.20	0.08	108	
Cd	114	He	0.089	6.062	190	5.79	0.08	112	
Sb	121	He	0.243	7.458	532	6.33	0.2	122	
Sb	123	He	0.253	4.707	443	3.79	0.2	127	
Ba	135	He	0.265	14.447	89	14.20	0.2	133	
Ba	137	He	0.244	9.951	146	9.33	0.2	122	
Tl	203	He	0.079	11.358	504	9.26	0.08	99	
Tl	205	He	0.085	5.955	1309	6.76	0.08	106	
[Pb]	206	He	0.223	8.276	1129	6.22	0.2	112	
[Pb]	207	He	0.234	6.366	1048	4.66	0.2	117	
Pb	208	He	0.226	5.814	4658	4.01	0.2	113	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	973632	1.17	1237359	78.69	70	125	
Sc	45	No Gas	3849537	2.71	4599003	83.70	70	125	
Ge	72	He	75125	2.11	93707	80.17	70	125	
Ge	72	H2	810937	0.83	953332	85.06	70	125	
In	115	He	639216	0.45	851093	75.11	70	125	
Lu	175	He	1769494	1.41	2126367	83.22	70	125	

Sample Report

Sample Table

Sample Name LLCCVS 1.0 ppb
 Data File Name 073SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:17:26-08:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.953	3.15	2778	0.03	
V	51	He	0.874	3.39	1948	0.04	
Cr	52	He	0.847	5.78	2684	0.03	
Cr	53	He	0.989	4.01	406	0.24	
Mn	55	He	0.822	18.15	1173	0.07	
Co	59	He	0.882	4.35	4614	0.02	
Ni	60	He	1.059	4.01	1625	0.07	
Ni	62	He	1.057	13.77	259	0.41	
Cu	63	He	0.872	4.57	4242	0.02	
Cu	65	He	0.892	7.38	2123	0.04	
Zn	66	He	2.596	3.15	1481	0.18	
As	75	He	0.886	4.03	281	0.32	
Se	77	H2	0.820	8.35	511	0.16	
Se	78	H2	0.900	4.12	518	0.17	
Mo	95	He	0.504	3.51	950	0.05	
Mo	97	He	0.470	7.43	597	0.08	
Mo	98	He	0.487	1.14	1620	0.03	
Ag	107	He	0.478	2.33	3381	0.01	
Ag	109	He	0.495	5.25	3473	0.01	
Cd	111	He	0.998	3.95	816	0.12	
Cd	114	He	0.992	1.14	2059	0.05	
Sb	121	He	0.519	2.02	1052	0.05	
Sb	123	He	0.530	2.95	866	0.06	
Ba	135	He	0.998	4.55	326	0.31	
Ba	137	He	0.971	5.09	568	0.17	
Tl	203	He	0.954	1.62	5717	0.02	
Tl	205	He	0.971	1.51	14079	0.01	
[Pb]	206	He	0.997	4.39	4730	0.02	
[Pb]	207	He	1.004	0.73	4274	0.02	
Pb	208	He	0.989	1.57	19287	0.01	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	962004	1.42	1237359	77.75	70	125	
Sc	45	No Gas	3823137	2.17	4599003	83.13	70	125	
Ge	72	He	77407	1.36	93707	82.61	70	125	
Ge	72	H2	823080	1.26	953332	86.34	70	125	
In	115	He	640641	0.77	851093	75.27	70	125	
Lu	175	He	1754690	1.69	2126367	82.52	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1802083-01
 Data File Name 074_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:20:25-08:00
 Sample Type PB
 Dilution 1
 Comment 5X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	-0.002	-67.4	6	57.7	0.04	
V	51	He	-0.019	-34.4	54	24.7	0.4	
Cr	52	He	0.056	32.5	402	11.9	0.4	
Cr	53	He	0.001	3485.1	58	31.8	0.4	
Mn	55	He	-0.096	-28.1	57	56.7	0.1	
Co	59	He	0.002	183.2	32	68.9	0.04	
Ni	60	He	0.036	41.2	126	15.6	0.4	
Ni	62	He	0.013	52.0	18	10.8	0.4	
Cu	63	He	-0.050	-7.2	343	3.4	0.2	
Cu	65	He	-0.049	-4.9	172	1.1	0.2	
Zn	66	He	0.131	33.4	182	11.8	1	
As	75	He	-0.008	-81.7	6	33.3	1	
Se	77	H2	-0.056	-43.8	356	0.7	2	
Se	78	H2	-0.014	-33.0	6	39.7	2	
Mo	95	He	0.013	42.8	34	31.1	0.1	
Mo	97	He	0.007	106.9	16	65.5	0.1	
Mo	98	He	0.012	73.6	56	55.7	0.1	
Ag	107	He	0.001	100.5	16	44.6	0.04	
Ag	109	He	0.000	247.0	12	68.7	0.04	
Cd	111	He	-0.002	-73.4	1	100.0	0.04	
Cd	114	He	0.107	12.8	238	11.7	0.04	Flag
Sb	121	He	-0.005	-109.4	72	13.9	0.1	
Sb	123	He	-0.006	-91.4	52	18.0	0.1	
Ba	135	He	-0.001	-1956.9	3	100.1	0.1	
Ba	137	He	0.010	16.7	11	9.1	0.1	
Tl	203	He	-0.002	-49.2	19	27.0	0.04	
Tl	205	He	-0.001	-22.5	63	9.1	0.04	
[Pb]	206	He	0.005	40.8	106	6.6	0.1	
[Pb]	207	He	0.010	4.0	104	3.7	0.1	
Pb	208	He	0.009	19.4	477	5.6	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1038662	0.62	1237359	83.94	70	125	
Sc	45	No Gas	3974610	1.98	4599003	86.42	70	125	
Ge	72	He	77621	1.78	93707	82.83	70	125	
Ge	72	H2	821816	0.64	953332	86.20	70	125	
In	115	He	673995	1.01	851093	79.19	70	125	
Lu	175	He	1849568	2.11	2126367	86.98	70	125	

Laboratory Control Sample (LCS) Report

Sample Table

Sample Name KQ1802083-02
 Data File Name 075_LCS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:23:24-08:00
 Sample Type LCS
 Dilution 1
 Comment 20X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	4.811	2.218	13954	1.92	5	96.2	
V	51	He	46.126	0.225	96588	0.60	50	92.3	
Cr	52	He	18.718	0.271	53474	0.40	20	93.6	
Cr	53	He	18.487	1.099	6471	0.68	20	92.4	
Mn	55	He	44.317	1.000	53234	0.87	50	88.6	
Co	59	He	46.109	1.413	236613	1.40	50	92.2	
Ni	60	He	45.845	1.684	66247	1.71	50	91.7	
Ni	62	He	45.609	2.042	10401	1.63	50	91.2	
Cu	63	He	22.782	0.173	95421	0.38	25	91.1	
Cu	65	He	23.275	1.022	47840	1.38	25	93.1	
Zn	66	He	46.953	1.758	24497	2.15	50	93.9	
As	75	He	43.977	0.640	13342	0.89	50	88.0	
Se	77	H2	45.853	0.451	8381	0.80	50	91.7	
Se	78	H2	44.829	0.860	24843	0.53	50	89.7	
Mo	95	He	48.260	2.014	91266	0.78	50	96.5	
Mo	97	He	48.349	1.348	61579	0.16	50	96.7	
Mo	98	He	48.213	1.855	161028	0.93	50	96.4	
Ag	107	He	4.923	1.287	35173	1.23	5	98.5	
Ag	109	He	4.920	2.731	34884	1.57	5	98.4	
Cd	111	He	4.863	2.216	4019	2.13	5	97.3	
Cd	114	He	4.956	0.554	10392	0.74	5	99.1	
Sb	121	He	49.768	0.574	94620	0.75	50	99.5	
Sb	123	He	49.627	0.221	76644	1.17	50	99.3	
Ba	135	He	94.533	2.749	30912	2.29	100	94.5	
Ba	137	He	96.940	1.194	56955	0.31	100	96.9	
Tl	203	He	9.707	1.991	59221	1.22	10	97.1	
Tl	205	He	9.758	0.770	144017	0.83	10	97.6	
[Pb]	206	He	47.887	1.745	228702	1.84	50	95.8	
[Pb]	207	He	49.804	0.499	214103	1.07	50	99.6	
Pb	208	He	49.107	1.345	965850	1.09	50	98.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	960541	0.42	1237359	77.63	70	125	
Sc	45	No Gas	3892837	0.79	4599003	84.65	70	125	
Ge	72	He	76270	0.41	93707	81.39	70	125	
Ge	72	H2	814150	0.76	953332	85.40	70	125	
In	115	He	648755	1.25	851093	76.23	70	125	
Lu	175	He	1795647	0.80	2126367	84.45	70	125	

All Reference Sample Report

Sample Table

Sample Name K1800847-001
 Data File Name 076_ARF.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:26:23-08:00
 Sample Type AllRef
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.039	4.42	134	0.03	
V	51	He	1.791	0.76	3855	0.05	
Cr	52	He	2.371	5.13	7005	0.03	
Cr	53	He	2.532	6.83	939	0.27	
Mn	55	He	201.054	1.49	241860	0.08	
Co	59	He	0.668	3.80	3463	0.02	
Ni	60	He	1.351	12.86	2031	0.07	
Ni	62	He	1.511	9.60	360	0.42	
Cu	63	He	6.590	1.31	28104	0.02	
Cu	65	He	6.805	3.06	14235	0.05	
Zn	66	He	300.349	1.39	156706	0.19	
As	75	He	1.125	4.02	351	0.32	
Se	77	H2	0.120	92.96	386	0.03	
Se	78	H2	0.125	18.46	84	0.15	
Mo	95	He	0.288	13.77	586	0.05	
Mo	97	He	0.265	14.75	364	0.07	
Mo	98	He	0.268	8.74	962	0.03	
Ag	107	He	0.019	22.17	153	0.01	
Ag	109	He	0.020	20.31	156	0.01	
Cd	111	He	0.161	6.10	144	0.11	
Cd	114	He	0.267	7.17	599	0.04	
Sb	121	He	0.271	4.94	628	0.04	
Sb	123	He	0.263	5.74	493	0.05	
Ba	135	He	96.616	0.73	33486	0.29	
Ba	137	He	98.630	1.52	61415	0.16	
Tl	203	He	0.025	14.94	196	0.01	
Tl	205	He	0.019	8.45	386	0.00	
[Pb]	206	He	2.040	2.43	10452	0.02	
[Pb]	207	He	2.001	1.98	9215	0.02	
Pb	208	He	2.023	1.50	42639	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1044017	1.90	1237359	84.37	70	125	
Sc	45	No Gas	4022060	1.62	4599003	87.46	70	125	
Ge	72	He	76580	1.57	93707	81.72	70	125	
Ge	72	H2	818809	1.42	953332	85.89	70	125	
In	115	He	687568	0.96	851093	80.79	70	125	
Lu	175	He	1911604	2.40	2126367	89.90	70	125	

Sample Report

Sample Table

Sample Name KQ1802083-03
 Data File Name 077SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:29:22-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.051	13.34	171	0.03	
V	51	He	1.315	4.29	2879	0.05	
Cr	52	He	1.921	1.02	5773	0.03	
Cr	53	He	1.917	7.38	731	0.26	
Mn	55	He	187.755	3.57	227807	0.08	
Co	59	He	0.560	7.96	2927	0.02	
Ni	60	He	1.082	4.96	1656	0.07	
Ni	62	He	1.159	9.36	282	0.41	
Cu	63	He	6.386	1.67	27488	0.02	
Cu	65	He	6.439	1.46	13601	0.05	
Zn	66	He	231.944	2.51	122094	0.19	
As	75	He	1.012	9.53	319	0.32	
Se	77	H2	0.000	-76850.42	368	0.00	
Se	78	H2	0.060	30.64	48	0.13	
Mo	95	He	0.242	12.88	500	0.05	
Mo	97	He	0.230	1.50	321	0.07	
Mo	98	He	0.225	6.43	821	0.03	
Ag	107	He	0.011	43.10	91	0.01	
Ag	109	He	0.011	35.91	91	0.01	
Cd	111	He	0.125	7.26	113	0.11	
Cd	114	He	0.241	5.46	548	0.04	
Sb	121	He	0.169	4.03	429	0.04	
Sb	123	He	0.190	5.48	377	0.05	
Ba	135	He	80.039	1.64	28077	0.29	
Ba	137	He	81.222	0.29	51194	0.16	
Tl	203	He	0.017	3.69	142	0.01	
Tl	205	He	0.011	2.37	260	0.00	
[Pb]	206	He	1.766	1.63	8969	0.02	
[Pb]	207	He	1.719	1.01	7848	0.02	
Pb	208	He	1.731	0.68	36159	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1043444	2.12	1237359	84.33	70	125	
Sc	45	No Gas	4050649	1.71	4599003	88.08	70	125	
Ge	72	He	77256	1.62	93707	82.44	70	125	
Ge	72	H2	826342	1.43	953332	86.68	70	125	
In	115	He	695902	0.71	851093	81.77	70	125	
Lu	175	He	1892004	0.69	2126367	88.98	70	125	

Sample Report

Sample Table

Sample Name K1800847-001L
 Data File Name 078SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:32:20-08:00
 Sample Type Sample
 Dilution 1
 Comment 25X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.008	22.36	34	0.02	
V	51	He	0.353	16.36	842	0.04	
Cr	52	He	0.559	7.06	1851	0.03	
Cr	53	He	0.647	3.22	284	0.23	
Mn	55	He	39.532	2.41	48119	0.08	
Co	59	He	0.128	4.34	683	0.02	
Ni	60	He	0.283	4.28	488	0.06	
Ni	62	He	0.308	26.41	86	0.36	
Cu	63	He	1.277	0.79	5941	0.02	
Cu	65	He	1.301	4.62	2966	0.04	
Zn	66	He	57.928	2.83	30579	0.19	
As	75	He	0.199	5.17	69	0.29	
Se	77	H2	-0.091	-129.94	350	-0.03	
Se	78	H2	0.006	61.38	18	0.04	
Mo	95	He	0.056	2.57	120	0.05	
Mo	97	He	0.058	14.68	84	0.07	
Mo	98	He	0.063	4.38	234	0.03	
Ag	107	He	0.004	32.08	42	0.01	
Ag	109	He	0.004	22.07	39	0.01	
Cd	111	He	0.033	18.95	31	0.11	
Cd	114	He	0.053	9.34	123	0.04	
Sb	121	He	0.082	14.30	247	0.03	
Sb	123	He	0.084	7.43	198	0.04	
Ba	135	He	18.979	2.42	6554	0.29	
Ba	137	He	19.442	1.61	12061	0.16	
Tl	203	He	0.001	135.05	36	0.00	
Tl	205	He	0.002	14.21	109	0.00	
[Pb]	206	He	0.414	8.06	2081	0.02	
[Pb]	207	He	0.397	4.67	1791	0.02	
Pb	208	He	0.411	5.64	8475	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1003127	1.61	1237359	81.07	70	125	
Sc	45	No Gas	4016628	2.04	4599003	87.34	70	125	
Ge	72	He	77256	1.28	93707	82.44	70	125	
Ge	72	H2	823031	0.62	953332	86.33	70	125	
In	115	He	684802	0.89	851093	80.46	70	125	
Lu	175	He	1819767	1.94	2126367	85.58	70	125	

Post Digestion Spike Sample (PDS) Report

Sample Table

Sample Name K1800847-001A
 Data File Name 079_PDS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:35:18-08:00
 Sample Type PDS
 Dilution 1
 Comment 5X
 QC Ref File Name 076_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

Not Added
 Not needed

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	51.580	1.386	155848	1.25	50	103	
V	51	He	52.453	2.464	113206	0.92	50	101	
Cr	52	He	52.181	1.398	153255	1.13	50	100	
Cr	53	He	53.437	2.498	19173	0.84	50	102	
Mn	55	He	253.494	3.446	313000	1.15	50	105	
Co	59	He	50.434	2.179	266789	0.49	50	100	
Ni	60	He	51.657	2.972	76930	1.10	50	101	
Ni	62	He	52.359	2.292	12309	2.36	50	102	
Cu	63	He	56.612	2.428	243581	0.78	50	100	
Cu	65	He	57.252	1.599	120909	0.93	50	101	
Zn	66	He	356.726	1.048	191122	1.48	50	113	
As	75	He	51.311	1.668	16047	1.24	50	100	
Se	77	H2	55.128	1.236	10305	1.45	50	110	
Se	78	H2	53.733	1.508	30673	1.77	50	107	
Mo	95	He	49.653	1.003	103692	1.58	50	99	
Mo	97	He	49.726	1.667	69930	1.45	50	99	
Mo	98	He	49.660	0.280	183149	0.79	50	99	
Ag	107	He	0.018	17.551	152	17.01	10	0	Flag
Ag	109	He	0.018	20.994	151	20.02	10	0	Flag
Cd	111	He	49.615	0.411	45250	0.41	50	99	
Cd	114	He	51.200	0.662	118468	0.16	50	102	
Sb	121	He	50.180	0.645	105333	0.78	50	100	
Sb	123	He	49.723	1.448	84779	0.99	50	99	
Ba	135	He	142.814	1.484	51563	1.45	50	92	
Ba	137	He	147.620	0.781	95764	1.24	50	98	
Tl	203	He	49.589	1.878	311536	2.47	50	99	
Tl	205	He	49.784	1.525	756378	1.20	50	100	
[Pb]	206	He	50.716	0.516	249463	1.02	50	97	
[Pb]	207	He	51.006	1.876	225802	0.38	50	98	
Pb	208	He	51.117	1.400	1035412	0.30	50	98	

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QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1001350	2.47	1237359	80.93	70	125	
Sc	45	No Gas	4218801	2.38	4599003	91.73	70	125	
Ge	72	He	78650	2.52	93707	83.93	70	125	
Ge	72	H2	838636	0.29	953332	87.97	70	125	
In	115	He	716269	0.71	851093	84.16	70	125	
Lu	175	He	1849516	1.53	2126367	86.98	70	125	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name KQ1802083-04
 Data File Name 080_Spk.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:38:16-08:00
 Sample Type Spike
 Dilution 1
 Comment 5X
 QC Ref File Name 076_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	19.371	0.535	60049	0.66	20	97	
V	51	He	196.939	1.440	417895	1.24	200	98	
Cr	52	He	79.930	2.513	230743	0.79	80	97	
Cr	53	He	81.376	1.419	28699	2.35	80	99	
Mn	55	He	377.736	1.837	458845	1.76	200	88	
Co	59	He	196.238	1.990	1021066	0.97	200	98	
Ni	60	He	197.458	3.099	289027	0.48	200	98	
Ni	62	He	196.440	1.676	45382	1.12	200	97	
Cu	63	He	102.876	1.958	434974	0.99	100	96	
Cu	65	He	103.818	2.165	215426	1.07	100	97	
Zn	66	He	483.916	2.114	254952	1.33	200	92	
As	75	He	195.631	1.414	60159	1.26	200	97	
Se	77	H2	207.722	1.376	37012	0.51	200	104	
Se	78	H2	206.242	1.100	115256	0.78	200	103	
Mo	95	He	195.392	0.870	393850	1.58	200	98	
Mo	97	He	194.036	0.742	263378	0.35	200	97	
Mo	98	He	195.443	0.865	695696	0.13	200	98	
Ag	107	He	19.237	1.593	146449	0.76	20	96	
Ag	109	He	19.437	2.226	146848	1.40	20	97	
Cd	111	He	19.925	1.008	17542	0.99	20	99	
Cd	114	He	20.043	0.772	44768	0.26	20	99	
Sb	121	He	196.532	0.717	397976	0.98	200	98	
Sb	123	He	194.184	1.332	319439	1.77	200	97	
Ba	135	He	471.469	1.218	164301	0.93	400	94	
Ba	137	He	477.152	0.822	298778	1.30	400	95	
Tl	203	He	37.921	1.971	240788	0.77	40	95	
Tl	205	He	38.093	1.662	585075	1.14	40	95	
[Pb]	206	He	186.464	2.423	926748	0.41	200	92	
[Pb]	207	He	194.929	2.184	872139	0.62	200	96	
Pb	208	He	193.262	2.438	3956037	0.58	200	96	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1027000	0.68	1237359	83.00	70	125	
Sc	45	No Gas	4140484	0.67	4599003	90.03	70	125	
Ge	72	He	77365	2.69	93707	82.56	70	125	
Ge	72	H2	821358	0.86	953332	86.16	70	125	
In	115	He	691397	0.85	851093	81.24	70	125	
Lu	175	He	1870005	2.77	2126367	87.94	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 081_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:41:14-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	23.855	0.816	68089	1.65	25	95	
V	51	He	23.762	0.929	47634	4.09	25	95	
Cr	52	He	23.731	1.279	64794	4.65	25	95	
Cr	53	He	24.270	1.681	8112	5.32	25	97	
Mn	55	He	23.018	2.233	26538	5.91	25	92	
Co	59	He	23.748	1.467	116537	3.04	25	95	
Ni	60	He	23.475	2.548	32486	5.22	25	94	
Ni	62	He	23.551	3.958	5149	7.69	25	94	
Cu	63	He	23.355	0.947	93564	4.64	25	93	
Cu	65	He	23.598	0.767	46380	3.29	25	94	
Zn	66	He	23.885	0.843	11972	4.45	25	96	
As	75	He	23.369	2.036	6787	5.47	25	93	
Se	77	H2	23.670	2.187	4527	1.92	25	95	
Se	78	H2	23.397	1.403	13046	1.45	25	94	
Mo	95	He	12.279	1.353	22927	4.86	12.5	98	
Mo	97	He	12.196	3.968	15344	7.38	12.5	98	
Mo	98	He	11.926	1.864	39318	4.55	12.5	95	
Ag	107	He	12.183	0.422	85929	5.60	12.5	97	
Ag	109	He	12.113	1.116	84795	6.01	12.5	97	
Cd	111	He	24.064	0.777	19624	5.42	25	96	
Cd	114	He	24.219	1.401	50094	4.76	25	97	
Sb	121	He	12.151	2.718	22847	3.66	12.5	97	
Sb	123	He	12.250	2.304	18711	4.35	12.5	98	
Ba	135	He	23.471	0.776	7580	5.40	25	94	
Ba	137	He	24.107	1.142	13983	4.86	25	96	
Tl	203	He	23.586	3.490	139530	3.08	25	94	
Tl	205	He	23.537	1.515	337083	5.16	25	94	
[Pb]	206	He	23.628	1.560	109569	5.07	25	95	
[Pb]	207	He	23.602	2.867	98463	4.08	25	94	
Pb	208	He	23.424	1.994	447237	4.57	25	94	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	945677	1.52	1237359	76.43	70	125	
Sc	45	No Gas	3814675	1.39	4599003	82.95	70	125	
Ge	72	He	72945	3.70	93707	77.84	70	125	
Ge	72	H2	818717	1.13	953332	85.88	70	125	
In	115	He	640547	5.97	851093	75.26	70	125	
Lu	175	He	1744081	6.61	2126367	82.02	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 082_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:44:14-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.004	28.6	23	13.8	0.04	
V	51	He	-0.008	-78.1	77	15.7	0.4	
Cr	52	He	0.002	621.7	246	12.6	0.4	
Cr	53	He	0.056	89.9	77	24.2	0.4	
Mn	55	He	-0.060	-35.6	100	26.5	0.1	
Co	59	He	0.003	78.3	36	35.5	0.04	
Ni	60	He	0.008	82.0	84	11.4	0.4	
Ni	62	He	-0.020	-137.8	10	66.7	0.4	
Cu	63	He	-0.042	-6.9	377	3.2	0.2	
Cu	65	He	-0.043	-15.3	184	7.3	0.2	
Zn	66	He	0.057	97.6	143	22.2	1	
As	75	He	0.000	7308.9	8	79.9	1	
Se	77	H2	-0.248	-36.4	328	7.4	20	
Se	78	H2	0.006	132.3	18	22.9	2	
Mo	95	He	0.005	16.0	19	10.2	0.1	
Mo	97	He	0.000	38.7	7	0.0	0.1	
Mo	98	He	0.005	54.7	32	33.3	0.1	
Ag	107	He	0.002	145.9	24	92.8	0.04	
Ag	109	He	0.002	141.4	23	86.9	0.04	
Cd	111	He	0.004	89.0	6	53.7	0.04	
Cd	114	He	0.005	65.3	18	43.3	0.04	
Sb	121	He	0.048	15.9	181	10.6	0.1	
Sb	123	He	0.056	31.1	156	20.3	0.1	
Ba	135	He	0.012	124.9	8	65.5	0.1	
Ba	137	He	0.012	104.3	12	67.3	0.1	
Tl	203	He	0.011	50.1	98	35.5	0.04	
Tl	205	He	0.012	38.1	271	27.3	0.04	
[Pb]	206	He	0.009	18.6	128	5.4	0.1	
[Pb]	207	He	0.019	26.7	144	16.7	0.1	
Pb	208	He	0.011	18.6	519	8.9	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1018473	1.50	1237359	82.31	70	125	
Sc	45	No Gas	4067100	1.01	4599003	88.43	70	125	
Ge	72	He	77361	1.64	93707	82.56	70	125	
Ge	72	H2	835693	3.69	953332	87.66	70	125	
In	115	He	691390	2.09	851093	81.24	70	125	
Lu	175	He	1850761	1.62	2126367	87.04	70	125	

Sample Report

Sample Table

Sample Name K1800847-002
 Data File Name 083SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:47:13-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.039	21.25	137	0.03	
V	51	He	0.808	2.87	1813	0.04	
Cr	52	He	0.987	5.23	3096	0.03	
Cr	53	He	1.012	15.99	414	0.24	
Mn	55	He	52.513	0.89	64101	0.08	
Co	59	He	0.404	3.53	2129	0.02	
Ni	60	He	0.829	5.81	1290	0.06	
Ni	62	He	0.757	4.41	190	0.40	
Cu	63	He	5.251	0.69	22788	0.02	
Cu	65	He	5.400	1.79	11494	0.05	
Zn	66	He	5416.200	0.41	2859842	0.19	>LDR
As	75	He	0.352	3.21	117	0.30	
Se	77	H2	0.094	145.61	383	0.02	
Se	78	H2	0.330	6.30	199	0.17	
Mo	95	He	0.338	3.18	704	0.05	
Mo	97	He	0.327	9.49	459	0.07	
Mo	98	He	0.332	2.34	1220	0.03	
Ag	107	He	0.042	9.75	336	0.01	
Ag	109	He	0.044	10.80	349	0.01	
Cd	111	He	0.096	7.58	89	0.11	
Cd	114	He	0.204	1.56	471	0.04	
Sb	121	He	0.360	7.86	830	0.04	
Sb	123	He	0.356	6.51	662	0.05	
Ba	135	He	32.870	0.47	11694	0.28	
Ba	137	He	33.964	0.92	21708	0.16	
Tl	203	He	0.070	7.95	471	0.01	
Tl	205	He	0.066	7.61	1094	0.01	
[Pb]	206	He	1.081	2.32	5448	0.02	
[Pb]	207	He	1.059	2.16	4796	0.02	
Pb	208	He	1.075	0.99	22271	0.00	

2/21/18

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1068233	1.60	1237359	86.33	70	125	
Sc	45	No Gas	4393603	3.38	4599003	95.53	70	125	
Ge	72	He	77542	0.60	93707	82.75	70	125	
Ge	72	H2	822237	0.83	953332	86.25	70	125	
In	115	He	705615	0.42	851093	82.91	70	125	
Lu	175	He	1867201	0.89	2126367	87.81	70	125	

Sample Report

Sample Table

Sample Name K1800847-003
 Data File Name 084SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:50:12-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.014	17.56	55	0.03	
V	51	He	0.194	9.26	517	0.04	
Cr	52	He	0.468	7.79	1631	0.03	
Cr	53	He	0.464	14.58	226	0.21	
Mn	55	He	105.292	2.26	131181	0.08	
Co	59	He	0.176	6.94	958	0.02	
Ni	60	He	0.388	7.50	657	0.06	
Ni	62	He	0.411	23.02	112	0.37	
Cu	63	He	2.645	4.44	12019	0.02	
Cu	65	He	2.710	2.17	6034	0.04	
Zn	66	He	19.117	4.07	10430	0.18	
As	75	He	0.081	30.04	34	0.24	
Se	77	H2	0.098	117.83	386	0.03	
Se	78	H2	0.044	44.36	39	0.11	
Mo	95	He	0.155	14.94	333	0.05	
Mo	97	He	0.138	14.26	200	0.07	
Mo	98	He	0.160	2.51	603	0.03	
Ag	107	He	0.032	9.66	262	0.01	
Ag	109	He	0.027	7.60	221	0.01	
Cd	111	He	0.087	19.65	81	0.11	
Cd	114	He	0.198	3.08	464	0.04	
Sb	121	He	0.102	6.97	299	0.03	
Sb	123	He	0.108	14.97	247	0.04	
Ba	135	He	48.053	1.80	17297	0.28	
Ba	137	He	50.028	1.04	32351	0.15	
Tl	203	He	0.010	34.93	94	0.01	
Tl	205	He	0.009	22.80	216	0.00	
[Pb]	206	He	0.528	6.96	2718	0.02	
[Pb]	207	He	0.497	1.94	2295	0.02	
Pb	208	He	0.525	1.20	11081	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1037812	2.17	1237359	83.87	70	125	
Sc	45	No Gas	4220974	1.00	4599003	91.78	70	125	
Ge	72	He	79263	1.31	93707	84.59	70	125	
Ge	72	H2	827100	1.56	953332	86.76	70	125	
In	115	He	713938	1.46	851093	83.88	70	125	
Lu	175	He	1875525	1.66	2126367	88.20	70	125	

Sample Report

Sample Table

Sample Name K1801023-001
 Data File Name 085SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:53:10-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.020	12.18	75	0.03	
V	51	He	3.067	3.56	6649	0.05	
Cr	52	He	6.030	1.43	17764	0.03	
Cr	53	He	6.174	4.79	2247	0.27	
Mn	55	He	125.695	0.86	153933	0.08	
Co	59	He	0.760	2.73	4003	0.02	
Ni	60	He	4.256	1.65	6350	0.07	
Ni	62	He	4.308	5.06	1017	0.42	
Cu	63	He	8.709	1.12	37613	0.02	
Cu	65	He	8.835	1.09	18725	0.05	
Zn	66	He	51.071	3.72	27202	0.19	
As	75	He	0.887	5.42	283	0.31	
Se	77	H2	0.195	37.89	402	0.05	
Se	78	H2	0.209	8.99	131	0.16	
Mo	95	He	3.336	3.09	6861	0.05	
Mo	97	He	3.240	3.74	4488	0.07	
Mo	98	He	3.304	1.85	12001	0.03	
Ag	107	He	0.096	11.14	751	0.01	
Ag	109	He	0.103	4.06	800	0.01	
Cd	111	He	0.329	2.64	298	0.11	
Cd	114	He	0.537	0.48	1227	0.04	
Sb	121	He	0.291	5.15	686	0.04	
Sb	123	He	0.264	1.30	506	0.05	
Ba	135	He	40.562	0.33	14410	0.28	
Ba	137	He	41.371	1.45	26404	0.16	
Tl	203	He	0.032	6.70	237	0.01	
Tl	205	He	0.036	9.92	650	0.01	
[Pb]	206	He	1.170	2.53	6041	0.02	
[Pb]	207	He	1.136	2.20	5266	0.02	
Pb	208	He	1.154	2.03	24492	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1046405	0.93	1237359	84.57	70	125	
Sc	45	No Gas	4122979	0.87	4599003	89.65	70	125	
Ge	72	He	77927	1.65	93707	83.16	70	125	
Ge	72	H2	826233	1.02	953332	86.67	70	125	
In	115	He	704632	0.80	851093	82.79	70	125	
Lu	175	He	1914270	1.57	2126367	90.03	70	125	

Sample Report

Sample Table

Sample Name K1801023-002
 Data File Name 086SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:56:09-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.079	7.96	260	0.03	
V	51	He	16.791	1.89	36287	0.05	
Cr	52	He	29.424	0.63	86468	0.03	
Cr	53	He	29.512	2.05	10610	0.28	
Mn	55	He	279.720	1.41	345242	0.08	
Co	59	He	3.360	2.02	17782	0.02	
Ni	60	He	5.682	2.92	8524	0.07	
Ni	62	He	5.572	4.28	1322	0.42	
Cu	63	He	41.628	0.28	179168	0.02	
Cu	65	He	42.452	0.28	89668	0.05	
Zn	66	He	156.175	0.78	83676	0.19	
As	75	He	19.873	2.69	6216	0.32	
Se	77	H2	0.128	49.02	391	0.03	
Se	78	H2	0.157	15.85	103	0.15	
Mo	95	He	0.884	1.21	1831	0.05	
Mo	97	He	0.830	0.58	1158	0.07	
Mo	98	He	0.842	3.57	3080	0.03	
Ag	107	He	0.095	6.10	746	0.01	
Ag	109	He	0.100	6.38	782	0.01	
Cd	111	He	0.641	3.74	580	0.11	
Cd	114	He	0.783	0.09	1795	0.04	
Sb	121	He	0.481	2.69	1081	0.04	
Sb	123	He	0.533	6.54	961	0.06	
Ba	135	He	123.008	2.54	43834	0.28	
Ba	137	He	125.964	0.54	80656	0.16	
Tl	203	He	0.039	6.63	280	0.01	
Tl	205	He	0.035	7.95	626	0.01	
[Pb]	206	He	196.933	0.78	994627	0.02	
[Pb]	207	He	192.225	0.70	873931	0.02	
Pb	208	He	197.320	1.43	4104337	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1043610	0.32	1237359	84.34	70	125	
Sc	45	No Gas	4172471	1.75	4599003	90.73	70	125	
Ge	72	He	78580	0.44	93707	83.86	70	125	
Ge	72	H2	827235	0.89	953332	86.77	70	125	
In	115	He	706975	0.55	851093	83.07	70	125	
Lu	175	He	1899524	0.88	2126367	89.33	70	125	

Sample Report

Sample Table

Sample Name K1801023-003
 Data File Name 087SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T13:59:06-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.097	6.20	322	0.03	
V	51	He	17.370	2.65	37819	0.05	
Cr	52	He	92.472	2.33	273284	0.03	
Cr	53	He	94.129	2.25	33968	0.28	
Mn	55	He	308.659	2.46	383853	0.08	
Co	59	He	3.863	1.77	20598	0.02	
Ni	60	He	6.742	4.00	10175	0.07	
Ni	62	He	6.978	6.05	1665	0.42	
Cu	63	He	105.760	2.35	457796	0.02	
Cu	65	He	107.134	2.81	227570	0.05	
Zn	66	He	148.311	2.66	80071	0.19	
As	75	He	74.933	2.13	23593	0.32	
Se	77	H2	0.357	26.48	429	0.08	
Se	78	H2	0.205	6.56	129	0.16	
Mo	95	He	1.243	2.97	2588	0.05	
Mo	97	He	1.234	4.29	1730	0.07	
Mo	98	He	1.248	0.47	4587	0.03	
Ag	107	He	0.092	9.18	729	0.01	
Ag	109	He	0.101	2.70	793	0.01	
Cd	111	He	0.345	5.50	316	0.11	
Cd	114	He	0.470	1.43	1086	0.04	
Sb	121	He	1.167	1.26	2519	0.05	
Sb	123	He	1.169	2.17	2043	0.06	
Ba	135	He	118.439	0.38	42496	0.28	
Ba	137	He	121.950	0.93	78612	0.16	
Tl	203	He	0.037	9.51	270	0.01	
Tl	205	He	0.038	7.54	678	0.01	
[Pb]	206	He	43.014	3.53	217347	0.02	
[Pb]	207	He	42.956	2.29	195423	0.02	
Pb	208	He	43.016	3.22	895209	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1060988	0.36	1237359	85.75	70	125	
Sc	45	No Gas	4355220	2.81	4599003	94.70	70	125	
Ge	72	He	79197	1.79	93707	84.52	70	125	
Ge	72	H2	821816	1.55	953332	86.20	70	125	
In	115	He	711767	0.55	851093	83.63	70	125	
Lu	175	He	1901010	2.89	2126367	89.40	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 088_CC.V.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:02:04-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	23.771	1.415	72725	1.04	25	95	
V	51	He	24.393	0.634	51850	0.11	25	98	
Cr	52	He	24.311	3.400	70361	2.65	25	97	
Cr	53	He	24.106	4.876	8540	4.19	25	96	
Mn	55	He	23.587	2.898	28815	2.22	25	94	
Co	59	He	24.104	3.011	125450	2.27	25	96	
Ni	60	He	23.816	1.927	34938	1.20	25	95	
Ni	62	He	24.109	2.462	5583	1.99	25	96	
Cu	63	He	24.105	2.728	102357	2.00	25	96	
Cu	65	He	24.211	1.977	50459	1.59	25	97	
Zn	66	He	24.349	2.007	12938	1.83	25	97	
As	75	He	23.869	1.224	7348	1.10	25	95	
Se	77	H2	24.391	2.902	4631	2.15	25	98	
Se	78	H2	23.995	2.328	13316	2.83	25	96	
Mo	95	He	12.295	3.300	24929	2.31	12.5	98	
Mo	97	He	12.329	2.687	16838	2.28	12.5	99	
Mo	98	He	11.925	1.054	42706	0.56	12.5	95	
Ag	107	He	12.115	0.883	92782	1.42	12.5	97	
Ag	109	He	12.286	2.171	93365	1.82	12.5	98	
Cd	111	He	24.100	0.704	21341	0.76	25	96	
Cd	114	He	24.132	1.607	54211	0.94	25	97	
Sb	121	He	12.080	1.199	24681	0.66	12.5	97	
Sb	123	He	12.245	2.325	20315	1.21	12.5	98	
Ba	135	He	23.155	2.531	8119	1.78	25	93	
Ba	137	He	24.019	1.256	15131	1.23	25	96	
Tl	203	He	23.084	1.387	148997	1.15	25	92	
Tl	205	He	23.362	1.446	364717	1.10	25	93	
[Pb]	206	He	23.483	1.821	118710	1.32	25	94	
[Pb]	207	He	23.301	1.336	106026	1.42	25	93	
Pb	208	He	23.310	1.885	485260	1.04	25	93	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1013675	0.40	1237359	81.92	70	125	
Sc	45	No Gas	4177772	2.78	4599003	90.84	70	125	
Ge	72	He	77358	0.73	93707	82.55	70	125	
Ge	72	H2	814812	0.79	953332	85.47	70	125	
In	115	He	695415	1.17	851093	81.71	70	125	
Lu	175	He	1900473	2.48	2126367	89.38	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 089_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:05:03-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.002	85.3	18	32.9	0.04	
V	51	He	-0.002	-731.2	91	29.3	0.4	
Cr	52	He	-0.004	-190.5	231	9.8	0.4	
Cr	53	He	0.044	95.4	73	20.8	0.4	
Mn	55	He	-0.034	-179.3	133	56.3	0.1	
Co	59	He	0.001	267.0	24	43.8	0.04	
Ni	60	He	0.004	557.8	80	39.8	0.4	
Ni	62	He	-0.021	-1.3	10	0.0	0.4	
Cu	63	He	-0.053	-8.4	337	6.2	0.2	
Cu	65	He	-0.049	-6.2	173	3.8	0.2	
Zn	66	He	0.069	123.3	151	30.0	1	
As	75	He	-0.012	-15.4	5	12.4	1	
Se	77	H2	-0.125	-89.9	343	5.3	20	
Se	78	H2	0.007	108.1	18	24.2	2	
Mo	95	He	0.001	343.4	12	83.3	0.1	
Mo	97	He	0.004	68.9	12	31.5	0.1	
Mo	98	He	0.001	198.3	17	34.6	0.1	
Ag	107	He	0.000	195.6	11	34.6	0.04	
Ag	109	He	0.000	-233.0	7	86.6	0.04	
Cd	111	He	0.005	35.0	7	22.9	0.04	
Cd	114	He	0.004	40.1	16	25.3	0.04	
Sb	121	He	0.036	8.8	159	4.4	0.1	
Sb	123	He	0.053	18.1	152	9.3	0.1	
Ba	135	He	0.008	110.3	7	50.0	0.1	
Ba	137	He	0.010	75.8	11	43.3	0.1	
Tl	203	He	0.002	75.8	43	20.3	0.04	
Tl	205	He	0.004	60.3	157	29.2	0.04	
[Pb]	206	He	0.000	477.7	88	11.6	0.1	
[Pb]	207	He	0.010	18.6	108	8.9	0.1	
Pb	208	He	0.006	42.7	431	13.5	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1040315	0.34	1237359	84.08	70	125	
Sc	45	No Gas	4266504	1.35	4599003	92.77	70	125	
Ge	72	He	78363	0.62	93707	83.63	70	125	
Ge	72	H2	820115	0.99	953332	86.03	70	125	
In	115	He	702959	1.18	851093	82.59	70	125	
Lu	175	He	1905527	2.04	2126367	89.61	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS
 Data File Name 090LCCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:08:02-08:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.038	15.062	127	13.43	0.04	95	
V	51	He	0.379	6.200	899	5.28	0.4	95	
Cr	52	He	0.379	3.256	1336	2.31	0.4	95	
Cr	53	He	0.396	17.518	197	12.80	0.4	99	
Mn	55	He	0.057	67.893	243	19.42	-1	-6	LLCCV Failed
Co	59	He	0.044	7.273	249	6.74	0.04	110	
Ni	60	He	0.423	8.948	693	7.94	0.4	106	
Ni	62	He	0.379	2.622	102	1.88	0.4	95	
Cu	63	He	0.159	3.652	1230	1.93	0.2	80	
Cu	65	He	0.147	10.786	579	5.35	0.2	74	
Zn	66	He	1.035	3.519	659	2.55	1	104	
As	75	He	0.993	6.798	314	6.90	1	99	
Se	77	H2	1.838	4.126	694	2.32	2	92	
Se	78	H2	1.896	1.355	1080	1.40	2	95	
Mo	95	He	0.103	9.281	217	8.57	0.1	103	
Mo	97	He	0.082	14.126	118	13.07	0.1	82	
Mo	98	He	0.091	6.797	339	6.69	0.1	91	
Ag	107	He	0.041	4.137	322	4.31	0.04	102	
Ag	109	He	0.043	11.843	338	11.22	0.04	108	
Cd	111	He	0.041	9.370	39	8.76	0.04	103	
Cd	114	He	0.042	2.396	99	2.59	0.04	104	
Sb	121	He	0.146	3.599	381	2.98	0.1	146	
Sb	123	He	0.141	16.071	295	12.39	0.1	141	LLCCV Failed
Ba	135	He	0.110	35.123	42	31.91	0.1	110	
Ba	137	He	0.126	5.494	84	5.00	0.1	126	
Tl	203	He	0.041	7.970	289	5.45	0.04	102	
Tl	205	He	0.036	8.165	634	5.47	0.04	90	
[Pb]	206	He	0.107	6.701	616	7.35	0.1	107	
[Pb]	207	He	0.107	9.409	541	6.81	0.1	107	
Pb	208	He	0.108	3.146	2513	3.34	0.1	108	

*see 1005
3/2/2018*

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1019498	0.65	1237359	82.39	70	125	
Sc	45	No Gas	4156232	1.64	4599003	90.37	70	125	
Ge	72	He	77465	0.39	93707	82.67	70	125	
Ge	72	H2	826493	0.40	953332	86.70	70	125	
In	115	He	693914	0.34	851093	81.53	70	125	
Lu	175	He	1869617	1.63	2126367	87.93	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS
 Data File Name 091LLCCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:10:59-08:00
 Sample Type LLCCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

2/21/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.041	12.725	134	12.51	0.04	102	
V	51	He	0.391	5.871	909	3.96	0.4	98	
Cr	52	He	0.392	1.598	1351	2.34	0.4	98	
Cr	53	He	0.357	15.716	180	11.57	0.4	89	
Mn	55	He	0.036	53.930	213	9.76	-1	-4	LLCCV Failed
Co	59	He	0.042	28.458	236	24.85	0.04	105	
Ni	60	He	0.363	8.919	596	7.30	0.4	91	
Ni	62	He	0.467	26.828	121	24.67	0.4	117	
Cu	63	He	0.150	9.741	1172	4.16	0.2	75	
Cu	65	He	0.149	11.716	574	4.94	0.2	75	
Zn	66	He	1.056	15.111	659	11.32	1	106	
As	75	He	1.007	6.694	313	6.39	1	101	
Se	77	H2	1.997	14.664	713	6.75	2	100	
Se	78	H2	1.843	0.516	1037	0.88	2	92	
Mo	95	He	0.089	3.952	189	4.44	0.1	89	
Mo	97	He	0.095	11.761	136	12.62	0.1	95	
Mo	98	He	0.101	4.494	373	3.89	0.1	101	
Ag	107	He	0.038	8.584	297	9.99	0.04	94	
Ag	109	He	0.036	0.565	279	1.38	0.04	89	
Cd	111	He	0.035	13.914	34	13.41	0.04	89	
Cd	114	He	0.043	1.874	102	1.99	0.04	107	
Sb	121	He	0.143	10.939	376	10.16	0.1	143	
Sb	123	He	0.144	7.086	300	5.09	0.1	144	LLCCV Failed
Ba	135	He	0.075	46.049	30	40.05	0.1	75	
Ba	137	He	0.095	23.021	64	19.92	0.1	95	
Tl	203	He	0.033	8.919	240	7.73	0.04	82	
Tl	205	He	0.035	7.082	636	5.80	0.04	89	
[Pb]	206	He	0.108	6.811	629	6.92	0.1	108	
[Pb]	207	He	0.103	5.187	527	5.18	0.1	103	
Pb	208	He	0.104	4.166	2447	4.66	0.1	104	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1004355	0.89	1237359	81.17	70	125	
Sc	45	No Gas	4183466	1.95	4599003	90.96	70	125	
Ge	72	He	76256	1.29	93707	81.38	70	125	
Ge	72	H2	816358	0.80	953332	85.63	70	125	
In	115	He	694089	1.63	851093	81.55	70	125	
Lu	175	He	1888945	1.10	2126367	88.83	70	125	

Low Level Continuing Calibration Verification (LLCCV) Report

Sample Table

Sample Name LLCCVS 2X
 Data File Name 092_QC1.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:13:57-08:00
 Sample Type QC1
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

2/21/18

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	0.082	0.235	257	1.12	0.08	103	
V	51	He	0.832	1.030	1828	1.24	0.8	104	
Cr	52	He	0.829	2.526	2587	0.68	0.8	104	
Cr	53	He	0.873	10.009	358	6.99	0.8	109	
Mn	55	He	0.173	22.465	377	10.73	0.2	87	
Co	59	He	0.086	11.540	461	10.13	0.08	108	
Ni	60	He	0.856	9.110	1307	10.52	0.8	107	
Ni	62	He	0.861	1.789	210	1.59	0.8	108	
Cu	63	He	0.395	4.074	2188	4.66	0.4	99	
Cu	65	He	0.387	5.665	1058	5.65	0.4	97	
Zn	66	He	2.269	10.587	1286	9.11	2	113	
As	75	He	2.136	4.892	654	3.02	2	107	
Se	77	H2	4.322	5.964	1110	3.12	4	108	
Se	78	H2	4.167	1.765	2305	0.85	4	104	
Mo	95	He	0.244	13.173	496	13.12	0.2	122	
Mo	97	He	0.212	19.312	290	17.96	0.2	106	
Mo	98	He	0.214	20.393	766	18.60	0.2	107	
Ag	107	He	0.072	2.452	550	3.37	0.08	90	
Ag	109	He	0.083	5.502	631	6.01	0.08	104	
Cd	111	He	0.085	3.728	77	4.62	0.08	107	
Cd	114	He	0.083	8.592	190	6.98	0.08	104	
Sb	121	He	0.265	3.592	612	4.37	0.2	132	
Sb	123	He	0.265	3.333	493	3.72	0.2	133	QC1 Main CR1 Failed
Ba	135	He	0.199	18.094	72	16.21	0.2	100	
Ba	137	He	0.215	6.479	138	6.88	0.2	108	
Tl	203	He	0.089	3.854	581	3.82	0.08	112	
Tl	205	He	0.081	3.818	1296	3.05	0.08	102	
[Pb]	206	He	0.195	3.600	1022	2.73	0.2	97	
[Pb]	207	He	0.207	10.745	962	9.87	0.2	104	
Pb	208	He	0.211	3.461	4488	3.10	0.2	105	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	993816	0.94	1237359	80.32	70	125	
Sc	45	No Gas	4149714	2.62	4599003	90.23	70	125	
Ge	72	He	76073	1.99	93707	81.18	70	125	
Ge	72	H2	808401	1.00	953332	84.80	70	125	
In	115	He	683509	1.37	851093	80.31	70	125	
Lu	175	He	1818328	0.72	2126367	85.51	70	125	

Sample Report

Sample Table

Sample Name LLCCVS 1.0 ppb
 Data File Name 093SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:16:57-08:00
 Sample Type Sample
 Dilution 1
 Comment
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.963	2.42	2895	0.03	
V	51	He	0.962	6.33	2085	0.05	
Cr	52	He	0.979	2.84	2993	0.03	
Cr	53	He	1.031	16.08	410	0.25	
Mn	55	He	0.971	18.57	1323	0.07	
Co	59	He	0.973	4.81	4973	0.02	
Ni	60	He	1.195	9.87	1779	0.07	
Ni	62	He	1.145	15.02	272	0.42	
Cu	63	He	0.953	2.21	4475	0.02	
Cu	65	He	1.035	5.05	2366	0.04	
Zn	66	He	2.839	2.71	1571	0.18	
As	75	He	0.881	13.47	272	0.32	
Se	77	H2	0.871	10.90	506	0.17	
Se	78	H2	0.970	0.87	542	0.18	
Mo	95	He	0.483	3.73	962	0.05	
Mo	97	He	0.522	4.76	700	0.07	
Mo	98	He	0.462	8.59	1625	0.03	
Ag	107	He	0.491	3.91	3666	0.01	
Ag	109	He	0.480	1.10	3560	0.01	
Cd	111	He	0.932	3.06	806	0.12	
Cd	114	He	0.973	2.60	2133	0.05	
Sb	121	He	0.523	5.90	1119	0.05	
Sb	123	He	0.501	2.05	869	0.06	
Ba	135	He	0.933	16.55	322	0.29	
Ba	137	He	1.013	2.72	626	0.16	
Tl	203	He	0.921	4.05	5771	0.02	
Tl	205	He	0.923	3.16	14010	0.01	
[Pb]	206	He	0.917	4.74	4561	0.02	
[Pb]	207	He	0.936	2.42	4176	0.02	
Pb	208	He	0.921	1.05	18819	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	991921	0.89	1237359	80.16	70	125	
Sc	45	No Gas	4105622	1.07	4599003	89.27	70	125	
Ge	72	He	75591	1.90	93707	80.67	70	125	
Ge	72	H2	800310	1.33	953332	83.95	70	125	
In	115	He	676974	0.64	851093	79.54	70	125	
Lu	175	He	1836313	1.38	2126367	86.36	70	125	

Prep Blank (PB) Report

Sample Table

Sample Name KQ1801858-04
 Data File Name 094_PB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:19:56-08:00
 Sample Type PB
 Dilution 1
 Comment 5X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Fail
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	-0.002	-27.3	5	28.6	0.04	
V	51	He	-0.009	-93.1	74	24.7	0.4	
Cr	52	He	0.067	7.1	437	3.1	0.4	
Cr	53	He	0.076	46.5	84	14.9	0.4	
Mn	55	He	-0.039	-64.2	127	24.1	0.1	
Co	59	He	0.002	90.3	32	33.3	0.04	
Ni	60	He	0.033	88.9	122	35.2	0.4	
Ni	62	He	0.046	99.2	26	41.9	0.4	
Cu	63	He	-0.051	-10.6	343	6.8	0.2	
Cu	65	He	-0.051	-28.3	168	18.0	0.2	
Zn	66	He	0.159	43.8	198	18.5	1	
As	75	He	-0.006	-77.0	6	24.1	1	
Se	77	H2	-0.107	-30.1	343	1.1	2	
Se	78	H2	0.004	26.4	16	3.5	2	
Mo	95	He	0.020	29.3	50	24.0	0.1	
Mo	97	He	0.012	70.8	23	51.5	0.1	
Mo	98	He	0.015	58.1	66	45.6	0.1	
Ag	107	He	0.001	94.0	14	35.3	0.04	
Ag	109	He	0.000	-150.2	8	24.7	0.04	
Cd	111	He	0.000	595.1	3	47.2	0.04	
Cd	114	He	0.123	6.0	282	6.2	0.04	Flag
Sb	121	He	0.015	58.0	116	16.2	0.1	
Sb	123	He	0.023	68.6	101	25.7	0.1	
Ba	135	He	0.037	44.9	17	34.6	0.1	
Ba	137	He	0.017	42.4	15	29.4	0.1	
Tl	203	He	0.000	-567.6	28	48.5	0.04	
Tl	205	He	-0.002	-35.4	53	21.7	0.04	
[Pb]	206	He	0.000	1613.7	86	25.0	0.1	
[Pb]	207	He	0.006	125.0	88	36.5	0.1	
Pb	208	He	0.004	22.2	389	6.5	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1022292	0.56	1237359	82.62	70	125	
Sc	45	No Gas	4186651	1.72	4599003	91.03	70	125	
Ge	72	He	77927	0.18	93707	83.16	70	125	
Ge	72	H2	813437	1.42	953332	85.33	70	125	
In	115	He	696100	0.44	851093	81.79	70	125	
Lu	175	He	1871219	1.52	2126367	88.00	70	125	

Laboratory Control Sample (LCSS) Report

Sample Table

Sample Name KQ1801858-05
 Data File Name 095_QCS.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:22:56-08:00
 Sample Type QCS
 Dilution 1
 Comment 20X
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	34.828	1.445	102869	1.38	33	105.5	
V	51	He	51.127	1.492	108176	0.34	48.35	105.7	
Cr	52	He	93.102	1.255	267841	0.75	91	102.3	
Cr	53	He	93.158	0.692	32729	1.32	91	102.4	
Mn	55	He	200.421	1.238	242715	1.99	205	97.8	
Co	59	He	89.877	0.791	466088	0.98	81	111.0	
Ni	60	He	85.252	0.695	124436	1.00	74.5	114.4	
Ni	62	He	84.521	1.491	19467	0.89	74.5	113.5	
Cu	63	He	52.928	1.662	223290	1.21	53	99.9	
Cu	65	He	54.002	0.903	111810	0.70	53	101.9	
Zn	66	He	100.777	1.217	53004	1.03	95.3	105.7	
As	75	He	48.080	1.493	14740	1.45	49.25	97.6	
Se	77	H2	81.740	2.953	14525	3.46	77	106.2	
Se	78	H2	80.361	1.199	44117	1.50	77	104.4	
Mo	95	He	94.163	0.832	183774	1.23	82	114.8	
Mo	97	He	94.154	1.212	123742	0.42	82	114.8	
Mo	98	He	93.341	0.763	321710	0.25	82	113.8	
Ag	107	He	20.851	1.967	153693	0.99	20.45	102.0	
Ag	109	He	21.311	1.663	155889	0.68	20.45	104.2	
Cd	111	He	86.359	1.443	73605	0.55	73	118.3	
Cd	114	He	86.945	1.220	188012	0.82	73	119.1	
Sb	121	He	46.566	1.383	91356	0.48	52.5	88.7	
Sb	123	He	46.595	0.566	74263	1.50	52.5	88.8	
Ba	135	He	155.407	1.239	52444	1.80	154	100.9	
Ba	137	He	157.407	0.646	95439	1.54	154	102.2	
Tl	203	He	98.196	1.875	629637	1.12	87.5	112.2	
Tl	205	He	103.502	2.733	1604991	1.29	87.5	118.3	
[Pb]	206	He	61.663	2.288	309563	0.72	65	94.9	
[Pb]	207	He	58.795	3.081	265682	1.84	65	90.5	
Pb	208	He	60.009	2.610	1240719	1.28	65	92.3	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	978654	0.97	1237359	79.09	70	125	
Sc	45	No Gas	4115268	0.61	4599003	89.48	70	125	
Ge	72	He	77084	1.57	93707	82.26	70	125	
Ge	72	H2	806676	0.58	953332	84.62	70	125	
In	115	He	669442	0.98	851093	78.66	70	125	
Lu	175	He	1888134	1.61	2126367	88.80	70	125	

All Reference Sample Report

Sample Table

Sample Name K1801219-001
 Data File Name 096_ARF.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:25:55-08:00
 Sample Type AllRef
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.064	13.46	212	0.03	
V	51	He	10.880	1.73	23581	0.05	
Cr	52	He	17.390	2.81	51274	0.03	
Cr	53	He	17.717	3.12	6401	0.28	
Mn	55	He	73.803	2.02	91347	0.08	
Co	59	He	1.615	3.70	8569	0.02	
Ni	60	He	17.176	3.30	25652	0.07	
Ni	62	He	17.541	4.64	4137	0.42	
Cu	63	He	162.582	2.79	699065	0.02	
Cu	65	He	165.477	1.94	349198	0.05	
Zn	66	He	330.617	1.01	177259	0.19	
As	75	He	1.116	7.18	357	0.31	
Se	77	H2	3.204	13.74	955	0.34	
Se	78	H2	3.065	3.03	1772	0.17	
Mo	95	He	3.039	2.50	6283	0.05	
Mo	97	He	2.943	2.73	4099	0.07	
Mo	98	He	2.950	0.74	10776	0.03	
Ag	107	He	1.093	3.28	8531	0.01	
Ag	109	He	1.101	4.07	8529	0.01	
Cd	111	He	0.841	4.64	761	0.11	
Cd	114	He	1.161	2.34	2662	0.04	
Sb	121	He	0.952	4.51	2059	0.05	
Sb	123	He	0.950	4.49	1666	0.06	
Ba	135	He	71.445	2.66	25510	0.28	
Ba	137	He	72.419	3.20	46452	0.16	
Tl	203	He	0.062	8.21	446	0.01	
Tl	205	He	0.054	10.45	958	0.01	
[Pb]	206	He	6.352	1.02	33089	0.02	
[Pb]	207	He	6.078	1.66	28491	0.02	
Pb	208	He	6.158	2.69	132056	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1034747	1.77	1237359	83.63	70	125	
Sc	45	No Gas	4217315	1.17	4599003	91.70	70	125	
Ge	72	He	78691	0.62	93707	83.98	70	125	
Ge	72	H2	843091	1.71	953332	88.44	70	125	
In	115	He	708573	2.48	851093	83.25	70	125	
Lu	175	He	1954124	1.47	2126367	91.90	70	125	

Sample Report

Sample Table

Sample Name KQ1801858-01
 Data File Name 097SMPL.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:28:53-08:00
 Sample Type Sample
 Dilution 1
 Comment 5X
 ISTD Ref FileName 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	%RSD	QC Flag
Be	9	No Gas	0.072	6.95	243	0.03	
V	51	He	11.073	2.23	24720	0.04	
Cr	52	He	17.559	0.90	53340	0.03	
Cr	53	He	17.806	1.22	6628	0.27	
Mn	55	He	74.880	1.54	95484	0.08	
Co	59	He	1.531	0.61	8373	0.02	
Ni	60	He	16.115	1.25	24804	0.06	
Ni	62	He	15.575	1.60	3786	0.41	
Cu	63	He	170.869	0.97	756981	0.02	
Cu	65	He	173.305	0.72	376791	0.05	
Zn	66	He	342.995	0.18	189467	0.18	
As	75	He	1.186	4.05	391	0.30	
Se	77	H2	3.373	2.71	1003	0.34	
Se	78	H2	3.212	4.26	1888	0.17	
Mo	95	He	3.065	2.21	6556	0.05	
Mo	97	He	3.009	3.93	4335	0.07	
Mo	98	He	3.040	2.51	11484	0.03	
Ag	107	He	1.211	3.80	9778	0.01	
Ag	109	He	1.235	4.02	9900	0.01	
Cd	111	He	0.870	1.19	814	0.11	
Cd	114	He	1.163	0.34	2760	0.04	
Sb	121	He	0.975	1.70	2181	0.04	
Sb	123	He	0.954	2.19	1730	0.06	
Ba	135	He	71.724	0.74	26493	0.27	
Ba	137	He	73.825	0.96	48991	0.15	
Tl	203	He	0.040	21.86	304	0.01	
Tl	205	He	0.033	8.76	638	0.01	
[Pb]	206	He	6.999	1.68	37321	0.02	
[Pb]	207	He	6.713	0.91	32215	0.02	
Pb	208	He	6.804	0.64	149376	0.00	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1069071	2.47	1237359	86.40	70	125	
Sc	45	No Gas	4326525	2.59	4599003	94.08	70	125	
Ge	72	He	81074	0.43	93707	86.52	70	125	
Ge	72	H2	857313	0.43	953332	89.93	70	125	
In	115	He	732695	0.42	851093	86.09	70	125	
Lu	175	He	2000772	0.90	2126367	94.09	70	125	

Matrix Spike Sample (MS) Report

Sample Table

Sample Name KQ1801858-02
 Data File Name 098_SpD.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:31:53-08:00
 Sample Type Spike
 Dilution 1
 Comment 5X
 QC Ref File Name 096_ARF.d
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Spk Amt	%Rec	QC Flag
Be	9	No Gas	20.112	0.507	60987	0.89	20	100	
V	51	He	214.808	1.190	446509	1.20	200	102	
Cr	52	He	99.326	0.306	280903	1.53	80	102	
Cr	53	He	99.240	1.678	34269	1.92	80	102	
Mn	55	He	267.225	1.757	318009	0.98	200	97	
Co	59	He	200.920	0.586	1024230	1.19	200	100	
Ni	60	He	218.462	0.632	313343	1.01	200	101	
Ni	62	He	216.452	1.370	48988	1.95	200	99	
Cu	63	He	277.029	0.126	1146707	1.66	100	114	
Cu	65	He	282.829	1.611	574519	1.82	100	117	
Zn	66	He	567.236	0.610	292773	1.45	200	118	
As	75	He	195.272	0.609	58831	1.99	200	97	
Se	77	H2	208.383	0.917	35508	1.30	200	103	
Se	78	H2	205.542	1.362	109839	0.12	200	101	
Mo	95	He	202.593	1.052	398627	1.60	200	100	
Mo	97	He	201.599	2.032	267090	0.63	200	99	
Mo	98	He	201.795	1.463	701181	1.14	200	99	
Ag	107	He	20.874	2.223	155113	1.08	20	99	
Ag	109	He	21.156	2.526	156008	0.41	20	100	
Cd	111	He	21.140	2.318	18166	0.63	20	101	
Cd	114	He	21.542	0.989	46972	1.72	20	102	
Sb	121	He	182.434	1.003	360641	1.67	200	91	
Sb	123	He	181.243	1.116	291042	1.47	200	90	
Ba	135	He	467.730	1.226	159118	1.35	400	99	
Ba	137	He	479.826	1.813	293257	0.99	400	102	
Tl	203	He	38.172	1.889	244028	0.72	40	95	
Tl	205	He	37.806	1.480	584644	1.81	40	94	
[Pb]	206	He	194.044	1.610	971074	0.64	200	94	
[Pb]	207	He	202.925	1.880	914114	0.84	200	98	
Pb	208	He	204.376	1.575	4212337	0.16	200	99	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1004635	1.00	1237359	81.19	70	125	
Sc	45	No Gas	4191879	1.67	4599003	91.15	70	125	
Ge	72	He	75774	1.56	93707	80.86	70	125	
Ge	72	H2	785478	1.24	953332	82.39	70	125	
In	115	He	675047	2.58	851093	79.32	70	125	
Lu	175	He	1882361	1.58	2126367	88.52	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name CCV
 Data File Name 099_CCV.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:34:51-08:00
 Sample Type CCV
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	QC Flag
Be	9	No Gas	23.841	0.911	71272	0.35	25	95	
V	51	He	24.768	0.904	51365	0.59	25	99	
Cr	52	He	24.362	1.232	68801	1.04	25	97	
Cr	53	He	24.481	2.815	8461	1.41	25	98	
Mn	55	He	23.262	2.181	27736	3.12	25	93	
Co	59	He	24.296	2.411	123373	1.34	25	97	
Ni	60	He	24.358	1.451	34862	0.52	25	97	
Ni	62	He	24.393	4.048	5511	3.47	25	98	
Cu	63	He	24.263	0.999	100530	1.13	25	97	
Cu	65	He	24.499	2.258	49830	3.68	25	98	
Zn	66	He	24.775	2.557	12842	2.07	25	99	
As	75	He	23.674	0.790	7111	0.92	25	95	
Se	77	H2	24.166	2.834	4595	2.38	25	97	
Se	78	H2	24.020	1.281	13336	0.58	25	96	
Mo	95	He	12.507	4.036	24876	4.02	12.5	100	
Mo	97	He	12.230	0.624	16381	0.70	12.5	98	
Mo	98	He	12.127	0.764	42597	0.88	12.5	97	
Ag	107	He	12.062	1.561	90590	1.45	12.5	96	
Ag	109	He	12.188	1.265	90845	1.22	12.5	98	
Cd	111	He	24.153	0.172	20977	0.20	25	97	
Cd	114	He	24.177	0.411	53270	0.53	25	97	
Sb	121	He	12.275	1.324	24597	1.42	12.5	98	
Sb	123	He	12.086	0.907	19669	0.98	12.5	97	
Ba	135	He	23.335	3.352	8025	3.27	25	93	
Ba	137	He	24.056	2.553	14863	2.67	25	96	
Tl	203	He	23.280	1.913	150027	0.93	25	93	
Tl	205	He	23.243	1.282	362332	0.91	25	93	
[Pb]	206	He	23.304	0.537	117642	1.21	25	93	
[Pb]	207	He	23.242	1.348	105608	1.72	25	93	
Pb	208	He	23.260	0.551	483548	0.63	25	93	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	990530	1.19	1237359	80.05	70	125	
Sc	45	No Gas	4130739	1.85	4599003	89.82	70	125	
Ge	72	He	75480	1.47	93707	80.55	70	125	
Ge	72	H2	815253	0.70	953332	85.52	70	125	
In	115	He	682018	0.12	851093	80.13	70	125	
Lu	175	He	1897334	1.01	2126367	89.23	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name CCB
 Data File Name 100_CCB.d
 Data Path Name D:\Data\Experiments 2018\022018B.b
 Acq Date Time 2018-02-20T14:37:50-08:00
 Sample Type CCB
 Dilution 1
 Comment
 ISTD Ref File Name 003CALB.d
 Sample QC Pass/Fail Pass
 ISTD Pass/Fail Pass

QC Analyte Table

Name	Mass	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	No Gas	0.002	49.7	18	20.7	0.04	
V	51	He	-0.008	-106.1	77	23.0	0.4	
Cr	52	He	0.011	70.7	272	8.9	0.4	
Cr	53	He	0.034	160.5	69	28.3	0.4	
Mn	55	He	-0.068	-42.2	90	38.5	0.1	
Co	59	He	0.006	60.4	53	38.0	0.04	
Ni	60	He	0.005	65.9	81	6.3	0.4	
Ni	62	He	0.009	4.4	17	0.0	0.4	
Cu	63	He	-0.041	-12.3	381	5.6	0.2	
Cu	65	He	-0.031	-51.8	208	16.2	0.2	
Zn	66	He	-0.024	-289.9	100	36.1	1	
As	75	He	-0.005	-93.6	7	22.9	1	
Se	77	H2	-0.041	-229.6	357	5.3	20	
Se	78	H2	0.003	168.2	16	18.4	2	
Mo	95	He	0.008	52.2	26	32.8	0.1	
Mo	97	He	0.003	93.3	10	33.3	0.1	
Mo	98	He	0.008	8.9	41	4.7	0.1	
Ag	107	He	0.001	243.6	16	101.3	0.04	
Ag	109	He	0.000	-310.4	8	49.5	0.04	
Cd	111	He	0.003	55.0	5	27.0	0.04	
Cd	114	He	0.006	5.5	19	2.7	0.04	
Sb	121	He	0.050	5.4	186	4.1	0.1	
Sb	123	He	0.053	17.6	150	10.6	0.1	
Ba	135	He	0.009	111.7	7	50.0	0.1	
Ba	137	He	0.004	93.3	7	35.2	0.1	
Tl	203	He	0.008	42.9	84	29.1	0.04	
Tl	205	He	0.006	11.8	180	8.5	0.04	
[Pb]	206	He	0.005	71.1	110	13.9	0.1	
[Pb]	207	He	0.005	77.5	88	22.9	0.1	
Pb	208	He	0.005	26.0	416	10.0	0.1	

QC ISTD Table

Name	Mass	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	1012480	1.07	1237359	81.83	70	125	
Sc	45	No Gas	4056073	2.69	4599003	88.19	70	125	
Ge	72	He	77199	0.54	93707	82.38	70	125	
Ge	72	H2	817962	0.83	953332	85.80	70	125	
In	115	He	694232	1.37	851093	81.57	70	125	
Lu	175	He	1910195	2.92	2126367	89.83	70	125	

CVAA Mercury Data Review Form

K-CVAA-02

Element: Hg

Analysis Lot #: 022218E HG2

Starlims #: 581405

Cal. STD/CCV Source: HG3-7-C

Pipettes ID: U52540, HG-5.0

Tubes P7176068

Service Request Numbers:

K1801202, K1801267, K1801280, K1801415, K1801474

	Yes	No	NA
1) Appropriate standardization completed	<u>X</u>	<u> </u>	<u> </u>
2) ICV within 10% of true value	<u>X</u>	<u> </u>	<u> </u>
3) CCVs in control (+/- 10%)	<u>X</u>	<u> </u>	<u> </u>
4) CCBs and or ICBs below MRL	<u>X</u>	<u> </u>	<u> </u>
5) CCV/CCB check run every 10 samples	<u>X</u>	<u> </u>	<u> </u>
6) All reported samples within calibration range	<u>X</u>	<u> </u>	<u> </u>
7) Calculations correct	<u>X</u>	<u> </u>	<u> </u>

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: ARM (Initials)

Primary Reviewed By: ARM

Date: 2/23/18

Secondary Reviewed By: 3L

Date: 2/23/18

Data Review Form

Instrument ID#: K-CVAA-02
DataFile Name: R:\ICPI\WIP\DATA\K-CVAA-02 (QUICKTRACE)\022218E HG2.csv
RUNNO: 581405

K1801202

No exceptions to report.

K1801267

No exceptions to report.

K1801280



No exceptions to report.

K1801415

No exceptions to report.

K1801474

No exceptions to report.

Primary Approver:  8/15/18
Secondary Approver:  2/23/18

CVAH Hg ANALYTICAL WORKSHEET

Method: 7470	Cal. Inter. Std* (100ppb): HG3-7-D 2nd Source Inter Std** (1ppm): HG3-6-M
---------------------	--

Analysis For: Hg	DATA					
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
1	Cal. Blk.	0.000	~	~		
2	Std 0.2*	0.200	~	(0.10-50mL)		
3	Std 0.5*	0.500	~	(0.25-50mL)		
4	Std 1.0*	1.000	~	(0.5-50mL)		
5	Std 5.0*	5.000	~	(2.5-50mL)		
6	Std 10.0*	10.000	~	(5.0-50mL)		
7	ICV1	5.010	~	100%		
8	ICB1	-0.022	~	~		
9	LLICV1	0.203	~	102%		
10	CCV1	5.030	~	101%		
11	CCB1	-0.020	~	~		
12	KQ1802022-02	-0.022	~			
13	KQ1802022-01	4.500	~	90%		
14	K1801202-020 D	0.002	~			
15	K1801202-021 D	-0.015	~			
16	KQ1802022-03	-0.015	~			
17	KQ1802022-04	4.660	~	93%		
18	K1801202-021A D	4.600	~	92%		
19	K1801202-022 D	0.092	~			
20	K1801202-023 D	-0.003	~			
21	K1801267-004	-0.020	~			
22	CCV2	4.970	~	99%		
23	CCB2	-0.025	~	~		
24	K1801267-018	-0.017	~			
25	K1801280-010 D	0.001	~			
26	K1801280-011 D	-0.001	~			
27	K1801280-012 D	-0.012	~			
28	K1801280-013 D	-0.002	~			
29	K1801415-002 D	-0.013	~			
30	K1801415-003 D	0.002	~			
31	K1801415-006 D	-0.002	~			
32	K1801415-007 D	-0.003	~			

Comments:

Soil/Tissue Spike Level:						
Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

CVAA Hg ANALYTICAL WORKSHEET

Analysis For: Hg		DATA				
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
33	K1801474-001 5	-0.009	5	Cx=-0.016		
34	CCV3	4.960	~	99%		
35	CCB3	-0.029	~	~		
36	K1801474-001A 5	2.900	5	58%		
37	CCV4	4.980	~	100%		
38	CCB4	-0.026	~	~		
39						
40						
41						
42						
43						
44						
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64						

Comments:

Soil/Tissue Spike Level:						
Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

Report Generated By CETAC QuickTrace

Analyst: alkls.alklsp196

Worksheet file: C:\Program Files\QuickTrace\Worksheets\022218E HG2.wsz

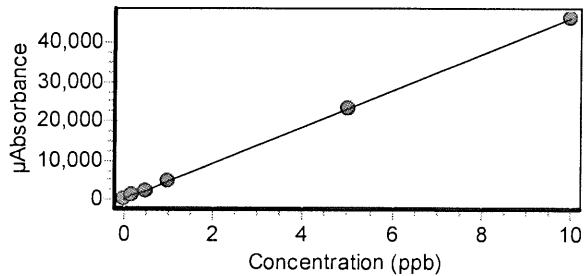
Date Started: 2/22/2018 2:12:27 PM

Comment:

Results

Sample Name	Type	Date/Time	Conc (ppb)	μ Abs	%RSD	Flags
Calibration Blank	STD	02/22/18 02:50:21 pm	0.000	152	21.04	
Replicates			190.6 132.5 120.0 165.2			
Standard #1	STD	02/22/18 02:51:58 pm	0.200	1088	2.89	
Replicates			1100.9 1113.1 1095.4 1042.0			
Standard #2	STD	02/22/18 02:53:35 pm	0.500	2443	0.92	
Replicates			2438.9 2456.3 2413.2 2463.7			
Standard #3	STD	02/22/18 02:55:12 pm	1.000	4749	0.33	
Replicates			4759.6 4743.5 4762.7 4728.7			
Standard #4	STD	02/22/18 02:56:50 pm	5.000	23048	1.25	
Replicates			22773.6 22899.7 23084.5 23435.4			
Standard #5	STD	02/22/18 02:58:29 pm	10.000	46421	0.49	
Replicates			46086.3 46523.4 46582.8 46490.6			

Calibration
 Equation: $A = 152.066 + 4617.130C$
 R2: 0.99997
 SEE: 124.1704
 Flags:



ICV1	ICV	02/22/18 03:00:08 pm	5.010	23276	0.38	
Replicates			23162.5 23259.6 23367.6 23314.1			
% Recovery			100.17			
ICB1	ICB	02/22/18 03:01:44 pm	-0.021	53	38.36	
Replicates			53.9 38.4 80.9 37.7			

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
LLICV1	CRDL	02/22/18 03:03:20 pm	0.203	1088	1.18	
Replicates						
1096.5						
1070.2						
1088.4						
1098.2						
% Recovery						
101.39						
CCV1	CCV	02/22/18 03:04:58 pm	5.030	23376	0.41	
Replicates						
23245.3						
23369.1						
23462.7						
23425.1						
% Recovery						
100.60						
CCB1	CCB	02/22/18 03:06:34 pm	-0.020	59	30.16	
Replicates						
84.4						
59.0						
43.1						
50.9						
KQ1802022-02	UNK	02/22/18 03:08:10 pm	-0.022	51	56.76	
Replicates						
21.4						
89.6						
38.9						
54.5						
KQ1802022-01	UNK	02/22/18 03:09:46 pm	4.500	20922	0.69	
Replicates						
20722.9						
21014.3						
21043.8						
20908.1						
K1801202-020 D	UNK	02/22/18 03:11:22 pm	0.002	163	21.87	
Replicates						
174.0						
148.4						
122.3						
205.4						
K1801202-021 D	UNK	02/22/18 03:12:59 pm	-0.015	82	23.56	
Replicates						
90.4						
60.0						
72.9						
103.9						
KQ1802022-03	UNK	02/22/18 03:14:36 pm	-0.015	83	37.87	
Replicates						
108.4						
85.9						
38.0						
100.0						
KQ1802022-04	UNK	02/22/18 03:16:13 pm	4.660	21669	0.94	
Replicates						
21816.8						
21737.9						
21751.5						
21368.9						
K1801202-021A D	UNK	02/22/18 03:17:51 pm	4.600	21401	0.45	
Replicates						
21296.9						
21438.6						
21516.2						
21351.5						
K1801202-022 D	UNK	02/22/18 03:19:29 pm	0.092	576	1.80	
Replicates						
588.8						
566.5						
579.5						
568.4						
K1801202-023 D	UNK	02/22/18 03:21:07 pm	-0.003	137	42.30	
Replicates						
147.6						
148.2						
56.5						
194.5						

Sample Name	Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
K1801267-004 Replicates	UNK	02/22/18 03:22:45 pm	-0.020	59	29.84	
			46.0	70.0	43.0	79.0
CCV2 Replicates % Recovery	CCV	02/22/18 03:24:24 pm	4.970	23117	0.46	
			22990.5	23066.8	23195.4	23216.5
			99.48			
CCB2 Replicates	CCB	02/22/18 03:25:59 pm	-0.025	38	120.76	
			33.3	86.1	-22.6	55.0
K1801267-018 Replicates	UNK	02/22/18 03:27:38 pm	-0.017	75	13.02	
			83.8	81.5	70.5	63.0
K1801280-010 D Replicates	UNK	02/22/18 03:29:17 pm	0.001	157	21.79	
			147.6	174.8	191.0	113.0
K1801280-011 D Replicates	UNK	02/22/18 03:30:52 pm	-0.001	150	13.30	
			149.6	141.4	130.4	177.0
K1801280-012 D Replicates	UNK	02/22/18 03:32:28 pm	-0.012	99	23.07	
			105.0	80.9	80.5	128.2
K1801280-013 D Replicates	UNK	02/22/18 03:34:04 pm	-0.002	144	15.69	
			136.7	152.0	116.3	169.3
K1801415-002 D Replicates	UNK	02/22/18 03:35:40 pm	-0.013	93	16.79	
			98.4	91.4	73.1	110.6
K1801415-003 D Replicates	UNK	02/22/18 03:37:16 pm	0.002	163	26.59	
			209.3	105.4	161.1	176.1
K1801415-006 D Replicates	UNK	02/22/18 03:38:53 pm	-0.002	141	26.69	
			193.4	104.7	133.6	130.7
K1801415-007 D Replicates	UNK	02/22/18 03:40:30 pm	-0.003	137	12.14	
			140.3	113.3	152.0	142.5

Sample Name				Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
K1801474-001 5				UNK	02/22/18 03:42:08 pm	-0.009	111	39.83	
Replicates	138.3	138.3	45.8	119.9					
CCV3				CCV	02/22/18 03:43:46 pm	4.960	23040	0.50	
Replicates	22875.2	23047.6	23118.4	23118.5					
% Recovery	99.14								
CCB3				CCB	02/22/18 03:45:21 pm	-0.028	20	149.90	
Replicates	40.5	36.6	-25.0	29.5					
K1801474-001A 5				UNK	02/22/18 03:46:59 pm	2.900	13555	0.81	
Replicates	13404.7	13553.0	13665.2	13595.5					
CCV4				CCV	02/22/18 03:51:23 pm	4.980	23139	0.46	
Replicates	22999.3	23174.3	23251.6	23129.2					
% Recovery	99.57								
CCB4				CCB	02/22/18 03:52:59 pm	-0.026	33	64.90	
Replicates	35.3	28.5	60.2	8.2					

Preparation Information Benchsheet

Prep Run: 308435 **Prep Workflow:** HgDigAq **Status:** Prepped
Team: Metals **Prep Method:** Method **Current Step:** Digestion **Prep Date:** 02/22/2018 12:30
Analyst: AMCKORNEY **Rush/NPDES:** Both **Due Date:** 02/24/2018
Hold Date: 03/07/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1802022-02	Method Blank		10 mL	10 mL			Hg T	
KQ1802022-01	Lab Control Sample		10 mL	10 mL	0.05 mL	187744	Hg T	
K1801202-020	MW-11S	.01	10 mL	10 mL			Hg D	
K1801202-021	MW-13	.01	10 mL	10 mL			Hg D	
K1801202-021: KQ1802022-03	Duplicate	.01	10 mL	10 mL			Hg D	
K1801202-021: KQ1802022-04	Matrix Spike	.01	10 mL	10 mL	0.05 mL	187744	Hg D	
K1801202-022	TMP-11	.01	10 mL	10 mL			Hg D	
K1801202-023	MW-17S	.01	10 mL	10 mL			Hg D	
K1801267-004	EQB-SD-01	.06	10 mL	10 mL			Hg T	
K1801267-018	EQB-PW-01	.06	10 mL	10 mL			Hg T	
K1801280-010	TMP-8	.01	10 mL	10 mL			Hg D	
K1801280-011	TMP-9	.01	10 mL	10 mL			Hg D	
K1801280-012	TMP-7	.01	10 mL	10 mL			Hg D	
K1801280-013	TMP-10	.01	10 mL	10 mL			Hg D	
K1801415-002	SB-1	.01	10 mL	10 mL			Hg D	
K1801415-003	SB-2	.01	10 mL	10 mL			Hg D	
K1801415-006	SB-3	.01	10 mL	10 mL			Hg D	
K1801415-007	SB-4	.01	10 mL	10 mL			Hg D	
K1801474-001	021418	.03	2.5 mL	10 mL			Hg T	

19 Total Samples consisting of 15 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
K-MET Hg Source Standard 1000 ug/L	Spike	187744	3/1/2018

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	K-MET 100ml Centrifuge Tube	183592	Digestion	K-MET K2S2O8 Hg	186360

Digestion	K-MET NACl Hg	184228	Digestion	K-MET SnCl Hg	187359
Digestion	K-MET HNO3 Hg	185067	Digestion	K-MET NH2OH-HCl Hg	187363
Digestion	K-MET KMnO4 Hg	185240	Digestion	K-MET 16 mL Tube	187410
Digestion	K-MET H2SO4 Hg	185918			

Preparation Hardware / Equipment

Step	Name	Property	Value		Step	Name	Property	Value	
Digestion	K-BlockDigester-15	Corrected Temperature	95	deg C	Digestion	K-BlockDigester-17	Thermometer ID 4185309		NONE
Digestion	K-BlockDigester-15	Correction Factor	0	deg C	Digestion	K-BlockDigester-17	Thermometer Location	53	NONE
Digestion	K-BlockDigester-15	Observed Temperature	95	deg C	Digestion	K-DG1000C			
Digestion	K-BlockDigester-15	Thermometer ID 4185262		NONE	Digestion	K-DG250A			
Digestion	K-BlockDigester-15	Thermometer Location	6	NONE	Digestion	K-DG500A			
Digestion	K-BlockDigester-17	Corrected Temperature	95	deg C	Digestion	K-HG-5.0			
Digestion	K-BlockDigester-17	Correction Factor	0	deg C	Digestion	K-U52540			
Digestion	K-BlockDigester-17	Observed Temperature	95	deg C					

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion	22-FEB-18 12:30	22-FEB-18 14:30	AMCKORNEY		N	

Comments

CAL. STD/CCV SOURCE: HG3-7-D

Review

Reviewed by: 3C Date: 2/23/18

Preparation Information Benchsheet

Prep Run: 308435 **Prep Workflow:** HgDigAq **Status:** Draft **Prep Date:** 02/15/2018
Team: Metals **Prep Method:** Method **Current Step:** Digestion 10:52
Analyst: JHINSON **Rush/NPDES:** Both **Due Date:** 02/16/2018
Hold Date: 03/07/2018

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1802022-02	Method Blank		10 mL	10 mL			Hg T	
KQ1802022-01	Lab Control Sample		10 mL	10 mL			Hg T	
K1801202-020	MW-11S	.01	10 mL	10 mL			Hg D	
K1801202-021	MW-13	.01	10 mL	10 mL			Hg D	
K1801202-021: KQ1802022-03	Duplicate	.01	10 mL	10 mL			Hg D	
K1801202-021: KQ1802022-04	Matrix Spike	.01	10 mL	10 mL			Hg D	
K1801202-022	TMP-11	.01	10 mL	10 mL			Hg D	
K1801202-023	MW-17S	.01	10 mL	10 mL			Hg D	
K1801267-004	EQB-SD-01	.06	10 mL	10 mL			Hg T	
K1801267-018	EQB-PW-01	.06	10 mL	10 mL			Hg T	
K1801280-010	TMP-8	.01	10 mL	10 mL			Hg D	
K1801280-011	TMP-9	.01	10 mL	10 mL			Hg D	
K1801280-012	TMP-7	.01	10 mL	10 mL			Hg D	
K1801280-013	TMP-10	.01	10 mL	10 mL			Hg D	
K1801415-002	SB-1	.01	10 mL	10 mL			Hg D	
K1801415-003	SB-2	.01	10 mL	10 mL			Hg D	
K1801415-006	SB-3	.01	10 mL	10 mL			Hg D	
K1801415-007	SB-4	.01	10 mL	10 mL			Hg D	
K1801474-001	021418	.03	2.5 mL	10 mL			Hg T	

Added

19 Total Samples consisting of 15 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Preparation Materials

HG 3-7-D

12:30

6
53

CVAA Mercury Data Review Form

K-CVAA-02

Element: Hg

Analysis Lot #: 032018A HG2

Starlins #: 584203

Cal. STD/CCV Source: HG3-8-B

Pipette IDs: U52540, HG2-5.0

16mL Tube Lot #: P7202846

Service Request Numbers:

K1802176, K1802209, K1802232, K1802235, K1802353, K1801267, K1801925,
K1801988, K1802011, K1802056, K1802101, K1802110, K1802161

	Yes	No	NA
1) Appropriate standardization completed	<u>X</u>		
2) ICV within 10% of true value	<u>X</u>		
3) CCVs in control (+/- 10%)	<u>X</u>		
4) CCBs and or ICBs below MRL	<u>X</u>		
5) CCV/CCB check run every 10 samples	<u>X</u>		
6) All reported samples within calibration range	<u>X</u>		
7) Calculations correct	<u>X</u>		

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: KL (Initials)

Primary Reviewed By: Kath Z

Date: 3-20-18

Secondary Reviewed By: J

Date: 3/20/18

Data Review Form

Instrument ID#: K-CVAA-02
DataFile Name: R:\ICPI\WIP\DATA\K-CVAA-02 (QUICKTRACE)\032018A HG2.csv
RUNNO: 584203

K1801267

No exceptions to report.

K1801925

No exceptions to report.

K1801988

No exceptions to report.

K1802011

No exceptions to report.

K1802056

No exceptions to report.

K1802101

No exceptions to report.

K1802110

No exceptions to report.

K1802161

No exceptions to report.

K1802176

No exceptions to report.

K1802209

No exceptions to report.

K1802232

No exceptions to report.

K1802233

No exceptions to report.

Primary Approver: *Keith J* 3-20-18
Secondary Approver: *B 3/20/18*

Data Review Form

Instrument ID#: K-CVAA-02
DataFile Name: R:\ICPI\WIP\DATA\K-CVAA-02 (QUICKTRACE)\032018A HG2.csv
RUNNO: 584203

K1802235

No exceptions to report.

K1802353

No exceptions to report.

CVAA Hg ANALYTICAL WORKSHEET

Method: 7470A	Cal. Inter. Std* (100ppb): HG3-8-B 2nd Source Inter Std** (1ppm): HG3-7-L
----------------------	--

Analysis For: Hg **DATA**

Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)	Comments:
1	Cal. Blk.	0.000	~	~	
2	Std 0.2*	0.200	~	(0.10-50mL)	
3	Std 0.5*	0.500	~	(0.25-50mL)	
4	Std 1.0*	1.000	~	(0.5-50mL)	
5	Std 5.0*	5.000	~	(2.5-50mL)	
6	Std 10.0*	10.000	~	(5.0-50mL)	
7	ICV1**	5.390	~	108%	
8	ICB1	-0.003	~	~	
9	LLICV1*	0.184	~	92%	
10	CCV1*	4.880	~	98%	
11	CCB1	-0.019	~	~	
12	KQ1803273-01	-0.047	~		
13	KQ1803273-02	5.230	~	105%	
14	K1802176-001	-0.044	~		
15	K1802176-001A	5.170	~	103%	
16	KQ1803273-03	-0.047	~		
17	KQ1803273-04	5.290	~	106%	
18	K1802176-002	-0.062	~		
19	K1802176-003	-0.034	~		
20	K1802176-004	-0.039	~		
21	K1802176-005	-0.020	~		
22	CCV2	4.910	~	98%	
23	CCB2	-0.015	~	~	
24	K1802176-006	-0.047	~		
25	K1802176-007	-0.040	~		
26	K1802176-008	-0.036	~		
27	K1802176-009	-0.053	~		
28	K1802176-001 D	-0.042	~		
29	K1802176-002 D	-0.039	~		
30	K1802176-003 D	-0.043	~		
31	K1802176-004 D	-0.052	~		
32	K1802176-005 D	-0.035	~		

Comments:

Soil/Tissue Spike Level:						
Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

CVAA Hg ANALYTICAL WORKSHEET

Analysis For: Hg		DATA				
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
33	K1802176-006 D	-0.043	~			
34	CCV3	4.950	~	99%		
35	CCB3	-0.013	~	~		
36	K1802176-007 D	-0.044	~			
37	K1802176-008 D	-0.028	~			
38	K1802176-009 D	-0.042	~			
39	KQ1803179-01	-0.039	~			
40	KQ1803179-02	5.570	~	111%		
41	K1802209-002	-0.030	~			
42	K1802233-001	-0.050	~			
43	K1802233-001A	5.250	~	105%		
44	KQ1803179-03	-0.054	~			
45	KQ1803179-04	5.230	~	105%		
46	CCV4	4.940	~	99%		
47	CCB4	-0.009	~	~		
48	K1802232-001	-0.038	~			
49	K1802235-001	-0.026	~			
50	K1802353-001 5X	-0.046	~		Cx=	-0.087
51	K1802353-001A 5X	2.640	~	53%		
52	KQ1803003-01	-0.056	~			
53	KQ1803003-02	5.140	~	103%		
54	K1801267-008	-0.030	~			
55	K1801267-017	-0.027	~			
56	K1801925-001	-0.042	~			
57	K1801925-001 D	-0.035	~			
58	CCV5	4.920	~	98%		
59	CCB5	-0.015	~	~		
60	K1801988-001	-0.014	~			
61	K1801988-001A	5.260	~	105%		
62	KQ1803003-03	-0.030	~			
63	KQ1803003-04	5.200	~	104%		
64	K1801988-002	-0.032	~			

Comments:

Soil/Tissue Spike Level:

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

CVAA Hg ANALYTICAL WORKSHEET

Analysis For: Hg		DATA				
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
65	K1801988-003	-0.018	~			
66	K1801988-004	0.039	~			
67	K1801988-001 D	-0.041	~			
68	K1801988-002 D	-0.041	~			
69	K1801988-003 D	-0.043	~			
70	CCV6	4.890	~	98%		
71	CCB6	-0.007	~	~		
72	K1801988-004 D	-0.042	~			
73	K1802011-001	-0.030	~			
74	KQ1803003-05	-0.045	~			
75	KQ1803003-06	5.160	~	103%		
76	K1802011-001 D	-0.052	~			
77	K1802056-002	0.007	~			
78	K1802101-001	-0.030	~			
79	K1802110-001 5X	-0.040	~		Cx=	-0.080
80	K1802110-001A 5X	2.490	~	50%		
81	K1802161-002	-0.061	~			
82	CCV7	4.960	~	99%		
83	CCB7	-0.004	~	~		
84						
85						
86						
87						
88						
89						
90						
91						
92						
93						
94						
95						
96						

Comments:

Soil/Tissue Spike Level:

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

Report Generated By CETAC QuickTrace

Analyst: alkls.alklsp196

Worksheet file: C:\Program Files\QuickTrace\Worksheets\032018A HG2.wsz

Date Started: 3/20/2018 8:51:16 AM

Comment:

Results

Sample Name	Type	Date/Time	Conc (ppb)	μ Abs	%RSD	Flags
Calibration Blank	STD	03/20/18 09:16:03 am	0.000	184	15.58	
Replicates				147.1 194.2 180.7 215.7		
Standard #1	STD	03/20/18 09:17:39 am	0.200	889	1.28	
Replicates				896.3 891.2 895.8 872.2		
Standard #2	STD	03/20/18 09:19:16 am	0.500	2029	0.99	
Replicates				2007.6 2036.8 2018.8 2053.3		
Standard #3	STD	03/20/18 09:20:53 am	1.000	3795	1.38	
Replicates				3786.5 3771.9 3870.1 3749.9		
Standard #4	STD	03/20/18 09:22:31 am	5.000	19191	0.33	
Replicates				19126.3 19189.5 19275.8 19172.0		
Standard #5	STD	03/20/18 09:24:10 am	10.000	39287	0.16	
Replicates				39214.8 39307.9 39360.8 39264.5		

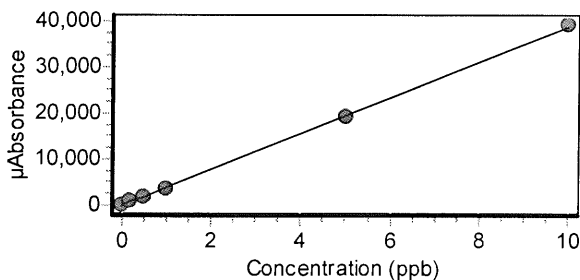
Calibration

Equation: $A = 184.403 + 3885.756C$

R2: 0.99970

SEE: 331.2698

Flags:



ICV1	ICV	03/20/18 09:25:49 am	5.390	21140	0.76	
Replicates				20927.3 21106.0 21279.3 21245.8		
% Recovery				107.86		
ICB1	ICB	03/20/18 09:27:25 am	-0.003	174	10.26	
Replicates				162.2 200.4 166.8 165.9		

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
LLICV1	CRDL	03/20/18 09:29:01 am	0.184	898	2.51	
Replicates						
920.9	871.5	912.6	888.6			
% Recovery						
91.87						
CCV1	CCV	03/20/18 09:30:39 am	4.880	19157	0.16	
Replicates						
19198.6	19129.6	19144.1	19154.1			
% Recovery						
97.65						
CCB1	CCB	03/20/18 09:32:15 am	-0.019	111	15.21	
Replicates						
114.8	127.2	115.4	87.3			
KQ1803273-01	UNK	03/20/18 09:33:51 am	-0.047	3	477.73	
Replicates						
33.5	35.6	-34.6	-24.4			
KQ1803273-02	UNK	03/20/18 09:35:27 am	5.230	20512	0.37	
Replicates						
20444.7	20465.2	20615.7	20522.6			
K1802176-001	UNK	03/20/18 09:37:03 am	-0.044	14	418.07	
Replicates						
43.2	52.8	-75.4	37.0			
K1802176-001A	UNK	03/20/18 09:38:40 am	5.170	20257	0.28	
Replicates						
20216.2	20332.7	20269.6	20211.3			
KQ1803273-03	UNK	03/20/18 09:40:17 am	-0.047	1	112.28	
Replicates						
22.3	-10.3	-18.5	8.9			
KQ1803273-04	UNK	03/20/18 09:41:54 am	5.290	20729	0.79	
Replicates						
20495.7	20730.7	20842.7	20846.7			
K1802176-002	UNK	03/20/18 09:43:31 am	-0.062	-57	50.73	
Replicates						
-77.5	-72.4	-14.4	-64.3			
K1802176-003	UNK	03/20/18 09:45:09 am	-0.034	51	28.25	
Replicates						
32.5	57.8	66.1	47.8			
K1802176-004	UNK	03/20/18 09:46:47 am	-0.039	34	60.78	
Replicates						
60.9	34.0	11.7	28.0			

Sample Name				Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
K1802176-005				UNK	03/20/18 09:48:25 am	-0.020	105	25.49	
Replicates	143.9	82.0	98.4	96.4					
CCV2				CCV	03/20/18 09:50:03 am	4.910	19266	0.61	
Replicates	19160.4	19238.8	19433.4	19232.8					
% Recovery	98.21								
CCB2				CCB	03/20/18 09:51:39 am	-0.015	124	23.10	
Replicates	153.3	85.6	136.0	122.8					
K1802176-006				UNK	03/20/18 09:53:18 am	-0.047	3	946.32	
Replicates	39.9	-25.1	14.4	-16.5					
K1802176-007				UNK	03/20/18 09:54:57 am	-0.040	28	188.27	
Replicates	-32.7	6.9	48.3	89.2					
K1802176-008				UNK	03/20/18 09:56:32 am	-0.036	43	44.34	
Replicates	30.6	62.3	23.1	56.3					
K1802176-009				UNK	03/20/18 09:58:08 am	-0.053	-21	151.49	
Replicates	-29.6	-61.2	11.6	-4.6					
K1802176-001 D				UNK	03/20/18 09:59:44 am	-0.042	21	128.78	
Replicates	0.6	61.2	15.2	7.9					
K1802176-002 D				UNK	03/20/18 10:01:20 am	-0.039	32	83.93	
Replicates	44.3	-5.2	32.4	58.4					
K1802176-003 D				UNK	03/20/18 10:02:56 am	-0.043	16	80.73	
Replicates	-1.0	29.6	15.7	18.2					
K1802176-004 D				UNK	03/20/18 10:04:33 am	-0.052	-16	94.91	
Replicates	2.2	-20.7	-34.9	-12.2					
K1802176-005 D				UNK	03/20/18 10:06:10 am	-0.034	50	37.03	
Replicates	75.1	30.7	51.7	43.9					

Sample Name				Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
K1802176-006 D				UNK	03/20/18 10:07:47 am	-0.043	16	505.96	
Replicates	-33.4	-3.8	-34.4	135.5					
CCV3				CCV	03/20/18 10:09:25 am	4.950	19400	0.48	
Replicates	19404.4	19425.5	19497.0	19271.9					
% Recovery	98.90								
CCB3				CCB	03/20/18 10:11:01 am	-0.013	135	24.80	
Replicates	177.3	100.0	118.5	143.4					
K1802176-007 D				UNK	03/20/18 10:12:38 am	-0.044	11	401.69	
Replicates	-50.9	12.0	56.7	27.5					
K1802176-008 D				UNK	03/20/18 10:14:16 am	-0.028	74	22.37	
Replicates	78.8	49.6	84.6	83.9					
K1802176-009 D				UNK	03/20/18 10:15:55 am	-0.042	20	91.65	
Replicates	28.1	-5.6	20.7	37.0					
KQ1803179-01				UNK	03/20/18 10:17:33 am	-0.039	34	107.32	
Replicates	48.7	-20.7	57.7	51.7					
KQ1803179-02				UNK	03/20/18 10:19:09 am	5.570	21811	0.84	
Replicates	21595.6	21721.4	21956.4	21969.9					
K1802209-002				UNK	03/20/18 10:20:44 am	-0.030	66	45.63	
Replicates	73.6	92.3	22.6	74.8					
K1802233-001				UNK	03/20/18 10:22:20 am	-0.050	-9	173.49	
Replicates	-25.3	-17.9	12.6	-7.4					
K1802233-001A				UNK	03/20/18 10:23:56 am	5.250	20577	0.74	
Replicates	20384.2	20529.2	20720.8	20675.0					
KQ1803179-03				UNK	03/20/18 10:25:33 am	-0.054	-27	39.14	
Replicates	-28.4	-38.9	-13.6	-25.7					

Sample Name	Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
KQ1803179-04 Replicates	UNK	03/20/18 10:27:10 am	5.230	20495	0.38	
		20414.9 20496.2 20599.9	20470.7			
CCV4 Replicates % Recovery	CCV	03/20/18 10:28:48 am	4.940	19361	0.56	
		19354.3 19417.7 19458.8	19211.9			
		98.70				
CCB4 Replicates	CCB	03/20/18 10:30:24 am	-0.009	148	24.34	
		111.9 122.2 177.5	180.5			
K1802232-001 Replicates	UNK	03/20/18 10:32:01 am	-0.038	37	94.12	
		43.7 50.9 64.9	-13.3			
K1802235-001 Replicates	UNK	03/20/18 10:33:38 am	-0.026	85	22.48	
		75.7 109.7 65.4	87.6			
K1802353-001 5X Replicates	UNK	03/20/18 10:35:16 am	-0.046	4	913.66	
		-5.8 45.1 -35.8	11.2			
K1802353-001A 5X Replicates	UNK	03/20/18 10:36:54 am	2.640	10458	1.58	
		10658.0 10513.8 10385.9	10275.3			
KQ1803003-01 Replicates	UNK	03/20/18 10:40:45 am	-0.056	-33	72.19	
		-43.2 -42.4 -48.0	2.5			
KQ1803003-02 Replicates	UNK	03/20/18 10:42:24 am	5.140	20142	1.07	
		19831.7 20201.3 20335.3	20197.8			
K1801267-008 Replicates	UNK	03/20/18 10:44:00 am	-0.030	70	34.63	
		56.3 105.3 54.6	61.8			
K1801267-017 Replicates	UNK	03/20/18 10:45:36 am	-0.027	81	17.00	
		81.8 99.7 67.6	74.8			
K1801925-001 Replicates	UNK	03/20/18 10:47:12 am	-0.041	23	43.23	
		34.9 27.7 17.7	12.5			

Sample Name				Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
K1801925-001 D				UNK	03/20/18 10:48:48 am	-0.035	49	36.78	
Replicates	53.6	37.8	73.2	32.9					
CCV5				CCV	03/20/18 10:50:26 am	4.920	19293	0.40	
Replicates	19187.4	19334.5	19361.9	19289.5					
% Recovery	98.35								
CCB5				CCB	03/20/18 10:52:02 am	-0.015	127	16.83	
Replicates	152.1	111.7	135.9	106.6					
K1801988-001				UNK	03/20/18 10:53:38 am	-0.014	132	12.43	
Replicates	121.0	134.5	153.4	117.2					
K1801988-001A				UNK	03/20/18 10:55:15 am	5.260	20623	0.86	
Replicates	20378.4	20606.6	20756.8	20748.5					
KQ1803003-03				UNK	03/20/18 10:56:52 am	-0.030	66	41.45	
Replicates	52.4	83.0	93.4	34.3					
KQ1803003-04				UNK	03/20/18 10:58:30 am	5.200	20398	0.87	
Replicates	20141.2	20414.9	20533.5	20502.2					
K1801988-002				UNK	03/20/18 11:00:07 am	-0.032	61	69.35	
Replicates	74.7	106.2	4.2	60.7					
K1801988-003				UNK	03/20/18 11:01:45 am	-0.018	112	30.47	
Replicates	130.5	101.4	69.9	148.0					
K1801988-004				UNK	03/20/18 11:03:23 am	0.039	336	2.33	
Replicates	343.0	342.2	328.0	330.3					
K1801988-001 D				UNK	03/20/18 11:05:02 am	-0.041	24	201.59	
Replicates	-38.9	13.5	71.9	49.4					
K1801988-002 D				UNK	03/20/18 11:06:38 am	-0.041	24	153.62	
Replicates	6.1	-13.4	31.4	73.8					

Sample Name					Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
K1801988-003 D					UNK	03/20/18 11:08:14 am	-0.043	17	338.66	
Replicates	21.8	28.1	75.9	-59.5						
CCV6					CCV	03/20/18 11:09:52 am	4.890	19176	0.43	
Replicates	19064.0	19170.7	19211.8	19256.9						
% Recovery	97.75									
CCB6					CCB	03/20/18 11:11:28 am	-0.007	158	6.68	
Replicates	157.3	145.7	171.6	158.8						
K1801988-004 D					UNK	03/20/18 11:13:04 am	-0.042	23	213.86	
Replicates	-33.1	68.4	59.1	-2.9						
K1802011-001					UNK	03/20/18 11:14:40 am	-0.030	66	42.31	
Replicates	93.9	72.3	27.4	69.4						
KQ1803003-05					UNK	03/20/18 11:16:17 am	-0.045	8	401.54	
Replicates	42.9	8.0	-36.2	18.3						
KQ1803003-06					UNK	03/20/18 11:17:54 am	5.160	20217	0.44	
Replicates	20115.8	20167.5	20289.4	20294.7						
K1802011-001 D					UNK	03/20/18 11:19:31 am	-0.052	-16	32.42	
Replicates	-14.7	-9.3	-19.0	-21.1						
K1802056-002					UNK	03/20/18 11:21:08 am	0.007	211	10.25	
Replicates	207.9	235.9	217.7	183.9						
K1802101-001					UNK	03/20/18 11:22:46 am	-0.030	69	27.90	
Replicates	91.8	50.3	77.1	56.0						
K1802110-001 5X					UNK	03/20/18 11:24:24 am	-0.040	30	151.61	
Replicates	67.9	69.8	-3.7	-14.6						
K1802110-001A 5X					UNK	03/20/18 11:26:02 am	2.490	9856	1.01	
Replicates	9774.6	9797.7	9855.3	9995.9						

Sample Name				Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
K1802161-002				UNK	03/20/18 11:29:45 am	-0.061	-54	63.25	
Replicates	-57.3	-44.3	-97.4	-15.7					
CCV7				CCV	03/20/18 11:31:23 am	4.960	19448	0.73	
Replicates	19295.7	19536.3	19598.0	19361.7					
% Recovery	99.15								
CCB7				CCB	03/20/18 11:32:58 am	-0.004	169	10.73	
Replicates	189.7	163.4	175.0	146.9					

Preparation Information Benchsheet

Prep Run#: 309973
 Team: Metals/KLINN
 Number of Copies to make: 1

Prep Workflow: HgDigAg
 Prep Method: Method

Status: Prepped
 Prep Date/Time: 3/19/18 10:30 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ1803273-01	MB		7470Δ/Hg T		Liquid	10mL	10.00mL	
2	KQ1803273-02	LCS		7470Δ/Hg T		Liquid	10mL	10.00mL	
3	K1802176-001	LPLF 1	.07	7470Δ/Hg D		Water	10mL	10.00mL	
4	K1802176-001	LPLF 1	.03	7470Δ/Hg T		Water	10mL	10.00mL	
5	KQ1803273-03	K1802176-001 DUP	.03	7470Δ/Hg T		Liquid	10mL	10.00mL	
6	KQ1803273-04	K1802176-001 MS	.03	7470Δ/Hg T		Liquid	10mL	10.00mL	
7	K1802176-002	LPLF 4	.07	7470Δ/Hg D		Water	10mL	10.00mL	
8	K1802176-002	LPLF 4	.03	7470Δ/Hg T		Water	10mL	10.00mL	
9	K1802176-003	LPLF 3	.07	7470Δ/Hg D		Water	10mL	10.00mL	
10	K1802176-003	LPLF 3	.03	7470Δ/Hg T		Water	10mL	10.00mL	
11	K1802176-004	LPLF 2	.07	7470Δ/Hg D		Water	10mL	10.00mL	
12	K1802176-004	LPLF 2	.03	7470Δ/Hg T		Water	10mL	10.00mL	
13	K1802176-005	Leachate	.07	7470Δ/Hg D		Water	10mL	10.00mL	
14	K1802176-005	Leachate	.03	7470Δ/Hg T		Water	10mL	10.00mL	
15	K1802176-006	LPLF 8	.07	7470Δ/Hg D		Water	10mL	10.00mL	
16	K1802176-006	LPLF 8	.03	7470Δ/Hg T		Water	10mL	10.00mL	
17	K1802176-007	UD	.07	7470Δ/Hg D		Water	10mL	10.00mL	
18	K1802176-007	UD	.03	7470Δ/Hg T		Water	10mL	10.00mL	
19	K1802176-008	LPLF 5	.07	7470Δ/Hg D		Water	10mL	10.00mL	
20	K1802176-008	LPLF 5	.03	7470Δ/Hg T		Water	10mL	10.00mL	
21	K1802176-009	FD	.07	7470Δ/Hg D		Water	10mL	10.00mL	
22	K1802176-009	FD	.03	7470Δ/Hg T		Water	10mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 188358 Logbook Ref: HG3-7-L Expires On: 04/01/2018

KQ1803273-02 0.05mL KQ1803273-04 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube	1712272 (188568)	K-MET 16 mL Tube	24135667 (187410)	K-MET H2SO4 Hg	57011 (185918)
K-MET HCl Hg	0000171908 (182905)	K-MET K2S2O8 Hg	0000166617 (186360)	K-MET KMnO4 Hg	0000150402 (185240)
K-MET NaCl Hg	0000164455 (184228)	K-MET NH2OH-HCl Hg	0000183329 (187363)	K-MET HNO3 Hg	0000183840 (185067)
K-MET SnCl Hg	0000174480 (187359)				

Preparation Information Benchsheet

Prep Run#: 309973
 Team: Metals/KLINN

Prep WorkFlow: HgDigAq
 Prep Method: Method

Status: Prepped
 Prep Date/Time: 3/19/18 10:30 AM

Preparation Steps

Step: Digestion
 Started: 3/19/18 10:30
 Finished: 3/19/18 12:30
 By: KLINN
 Comments

Preparation Equipment

Equipment	Digestion	Corrected Temperature	Observed Temperature	Thermometer Location	Correction Factor	Thermometer ID
K-BlockDigester-15	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-BlockDigester-15	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-BlockDigester-15	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-BlockDigester-17	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-BlockDigester-17	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-BlockDigester-17	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-HG2-5.0	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-DG500A	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262
K-U52540	Digestion	95 deg C	95 deg C	17 NONE	NONE	4185262

Comments: Cal. Std./CCV Source: HG3-8-B.

Reviewed By: _____ Date: 3/20/18

Preparation Information Benchsheet

Prep Run: 309973 **Prep Workflow:** HgDigAq **Status:** Draft **Prep Date:** 03/15/2018
Team: Metals **Prep Method:** Method **Current Step:** Digestion 08:07
Analyst: JHINSON **Rush/NPDES:** NPDES **Due Date:** 03/16/2018
Hold Date: 04/05/2018

3/23

23 (PS)

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803273-01	Method Blank		10 mL	10 mL			Hg T	
KQ1803273-02	Lab Control Sample		10 mL	10 mL			Hg T	
K1802176-001	LPLF 1	.07	10 mL	10 mL			Hg D	
K1802176-001	LPLF 1	.03	10 mL	10 mL			Hg T	
K1802176-001: KQ1803273-03	Duplicate	.03	10 mL	10 mL			Hg T	
K1802176-001: KQ1803273-04	Matrix Spike	.03	10 mL	10 mL			Hg T	
K1802176-002	LPLF 4	.07	10 mL	10 mL			Hg D	
K1802176-002	LPLF 4	.03	10 mL	10 mL			Hg T	
K1802176-003	LPLF 3	.07	10 mL	10 mL			Hg D	
K1802176-003	LPLF 3	.03	10 mL	10 mL			Hg T	
K1802176-004	LPLF 2	.07	10 mL	10 mL			Hg D	
K1802176-004	LPLF 2	.03	10 mL	10 mL			Hg T	
K1802176-005	Leachate	.07	10 mL	10 mL			Hg D	
K1802176-005	Leachate	.03	10 mL	10 mL			Hg T	
K1802176-006	LPLF 8	.07	10 mL	10 mL			Hg D	
K1802176-006	LPLF 8	.03	10 mL	10 mL			Hg T	
K1802176-007	UD	.07	10 mL	10 mL			Hg D	
K1802176-007	UD	.03	10 mL	10 mL			Hg T	
K1802176-008	LPLF 5	.07	10 mL	10 mL			Hg D	
K1802176-008	LPLF 5	.03	10 mL	10 mL			Hg T	
K1802176-009	FD	.07	10 mL	10 mL			Hg D	
K1802176-009	FD	.03	10 mL	10 mL			Hg T	

13 Total Samples consisting of 9 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

3-19-18 1030-12030
 KJ-H-18
 BD 15 T95 R17
 BD 17 T95 R57
 HG3-8-B 584203

Preparation Information Benchsheet

Prep Run#: 309839

Team: Metals/KLINN

Number of Copies to make: 5

Prep Workflow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/19/18 10:30 AM

#	Lab Code	Client ID	B#	Method / Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ1803179-01	MB		7470A/Hg T		Liquid	10mL	10.00mL	
2	KQ1803179-02	LCS		7470A/Hg T		Liquid	10mL	10.00mL	
3	K1802209-002	SPR-030818-SW	.01	7470A/Hg T		Water	10mL	10.00mL	
4	K1802233-001	TUBE-001-030818	.03	7470A/Hg T		Surface Water	10mL	10.00mL	
5	KQ1803179-03	K1802233-001 DUP	.03	7470A/Hg T		Liquid	10mL	10.00mL	
6	KQ1803179-04	K1802233-001 MS	.03	7470A/Hg T		Liquid	10mL	10.00mL	
7	K1802232-001	Basin-001-030818	.06	7470A/Hg T		Surface Water	10mL	10.00mL	
8	K1802235-001	Lagoon-001-030818	.06	7470A/Hg T		Surface Water	10mL	10.00mL	
9	K1802353-001		.03	7470A/Hg T		Water	2.5mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 188358 Logbook Ref: HG3-7-L Expires On: 04/01/2018

KQ1803179-02 0.05mL KQ1803179-04 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube	1712272 (188568)	K-MET 16 mL Tube	24135667 (187410)	K-MET H2SO4 Hg	57011 (185918)
K-MET HCl Hg	0000171908 (182905)	K-MET K2S2O8 Hg	0000166617 (186360)	K-MET KMnO4 Hg	0000150402 (185240)
K-MET NaCl Hg	0000164455 (184228)	K-MET NH2OH-HCl Hg	0000183329 (187363)	K-MET HNO3 Hg	0000183840 (185067)
K-MET SnCl Hg	0000174480 (187359)				

Preparation Steps

Step: Digestion
 Started: 3/19/18 10:30
 Finished: 3/19/18 12:30
 By: KLINN
 Comments

Preparation Equipment

K-BlockDigerster-15	Digestion	Corrected Temperature	95 deg C	K-BlockDigerster-15	Digestion	Correction Factor	0 deg C
K-BlockDigerster-15	Digestion	Observed Temperature	95 deg C	K-BlockDigerster-15	Digestion	Thermometer ID 4185262	NONE
K-BlockDigerster-15	Digestion	Thermometer Location	17 NONE	K-BlockDigerster-17	Digestion	Corrected Temperature	95 deg C
K-BlockDigerster-17	Digestion	Correction Factor	0 deg C	K-BlockDigerster-17	Digestion	Observed Temperature	95 deg C
K-BlockDigerster-17	Digestion	Thermometer ID 4185309	NONE	K-BlockDigerster-17	Digestion	Thermometer Location	57 NONE
K-DG1000C	Digestion			K-DG250A	Digestion		
K-DG500A	Digestion			K-U32540	Digestion		
K-HG2-5.0	Digestion			K-DG100A	Digestion		

Preparation Information Benchsheet

Prep Run#: 309839
Team: Metals/KLINN

Prep WorkFlow: HgDigAq
Prep Method: Method

Status: Prepped
Prep Date/Time: 3/19/18 10:30 AM

Comments: Cal. Std./CCV Source: HG3-8-B.

Reviewed By: _____ Date: 3/20/18

Printed 3/20/18 12:20

Preparation Information Benchsheet

Page 2

Preparation Information Benchsheet

Prep Run: 309839 **Prep Workflow:** HgDigAq **Status:** Draft **Prep Date:** 03/13/2018
Team: Metals **Prep Method:** Method **Current Step:** Digestion 08:37
Analyst: JHINSON **Rush/NPDES:** Both **Due Date:** 03/15/2018
Hold Date: 04/05/2018

3/20

10 (PS)

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803179-01	Method Blank		10 mL	10 mL			Hg T	
KQ1803179-02	Lab Control Sample		10 mL	10 mL			Hg T	
K1802209-002	SPR-030818-SW	.01	10 mL	10 mL			Hg T	
K1802233-001	TUBE-001-030818	.03	10 mL	10 mL			Hg T	
K1802233-001: KQ1803179-03	Duplicate	.03	10 mL	10 mL			Hg T	
K1802233-001: KQ1803179-04	Matrix Spike	.03	10 mL	10 mL			Hg T	
K1802232-001	Basin-001-030818	.06	10 mL	10 mL			Hg T	
K1802235-001	Lagoon-001-030818	.06	10 mL	10 mL			Hg T	
K1802353-001	031318	.03	2.5 mL	10 mL			Hg T	

9 Total Samples consisting of 5 Client Samples, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions 3-19-18 1030-1230

BD15 T95 TL17
BD17 T95 TL57

Preparation Materials

Preparation Hardware / Equipment

H63-8-B

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion					N	

Comments

Review

Reviewed by: J Date: 3/20/18

Preparation Information Benchsheet

Prep Workflow: HgDigAq

Prep Method: Method

Status: Prepped
Prep Date/Time: 3/19/18 10:30 AM

Prep Run#: 309598

Team: Metals/KLINN

Number of Copies to make: 8

#	Lab Code	Client ID	B#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ1803003-01	MB		7470AA/Hg T		Liquid	10mL	10.00mL	
2	KQ1803003-02	LCS		7470AA/Hg T		Liquid	10mL	10.00mL	
3	K1801267-008	CO1-PW-3-5 (W)	.09	7470AA/Hg T		Water	10mL	10.00mL	
4	K1801267-017	CO3-PW-3-5 (W)	.03	7470AA/Hg T		Water	10mL	10.00mL	
5	K1801925-001	MH5171	.09	7470AA/Hg D		Water	10.0000mL	10.00mL	
6	K1801925-001	MH5171	.01	7470AA/Hg T		Water	10.0000mL	10.00mL	
7	K1801988-001	WR306-20180301	.09	7470AA/Hg D		Storm Water	10mL	10.00mL	
8	K1801988-001	WR306-20180301	.17	7470AA/Hg T		Storm Water	10mL	10.00mL	
9	KQ1803003-03	K1801988-001 DUP	.17	7470AA/Hg T		Liquid	10mL	10.00mL	
10	KQ1803003-04	K1801988-001 MS	.17	7470AA/Hg T		Liquid	10mL	10.00mL	
11	K1801988-002	OF18-20180301	.09	7470AA/Hg D		Storm Water	10mL	10.00mL	
12	K1801988-002	OF18-20180301	.17	7470AA/Hg T		Storm Water	10mL	10.00mL	
13	K1801988-003	WR307-20180301	.09	7470AA/Hg D		Storm Water	10mL	10.00mL	
14	K1801988-003	WR307-20180301	.17	7470AA/Hg T		Storm Water	10mL	10.00mL	
15	K1801988-004	WR510-20180228	.09	7470AA/Hg D		Storm Water	10mL	10.00mL	
16	K1801988-004	WR510-20180228	.17	7470AA/Hg T		Storm Water	10mL	10.00mL	
17	K1802011-001	MH5171D	.09	7470AA/Hg D		Water	10mL	10.00mL	
18	K1802011-001	MH5171D	.01	7470AA/Hg T		Water	10mL	10.00mL	
19	KQ1803003-05	K1802011-001 DUP	.01	7470AA/Hg T		Liquid	10mL	10.00mL	
20	KQ1803003-06	K1802011-001 MS	.01	7470AA/Hg T		Liquid	10mL	10.00mL	
21	K1802056-002	Sycco	.04	7470AA/Hg T		Water	10mL	10.00mL	
22	K1802101-001	March 2018	.02	7470AA/Hg T		Water	10mL	10.00mL	
23	K1802110-001	030718	.03	7470AA/Hg T		Water	2.5mL	10.00mL	
24	K1802161-002	336-01C-030618	.02	7470AA/Hg T		Water	10mL	10.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 188358 Logbook Ref: HG3-7-L Expires On: 04/01/2018

KQ1803003-02 0.05mL KQ1803003-04 0.05mL KQ1803003-06 0.05mL

Preparation Materials

K-MET 100ml Centrifuge Tube	1712272 (188568)	K-MET 16 mL Tube	24135667 (187410)	K-MET H2SO4 Hg	57011 (185918)
K-MET HCl Hg	0000171908 (182905)	K-MET K2S2O8 Hg	0000166617 (186360)	K-MET KMnO4 Hg	0000150402 (185240)
K-MET NaCl Hg	0000164455 (184228)	K-MET NH2OH-HCl Hg	0000183329 (187363)	K-MET HNO3 Hg	0000183840 (185067)
K-MET SnCl Hg	0000174480 (187359)				

Preparation Information Benchsheet

Prep Run#: 309598
 Team: Metals/KLINN

Prep WorkFlow: HgDigAq
 Prep Method: Method

Status: Prepped
 Prep Date/Time: 3/19/18 10:30 AM

Preparation Steps

Step: Digestion
 Started: 3/19/18 10:30
 Finished: 3/19/18 12:30
 By: KLINN
 Comments

Preparation Equipment

Equipment	Digestion	Corrected Temperature	Observed Temperature	Thermometer Location	Correction Factor	Thermometer ID	Correction Factor	Observed Temperature	Thermometer Location
K-BlockDigester-15	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-BlockDigester-15	0 deg C	NONE	
K-BlockDigester-15	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-BlockDigester-15	0 deg C	NONE	
K-BlockDigester-15	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-BlockDigester-15	0 deg C	NONE	
K-BlockDigester-17	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-BlockDigester-17	0 deg C	NONE	
K-BlockDigester-17	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-BlockDigester-17	0 deg C	NONE	
K-BlockDigester-17	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-BlockDigester-17	0 deg C	NONE	
K-HG2-5.0	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-U52540	0 deg C	NONE	
K-DG1000C	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-DG250A	0 deg C	NONE	
K-DG500A	Digestion	95 deg C	95 deg C	17 NONE	0 deg C	K-DG100A	0 deg C	NONE	

Comments: Cal. Std./CCV Source: HG3-8-B.

Reviewed By: _____ Date: 3/20/18

Preparation Information Benchsheet

Prep Run: 309598	Prep Workflow: HgDigAq	Status: Draft	Prep Date: 03/08/2018
Team: Metals	Prep Method: Method	Current Step: Digestion	09:43
Analyst: JHINSON	Rush/NPDES: Both		Due Date: 02/22/2018
			Hold Date: 03/07/2018

3/16

Lab Code	Client ID	Bottle #	Initial Amt	Final Volume	Spike Amt	Spike ID	TestNo List	Comments
KQ1803003-01	Method Blank						Hg T	
KQ1803003-02	Lab Control Sample						Hg T	
K1801267-008	CO1-PW-3-5 (W)	.09					Hg T	
K1801267-017	CO3-PW-3-5 (W)	.03					Hg T	
K1801925-001	MH5171	.09					Hg D	
K1801925-001	MH5171	.01					Hg T	
K1801988-001	WR306-20180301	.09					Hg D	
K1801988-001	WR306-20180301	.17					Hg T	
K1801988-001: KQ1803003-03	Duplicate	.17					Hg T	
K1801988-001: KQ1803003-04	Matrix Spike	.17					Hg T	
K1801988-002	OF18-20180301	.09					Hg D	
K1801988-002	OF18-20180301	.17					Hg T	
K1801988-003	WR307-20180301	.09					Hg D	
K1801988-003	WR307-20180301	.17					Hg T	
K1801988-004	WR510-20180228	.09					Hg D	
K1801988-004	WR510-20180228	.17					Hg T	
K1802011-001	MH5171D	.09					Hg D	
K1802011-001	MH5171D	.01					Hg T	
K1802011-001: KQ1803003-05	Duplicate	.01					Hg T	
K1802011-001: KQ1803003-06	Matrix Spike	.01					Hg T	
K1802056-002	Sysco	.04					Hg T	
K1802101-001	March 2018	.02					Hg T	
K1802110-001	030718	.03	2.5				Hg T	
K1802161-002	336-01C-030618	.02					Hg T	

18 Total Samples consisting of 12 Client Samples, 4 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

3-19-18 1030-1230

BD 15 T95 TL17

BD 17 T95 TL57

H63-8-B

Preparation Materials

Preparation Hardware / Equipment

Preparation Steps

<u>Step</u>	<u>Started</u>	<u>Finished</u>	<u>By</u>	<u>Assisted By</u>	<u>Training?</u>	<u>Comments</u>
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Digestion						
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Comments

CVAA Mercury Data Review Form

K-CVAA-02

Element: Hg

Analysis Lot #: 021918F HG2

Starlims #: 580986

Cal. STD/CCV Source: HG3-7-A

Pipettes ID: U52540, HG-5.0

Tubes P7176068

Service Request Numbers:

K1801267 (TCLP)

	Yes	No	NA
1) Appropriate standardization completed	<u>X</u>	<u> </u>	<u> </u>
2) ICV within 10% of true value	<u>X</u>	<u> </u>	<u> </u>
3) CCVs in control (+/- 10%)	<u>X</u>	<u> </u>	<u> </u>
4) CCBs and or ICBs below MRL	<u>X</u>	<u> </u>	<u> </u>
5) CCV/CCB check run every 10 samples	<u>X</u>	<u> </u>	<u> </u>
6) All reported samples within calibration range	<u>X</u>	<u> </u>	<u> </u>
7) Calculations correct	<u>X</u>	<u> </u>	<u> </u>

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: AEM (Initials)

Primary Reviewed By: AEM

Date: 2/20/18

Secondary Reviewed By: [Signature]


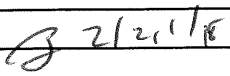
Date: 2/21/18

Data Review Form

Instrument ID#: K-CVAA-02
DataFile Name: R:\ICPI\WIP\DATA\K-CVAA-02 (QUICKTRACE)\021918F HG2.csv
RUNNO: 580986

K1801267

No exceptions to report.

Primary Approver:  2/20/18
Secondary Approver:  2/21/18

CVAA Hg ANALYTICAL WORKSHEET

Method: 7470 TCLP	Cal. Inter. Std* (100ppb): HG3-7-A 2nd Source Inter Std** (1ppm): HG3-6-M
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Analysis For: Hg		DATA				
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
1	Cal. Blk.	0.000	~	~		
2	Std 0.2*	0.200	~	(0.10-50mL)		
3	Std 0.5*	0.500	~	(0.25-50mL)		
4	Std 1.0*	1.000	~	(0.5-50mL)		
5	Std 5.0*	5.000	~	(2.5-50mL)		
6	Std 10.0*	10.000	~	(5.0-50mL)		
7	ICV1	5.130	~	103%		
8	ICB1	-0.029	~	~		
9	LLICV1	0.186	~	93%		
10	CCV1	4.980	~	100%		
11	CCB1	-0.023	~	~		
12	KQ1801999-01	-0.005	~			
13	KQ1801999-02	4.540	~	91%		
14	K1801267-010 E	-0.019	~			
15	KQ1801999-03	-0.005	~			
16	KQ1801999-04	4.700	~	94%		
17	K1801267-010A E	4.730	~	95%		
18	CCV2	4.960	~	99%		
19	CCB2	-0.018	~	~		
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

Comments:

Soil/Tissue Spike Level:						
Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

Report Generated By CETAC QuickTrace

Analyst: alkls.alklsp196

Worksheet file: C:\Program Files\QuickTrace\Worksheets\021918F HG2.wsz

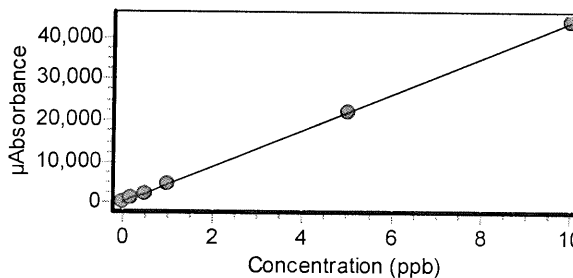
Date Started: 2/19/2018 1:50:43 PM

Comment:

Results

Sample Name					Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
Calibration Blank					STD	02/19/18 02:52:09 pm	0.000	83	4.82	
Replicates	84.0	78.8	88.5	82.1						
Standard #1					STD	02/19/18 02:53:46 pm	0.200	915	3.75	
Replicates	889.8	910.0	896.0	965.2						
Standard #2					STD	02/19/18 02:55:22 pm	0.500	2235	0.67	
Replicates	2240.5	2249.3	2213.9	2235.2						
Standard #3					STD	02/19/18 02:57:00 pm	1.000	4524	0.49	
Replicates	4497.7	4541.4	4513.8	4543.4						
Standard #4					STD	02/19/18 02:58:38 pm	5.000	21717	0.51	
Replicates	21637.4	21773.1	21843.4	21612.4						
Standard #5					STD	02/19/18 03:00:16 pm	10.000	43826	0.57	
Replicates	43475.4	43842.9	44057.9	43928.4						

Calibration
 Equation: $A = 83.349 + 4365.164C$
 R2: 0.99996
 SEE: 133.8746
 Flags:



ICV1					ICV	02/19/18 03:01:56 pm	5.130	22489	0.51	
Replicates	22326.9	22511.0	22599.0	22520.8						
% Recovery	102.66									
ICB1					ICB	02/19/18 03:03:31 pm	-0.029	-43	70.52	
Replicates	-13.9	-30.4	-84.4	-42.0						

Sample Name				Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
LLICV1				CRDL	02/19/18 03:05:08 pm	0.186	897	6.30	
Replicates	876.6	889.0	977.5		845.6				
% Recovery	93.22								
CCV1				CCV	02/19/18 03:06:46 pm	4.980	21811	0.52	
Replicates	21660.4	21912.4	21880.9		21790.6				
% Recovery	99.55								
CCB1				CCB	02/19/18 03:08:21 pm	-0.023	-16	139.54	
Replicates	-33.7	0.9	5.4		-35.1				
KQ1801999-01				UNK	02/19/18 03:09:57 pm	-0.005	59	26.45	
Replicates	60.9	74.4	64.8		37.4				
KQ1801999-02				UNK	02/19/18 03:11:33 pm	4.540	19915	0.61	
Replicates	19753.8	19892.4	19988.4		20025.3				
K1801267-010 E				UNK	02/19/18 03:13:09 pm	-0.019	1	628.39	
Replicates	24.7	-29.8	56.5		-46.1				
KQ1801999-03				UNK	02/19/18 03:14:46 pm	-0.005	63	53.51	
Replicates	45.5	24.3	86.3		95.3				
KQ1801999-04				UNK	02/19/18 03:16:23 pm	4.700	20611	0.60	
Replicates	20451.7	20610.7	20753.7		20627.8				
K1801267-010A E				UNK	02/19/18 03:18:00 pm	4.730	20731	0.38	
Replicates	20683.2	20749.2	20834.0		20658.0				
CCV2				CCV	02/19/18 03:19:59 pm	4.960	21734	0.44	
Replicates	21654.0	21677.4	21865.3		21740.7				
% Recovery	99.20								
CCB2				CCB	02/19/18 03:21:35 pm	-0.018	6	635.73	
Replicates	8.9	60.0	-23.2		-21.2				

Preparation Information Benchsheet

Prep Run#: 308409
Team: Metals/KLINN
 Number of Copies to make: 1

Prep WorkFlow: HgDigLP
Prep Method: Method

Status: Prepped
Prep Date/Time: 2/15/18 01:00 PM

#	Lab Code	Client ID	#	Method /Test	pH	Matrix	Amt. Ext.	Final Vol	Sample Description
1	KQ1801999-01	MB		7470A/Hg TCLP		Solid	20mL	20.00mL	
2	KQ1801999-02	LCS		7470A/Hg TCLP		Solid	20mL	20.00mL	
3	K1801267-010	TCLP-0-3	.01	7470A/Hg TCLP		Sediment	20mL	20.00mL	CLUKKEN
4	KQ1801999-03	K1801267-010 DUP	.01	7470A/Hg TCLP		Solid	20mL	20.00mL	
5	KQ1801999-04	K1801267-010 MS	.01	7470A/Hg TCLP		Solid	20mL	20.00mL	

Spiking Solutions

Name: K-MET Hg Source Standard 1000 ug/L Inventory ID 187744 Logbook Ref: HG3-6-M Expires On: 03/01/2018

KQ1801999-02 0.10mL KQ1801999-04 0.10mL

Preparation Materials

K-MET 100ml Centrifuge Tube	Lot # 1703076 (183592)	K-MET 50ml Centrifuge Tube	P7148010 (187238)	K-MET H2SO4 Hg	57011 (185918)
K-MET HCl Hg	0000171908 (182905)	K-MET K2S2O8 Hg	0000166617 (186360)	K-MET KMnO4 Hg	0000150402 (185240)
K-MET NACl Hg	0000164455 (184228)	K-MET NH2OH-HCl Hg	0000183329 (187363)	K-MET HNO3 Hg	0000183840 (185067)
K-MET SnCl Hg	0000174480 (187359)				

Preparation Steps

Step: Digestion
Started: 2/15/18 13:00
Finished: 2/15/18 15:00
By: KLINN

Preparation Equipment

HOTBLOCKDIGESTER	Digestion	Corrected Temperature	95 deg C	HOTBLOCKDIGESTER	Digestion	Correction Factor	0 deg C
HOTBLOCKDIGESTER	Digestion	Observed Temperature	95 deg C	HOTBLOCKDIGESTER	Digestion	Thermometer #	4184756
HOTBLOCKDIGESTER	Digestion	Thermometer Location	28	K-Block-Digester-14	Digestion	Corrected Temperature	95 deg C
K-Block-Digester-14	Digestion	Correction Factor	0 deg C	K-Block-Digester-14	Digestion	Observed Temperature	95 deg C
K-Block-Digester-14	Digestion	Thermometer ID	6428433	K-Block-Digester-14	Digestion	Thermometer Location	3 NONE
K-DG250A	Digestion			K-DG100A	Digestion		
K-U52540	Digestion			K-DG300A	Digestion		
K-HG-5.0	Digestion			K-DG1000C	Digestion		

Comments: Cal. Std./CCV Source: HG3-7-A.

Reviewed By: _____ Date: 2/15/18

Preparation Information Benchsheet

Prep Run#: 308409

Team: Metals/KLINN

Number of Copies to make: 1

Prep Workflow: HgDigLP
Prep Method: Method

TCLP

Status: Draft
Prep Date/Time: 2/15/18 07:01 AM

#	Lab Code	Client ID	B#	Method / Test	Matrix	Amt. Ext.	pH	Int. Vol	Final Vol	Surr Amt	Spike Amt
1	KQ1801999-01	MB		7470A / Hg TCLP	Solid						
2	KQ1801999-02	LCS		7470A / Hg TCLP	Solid						
3	K1801267-010	TCLP-0-3	.01	7470A / Hg TCLP	Sediment						
4	KQ1801999-03	K1801267-010 DUP	.01	7470A / Hg TCLP	Solid						
5	KQ1801999-04	K1801267-010 MS	.01	7470A / Hg TCLP	Solid						

Comments: H63-7-A 2-15-18 1300-1500 3SD14 T95 T23

Surrogate ID: _____ Spike ID: 187.744-HG3-6-M 187.744-HG3-6-M

Witnessed By: _____

Analyst: _____ Assisted By: _____

CVAA Mercury Data Review Form
K-CVAA-02

Element: Hg
 Analysis Lot #: 022118A HG2
 Starlims #: 581176
 Cal. STD/CCV Source: HG3-7-C
 Pipettes ID: U52540, HG-5.0
 Tubes P7176068

Service Request Numbers:

K1801265, K1801267, K1801291, K1801322
K1801151 (TCLP Filtrate)

	Yes	No	NA
1) Appropriate standardization completed	<u>X</u>	<u> </u>	<u> </u>
2) ICV within 10% of true value	<u>X</u>	<u> </u>	<u> </u>
3) CCVs in control (+/- 10%)	<u>X</u>	<u> </u>	<u> </u>
4) CCBs and or ICBs below MRL	<u>X</u>	<u> </u>	<u> </u>
5) CCV/CCB check run every 10 samples	<u>X</u>	<u> </u>	<u> </u>
6) All reported samples within calibration range	<u>X</u>	<u> </u>	<u> </u>
7) Calculations correct	<u>X</u>	<u> </u>	<u> </u>

Comments:

Data reviewed against service request(s) to ensure no samples were omitted: AFM (Initials)

Primary Reviewed By: AFM

Date: 2/21/18

Secondary Reviewed By: B

Date: 2/22/18

Data Review Form

Instrument ID#: K-CVAA-02
DataFile Name: R:\ICP\WIP\DATA\K-CVAA-02 (QUICKTRACE)\022118A HG2.csv
RUNNO: 581176

K1801265

No exceptions to report.

K1801267

No exceptions to report.


K1801291

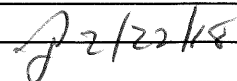
No exceptions to report.

K1801322

No exceptions to report.

Primary Approver:
Secondary Approver:

 8/1/22/18

 8/2/22/18

CVAA Hg ANALYTICAL WORKSHEET

Method: 7471	Cal. Inter. Std* (100ppb): HG3-7-C 2nd Source Inter Std** (1ppm): HG3-6-M
---------------------	--

Analysis For: Hg		DATA				
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		Comments:
1	Cal. Blk.	0.000	~	~		
2	Std 0.2*	0.200	~	(0.10-50mL)		
3	Std 0.5*	0.500	~	(0.25-50mL)		
4	Std 1.0*	1.000	~	(0.5-50mL)		
5	Std 5.0*	5.000	~	(2.5-50mL)		
6	Std 10.0*	10.000	~	(5.0-50mL)		
7	ICV1	4.910	~	98%		
8	ICB1	-0.041	~	~		
9	LLICV1	0.171	~	86%		
10	CCV1	5.010	~	100%		
11	CCB1	-0.056	~	~		
12	KQ1804822-05	-0.044	~			
13	KQ1801822-06 10	3.690	~	104%		
14	K1801265-001	2.160	~			
15	K1801265-002	0.845	~			
16	K1801265-003	0.022	~			
17	K1801265-005	1.730	~			
18	K1801265-006	1.690	~			
19	K1801265-007	4.860	~			
20	K1801265-008	4.570	~			
21	K1801265-009	1.600	~			
22	CCV2	5.120	~	102%		
23	CCB2	-0.022	~	~		
24	K1801265-009L	0.325	5	2%		
25	KQ1801822-01	1.670	~			
26	KQ1801822-02	6.130	~	91%		
27	K1801265-009A	6.330	~	95%		
28	K1801265-010	1.030	~			
29	K1801265-011	0.810	~			
30	K1801265-012	2.090	~			
31	KQ1801822-03	2.190	~			
32	KQ1801822-04	7.190	~	102%		

Comments:

Soil/Tissue Spike Level:						
Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

CVAA Hg ANALYTICAL WORKSHEET

Analysis For: Hg		DATA				Comments:
Pos.	SAMPLE NUMBER	Measured (µg/L)	Dilution Factor	Recoveries (ICV, CCV, LCS, MS)		
33	K1801265-013	-0.044	~			
34	CCV3	5.170	~	103%		
35	CCB3	-0.029	~	~		
36	K1801265-015	1.660	~			
37	K1801267-001	9.070	~			
38	K1801267-009	2.630	~			
39	KQ1801822-09	2.410	~			
40	KQ1801822-10	7.510	~	98%		
41	K1801267-013	6.310	~			
42	K1801291-021	1.500	~			
43	K1801291-022	1.530	~			
44	K1801322-023	1.330	~			
45	KQ1801998-01	-0.010	~			
46	CCV4	5.170	~	103%		
47	CCB4	-0.021	~	~		
48	KQ1801998-02	5.100	~	102%		
49	K1801151-001	-0.047	~			
50	KQ1801998-03	-0.025	~			
51	KQ1801998-04	4.410	~	88%		
52	K1801151-001A	4.390	~	88%		
53	CCV5	5.230	~	105%		
54	CCB5	-0.029	~	~		
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						

Comments:

Soil/Tissue Spike Level:

Method	Spike Level	MRL	LCS Limit	MS Limit	RPD	Post-Spike @ 5ppb
7470A Water	5.0 µg/L	0.2 µg/L	80-120%	75-125%	20%	+/- 20%
245.1 Water	5.0 µg/L	0.2 µg/L	85-115%	70-130%	20%	+/- 20%
7470A TCLP	5.0 µg/L	1.0 µg/L	80-120%	75-125%	20%	+/- 20%
7471A Soil LCSS	7.1mg/kg	0.02 mg/kg	51-149%	80-120%	20%	+/- 20%
7471A Tissue Dorm	0.41 mg/kg	0.02 mg/kg	68-136%	80-120%	20%	+/- 20%

Report Generated By CETAC QuickTrace

Analyst: alkls.alklsp196

Worksheet file: C:\Program Files\QuickTrace\Worksheets\022118A HG2.wsz

Date Started: 2/21/2018 1:39:26 PM

Comment:

Results

Sample Name				Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
Calibration Blank				STD	02/21/18 02:36:05 pm	0.000	223	22.38	
Replicates	254.9	233.4	149.8	254.5					
Standard #1				STD	02/21/18 02:37:42 pm	0.200	1009	1.96	
Replicates	979.7	1021.4	1014.1	1020.7					
Standard #2				STD	02/21/18 02:39:19 pm	0.500	2257	0.85	
Replicates	2275.5	2239.9	2241.2	2271.9					
Standard #3				STD	02/21/18 02:40:57 pm	1.000	4548	1.22	
Replicates	4488.2	4523.6	4562.8	4617.3					
Standard #4				STD	02/21/18 02:42:35 pm	5.000	21065	0.48	
Replicates	21129.2	21166.8	21014.0	20949.3					
Standard #5				STD	02/21/18 02:44:13 pm	10.000	42666	0.68	
Replicates	42319.6	42542.3	42836.7	42966.3					

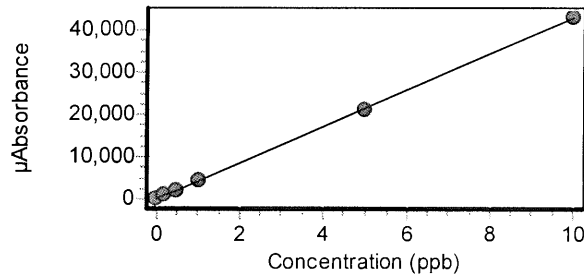
Calibration

Equation: $A = 223.155 + 4229.456C$

R2: 0.99989

SEE: 211.8885

Flags:



ICV1				ICV	02/21/18 02:45:52 pm	4.910	21002	0.82	
Replicates	20824.0	20886.8	21127.6	21168.5					
% Recovery	98.26								
ICB1				ICB	02/21/18 02:47:28 pm	-0.040	52	69.85	
Replicates	84.0	-0.1	62.9	60.3					

Sample Name				Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
LLICV1				CRDL	02/21/18 02:49:05 pm	0.171	948	4.02	
Replicates	914.0	937.2	936.6	1002.3					
% Recovery	85.63								
CCV1				CCV	02/21/18 02:50:43 pm	5.010	21397	0.28	
Replicates	21312.3	21408.8	21413.8	21454.6					
% Recovery	100.13								
CCB1				CCB	02/21/18 02:52:19 pm	-0.056	-15	160.63	
Replicates	-41.4	-1.6	11.2	-28.1					
KQ1804822-05				UNK	02/21/18 02:53:54 pm	-0.044	37	95.72	
Replicates	88.6	11.9	25.5	20.6					
KQ1801822-06 10				UNK	02/21/18 02:55:30 pm	3.690	15836	0.37	
Replicates	15754.3	15836.3	15884.9	15867.4					
K1801265-001				UNK	02/21/18 02:57:07 pm	2.160	9352	2.34	
Replicates	9601.7	9419.8	9305.5	9079.4					
K1801265-002				UNK	02/21/18 02:58:43 pm	0.845	3798	0.88	
Replicates	3791.6	3759.0	3799.0	3840.5					
K1801265-003				UNK	02/21/18 03:00:20 pm	0.022	315	9.93	
Replicates	359.0	284.7	307.7	309.2					
K1801265-005				UNK	02/21/18 03:01:57 pm	1.730	7542	0.70	
Replicates	7471.2	7533.0	7589.3	7575.6					
K1801265-006				UNK	02/21/18 03:03:35 pm	1.690	7362	0.40	
Replicates	7324.1	7380.6	7354.1	7389.1					
K1801265-007				UNK	02/21/18 03:05:13 pm	4.860	20767	0.31	
Replicates	20672.8	20774.3	20808.9	20810.7					
K1801265-008				UNK	02/21/18 03:06:51 pm	4.570	19544	1.03	
Replicates	19291.7	19518.7	19586.8	19778.7					

Sample Name				Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
K1801265-009				UNK	02/21/18 03:08:29 pm	1.600	7005	0.82	
Replicates	6949.5	7057.5	6961.5	7051.1					
CCV2				CCV	02/21/18 03:10:07 pm	5.120	21870	0.52	
Replicates	21712.2	21912.0	21979.9	21875.5					
% Recovery	102.36								
CCB2				CCB	02/21/18 03:11:43 pm	-0.022	130	16.05	
Replicates	132.6	108.0	157.2	121.6					
K1801265-009L				UNK	02/21/18 03:13:21 pm	0.325	1597	2.07	
Replicates	1558.1	1629.8	1618.7	1582.3					
KQ1801822-01				UNK	02/21/18 03:15:00 pm	1.670	7277	0.71	
Replicates	7222.2	7248.1	7304.5	7334.6					
KQ1801822-02				UNK	02/21/18 03:16:36 pm	6.130	26139	0.71	
Replicates	25894.6	26103.7	26248.2	26310.9					
K1801265-009A				UNK	02/21/18 03:18:11 pm	6.330	27010	0.80	
Replicates	26750.9	26920.6	27153.3	27216.8					
K1801265-010				UNK	02/21/18 03:19:47 pm	1.030	4599	0.73	
Replicates	4554.9	4590.9	4621.4	4628.6					
K1801265-011				UNK	02/21/18 03:21:23 pm	0.810	3649	1.30	
Replicates	3585.7	3651.7	3658.0	3701.0					
K1801265-012				UNK	02/21/18 03:23:00 pm	2.090	9083	1.05	
Replicates	8966.7	9044.0	9147.9	9172.2					
KQ1801822-03				UNK	02/21/18 03:24:36 pm	2.190	9469	0.90	
Replicates	9382.6	9438.9	9471.5	9584.5					
KQ1801822-04				UNK	02/21/18 03:26:13 pm	7.190	30652	0.70	
Replicates	30370.1	30601.2	30818.0	30817.2					

Sample Name				Type	Date/Time	Conc (ppb)	µAbs	%RSD	Flags
K1801265-013				UNK	02/21/18 03:27:51 pm	-0.044	38	65.63	
Replicates	35.1	12.4	32.4	72.3					
CCV3				CCV	02/21/18 03:29:29 pm	5.170	22083	0.70	
Replicates	21871.0	22068.7	22221.5	22172.8					
% Recovery	103.37								
CCB3				CCB	02/21/18 03:31:04 pm	-0.029	100	10.61	
Replicates	103.3	110.3	85.2	101.2					
K1801265-015				UNK	02/21/18 03:32:42 pm	1.660	7256	0.50	
Replicates	7219.8	7277.9	7295.5	7230.0					
K1801267-001				UNK	02/21/18 03:34:20 pm	9.070	38588	1.59	
Replicates	39099.3	38856.1	37704.7	38692.2					
K1801267-009				UNK	02/21/18 03:35:58 pm	2.630	11354	0.90	
Replicates	11214.3	11340.7	11439.1	11422.1					
KQ1801822-09				UNK	02/21/18 03:37:36 pm	2.410	10423	0.93	
Replicates	10304.8	10414.8	10429.8	10542.2					
KQ1801822-10				UNK	02/21/18 03:39:12 pm	7.510	31967	0.27	
Replicates	31845.3	31973.8	32013.5	32036.4					
K1801267-013				UNK	02/21/18 03:40:48 pm	6.310	26909	0.94	
Replicates	26610.0	26806.3	27033.4	27187.2					
K1801291-021				UNK	02/21/18 03:42:23 pm	1.500	6571	0.79	
Replicates	6505.4	6562.8	6585.8	6629.9					
K1801291-022				UNK	02/21/18 03:44:00 pm	1.530	6681	0.34	
Replicates	6678.0	6674.8	6659.3	6712.9					
K1801322-023				UNK	02/21/18 03:45:36 pm	1.330	5865	0.41	
Replicates	5835.5	5876.7	5891.2	5858.4					

Sample Name				Type	Date/Time	Conc (ppb)	μAbs	%RSD	Flags
KQ1801998-01				UNK	02/21/18 03:48:19 pm	-0.010	183	1.67	
Replicates	178.4	183.5	182.7	185.7					
CCV4				CCV	02/21/18 03:49:58 pm	5.170	22101	0.45	
Replicates	22013.4	22087.5	22060.0	22244.8					
% Recovery	103.46								
CCB4				CCB	02/21/18 03:51:33 pm	-0.021	136	18.21	
Replicates	128.7	105.5	145.9	163.5					
KQ1801998-02				UNK	02/21/18 03:53:10 pm	5.100	21808	1.17	
Replicates	21434.4	21866.4	21986.5	21945.5					
K1801151-001				UNK	02/21/18 03:54:48 pm	-0.047	25	56.77	
Replicates	5.9	40.8	27.8	27.4					
KQ1801998-03				UNK	02/21/18 03:56:26 pm	-0.025	116	28.00	
Replicates	161.1	109.3	109.6	83.8					
KQ1801998-04				UNK	02/21/18 03:58:04 pm	4.410	18888	1.49	
Replicates	18497.5	18867.0	19076.9	19109.0					
K1801151-001A				UNK	02/21/18 03:59:43 pm	4.390	18807	0.68	
Replicates	18631.1	18804.9	18862.6	18930.0					
CCV5				CCV	02/21/18 04:02:07 pm	5.230	22331	0.42	
Replicates	22209.2	22307.5	22427.6	22378.8					
% Recovery	104.54								
CCB5				CCB	02/21/18 04:03:43 pm	-0.028	103	19.61	
Replicates	126.5	110.5	92.0	81.0					

Preparation Information Benchsheet

Prep Run: 308198 **Prep Workflow:** HgDigS **Status:** Prepped
Team: Metals **Prep Method:** Method **Current Step:** Digestion **Prep Date:** 02/21/2018 11:15
Analyst: amckorney **Rush/NPDES:** N/A **Due Date:** 02/26/2018
Hold Date: 03/05/2018

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1801822-05	Method Blank		0.500 g	As received	50 mL			
KQ1801822-06	Lab Control Sample		0.250 g	As received	50 mL	0.25 g	171958	
K1801265-001	CCP101-SC-00-10-180205	.01	3.134 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-002	CCP101-SC-10-104-180206	.01	0.731 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-003	CCP101-SC-104-134-180206	.01	0.702 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-005	CCP88-SC-10-152-180206	.01	2.131 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-006	CCP88-SC-10-152-180206-D	.01	2.044 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-007	CCP88-SC-152-293-180206	.01	2.975 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-008	CCP88-SC-293-323-180206	.01	1.784 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-009	CCP88-SS-00-10-180205	.01	3.037 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-009: KQ1801822-01	Duplicate	.01	3.091 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-009: KQ1801822-02	Matrix Spike	.01	3.052 g	As received	50 mL	0.25 mL	187744	DMADDEN K-Balance-50
K1801265-010	CCP93-SC-10-136-180206	.01	1.275 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-011	CCP93-SC-136-262-180206	.01	0.625 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-012	CCP93-SC-262-389-180206	.01	0.684 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-012: KQ1801822-03	Duplicate	.01	0.705 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-012: KQ1801822-04	Matrix Spike	.01	0.738 g	As received	50 mL	0.25 mL	187744	DMADDEN K-Balance-50
K1801265-013	CCP93-SC-389-419-180206	.01	0.605 g	As received	50 mL			DMADDEN K-Balance-50
K1801265-015	CCP93-SS-00-10-180205	.01	3.088 g	As received	50 mL			DMADDEN K-Balance-50
K1801267-001	CO2-SD-3-5	.02	1.182 g	As received	50 mL			APOSEY K-BALANCE-48
K1801267-009	CO3-SD-3-5	.01	1.381 g	As received	50 mL			APOSEY K-BALANCE-48
K1801267-009: KQ1801822-09	Duplicate	.02	1.219 g	As received	50 mL			APOSEY K-BALANCE-48
K1801267-009: KQ1801822-10	Matrix Spike	.01	1.227 g	As received	50 mL	0.25 mL	187744	APOSEY K-BALANCE-48
K1801267-013	CO1-SD-3-5	.02	1.119 g	As received	50 mL			APOSEY K-BALANCE-

Preparation Information Benchsheet

Prep Run#: 308198

Team: Metals/KPETERSEN
Number of Copies to make: 4

Prep Workflow: HgDigs
Prep Method: Method

4471

Status: Draft
Prep Date/Time: 2/12/18 14:07 PM

#	Lab Code	Client ID	B#	Method / Test	Matrix	Amt. Ext.	pH	Int. Vol	Final Vol	Surr Amt	Spike Amt
1	KQ1801822-05	MB		7471A/Hg	Solid	0.500					
2	KQ1801822-06	LCSI		7471A/Hg	Solid	0.650					
3	K1801265-001	CCP101-SC-00-10-180205	.01	7471A/Hg	Sediment	3.134					
4	K1801265-002	CCP101-SC-10-104-180206	.01	7471A/Hg	Sediment	0.731					
5	K1801265-003	CCP101-SC-104-134-180206	.01	7471A/Hg	Sediment	0.702					
6	K1801265-005	CCP88-SC-10-152-180206	.01	7471A/Hg	Sediment	2.131					
7	K1801265-006	CCP88-SC-10-152-180206-D	.01	7471A/Hg	Sediment	2.044					
8	K1801265-007	CCP88-SC-152-293-180206	.01	7471A/Hg	Sediment	2.975					
9	K1801265-008	CCP88-SS-293-323-180206	.01	7471A/Hg	Sediment	1.784					
10	K1801265-009	CCP88-SS-00-10-180205	.01	7471A/Hg	Sediment	3.037					
11	KQ1801822-01	K1801265-009 DUP	.01	7471A/Hg	Solid	3.091					
12	KQ1801822-02	K1801265-009 MS	.01	7471A/Hg	Solid	3.052					
13	K1801265-010	CCP93-SC-10-136-180206	.01	7471A/Hg	Sediment	1.275					
14	K1801265-011	CCP93-SC-136-262-180206	.01	7471A/Hg	Sediment	0.625					
15	K1801265-012	CCP93-SC-262-389-180206	.01	7471A/Hg	Sediment	0.684					
16	KQ1801822-03	K1801265-012 DUP	.01	7471A/Hg	Solid	0.705					
17	KQ1801822-04	K1801265-012 MS	.01	7471A/Hg	Solid	0.738					
18	K1801265-013	CCP93-SC-389-419-180206	.01	7471A/Hg	Sediment	0.605					
19	K1801265-015	CCP93-SS-00-10-180205	.01	7471A/Hg	Sediment	3.088					
20	K1801267-001	CO2-SD-3-5	.02	7471B/Hg	Sediment	1.182					
21	K1801267-009	CO3-SD-3-5	.01	7471B/Hg	Sediment	1.381					
22	KQ1801822-09	K1801267-009 DUP	.02	7471B/Hg	Solid	1.219					
23	KQ1801822-10	K1801267-009 MS	.01	7471B/Hg	Solid	1.227					
24	K1801267-013	CO1-SD-3-5	.02	7471B/Hg	Sediment	1.119					
25	K1801291-021	CCP129-SS-00-10-180207	.05	7471A/Hg	Sediment	3.028					
26	K1801291-022	CCP129-SS-00-10-180207-D	.05	7471A/Hg	Sediment	3.061					
27	K1801322-023	CCP118-SS-00-10-180208	.11	7471A/Hg	Sediment	3.109					

Comments:

Surrogate ID:

Spike ID: 187.744-HG3-6-M 187.744-HG3-6-M 187.744-HG3-6-M

Witnessed By:

AG 3-7-C 11:15 2/21/18

Analyst:

Assisted By:

Preparation Information Benchsheet

Prep Run: 308408 **Prep Workflow:** HgDigLP **Status:** Prepped
Team: Metals **Prep Method:** Method **Current Step:** Digestion **Prep Date:** 02/21/2018 14:00
Analyst: AMCKORNEY **Rush/NPDES:** N/A **Due Date:** 02/15/2018
Hold Date: 03/13/2018

Lab Code	Client ID	Bottle #	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1801998-01	Method Blank		50 mL	as received	50 mL			
KQ1801998-02	Lab Control Sample		50 mL	as received	50 mL	0.25 mL	187744	
K1801151-001	IFG-LEW-001	.01	1 mL	as received	50 mL			1mL=0.981g
K1801151-001: KQ1801998-03	Duplicate	.01	1 mL	as received	50 mL			1mL=0.985g
K1801151-001: KQ1801998-04	Matrix Spike	.01	1 mL	as received	50 mL	0.25 mL	187744	1mL=0.988g

5 Total Samples consisting of 1 Client Sample, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
K-MET Hg Source Standard 1000 ug/L	Spike	187744	3/1/2018

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	Teflon Chips	80163	Digestion	K-MET HNO3 Hg	185067
Digestion	K-MET HCl Hg	182905	Digestion	K-MET KMnO4 Hg	185240
Digestion	K-MET 100ml Centrifuge Tube	183592	Digestion	K-MET SnCl Hg	187359
Digestion	K-MET NACl Hg	184228	Digestion	K-MET NH2OH-HCl Hg	187363

Preparation Hardware / Equipment

Step	Name	Property	Value	Step	Name	Property	Value
Digestion	K-Balance-37	Date Checked	02/21/18	Digestion	K-DG1000C		
Digestion	K-BlockDigester-15	Corrected Temperature	95	Digestion	K-DG100A		
Digestion	K-BlockDigester-15	Correction Factor	0	Digestion	K-DG250A		
Digestion	K-BlockDigester-15	Observed Temperature	95	Digestion	K-DG500A		
Digestion	K-BlockDigester-15	Thermometer ID	4185262	Digestion	K-HG-5.0		
Digestion	K-BlockDigester-15	Thermometer Location	5				

Preparation Steps

Step	Started	Finished	By	Assisted By	Training?	Comments
Digestion						

Comments

CAL. STD/CCV SOURCE: HG3-7-C

Review

Reviewed by: _____

Sj

Date: _____

2/22/18

Preparation Information Benchsheet

Prep Run: 308408 **Prep Workflow:** HgDigLP **Status:** Draft **Prep Date:** 02/15/2018
Team: Metals **Prep Method:** Method **Current Step:** Digestion **07:00**
Analyst: KLINN **Rush/NPDES:** N/A **Due Date:** 02/15/2018
Hold Date: 03/13/2018

Lab Code	Client ID	Bottle #	Target Amt	Initial Amt	Initial Basis	Final Volume	Spike Amt	Spike ID	Comments
KQ1801998-01	Method Blank		20 mL						0.500
KQ1801998-02	Lab Control Sample		20 mL				0.25 mL	187744	0.500
K1801151-001	IFG-LEW-001	.01	20 mL						1 mL = 0.981
K1801151-001: KQ1801998-03	Duplicate	.01	20 mL						= 0.985
K1801151-001: KQ1801998-04	Matrix Spike	.01	20 mL				0.25 mL	187744	= 0.988

5 Total Samples consisting of 1 Client Sample, 2 Client QC Samples, 2 Batch QC Samples associated with the current Prep Run.

Spiking Solutions

Name	Type	ID	Expires
K-MET Hg Source Standard 1000 ug/L	Spike	187744	3/1/2018

Preparation Materials

Step	Name	ID	Step	Name	ID
Digestion	Teflon Chips	80163	Digestion	K-MET HNO3 Hg	185067
Digestion	K-MET HCl Hg	182905	Digestion	K-MET KMnO4 Hg	185240
Digestion	K-MET 100ml Centrifuge Tube	183592	Digestion	K-MET SnCl Hg	187359
Digestion	K-MET NaCl Hg	184228	Digestion	K-MET NH2OH-HCl Hg	187363

Preparation Hardware / Equipment

Step	Name	Property	Value	Step	Name	Property Value
Digestion	K-Balance-37	Date Checked		Digestion	K-DG1000C	
Digestion	K-BlockDigester-15	Corrected Temperature	deg C	Digestion	K-DG100A	
Digestion	K-BlockDigester-15	Correction Factor	deg C	Digestion	K-DG250A	
Digestion	K-BlockDigester-15	Observed Temperature	deg C	Digestion	K-DG500A	
Digestion	K-BlockDigester-15	Thermometer ID 4185262	NONE	Digestion	K-HG-5.0	
	K-					

HG3-7-C

14:00

5

Digestion	BlockDigester- 15	Thermometer Location	NONE
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Preparation Steps

<u>Step</u>	<u>Started</u>	<u>Finished</u>	<u>By</u>	<u>Assisted By</u>	<u>Training?</u>	<u>Comments</u>
Digestion						

Comments

Samples treated as solids AFM 2/21/18

Pre-Prep Information Benchsheet

Prep Run #: 308198


Prep Method:

Team:

Container Lot No: 1707186

Prep Due Date: Feb-22-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801265-001	.01	Hg	3.134g	Watery and contains small rocks.	PrepComments:DMADDEN K-Balance-50
2	K1801265-002	.01	Hg	0.731g	Contains small rocks.	PrepComments:DMADDEN K-Balance-50
3	K1801265-003	.01	Hg	0.702g	Contains shells.	PrepComments:DMADDEN K-Balance-50
4	K1801265-005	.01	Hg	2.131g		PrepComments:DMADDEN K-Balance-50
5	K1801265-006	.01	Hg	2.044g		PrepComments:DMADDEN K-Balance-50
6	K1801265-007	.01	Hg	2.973g		PrepComments:DMADDEN K-Balance-50
7	K1801265-008	.01	Hg	1.784g		PrepComments:DMADDEN K-Balance-50
8	K1801265-009	.01	Hg	3.037g		PrepComments:DMADDEN K-Balance-50
9	K1801265-009 DUP K01801822-01	.01	Hg	3.091g		PrepComments:DMADDEN K-Balance-50
10	K1801265-009 MS K01801822-02	.01	Hg	3.052g		PrepComments:DMADDEN K-Balance-50
11	K1801265-010	.01	Hg	1.275g		PrepComments:DMADDEN K-Balance-50
12	K1801265-011	.01	Hg	0.625g		PrepComments:DMADDEN K-Balance-50
13	K1801265-012	.01	Hg	0.684g		PrepComments:DMADDEN K-Balance-50
14	K1801265-012 DUP K01801822-03	.01	Hg	0.705g		PrepComments:DMADDEN K-Balance-50
15	K1801265-012 MS K01801822-04	.01	Hg	0.738g		PrepComments:DMADDEN K-Balance-50
16	K1801265-013	.01	Hg	0.605g		PrepComments:DMADDEN K-Balance-50
17	K1801265-015	.01	Hg	3.088g		PrepComments:DMADDEN K-Balance-50

Relinquished By: <i>K. Petersen</i>	Date/Time: <i>1/11/18</i>	Received By: 	Date/Time: <i>2/21/18</i>
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Pre-Prep Information Benchsheet

Prep Run #: 308349

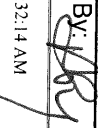

Prep Method:

Team:

Container Lot No: 1709027

Prep Due Date: Feb-19-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801267-001	.01	Hg	1.182g	2/14AP. Strong Fuel smell, Few large rocks sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
2	K1801267-009	.01	Hg	1.381g	Fuel smell and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
3	K1801267-009 DUP	.01	Hg	1.219g		PrepComments:APOSEY K-BALANCE-48
4	KQ1801938-01	.01	Hg	1.227g		PrepComments:APOSEY K-BALANCE-48
5	K1801267-013	.01	Hg	1.119g	Fuel smell, Few large rocks, sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48

Relinquished By: 	Date/Time: 2/14/18	Received By: 	Date/Time: 2/21/18
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Printed 2/14/2018 10:32:14 AM

Preparation Information Benchsheet

Pre-Prep Information Benchsheet

Prep Run #: 308282

Prep Method:

Team:

Container Lot No: 1709027

Prep Due Date: Feb-20-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801291-021	.01	Hg	3.028g		PrepComments:DMADDEN K-Balance-50
2	K1801291-021-DUP	.01	Hg	3.022g		PrepComments:DMADDEN K-Balance-50
3	K1801291-021 MS	.01	Hg	3.116g		PrepComments:DMADDEN K-Balance-50
4	K1801291-022	.01	Hg	3.067g		PrepComments:DMADDEN K-Balance-50

A-15-24
2/11/18

Relinquished By: <i>GM</i>	Date/Time: 2/13/18 13:51	Received By: <i>[Signature]</i>	Date/Time: 2/21/18
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Pre-Prep Information Benchsheet

Prep Run #: 308371 Prep Method: Team: Container Lot No: 1709027 Prep Due Date: Feb-23-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	KI801322-023	.11	Hg	3.109g		Prep Comments: DMADDEN K-Balance-50
2	KI801963-01	.11	Hg	3.157g		Prep Comments: DMADDEN K-Balance-50
3	KI801322-023 MS	.11	Hg	3.061g		Prep Comments: DMADDEN K-Balance-50

2/21/18
 KF2

Relinquished By: <i>SM</i>	Date/Time: 2/14/18 14:07	Received By: <i>[Signature]</i>	Date/Time: 2/21/18
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Polychlorinated Biphenyls (PCBs)

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Preparation Information

Group ID: KWG1800943	Prep Method: EPA 3546	Prep Date: 02/15/18 11:42
Department: Semivoa GC		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.	Solids
K1801096-023	CCP128-SS-00-10-180203	8082A PCB LL	SEDIMENT	2.070g	8mL	9.65
K1801096-024	CCP131-SC-10-149-180203	8082A PCB LL	SEDIMENT	2.099g	8mL	16.4
K1801096-025	CCP131-SC-149-288-180203	8082A PCB LL	SEDIMENT	2.075g	8mL	17.7
K1801096-026	CCP131-SC-288-427-180203	8082A PCB LL	SEDIMENT	2.035g	8mL	17.0
K1801096-027	CCP131-SC-427-566-180203	8082A PCB LL	SEDIMENT	2.078g	8mL	17.5
K1801096-028	CCP131-SC-566-705-180203	8082A PCB LL	SEDIMENT	2.287g	8mL	16.5
K1801096-029	CCP131-SC-705-845-180203	8082A PCB LL	SEDIMENT	2.253g	8mL	19.5
K1801096-030	CCP131-SC-845-867-180203	8082A PCB LL	SEDIMENT	2.221g	8mL	59.0
K1801096-031	CCP131-SS-00-10-180202	8082A PCB LL	SEDIMENT	2.388g	8mL	14.0
K1801096-032	CCP82-SC-10-168-180205	8082A PCB LL	SEDIMENT	2.282g	8mL	13.7
K1801096-033	CCP82-SC-168-326-180205	8082A PCB LL	SEDIMENT	2.070g	8mL	15.3
K1801096-034	CCP82-SC-326-484-180205	8082A PCB LL	SEDIMENT	2.015g	8mL	21.2
K1801096-035	CCP82-SC-484-514-180205	8082A PCB LL	SEDIMENT	2.074g	8mL	81.7
K1801096-037	CCP82-SS-00-10-180205	8082A PCB LL	SEDIMENT	2.027g	8mL	11.9
K1801267-001	CO2-SD-3-5	8082A PCB	SEDIMENT	2.372g	8mL	63.6
K1801267-009	CO3-SD-3-5	8082A PCB	SEDIMENT	2.438g	8mL	75.9
K1801267-013	CO1-SD-3-5	8082A PCB	SEDIMENT	2.402g	8mL	67.6
K1801291-021	CCP129-SS-00-10-180207	8082A PCB LL	SEDIMENT	2.147g	8mL	9.14
K1801291-022	CCP129-SS-00-10-180207-D	8082A PCB LL	SEDIMENT	2.369g	8mL	9.16
K1801322-023	CCP118-SS-00-10-180208	8082A PCB LL	SEDIMENT	2.429g	8mL	
KWG1800943-1	Matrix Spike	8082A PCB LL	SEDIMENT	2.083g	8mL	9.65
KWG1800943-2	Duplicate Matrix Spike	8082A PCB LL	SEDIMENT	2.018g	8mL	9.65
KWG1800943-3	Lab Control Sample	8082A PCB LL	SEDIMENT	2.000g	8mL	
KWG1800943-4	Method Blank	8082A PCB LL	SEDIMENT	2.438g	8mL	

Lab Code	Parent Lab Code	Comments
KWG1800943-1	K1801096-023	KQ1801589-01
KWG1800943-2	K1801096-023	KQ1801589-02

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K1801096-023	1664051					
K1801096-024	1664052					
K1801096-025	1664053					
K1801096-026	1664054					
K1801096-027	1664055					
K1801096-028	1664056					

308285, 308351
308377, 307934

Comments: 3/9

Started By: KPrescot Assisted By: — Training: Yes No

Completed By: CWilliam Assisted By: — Training: Yes No

Reviewed By: [Signature] Date: 2/19/18 Storage: —

Chain of Custody

Relinquished By: <u>[Signature]</u>	Date: <u>2/19/18</u>	Extracts Examined: <input type="checkbox"/> Yes <input type="checkbox"/> No
Received By: <u>[Signature]</u>	Date: <u>2/19/18</u>	Extracts Examined: <input type="checkbox"/> Yes <input type="checkbox"/> No

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K1801096-029	1664057					
K1801096-030	1664058					
K1801096-031	1664059					
K1801096-032	1664060					
K1801096-033	1664061					
K1801096-034	1664062					
K1801096-035	1664063					
K1801096-037	1664064					
K1801267-001	1664047					
K1801267-009	1664048					
K1801267-013	1664049					
K1801291-021	1664045					
K1801291-022	1664046					
K1801322-023	1664050					
KWG1800943-1	1664065					
KWG1800943-2	1664066					
KWG1800943-3	1664067					
KWG1800943-4	1664068					

Comments: _____

Started By: KPrescot **Assisted By:** — **Training:** Yes No

Completed By: CWilliam **Assisted By:** — **Training:** Yes No

Reviewed By: HF **Date:** 2/19/18 **Storage:** _____

Chain of Custody

Relinquished By: <u>CW</u>	Date: <u>2/19/18</u>	Extracts Examined
Received By: <u>[Signature]</u>	Date: <u>2/19/18</u>	Yes <input type="checkbox"/> No <input type="checkbox"/>

Preparation Information

Group ID:	KWG1800943	Prep Method:	EPA 3546
Department:	Semivoa GC	Prep Date:	02/15/18 00:00

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol. <i>ml</i>	Final Vol. <i>ml</i>	Surr. Added <i>µl</i>	Spike Added <i>µl</i>
1	K1801096-023	CCPI28-SS-00-10-180203	.01	✓	8082A PCB LL	SEDIMENT	9 *	N/A	20	8	50	-
2	K1801096-024	CCPI31-SC-10-149-180203	.01	✓	8082A PCB LL	SEDIMENT	|	N/A	20	8	|	-
3	K1801096-025	CCPI31-SC-149-288-180203	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
4	K1801096-026	CCPI31-SC-288-427-180203	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
5	K1801096-027	CCPI31-SC-427-566-180203	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
6	K1801096-028	CCPI31-SC-566-705-180203	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
7	K1801096-029	CCPI31-SC-705-845-180203	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
8	K1801096-030	CCPI31-SC-845-867-180203	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
9	K1801096-031	CCPI31-SS-00-10-180202	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
10	K1801096-032	CCP82-SC-10-168-180205	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
11	K1801096-033	CCP82-SC-168-326-180205	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
12	K1801096-034	CCP82-SC-326-484-180205	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
13	K1801096-035	CCP82-SC-484-514-180205	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
14	K1801096-037	CCP82-SS-00-10-180205	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
15	K1801267-001	CO2-SD-3-5	.01	✓	8082A PCB	SEDIMENT		N/A	20	8		-
16	K1801267-009	CO3-SD-3-5	.01	✓	8082A PCB	SEDIMENT		N/A	20	8		-
17	K1801267-013	CO1-SD-3-5	.01	✓	8082A PCB	SEDIMENT		N/A	20	8		-
18	K1801291-021	CCPI29-SS-00-10-180207	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-

Comments: * See Pre-Prep Information Benchsheet. Prep 02/15/18. PREPRUN: 308285, 308351, 308377, 307934

Surrogate ID: PCB7 - 25M 0.8ppm XP: 08/15/18 50ul app. 4I

Spike ID: PCB7 - 28J 1ppm XP: 04/16/18 200ul app. 100

Witness: _____

Started By: KPrescot Assisted By: _____

Completed By: Williams Assisted By: _____

Group ID: KWG1800943
 Department: Semivoa GC

Prep Method: EPA 3546

Prep Date: 02/15/18 00:00

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol. <i>ml</i>	Final Vol. <i>ml</i>	Surr. Added <i>ul</i>	Spike Added <i>ul</i>
19	K1801291-022	CCP129-SS-00-10-180207-D	.01	✓	8082A PCB LL	SEDIMENT	<i>g</i> *	N/A	20	8	50	-
20	K1801322-023	CCP118-SS-00-10-180208	.11	✓	8082A PCB LL	SEDIMENT		N/A	20	8		-
21	KWG1800943-1	Matrix Spike <i>K1801096-023</i>	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		200
22	KWG1800943-2	Duplicate Matrix Spike <i>K1801096-023</i>	.01	✓	8082A PCB LL	SEDIMENT		N/A	20	8		
23	KWG1800943-3	Lab Control Sample	-	-	8082A PCB LL	SEDIMENT	2.000	N/A	20	8		
24	KWG1800943-4	Method Blank	-	-	8082A PCB LL	SEDIMENT	2.438	N/A	20	8		-

Comments: **See Pre-Prep Confirmation Benchsheet. KRP 02/15/18.*

Surrogate ID: *SEE PAGE 1*

Spike ID: *SEE PAGE 1*

Witness: *—*

Started By: KPrescot

Assisted By: —

Completed By: *Williams*

Assisted By: —

Pre-Prep Information Benchsheet

Prep Run #: 308285

Prep Method:

Team:

Container Lot No: 090417-1TW

Prep Due Date: Feb-20-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801291-021	.01	PCB LL	2.147g		PrepComments:DMADDEN K-Balance-50
2	[REDACTED]	.01	PCB LL	2.182g		PrepComments:DMADDEN K-Balance-50
3	[REDACTED]	.01	PCB LL	2.257g		PrepComments:DMADDEN K-Balance-50
4	K1801291-022	.01	PCB LL	2.369g		PrepComments:DMADDEN K-Balance-50

Relinquished By: <i>DM</i>	Date/Time: 2/13/18 13:51	Received By: <i>KP</i>	Date/Time: 02/15/18
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Pre-Prep Information Benchsheet

Prep Run #: 308351

Prep Method:

Team:

Container Lot No: 081516-1BNU

Prep Due Date: Feb-19-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801267-001	.01	PCB	2.372g	2/14AP. Strong Fuel smell, Few large rocks sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
2	K1801267-009	.01	PCB	2.438g	Fuel smell and has black tar balls.	PrepComments:APOSEY K-BALANCE-48
3	[REDACTED]	.01	PCB	2.430g		PrepComments:APOSEY K-BALANCE-48
4	[REDACTED]	.01	PCB	2.407g		PrepComments:APOSEY K-BALANCE-48
5	K1801267-013	.01	PCB	2.402g	Fuel smell, Few large rocks, sample is black and has black tar balls.	PrepComments:APOSEY K-BALANCE-48

Relinquished By: <i>[Signature]</i>	Date/Time: <i>3/14/18</i>	Received By: <i>[Signature]</i>	Date/Time: <i>02/15/18</i>
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Pre-Prep Information Benchsheet

Prep Run #: 308377

Prep Method:

Team:

Container Lot No: 090417-1TW

Prep Due Date: Feb-23-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801322-023	.11	PCB LL	2.429g		PrepComments:DMADDEN K-Balance-50
2	XXXXXXXXXX	.11	PCB LL	2.438g		PrepComments:DMADDEN K-Balance-50
3	XXXXXXXXXX	.11	PCB LL	2.343g		PrepComments:DMADDEN K-Balance-50

Relinquished By: <i>GM</i>	Date/Time: 2/14/18 11:01	Received By: <i>RPD</i>	Date/Time: 02/15/18
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Pre-Prep Information Benchsheet

Prep Run #: 307934

Prep Method:

Team:

Container Lot No: 1707186

Prep Due Date: Feb-16-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801096-023	.01	PCB LL	2.070g	watery sample	PrepComments:K:PETERSEN K-Balance-49
2	K1801096-023 MS KQ1801589-01	.01	PCB LL	2.083g		PrepComments:K:PETERSEN K-Balance-49
3	K1801096-023 DMS KQ1801589-02	.01	PCB LL	2.018g		PrepComments:K:PETERSEN K-Balance-49
4	K1801096-024	.01	PCB LL	2.099g		PrepComments:K:PETERSEN K-Balance-49
5	K1801096-025	.01	PCB LL	2.075g		PrepComments:K:PETERSEN K-Balance-49
6	K1801096-026	.01	PCB LL	2.035g		PrepComments:K:PETERSEN K-Balance-49
7	K1801096-027	.01	PCB LL	2.078g		PrepComments:K:PETERSEN K-Balance-49
8	K1801096-028	.01	PCB LL	2.287g		PrepComments:BP:ACOCK K-Balance-47
9	K1801096-029	.01	PCB LL	2.253g		PrepComments:BP:ACOCK K-Balance-47
10	K1801096-030	.01	PCB LL	2.221g		PrepComments:BP:ACOCK K-Balance-47
11	K1801096-031	.01	PCB LL	2.388g	BP watery sample	PrepComments:BP:ACOCK K-Balance-47
12	K1801096-032	.01	PCB LL	2.282g		PrepComments:BP:ACOCK K-Balance-47
13	K1801096-033	.01	PCB LL	2.070g	BP	PrepComments:BP:ACOCK K-Balance-47
14	K1801096-034	.01	PCB LL	2.015g		PrepComments:K:PETERSEN K-Balance-49
15	K1801096-035	.01	PCB LL	2.074g	sandy consistency	PrepComments:K:PETERSEN K-Balance-49
16	K1801096-037	.01	PCB LL	2.027g	watery sample	PrepComments:K:PETERSEN K-Balance-49

Relinquished By: <i>GM</i>	Date/Time: 2/16/18 0:00	Received By: <i>AKP</i>	Date/Time: 02/15/18
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**Additional Prep Information for EPA 3546
Pest/PCB/Con in Soil/Paperboard/Wipes**

Service Request # K1801096/1267/1291/1322 Work Group # Pest:
PCB: KWG1800943

Storage Location (if not extracted same day):

4:1 Hexane:Acetone Lot # EXT002-7G ^{SULFATE} Hydromatrix Lot # 171696 Matrix Lot #

Extraction Start (time/date/initial): 1142 02/15/18 KRP

Pipette (5 mL) Lot # 31416647 Pipette (2 mL) Lot #

Solvent Exchange to Hexane (time/date/initial): 09:50 2/16/18 CW Hexane Lot# 182436

N-Evap (time/date/initial): 09:10 2/16/18 CW N-Evap Thermometer ID: SJM-001
Temp as measured: 20 °C Correction factor: 0.0 °C Adjusted temp: 20 °C

Carbon Clean-up (Ext-Car) (time/date/initial): Carbon Lot #

Hexane 1:1 DCM Lot #
N-Evap (time/date/initial): N-Evap Thermometer ID:

Temp as measured: °C Correction factor: °C Adjusted temp: °C

Florisil Clean-up (Ext-Flor)(time/date/initial): Florisil Lot #

Hexane 1:1 Acetone Lot # Hexane 9:1 Acetone Lot #
N-Evap (time/date/initial): N-Evap Thermometer ID:

Temp as measured: °C Correction factor: °C Adjusted temp: °C

Sulfuric Acid Clean-up (3665)(time/date/initial): 08:20 2/19/18 CW Acid Lot # 54344

Other Clean-up: all samples some samples:

Pipette (2 mL) Lot # 13917646 Pipette (1 mL) Lot #

Pest Vial: Vial Storage:
PCB Vial: Green Vial Storage: Goofy H1-54

Archived Extract Storage: BAGGINS
Additional Comments: ① E.E. KRP 02/15/18.

Bench Sheet Review Check List	
<input checked="" type="checkbox"/>	Hold times met (if no, reason: <u> </u>)
<input checked="" type="checkbox"/>	Prep date, time, method, department, product code correct in stealth
<input type="checkbox"/>	Spike information and Q.C. correct (insufficient volume or mass recorded if no Q.C.)
<input checked="" type="checkbox"/>	Weights/Volumes and units correct on raw and final bench sheets
<input checked="" type="checkbox"/>	Sample IDs have been checked - bottle numbers appended if required
<input checked="" type="checkbox"/>	Names present for: started by, completed by, relinquished by, and witnessed by. Training circled.
<input checked="" type="checkbox"/>	Extract storage recorded
<input checked="" type="checkbox"/>	Additional prep sheet completely filled out (NA or line out blanks)
<input checked="" type="checkbox"/>	All clean-ups have been noted on additional prep sheet
<input checked="" type="checkbox"/>	Signed service request with Form V, if applicable, has been attached

Preparation Information

Group ID: KWG1801348	Prep Method: EPA 3511	Prep Date: 03/09/18 14:51
Department: Semivoa GC		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
K1801267-008	CO1-PW-3-5 (W)	8082A PCB	WATER	86ml	5ml
K1801267-017	CO3-PW-3-5 (W)	8082A PCB	WATER	100ml	5ml
KWG1801348-1	Lab Control Sample	8082A PCB	WATER	100ml	5ml
KWG1801348-2	Duplicate Lab Control Sample	8082A PCB	WATER	100ml	5ml
KWG1801348-3	Method Blank	8082A PCB	WATER	100ml	5ml

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K1801267-008	1666771					
K1801267-017	1666772					
KWG1801348-1	1666773					
KWG1801348-2	1666774					
KWG1801348-3	1666775					

Comments: _____

Started By: <u>AMcFarla</u>	Assisted By: _____	<u>Training</u>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Completed By: <u>AMcFarla</u>	Assisted By: _____		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Reviewed By: <u>[Signature]</u>	Date: <u>3/9/18</u>	Storage: <u>Goofy D1-D5</u>		

Relinquished By: <u>J McFarlane</u>	Date: <u>3/9/18</u>	<u>Extracts Examined</u>
Received By: <u>[Signature]</u>	Date: <u>3/9/18</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Preparation Information

Group ID:	KWG1801348	Prep Method:	EPA 3511
Department:	Semivoa GC	Prep Date:	03/09/18 00:00

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext. <i>mL</i>	pH	Int. Vol.	Final Vol. <i>mL</i>	Surr. Added <i>mL</i>	Spike Added <i>mL</i>
1	K1801267-008	CO1-PW-3-5 (W) <i>X</i>	.03	✓	8082A PCB	WATER	86	7	N/A	5	50	-
2	K1801267-017	CO3-PW-3-5 (W)	.02	✓	8082A PCB	WATER	100	7		5		-
3	KWG1801348-1	Lab Control Sample			8082A PCB	WATER	100	5		5		250
4	KWG1801348-2	Duplicate Lab Control Sample			8082A PCB	WATER	100	5		5		
5	KWG1801348-3	Method Blank			8082A PCB	WATER	100	5		5		-

Comments: *Insufficient sample for MS/DMS TM 3/9/18 prep run #309689*
** limited sample, brought to 100 mL w/DI H2O TM 3/9/18*

Surrogate ID: *PCB7-25K, 0.5 ppm, exp. 7/20/18, 50 mL, 4I*

Spike ID: *PCB7-25I, 1 ppm, exp. 6/12/13, 250 mL, 2*

Witness: _____

Started By: AMcFarla Assisted By: —

Completed By: AMcFarla Assisted By: —

Pest/PCB/PAH by 3511

Service Request # K1801267 Work Group # Pest:
PCB: KW61801348
PAH:

Solvent Lot # 182436

Extraction Start (time/date/initial): 14:51 3/9/18 JM

Extraction Stop (time/date/initial): 15:21 3/9/18 JM

NaCl Lot# 176207

Sulfate Lot # 170862

Carbon Clean-up (Ext-Car)(time/date/initial): Carbon Lot #

Hexane Lot #

Florisil Clean-up (Ext-Flor)(time/date/initial): Florisil Lot #

Hexane Lot #

Sulfuric Acid Clean-up (3665) (time/date/initial): 15:15 3/9/18 JM Acid Lot # 54344

Other Clean-up: all samples some samples:

Pipette (2 mL) Lot # 13917646 Pipette (1 mL) Lot # 13617645

Pest Vial: Vial Storage:

PCB Vial: Green Vial Storage: Goody DI-DS

PAH Vial: Vial Storage:

Archived Extract Storage: Ricky Ricardo

Additional Comments:

- Hold times met (if no, reason:)
- Prep date, time, method, department, product code correct in stealth
- Spike information and Q.C. correct (insufficient volume or mass recorded if no Q.C.)
- Weights/Volumes and units correct on raw and final bench sheets
- Sample IDs have been checked - bottle numbers appended if required
- Names present for: started by, completed by, relinquished by, and witnessed by. Training circled.
- Extract storage recorded
- Additional prep sheet completely filled out (NA or line out blanks)
- All clean-ups have been noted on additional prep sheet
- Signed service request with Form V, if applicable, has been attached

Preparation Information

Group ID: KWG1800932	Prep Method: EPA 3511	Prep Date: 02/14/18 00:00
Department: Semivoa GC		

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext. mL	pH	Int. Vol.	Final Vol. mL	Surr. Added mL	Spike Added mL
1	K1801267-004	EQB-SD-01	.04	✓	8082A PCB	WATER	410	5	N/A	2	20	-
2	K1801267-018	EQB-PW-01	.03	✓	8082A PCB	WATER	425	5	I	2	I	-
3	KWG1800932-1	Lab Control Sample	-	-	8082A PCB ULL	WATER	400	5	I	2	I	50
4	KWG1800932-2	Duplicate Lab Control Sample	-	-	8082A PCB ULL	WATER	400	5	I	2	I	I
5	KWG1800932-3	Method Blank	-	-	8082A PCB ULL	WATER	425	5	I	2	I	-

Comments:

Insufficient sample for MS/DMS TM 2/14/18 prep run # 308384

X-PC requested sample be run for PCB ULL instead of PCB TM 2/14/18

Surrogate ID:

PCB7-25K, 0.5 ppm, exp. 7/26/18, 20 mL, (syr)

Spike ID:

PCB7-23J, 1 ppm, exp. 4/16/18, 50 mL, 4I

Witness:

Started By: AMcFarla

Assisted By: -

Completed By: AMcFarla

Assisted By: -

Pest/PCB/PAH by 3511

Service Request # R1801267 Work Group # Pest: —
PCB: KWG1800932
PAH: —

Solvent Lot # 182436

Extraction Start (time/date/initial): 16:03 2/14/18 TM

Extraction Stop (time/date/initial): 16:33 2/14/18 TM

NaCl Lot# 176207

Sulfate Lot # 170862

Carbon Clean-up (Ext-Car)(time/date/initial): — Carbon Lot # —

Hexane Lot # —

Florisil Clean-up (Ext-Flor)(time/date/initial): — Florisil Lot # —

Hexane Lot # —

Sulfuric Acid Clean-up (3665) (time/date/initial): 17:40 2/14/18 TM Acid Lot # 54344

Other Clean-up: — all samples some samples: —

Pipette (2 mL) Lot # 13717646 Pipette (1 mL) Lot # 13617645

Pest Vial: — Vial Storage: —
PCB Vial: Green Vial Storage: BooFy C1-C5
PAH Vial: — Vial Storage: —

Archived Extract Storage: Joey

Additional Comments: —

- Hold times met (if no, reason: _____)
- Prep date, time, method, department, product code correct in stealth
- Spike information and Q.C. correct (insufficient volume or mass recorded if no Q.C.)
- Weights/Volumes and units correct on raw and final bench sheets
- Sample IDs have been checked - bottle numbers appended if required
- Names present for: started by, completed by, relinquished by, and witnessed by. Training circled.
- Extract storage recorded
- Additional prep sheet completely filled out (NA or line out blanks)
- All clean-ups have been noted on additional prep sheet
- Signed service request with Form V, if applicable, has been attached

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F016.D
Lab ID: K1801267-004
RunType: SMPL
Matrix: WATER

Date Acquired: 02/15/2018 15:54
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

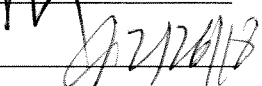
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action	
Lab Control Spike	Aroclor 1016 {1}	120	60	103	LCST-ND	
	Aroclor 1016	116	60	103		
	Aroclor 1016 {2}	117	60	103		
	Aroclor 1016 {3}	115	60	103		
	Aroclor 1016 {4}	108	60	103		
	Aroclor 1016 {5}	122	60	103		
	Aroclor 1260 {1}	105	60	103		
	Aroclor 1260	117	60	103		
	Aroclor 1260 {2}	132	60	103		
	Aroclor 1260 {3}	126	60	103		
	Aroclor 1260 {4}	120	60	103		
	Aroclor 1260 {5}	105	60	103		
	Duplicate Lab Control Spike	Aroclor 1016 {1}	113	60		103
		Aroclor 1016	120	60		103
Aroclor 1016 {2}		126	60	103		

Primary Review: 

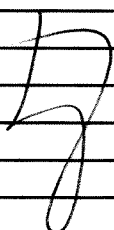
Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F016.D
Lab ID: K1801267-004
RunType: SMPL
Matrix: WATER

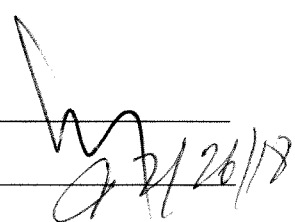
Date Acquired: 02/15/2018 15:54
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
	Aroclor 1016 {3}	122	60	103	CFST MD
	Aroclor 1016 {4}	115	60	103	
	Aroclor 1016 {5}	124	60	103	
	Aroclor 1260 {1}	110	60	103	
	Aroclor 1260	123	60	103	
	Aroclor 1260 {2}	137	60	103	
	Aroclor 1260 {3}	132	60	103	
	Aroclor 1260 {4}	126	60	103	
	Aroclor 1260 {5}	110	60	103	

Primary Review: _____

Secondary Review: _____



Exception Report

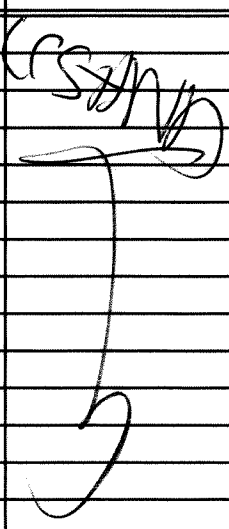
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F016.D
Lab ID: K1801267-004
RunType: SMPL
Matrix: WATER

Date Acquired: 02/15/2018 15:54
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action	
Lab Control Spike	Aroclor 1016	116	60	103		
	Aroclor 1016 {1}	120	60	103		
	Aroclor 1016 {2}	117	60	103		
	Aroclor 1016 {3}	115	60	103		
	Aroclor 1016 {4}	108	60	103		
	Aroclor 1016 {5}	122	60	103		
	Aroclor 1260 {1}	105	60	103		
	Aroclor 1260	117	60	103		
	Aroclor 1260 {2}	132	60	103		
	Aroclor 1260 {3}	126	60	103		
	Aroclor 1260 {4}	120	60	103		
	Aroclor 1260 {5}	105	60	103		
	Duplicate Lab Control Spike	Aroclor 1016	120	60		103
		Aroclor 1016 {1}	113	60		103
Aroclor 1016 {2}		126	60	103		

Primary Review: _____

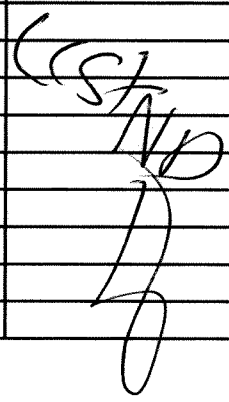
Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F016.D
Lab ID: K1801267-004
RunType: SMPL
Matrix: WATER

Date Acquired: 02/15/2018 15:54
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
	Aroclor 1016 {3}	122	60	103	
	Aroclor 1016 {4}	115	60	103	
	Aroclor 1016 {5}	124	60	103	
	Aroclor 1260 {1}	110	60	103	
	Aroclor 1260	123	60	103	
	Aroclor 1260 {2}	137	60	103	
	Aroclor 1260 {3}	132	60	103	
	Aroclor 1260 {4}	126	60	103	
	Aroclor 1260 {5}	110	60	103	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F016.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F016.D	Vial:	12
Acqu Date:	02/15/2018 15:54	Quant Date:	02/16/2018 10:14
Run Type:	SMPL	ListJoinID:	LJ15289
Lab ID:	K1801267-004	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	WATER
Prod Code:	8082A PCB	Collect Date:	02/07/2018	Receive Date:	02/08/2018

Analysis Lot:	KWG1800961	Prep Lot:	KWG1800932	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1663953	Prep Date:	02/14/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ15289
MB Ref:	J:\GC32\DATA\021518.B\0215F020.D	Method ID:	MJ702
		Quant based on Report List	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Decachlorobiphenyl	16.75 ^{0.00}	18.03 ^{0.00}	4151029	4486420	4.12	4.08			82 OK
			%Recovery =		82 OK	82 OK	Limits =	39-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016 {1}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1016			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1016 {2}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1016 {3}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1016 {4}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1016 {5}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1221 {1}			0	0	0.0000	0.0000	0.0059U	0.0059U	
Aroclor 1221			0	0	0.0000	0.0000	0.0059U	0.0059U	0.0059U
Aroclor 1221 {2}			0	0	0.0000	0.0000	0.0059U	0.0059U	
Aroclor 1221 {3}			0	0	0.0000	0.0000	0.0059U	0.0059U	
Aroclor 1232 {1}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1232 {2}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {3}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {4}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {5}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {1}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1242 {2}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {3}			0	0	0.0000	0.0000	0.0024U	0.0024U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F016.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F016.D	Vial:	12
Acqu Date:	02/15/2018 15:54	Quant Date:	02/16/2018 10:14
Run Type:	SMPL	ListJoinID:	LJ15289
Lab ID:	K1801267-004	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Parameter Name	RT		Resp		ng/mL		ug/L		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {4}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {5}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {1}			0	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1248 {2}			0	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {3}			0	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {4}			0	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {5}			0	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {1}			0d	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1254 {2}			0d	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {3}			0d	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {4}			0d	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {5}			0d	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260 {1}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1260 {2}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260 {3}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260 {4}			0	0	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260 {5}			0	0	0.0000	0.0000	0.0024U	0.0024U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 410 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F016.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F016.D
Inj Date : 15-FEB-2018 15:54
Sample Info: K1801267-004
Misc Info :
Cal Date : 16-FEB-2018 09:45
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.280	7303507	6775383	4.47	5.00		100.00(R)
Decachlorobiphenyl	16.750	18.030	4151029	4486420	4.12	4.08		100.00(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\AIK1sws002\inst\data\GC32\DATA\021518,b\0215F016.D

Date: 15-FEB-2018 15:54

Client ID:

Sample Info: K1801267-004

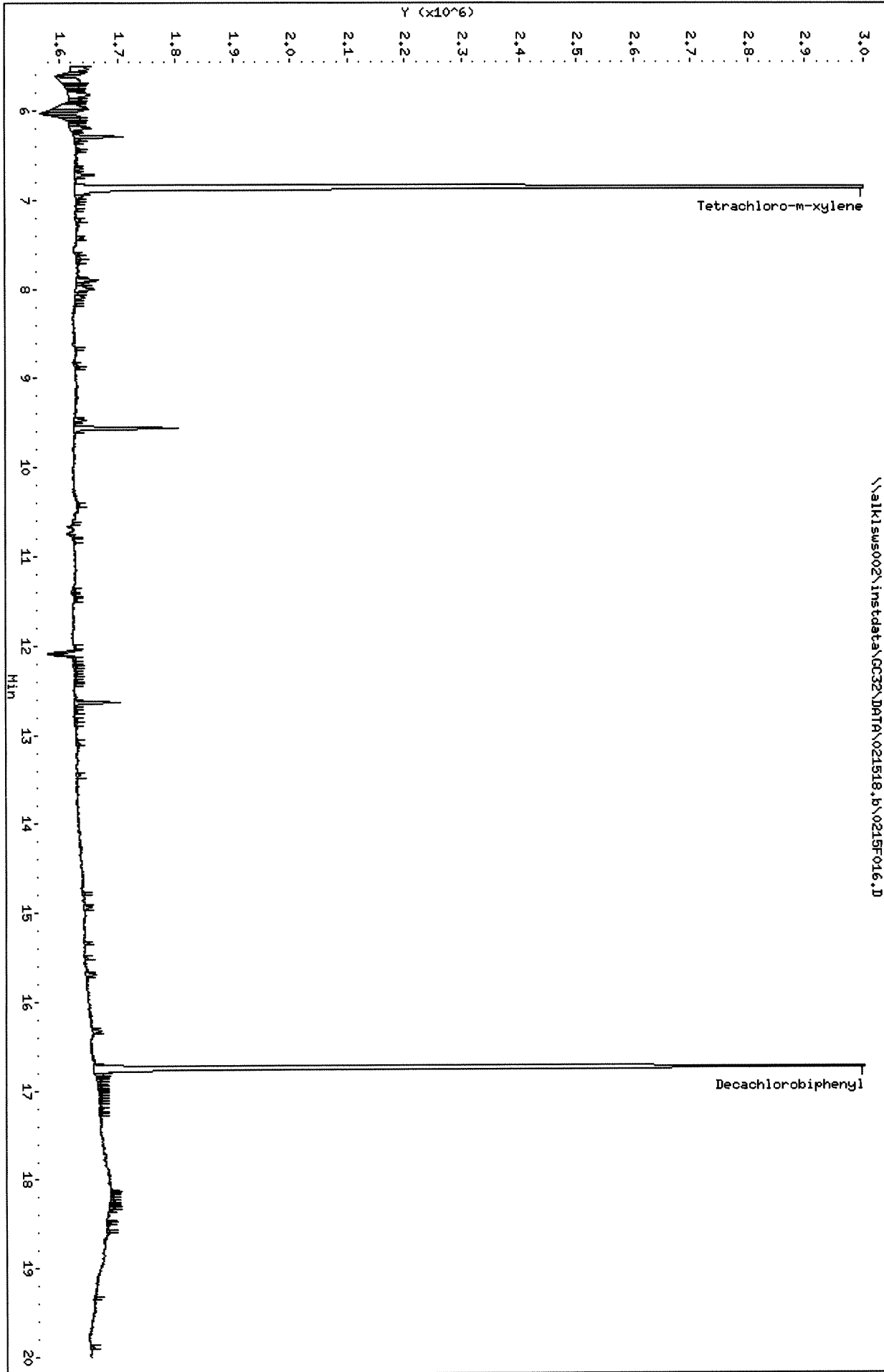
Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32

\\AIK1sws002\inst\data\GC32\DATA\021518,b\0215F016.D



Data File: \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F016.D

Date: 15-FEB-2018 15:54

Client ID:

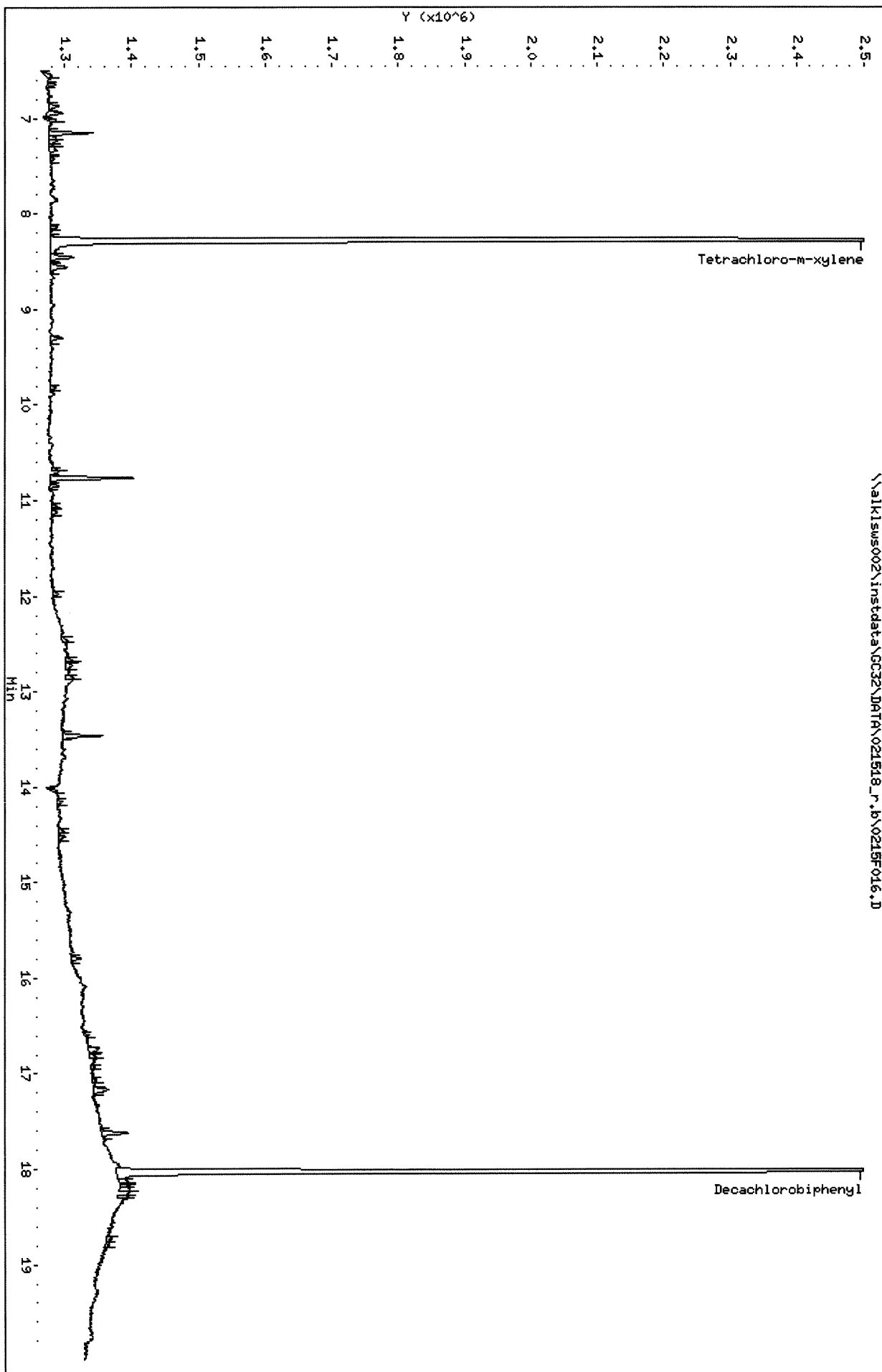
Sample Info: K1801267-004

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



Exception Report

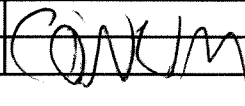
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F006.D
Lab ID: K1801267-008
Run Type: SMPL
Matrix: WATER

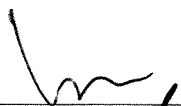
Date Acquired: 03/29/2018 14:32
Date Quantitated: 04/07/2018 10:33
Batch ID: KWG1801852
Analysis Method: 8082A
ListJoinID: LJ18637

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Lab Control Spike	Aroclor 1260 {3}	131	70	130	
Surrogates	Decachlorobiphenyl	38	70	130	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F006.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F006.D	Vial:	3
Acqu Date:	03/29/2018 14:32	Quant Date:	04/07/2018 10:32
Run Type:	SMPL	ListJoinID:	LJ18637
Lab ID:	K1801267-008	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	WATER
Prod Code:	8082A PCB	Collect Date:	03/06/2018	Receive Date:	03/06/2018

Analysis Lot:	KWG1801852	Prep Lot:	KWG1801348	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1666771	Prep Date:	03/09/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18637
MB Ref:	J:\GC32\DATA\031418.B\0314F026.D	Method ID:	MJ1662
		Quant based on Report List	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt	
Decachlorobiphenyl	16.74 ^{0.00}	18.02 ^{+0.00}	1778879	2096876	1.77 ^{CCV}	1.91	35 *	38 *	Limits = 70-130	38 * <i>default</i>

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1016			0	0	0.0000	0.0000	0.033U	0.033U	0.033U
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1221 {1}			0	0	0.0000	0.0000	0.033U	0.033U	
Aroclor 1221			0	0	0.0000	0.0000	0.033U	0.033U	0.033U
Aroclor 1221 {2}			0	0	0.0000	0.0000	0.033U	0.033U	
Aroclor 1221 {3}			0	0	0.0000	0.0000	0.033U	0.033U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1232			0	0	0.0000	0.0000	0.033U	0.033U	0.033U
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1242 {1}	9.17	10.19	103151m	82746m	5.48	6.75	0.32	0.39	
Aroclor 1242			0	0	11.03	13.50	0.64	0.78	0.64
Aroclor 1242 {2}	9.62	10.82	256633m	318266m	5.75	9.16	0.33	0.53	
Aroclor 1242 {3}	10.26	11.31	0m	0m	0.0000	0.0000	0.033U	0.033U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\032918.B\0329F006.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F006.D	Vial:	3
Acqu Date:	03/29/2018 14:32	Quant Date:	04/07/2018 10:32
Run Type:	SMPL	ListJoinID:	LJ18637
Lab ID:	K1801267-008	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Parameter Name	RT		Resp		ng/mL		ug/L		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {4}	10.96	11.62	522433m	554966m	21.88	24.58	1.3	1.4	
Aroclor 1242 {5}	11.30	12.42	0m	0m	0.0000	0.0000	0.033U	0.033U	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1248			0	0	0.0000	0.0000	0.033U	0.033U	0.033U
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.033U	0.033U	
Aroclor 1254 {1}	11.36	12.30	1246153m	1256837m	22.78	24.58	1.3	1.4	
Aroclor 1254			0	0	28.59	26.17	1.7	1.5	1.5
Aroclor 1254 {2}	12.13	12.35	1642678m	702109m	39.71	30.82	2.3	1.8	
Aroclor 1254 {3}	12.29	12.68	1743958m	1463166m	21.39	24.50	1.2	1.4	
Aroclor 1254 {4}	12.53	13.00	1078487m	545926m	26.72	24.87	1.6	1.4	
Aroclor 1254 {5}	12.82	14.24	999191m	817026m	32.33	26.07	1.9	1.5	
Aroclor 1260 {1}	12.53 ^{0.00}	14.09 ^{+0.00}	0m	0m	0.0000	0.0000	0.033U	0.033U	
Aroclor 1260			0	0	7.69	10.29	0.45	0.60	0.45
Aroclor 1260 {2}	13.12 ^{-0.01}	14.67 ^{+0.00}	0m	438705m	0.0000	10.64	0.033U	0.62	
Aroclor 1260 {3}	13.94 ^{-0.01}	15.04 ^{+0.01}	295053m	423494m	7.60	10.46	0.44	0.61	
Aroclor 1260 {4}	14.32 ^{0.00}	15.57 ^{+0.00}	598721m	716831m	7.09	8.34	0.41	0.48	
Aroclor 1260 {5}	14.94 ^{0.00}	16.07 ^{+0.00}	544578m	728893m	8.38	11.70	0.49	0.68	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 86 ml **Dilution:** 1.0
Prep Final Vol: 5 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F006.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F006.D
 Inj Date : 29-MAR-2018 14:32
 Sample Info: K1801267-008RR
 Misc Info :
 Cal Date : 30-MAR-2018 08:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.851	8.268	636875	588754	0.390	0.434		100.00 (R)
Aroclor 1242	9.168	10.185	103151	82746	5.48	6.75	80.00- 120.00	100.00 (M)
	9.624	10.821	256633	318266	5.75	9.16	188.17- 282.25	248.79 (M)
	10.264	11.305					129.73- 194.59	0.00 (M)
	10.958	11.618	522433	554966	21.9	24.6	97.61- 146.41	506.47 (M)
	11.301	12.421					145.18- 217.78	0.00 (M)
	Average of Peak Amounts =				11.0	13.5		
Aroclor 1254	11.358	12.298	1246153	1256837	22.8	24.6	80.00- 120.00	100.00 (MH)
	12.134	12.351	1642678	702109	39.7	30.8	64.52- 96.78	131.82 (MH)
	12.291	12.675	1743958	1463166	21.4	24.5	121.44- 182.17	139.95 (MH)
	12.534	12.995	1078487	545926	26.7	24.9	61.81- 92.72	86.55 (MH)
	12.821	14.238	999191	817026	32.3	26.1	47.38- 71.07	80.18 (MH)
	Average of Peak Amounts =				28.6	26.2		
Aroclor 1260	12.534	14.085					80.00- 120.00	0.00 (M)
	13.124	14.665		438705		10.6	148.44- 222.65	79.28 (M)
	13.938	15.038	295053	423494	7.60	10.5	52.09- 78.13	27.36 (M)
	14.321	15.568	598721	716831	7.09	8.34	101.38- 152.06	55.51 (M)
	14.944	16.071	544578	728893	8.38	11.7	74.53- 111.80	50.49 (M)
	Average of Peak Amounts =				7.69	10.3		
Decachlorobiphenyl	16.738	18.018	1778879	2096876	1.77	1.91		100.00 (R)
Aroclors, Total	1.000	1.000	2115616	1852652	47.3	50.0		100.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\alk1sus002\instdata\GC32\DATA\032918_16\0329F006.D

Date : 29-MAR-2018 14:32

Client ID:

Sample Info: K1801267-008RR

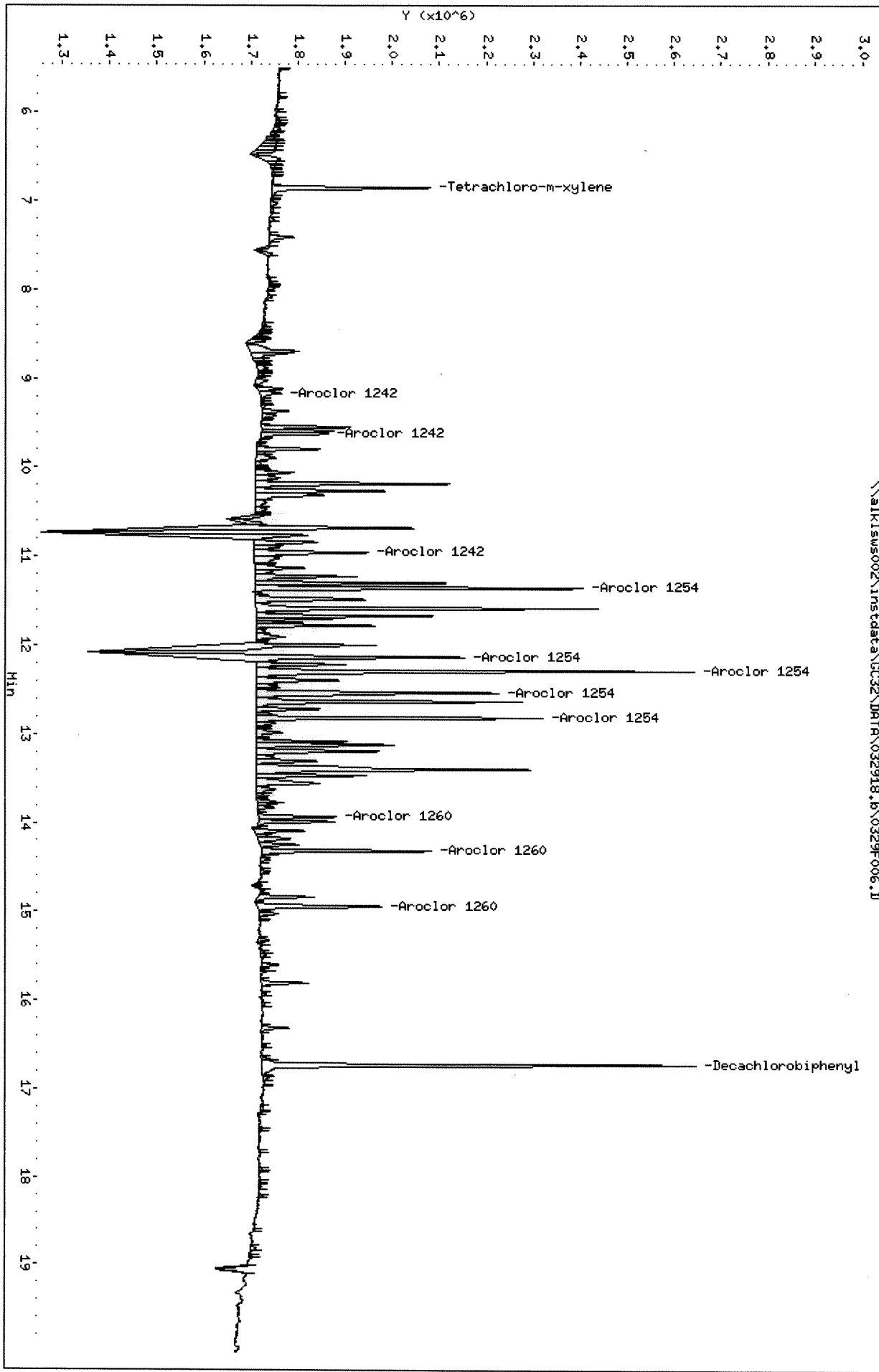
Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

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Data File: \\alk1sus002\instdata\GC32\DATA\032918_r.j\0329F006.D

Date: 29-MAR-2018 14:32

Client ID:

Sample Info: K1801267-008RR

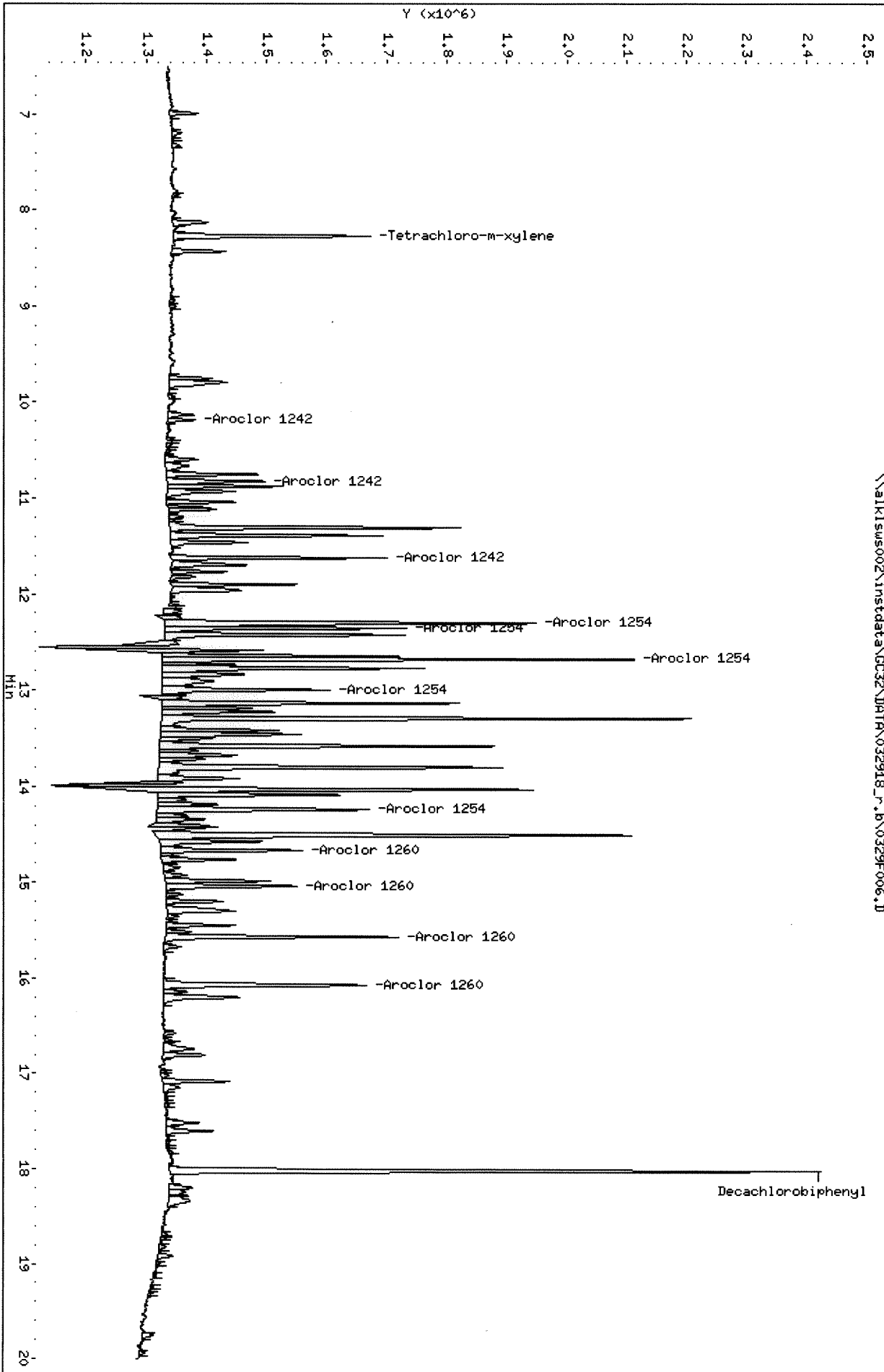
Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

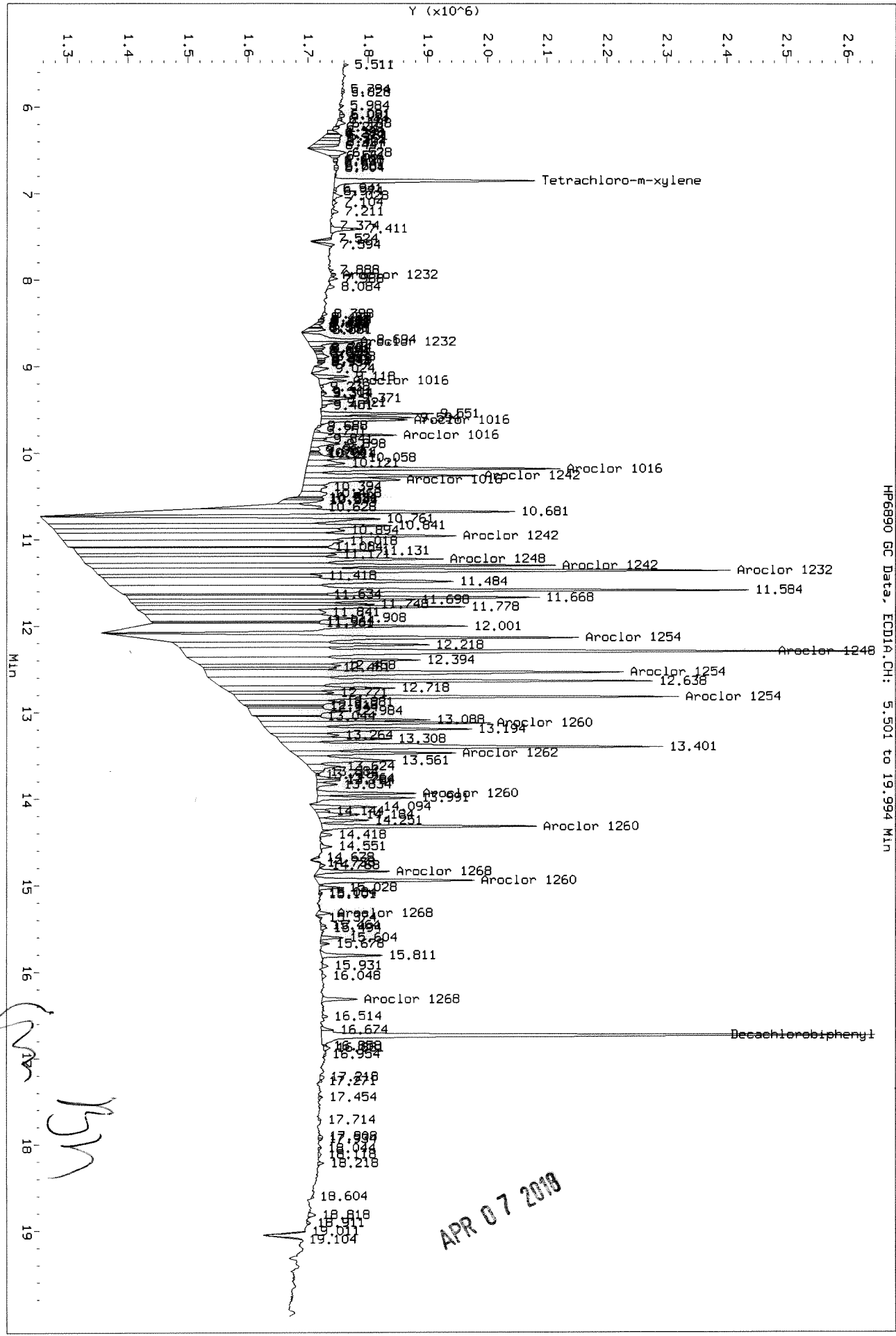
Column diameter: 0.32

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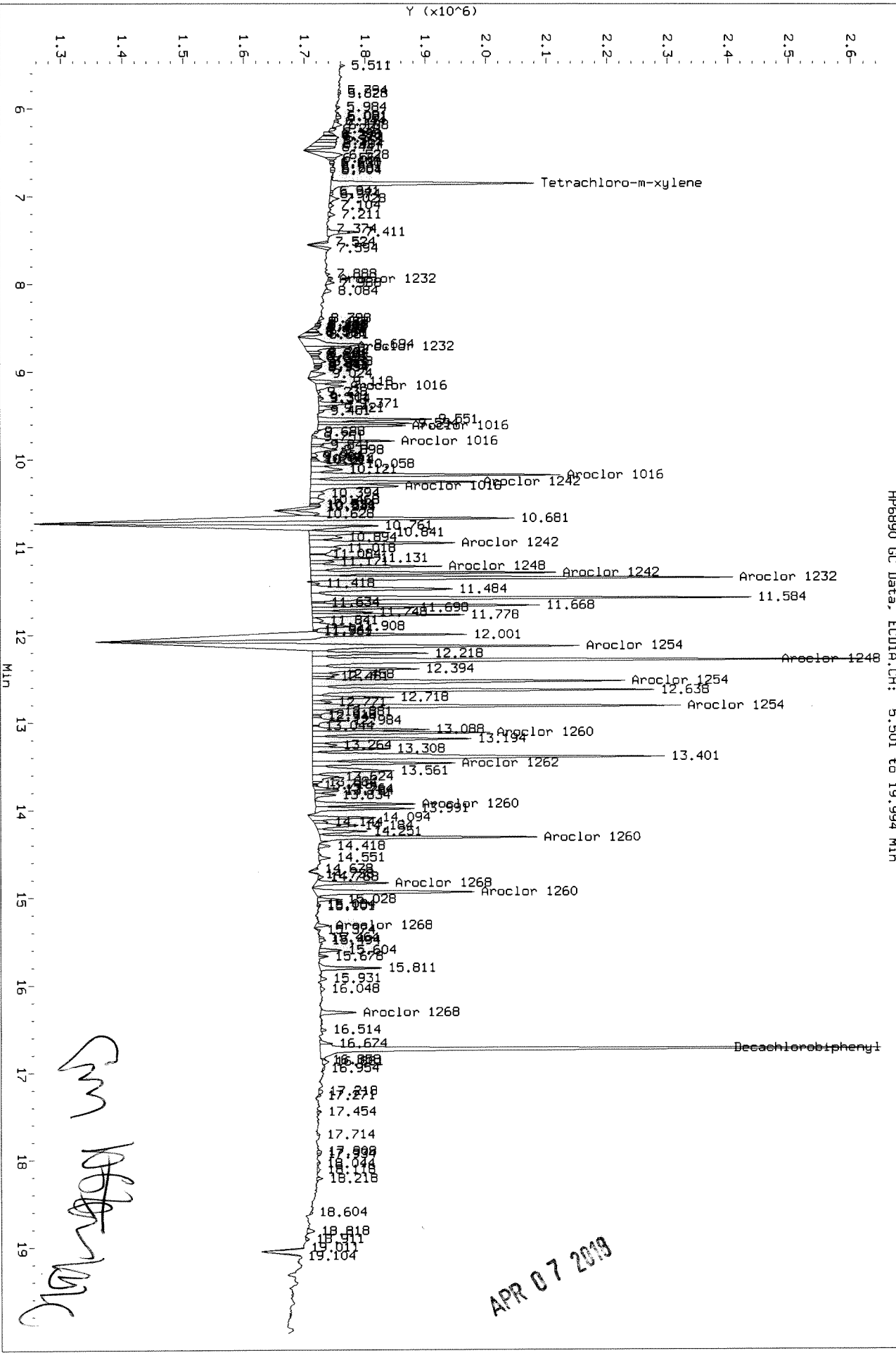
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Injection Date: 29-MAR-2018 14:32
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 5.501 to 19.994 Min



APR 07 2018

Data File: \\alkisw002\untd\data\GC32\DATA\032918.b\0329F006.D
 Injection Date: 29-MAR-2018 14:32
 Instrument: GC32.1
 Client Sample ID:

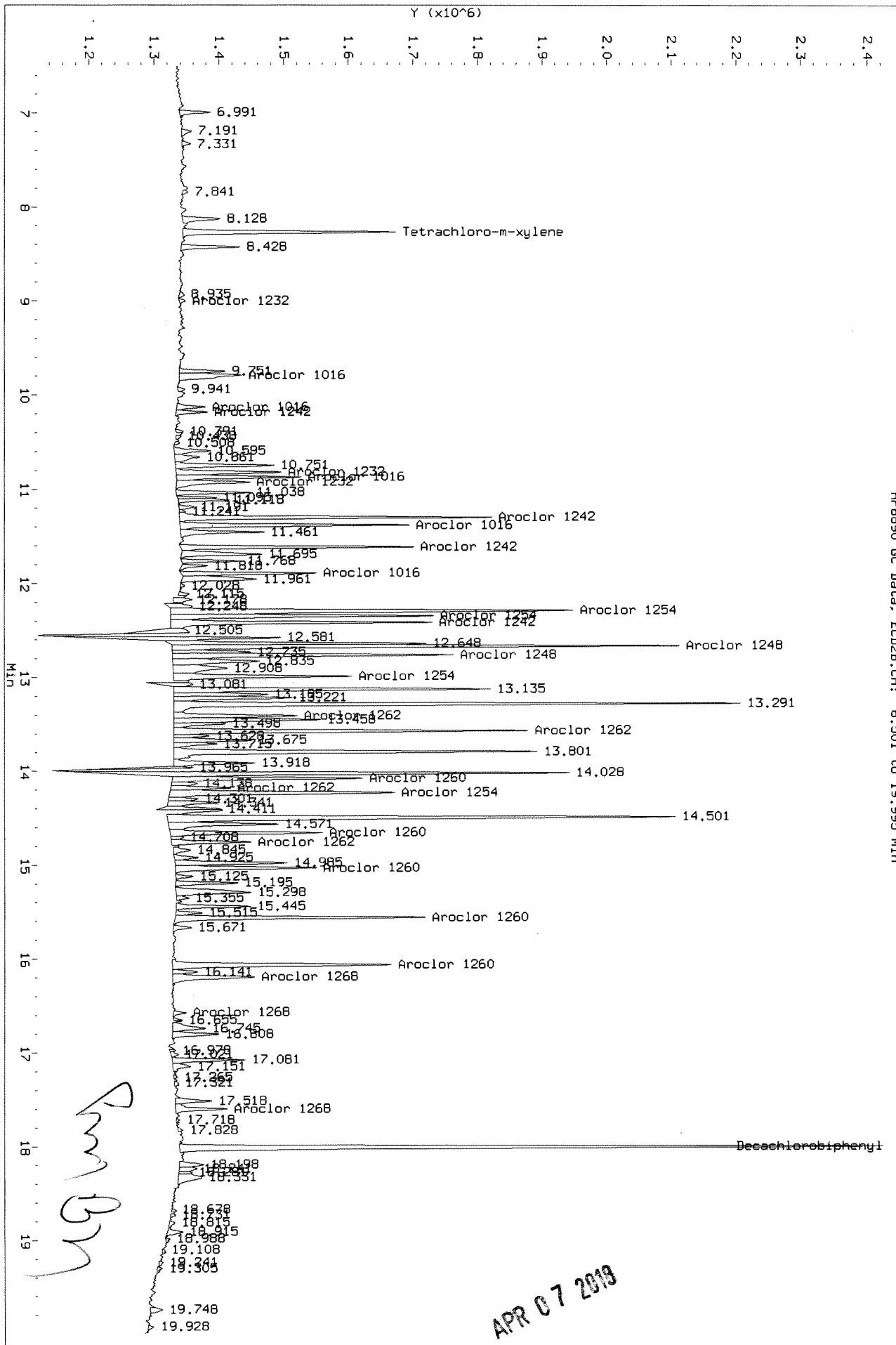


HR6890 GC Data, ECD1A.CH: 5.501 to 19.994 Min

SM
10/1/18

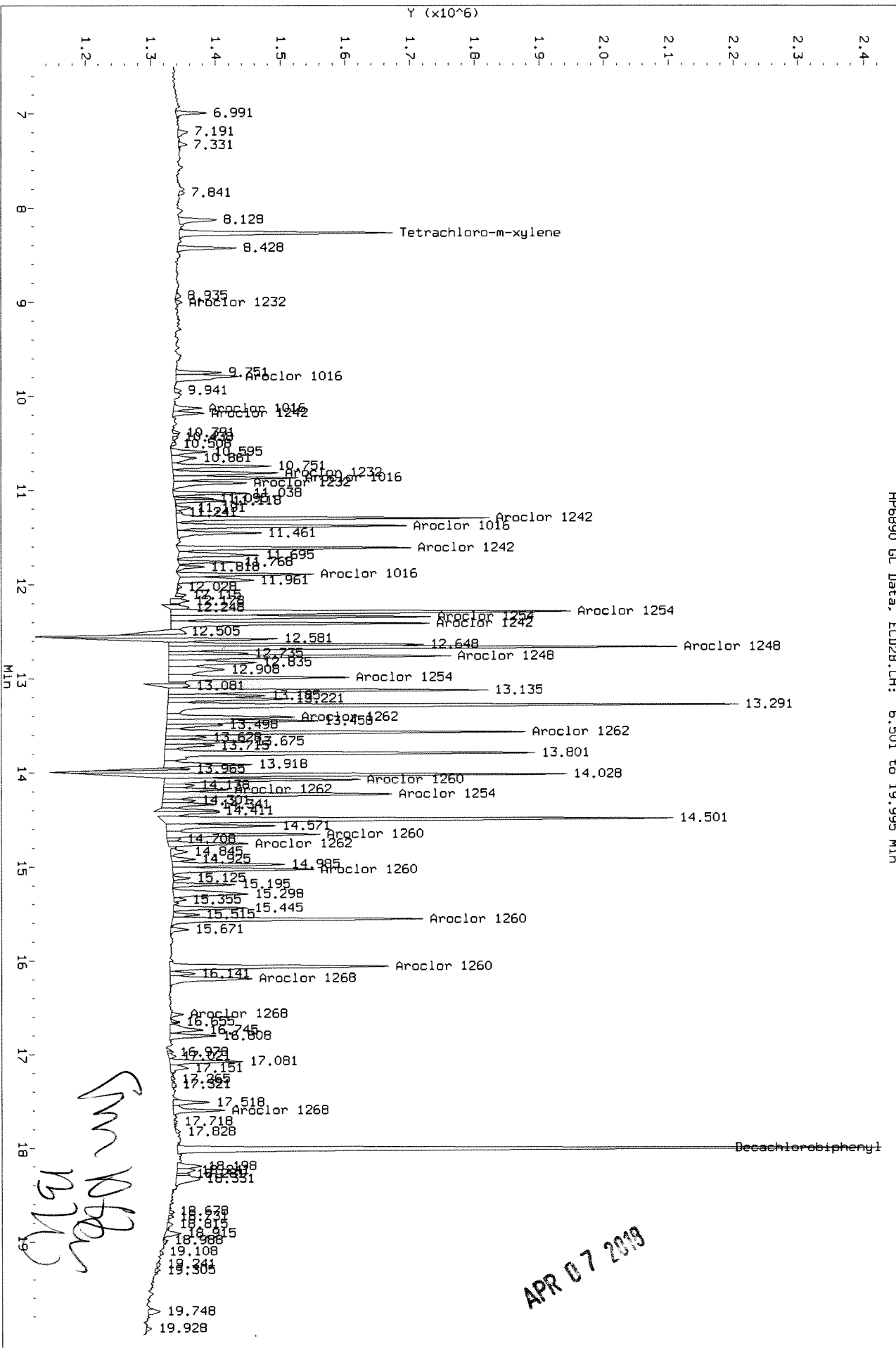
APR 07 2018

HP6890 GC Data, ECD2B.CH: 6.501 to 19.995 Min



APR 07 2018

HP6890 GC Data, ECD2B.CH: 6.501 to 19.995 Min



*Sm
19/10*

APR 07 2018

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F007.D
Lab ID: K1801267-017
Run Type: SMPL
Matrix: WATER

Date Acquired: 03/29/2018 15:04
Date Quantitated: 04/07/2018 10:32
Batch ID: KWG1801852
Analysis Method: 8082A
ListJoinID: LJ18637

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-30.6	NA	20	Re
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-25.4	NA	20	Re
Lab Control Spike	Aroclor 1260 {3}	131	70	130	CONCERN
Surrogates	Decachlorobiphenyl	38	70	130	CONCERN

Primary Review: 

Secondary Review: 

Exception Report

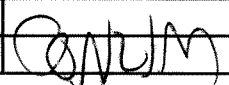
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F007.D
Lab ID: K1801267-017
RunType: SMPL
Matrix: WATER

Date Acquired: 03/29/2018 15:04
Date Quantitated: 04/07/2018 10:33
Batch ID: K WG1801852
Analysis Method: 8082A
ListJoinID: LJ18637

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Lab Control Spike	Aroclor 1260 {3}	131	70	130	
Surrogates	Decachlorobiphenyl	45	70	130	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F007.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F007.D	Vial:	4
Acqu Date:	03/29/2018 15:04	Quant Date:	04/07/2018 10:32
Run Type:	SMPL	ListJoinID:	LJ18637
Lab ID:	K1801267-017	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	WATER
Prod Code:	8082A PCB	Collect Date:	03/07/2018	Receive Date:	03/08/2018

Analysis Lot:	KWG1801852	Prep Lot:	KWG1801348	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1666772	Prep Date:	03/09/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18637
MB Ref:	J:\GC32\DATA\031418.B\0314F026.D	Method ID:	MJ1662
Quant based on Report List			

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Decachlorobiphenyl	16.74 ^{0.00}	18.02	1909359	2452358	1.90 ^{CCV}	2.23			45 *
			%Recovery =		38 *	45 *	Limits =	70-130	<i>default</i>

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {1}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1221 {2}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {3}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {1}	9.20	10.18	220701m	198420	11.72	16.20	0.59	0.81	
Aroclor 1242			0	0	20.93	29.71	1.0	1.5	1.0
Aroclor 1242 {2}	9.62	10.82	855510m	792820	19.15	22.82	0.96	1.1	
Aroclor 1242 {3}	10.26	11.30	0m	0	0.0000	0.0000	0.028U	0.028U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\032918.B\0329F007.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F007.D	Vial:	4
Acqu Date:	03/29/2018 15:04	Quant Date:	04/07/2018 10:32
Run Type:	SMPL	ListJoinID:	LJ18637
Lab ID:	K1801267-017	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {4}	10.96	11.62	762224m	1131198	31.93	50.10	1.6	2.5	
Aroclor 1242 {5}	11.30	12.42	0m	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {1}	11.36	12.30	2254640m	2188162	41.21	42.79	2.1	2.1	
Aroclor 1254			0	0	35.75	45.81	1.8	2.3	1.8
Aroclor 1254 {2}	12.13	12.35	1220918m	1493900	29.51	65.58	1.5	3.3	
Aroclor 1254 {3}	12.29	12.68	2379458m	2329492	29.19	39.01	1.5	2.0	
Aroclor 1254 {4}	12.54	13.00	1516419m	954748	37.58	43.49	1.9	2.2	
Aroclor 1254 {5}	12.82	14.24	1275121m	1196926	41.26	38.19	2.1	1.9	
Aroclor 1260 {1}	12.54 ^{+0.00}	14.08 ^{+0.00}	0m	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1260			0	0	10.29	12.16	0.51	0.61	0.51
Aroclor 1260 {2}	13.12 ^{-0.01}	14.66 ^{+0.00}	0m	484598	0.0000	11.75	0.028U	0.59	
Aroclor 1260 {3}	13.94 ^{0.00}	15.03 ^{+0.00}	409037m	584611	10.54	14.43	0.53	0.72	
Aroclor 1260 {4}	14.32 ^{0.00}	15.57	876857m	924726	10.39	10.76	0.52	0.54	
Aroclor 1260 {5}	14.94 ^{0.00}	16.07 ^{+0.00}	647234m	728059	9.96	11.69	0.50	0.58	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 100 ml Dilution: 1.0
 Prep Final Vol: 5 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F007.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F007.D
 Inj Date : 29-MAR-2018 15:04
 Sample Info: K1801267-017RR
 Misc Info :
 Cal Date : 30-MAR-2018 08:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.850	8.267	3394271	3630561	2.08	2.68		100.00 (R)
Aroclor 1242	9.200	10.184	220701	198420	11.7	16.2	80.00- 120.00	100.00 (M)
	9.617	10.821	855510	792820	19.2	22.8	188.17- 282.25	387.63 (M)
	10.264	11.304					129.73- 194.59	0.00 (M)
	10.957	11.621	762224	1131198	31.9	50.1	97.61- 146.41	345.36 (M)
	11.300	12.424					145.18- 217.78	0.00 (M)
	Average of Peak Amounts =				20.9	29.7		
Aroclor 1254	11.357	12.297	2254640	2188162	41.2	42.8	80.00- 120.00	100.00 (MH)
	12.134	12.351	1220918	1493900	29.5	65.6	64.52- 96.78	54.15 (MH)
	12.290	12.677	2379458	2329492	29.2	39.0	121.44- 182.17	105.54 (MH)
	12.537	12.997	1516419	954748	37.6	43.5	61.81- 92.72	67.26 (MH)
	12.820	14.241	1275121	1196926	41.3	38.2	47.38- 71.07	56.56 (MH)
	Average of Peak Amounts =				35.8	45.8		
Aroclor 1260	12.537	14.084					80.00- 120.00	0.00 (M)
	13.124	14.664		484598		11.8	148.44- 222.65	62.51 (M)
	13.940	15.034	409037	584611	10.5	14.4	52.09- 78.13	26.97 (M)
	14.320	15.567	876857	924726	10.4	10.8	101.38- 152.06	57.82 (M)
	14.944	16.071	647234	728059	9.95	11.7	74.53- 111.80	42.68 (M)
	Average of Peak Amounts =				10.3	12.2		
Decachlorobiphenyl	16.737	18.017	1909359	2452358	1.90	2.23		100.00 (R)
Aroclors, Total	1.000	1.000	2986500	3020623	67.0	87.7		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\alk1s002\inst\data\GC32\DATA\032918.b\0329F007.D

Date: 29-MAR-2018 15:04

Client ID:

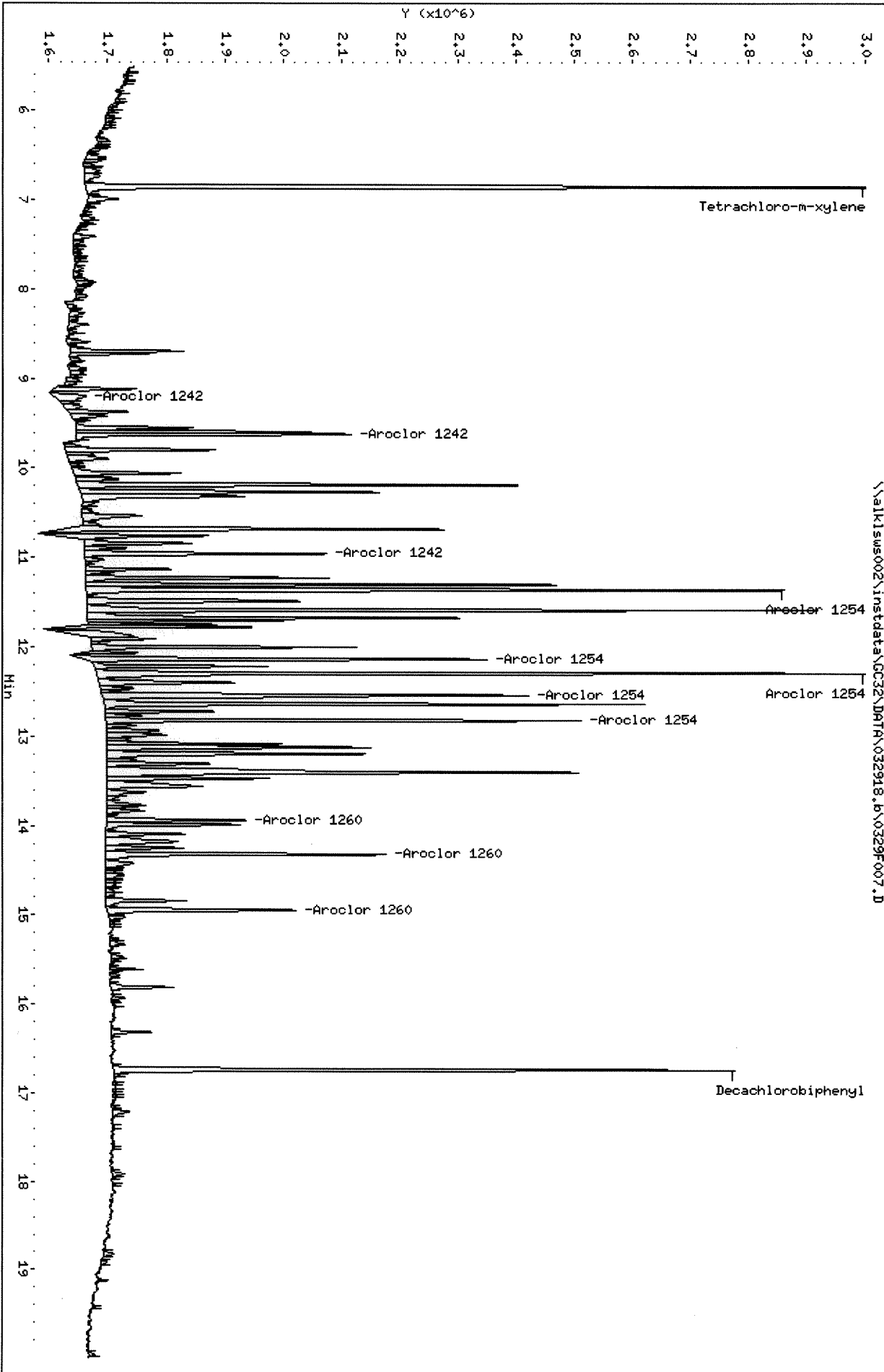
Sample Info: K1801267-017RR

Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\032918_r.j\0329F007.D

Date: 29-MAR-2018 15:04

Client ID:

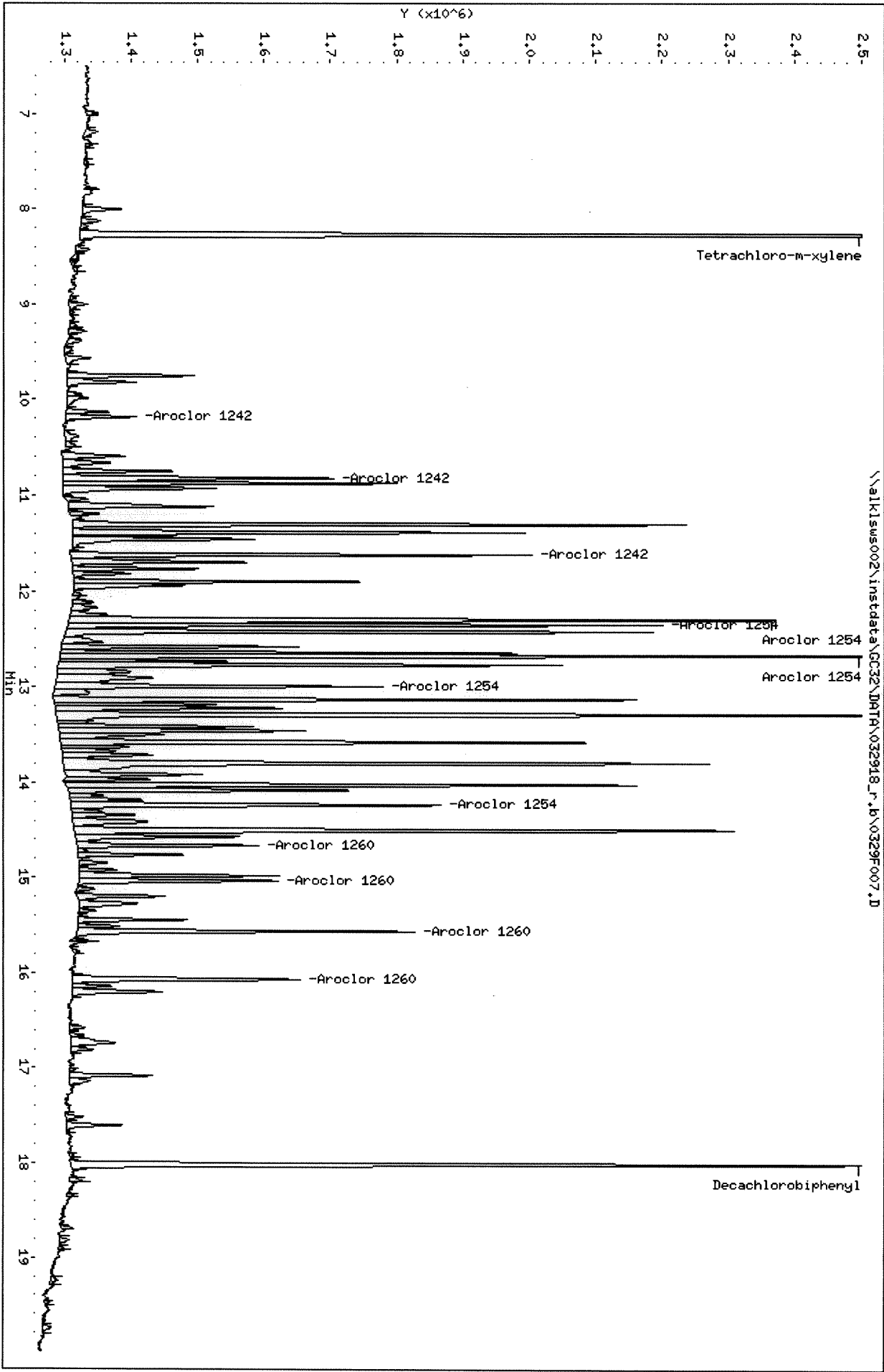
Sample Info: K1801267-017RR

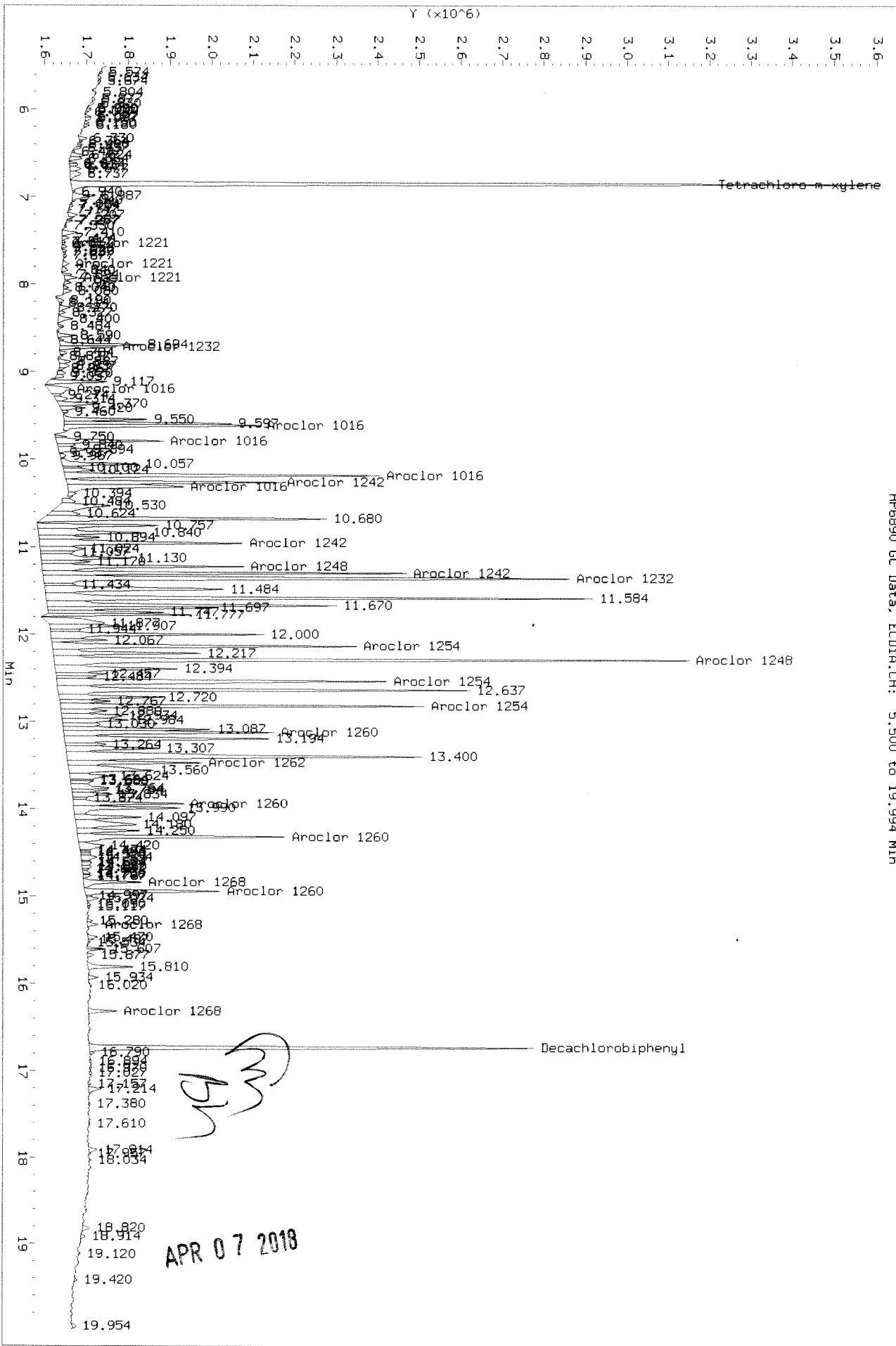
Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32





HP6890 GC Data, ECD1A.CH: 5.500 to 19.994 Min

Exception Report

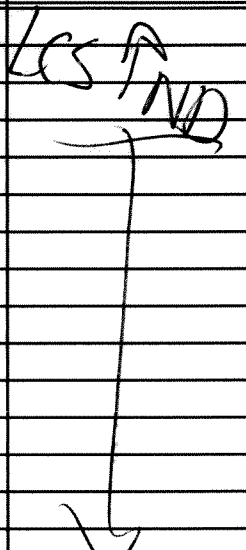
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F017.D
Lab ID: K1801267-018
RunType: SMPL
Matrix: WATER

Date Acquired: 02/15/2018 16:26
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Lab Control Spike	Aroclor 1016 {1}	120	60	103	
	Aroclor 1016	116	60	103	
	Aroclor 1016 {2}	117	60	103	
	Aroclor 1016 {3}	115	60	103	
	Aroclor 1016 {4}	108	60	103	
	Aroclor 1016 {5}	122	60	103	
	Aroclor 1260 {1}	105	60	103	
	Aroclor 1260	117	60	103	
	Aroclor 1260 {2}	132	60	103	
	Aroclor 1260 {3}	126	60	103	
	Aroclor 1260 {4}	120	60	103	
	Aroclor 1260 {5}	105	60	103	
	Duplicate Lab Control Spike	Aroclor 1016 {1}	113	60		103
Aroclor 1016		120	60	103	
Aroclor 1016 {2}		126	60	103	

Primary Review: 

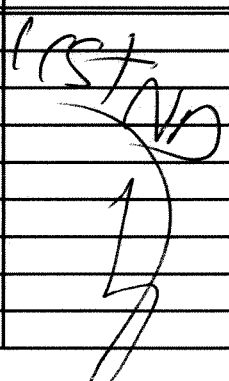
Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F017.D
Lab ID: K1801267-018
RunType: SMPL
Matrix: WATER

Date Acquired: 02/15/2018 16:26
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
	Aroclor 1016 {3}	122	60	103	
	Aroclor 1016 {4}	115	60	103	
	Aroclor 1016 {5}	124	60	103	
	Aroclor 1260 {1}	110	60	103	
	Aroclor 1260	123	60	103	
	Aroclor 1260 {2}	137	60	103	
	Aroclor 1260 {3}	132	60	103	
	Aroclor 1260 {4}	126	60	103	
	Aroclor 1260 {5}	110	60	103	

Primary Review: _____

Secondary Review: _____

Exception Report

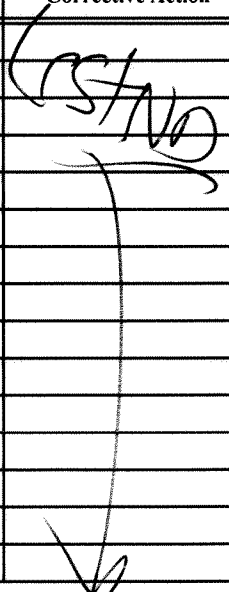
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F017.D
Lab ID: K1801267-018
RunType: SMPL
Matrix: WATER

Date Acquired: 02/15/2018 16:26
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA		x
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action	
Lab Control Spike	Aroclor 1016	116	60	103		
	Aroclor 1016 {1}	120	60	103		
	Aroclor 1016 {2}	117	60	103		
	Aroclor 1016 {3}	115	60	103		
	Aroclor 1016 {4}	108	60	103		
	Aroclor 1016 {5}	122	60	103		
	Aroclor 1260 {1}	105	60	103		
	Aroclor 1260	117	60	103		
	Aroclor 1260 {2}	132	60	103		
	Aroclor 1260 {3}	126	60	103		
	Aroclor 1260 {4}	120	60	103		
	Aroclor 1260 {5}	105	60	103		
	Duplicate Lab Control Spike	Aroclor 1016	120	60		103
		Aroclor 1016 {1}	113	60		103
Aroclor 1016 {2}		126	60	103		

Primary Review: _____

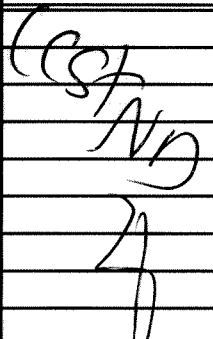
Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F017.D
Lab ID: K1801267-018
RunType: SMPL
Matrix: WATER

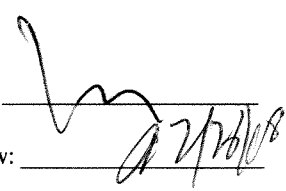
Date Acquired: 02/15/2018 16:26
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
ListJoinID: LJ15289

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
	Aroclor 1016 {3}	122	60	103	
	Aroclor 1016 {4}	115	60	103	
	Aroclor 1016 {5}	124	60	103	
	Aroclor 1260 {1}	110	60	103	
	Aroclor 1260	123	60	103	
	Aroclor 1260 {2}	137	60	103	
	Aroclor 1260 {3}	132	60	103	
	Aroclor 1260 {4}	126	60	103	
	Aroclor 1260 {5}	110	60	103	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1: J:\GC32\DATA\021518.B\0215F017.D	Instrument: GC32.i
Data File #2: \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F017.D	Vial: 13
Acqu Date: 02/15/2018 16:26	Quant Date: 02/16/2018 10:14
Run Type: SMPL	ListJoinID: LJ15289
Lab ID: K1801267-018	Soln Conc. Units: ng/mL
Signal #1: DB-35MS	Signal #2: DB-XLB

Bottle ID:	Tier: IV	Matrix: WATER
Prod Code: 8082A PCB	Collect Date: 02/08/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1800961	Prep Lot: KWG1800932	Report Group: K1801267
Analysis Method: 8082A	Prep Method: EPA 3511	
Prep Ref: 1663954	Prep Date: 02/14/2018	

Quant Method: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID: CAL15681
Title: Polychlorinated Biphenyls (PCBs)	Report List ID: LJ15289
MB Ref: J:\GC32\DATA\021518.B\0215F020.D	Method ID: MJ702
	Quant based on Report List

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Decachlorobiphenyl	16.75 ^{0.00}	18.03 ^{+0.00}	4118571	4512410	4.09	4.11	82 OK	82 OK	82 OK
%Recovery =					82 OK	82 OK	Limits =	39-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016 {1}		9.81 ^{-0.02}	0	23954	0.0000	0.9150	0.0023U	0.0043J	
Aroclor 1016			0	0	0.0000	0.8763	0.0023U	0.0041J	0.0023U
Aroclor 1016 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1016 {3}		10.84 ^{-0.04}	0	52095	0.0000	1.06	0.0023U	0.0050J	
Aroclor 1016 {4}		11.39 ^{-0.01}	0	20774	0.0000	0.6540	0.0023U	0.0031J	
Aroclor 1016 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1221 {1}			0	0	0.0000	0.0000	0.0057U	0.0057U	
Aroclor 1221			0	0	0.0000	0.0000	0.0057U	0.0057U	0.0057U
Aroclor 1221 {2}			0	0	0.0000	0.0000	0.0057U	0.0057U	
Aroclor 1221 {3}			0	0	0.0000	0.0000	0.0057U	0.0057U	
Aroclor 1232 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1232 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1242 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 #: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F017.D	Instrument:	GC32.i
Data File #2:	\\alkisws002\instdata\GC32\DATA\021518_r.b\0215F017.D	Vial:	13
Acqu Date:	02/15/2018 16:26	Quant Date:	02/16/2018 10:14
Run Type:	SMPL	ListJoinID:	LJ15289
Lab ID:	K1801267-018	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Parameter Name	RT		Resp		ng/mL		ug/L		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {1}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1248 {2}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {3}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {4}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {5}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1254 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {1}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1260 {2}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {3}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {4}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {5}			0d	0	0.0000	0.0000	0.0023U	0.0023U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 425 ml Dilution: 1.0
 Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F017.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F017.D
 Inj Date : 15-FEB-2018 16:26
 Sample Info: K1801267-018
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.856	8.280	8173480	7544368	5.01	5.56		100.00 (R)
Aroclor 1016	0.000	9.813	0	23954	0.000	0.915		
	0.000	0.000	0	0	0.000	0.000		
	0.000	10.843	0	52095	0.000	1.06		
	0.000	11.390	0	20774	0.000	0.654		
	0.000	0.000	0	0	0.000	0.000		
	Average of Peak Amounts =				0.000	0.876		
Decachlorobiphenyl	16.750	18.033	4118571	4512410	4.09	4.11		100.00 (R)
Aroclors, Total	0.000	1.000	0	32274	0.000	0.876		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\021518.b\0215F017.D

Date: 15-FEB-2018 16:26

Client ID:

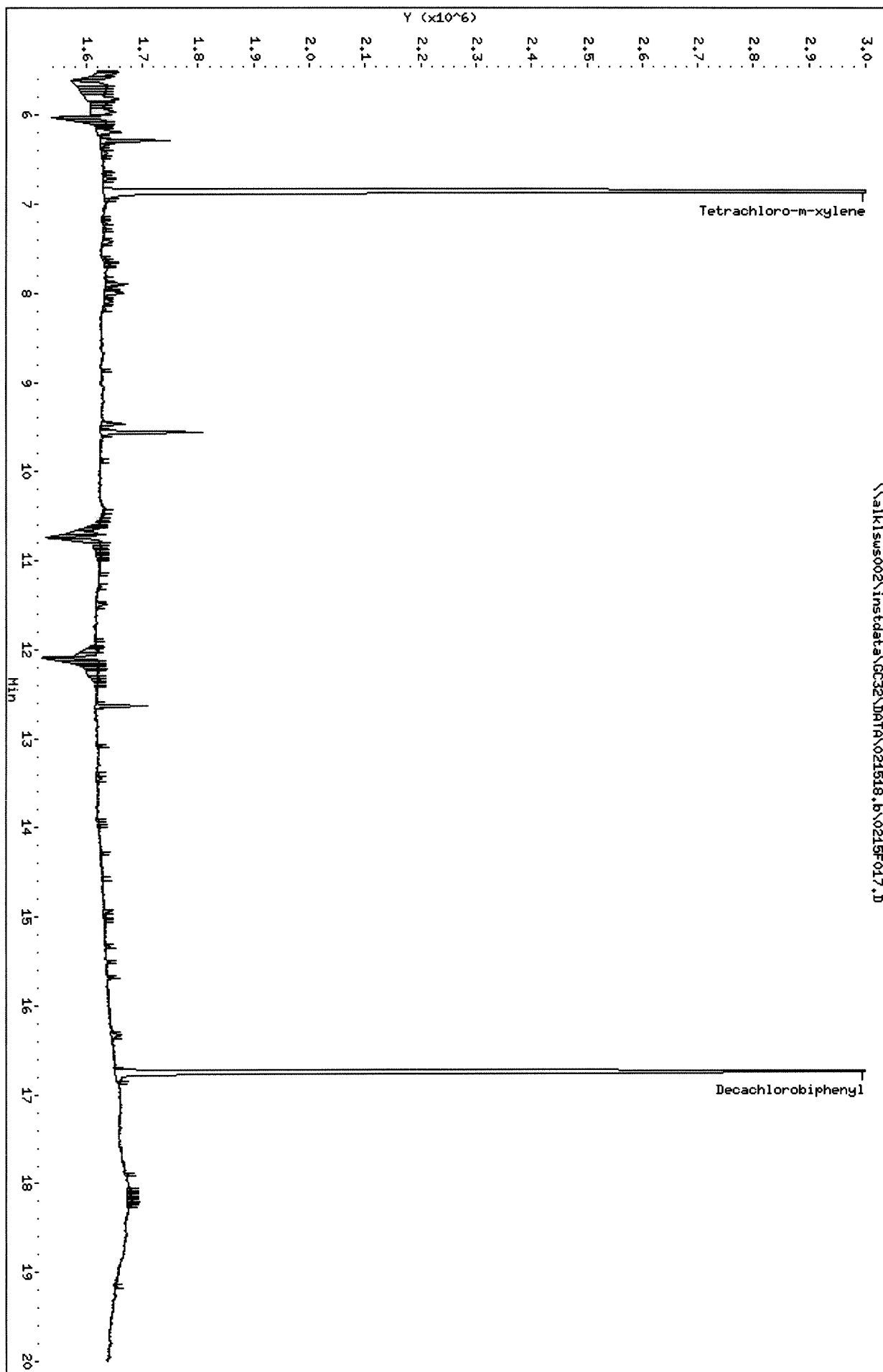
Sample Info: K1801267-018

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1s002\instdata\GC32\DATA\021518_r.b\0215F017.D
Date: 15-FEB-2018 16:26

Client ID:

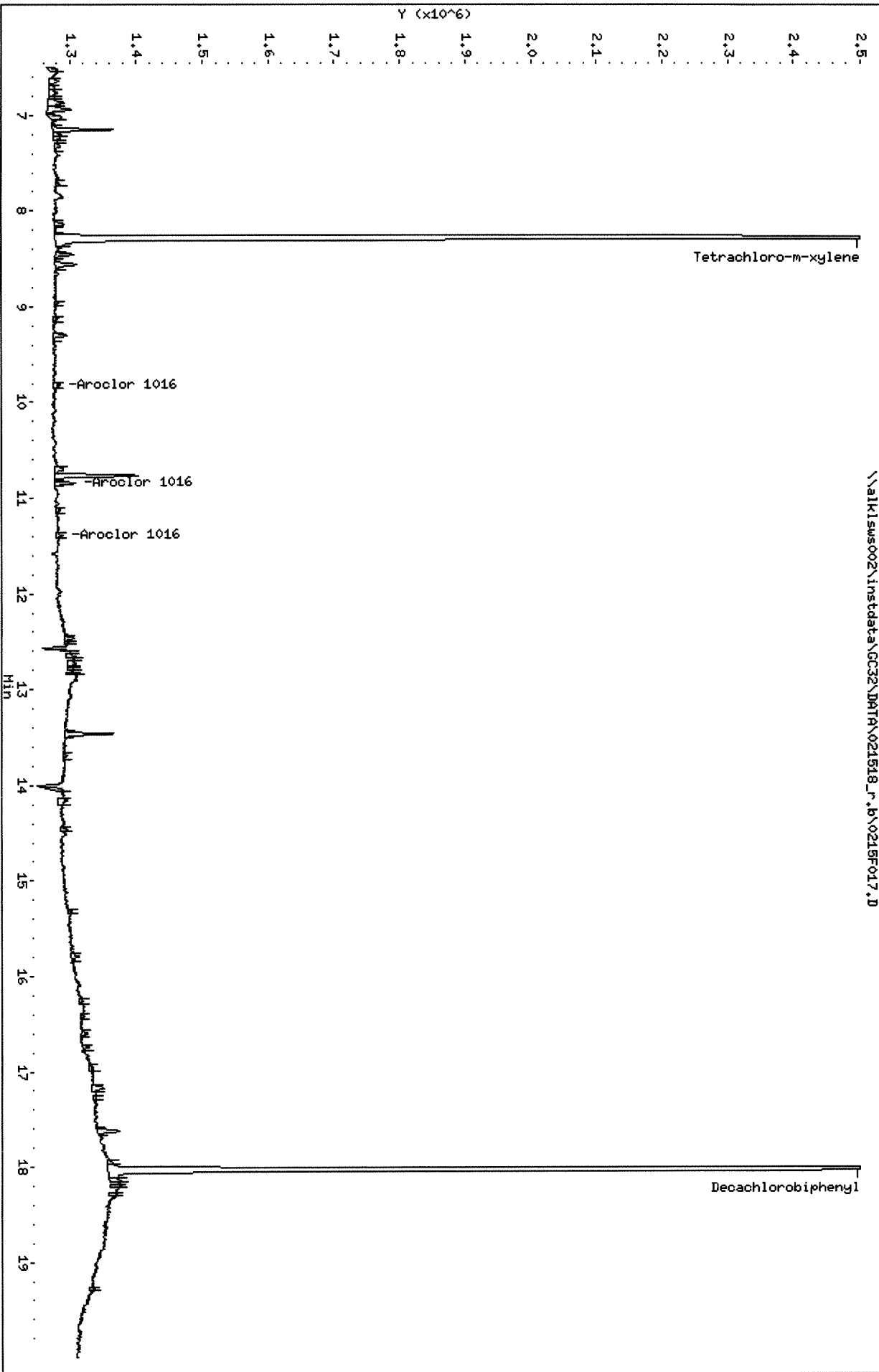
Sample Info: K1801267-018

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



Exception Report


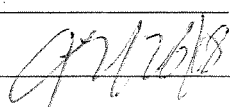
04

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F020.D
Lab ID: KWG1800932-3
RunType: MB
Matrix: WATER

Date Acquired: 02/15/2018 18:01
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F020.D
Lab ID: KWG1800932-3
RunType: MB
Matrix: WATER

Date Acquired: 02/15/2018 18:01
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F020.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F020.D	Vial:	16
Acqu Date:	02/15/2018 18:01	Quant Date:	02/16/2018 10:14
Run Type:	MB	MethodJoinID:	MJ702
Lab ID:	KWG1800932-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8082A PCB ULL	Collect Date:		Receive Date:	02/14/2018

Analysis Lot:	KWG1800961	Prep Lot:	KWG1800932	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1663957	Prep Date:	02/14/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ702
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.86 ^{+0.00}	8.28 ^{0.00}	7357869	6858275	4.51	5.06			101 OK
			%Recovery =		90 OK	101 OK	Limits =	37-121	
Decachlorobiphenyl	16.75 ^{+0.00}	18.03 ^{+0.00}	4548701	4936221	4.52	4.49			90 OK
			%Recovery =		90 OK	90 OK	Limits =	39-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units:		ug/L		Rpt
					ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	
Aroclor 1016			0	0	0.0000	0.0000	0.00230U	0.00230U	0.00230U
Aroclor 1016 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1016 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1016 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1016 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1016 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1221			0	0	0.0000	0.0000	0.0057U	0.0057U	0.0057U
Aroclor 1221 {1}			0	0	0.0000	0.0000	0.0057U	0.0057U	
Aroclor 1221 {2}			0	0	0.0000	0.0000	0.0057U	0.0057U	
Aroclor 1221 {3}			0	0	0.0000	0.0000	0.0057U	0.0057U	
Aroclor 1232			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1232 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1232 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1242 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F020.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F020.D	Vial:	16
Acqu Date:	02/15/2018 18:01	Quant Date:	02/16/2018 10:14
Run Type:	MB	MethodJoinID:	MJ702
Lab ID:	KWG1800932-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Parameter Name	RT		Resp		ng/mL		ug/L		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1242 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1248 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1248 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1254 {1}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {2}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {3}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {4}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1254 {5}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260			0	0	0.0000	0.0000	0.00230U	0.00230U	0.00230U
Aroclor 1260 {1}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {2}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {3}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {4}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1260 {5}			0	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1262			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1262 {1}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1262 {2}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1262 {3}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1262 {4}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1262 {5}			0	0d	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1268			0	0	0.0000	0.0000	0.0023U	0.0023U	0.0023U
Aroclor 1268 {1}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1268 {2}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1268 {3}			0d	0	0.0000	0.0000	0.0023U	0.0023U	
Aroclor 1268 {4}			0d	0	0.0000	0.0000	0.0023U	0.0023U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 425 ml Dilution: 1.0
 Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

- U: Undetected at or above MDL
- J: Analyte detected above MDL, but below MRL
- B: Hit above MRL also found in Method Blank
- E: Analyte concentration above high point of ICAL
- N: Presumptive evidence of compound
- D: Result from dilution
- m: Manual integration performed
- d: Compound manually deleted
- NR: Analyte not reported from this analysis
- *: Result fails acceptance criteria
- #: Acceptance criteria not applicable
- ?: Insufficient information to determine acceptance
- e: Result >= MRL, but MRL less than low point of ICAL
- c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F020.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F020.D
Inj Date : 15-FEB-2018 18:01
Sample Info: KWG1800932-MB
Misc Info :
Cal Date : 16-FEB-2018 09:45
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.280	7357869	6858275	4.51	5.06		100.00(R)
Decachlorobiphenyl	16.753	18.034	4548701	4936221	4.52	4.49		100.00(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alklsws002\instdata\GC32\DATA\021518.b\0215F020.D
Date : 15-FEB-2018 18:01

Client ID:

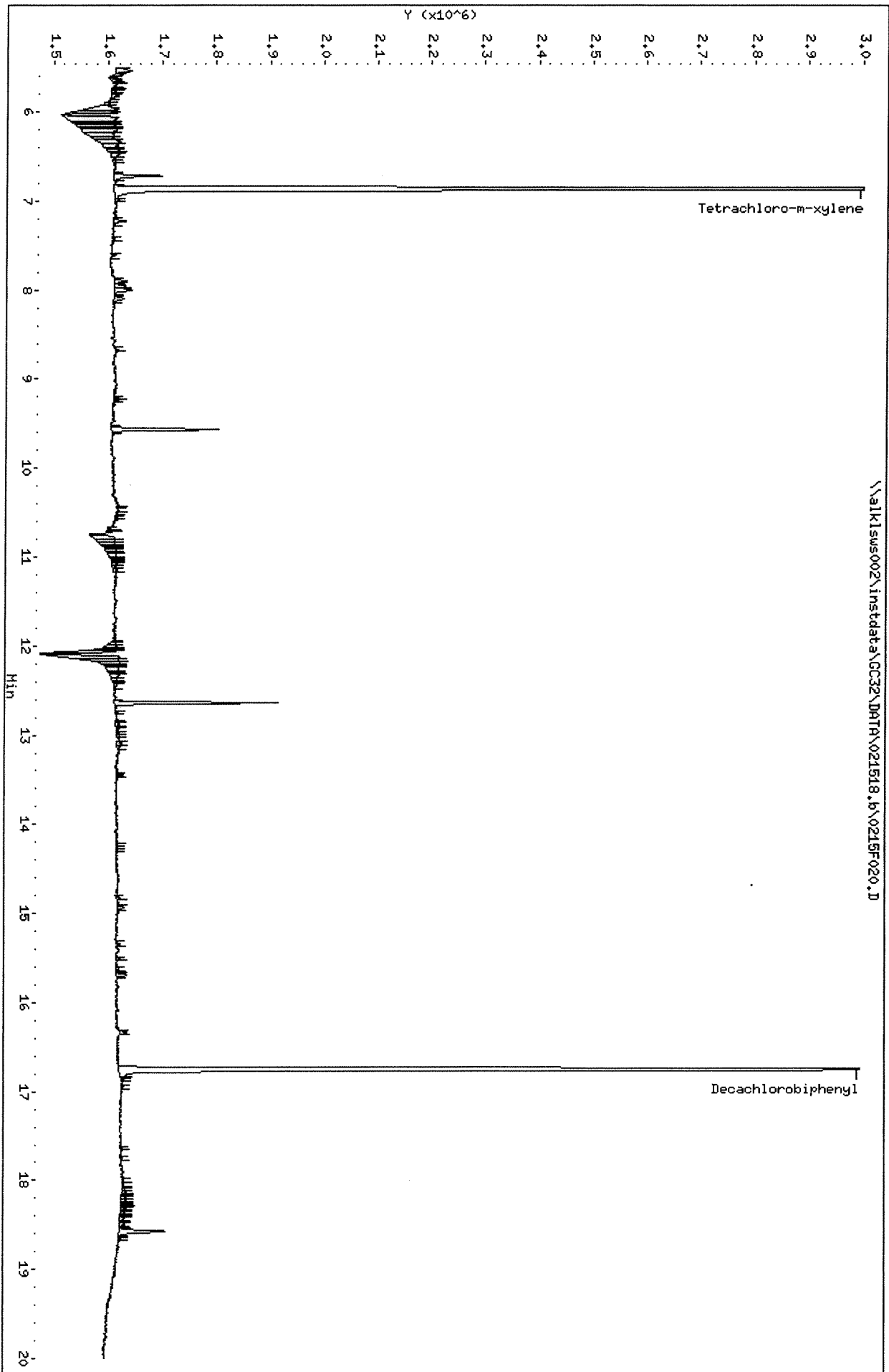
Sample Info: KMG1800932-MB

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alkisus002\instdata\GC32\DATA\021518_r_b\0215F020.D

Date : 15-FEB-2018 18:01

Client ID:

Sample Info: KMG1800332-HB

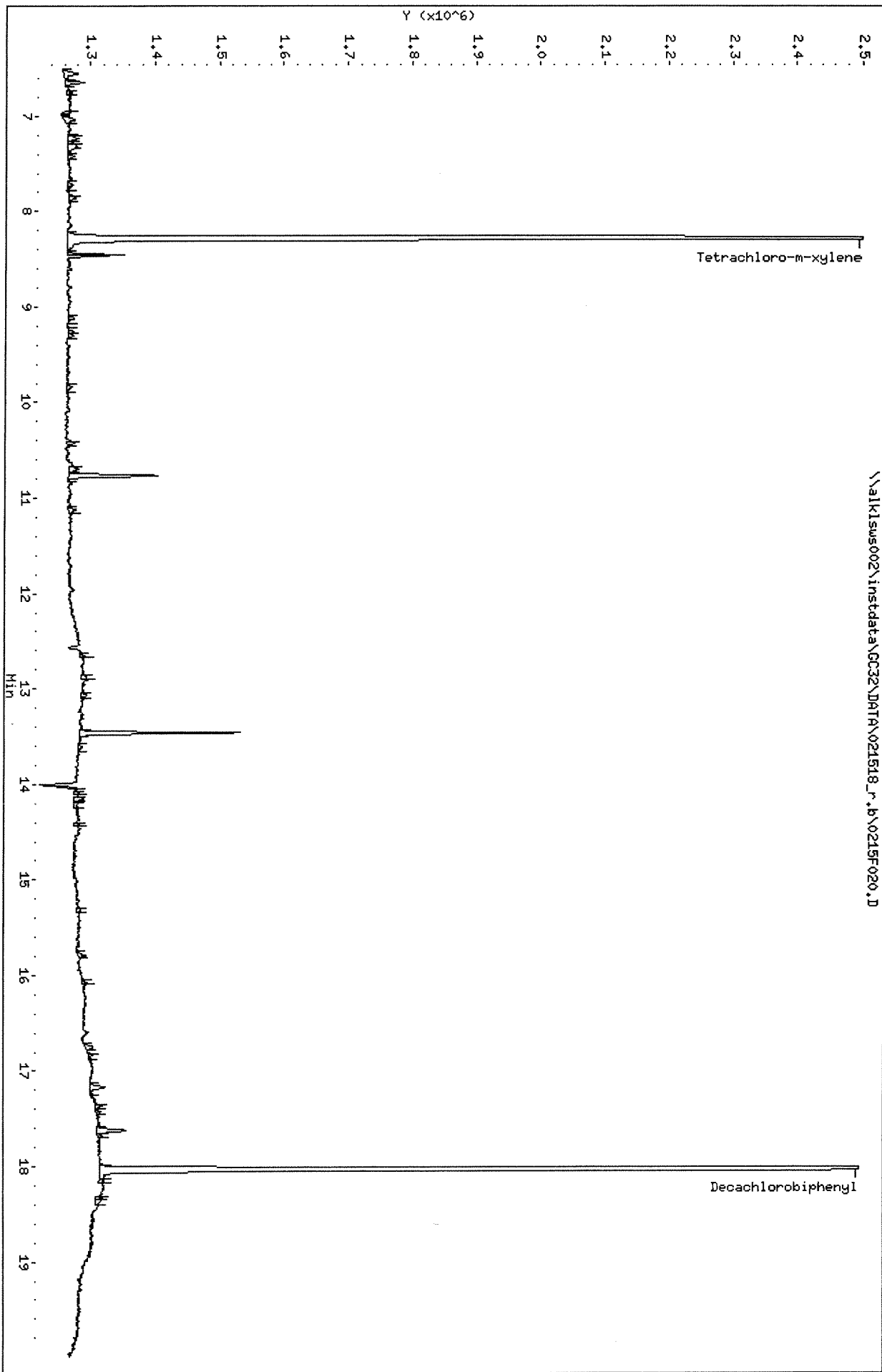
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alkisus002\instdata\GC32\DATA\021518_r_b\0215F020.D



Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F026.D
Lab ID: KWG1801348-3
Run Type: MB
Matrix: WATER

Date Acquired: 03/15/2018 01:17
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-23.4	NA	20	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F026.D
Lab ID: KWG1801348-3
RunType: MB
Matrix: WATER

Date Acquired: 03/15/2018 01:17
Date Quantitated: 03/22/2018 13:34
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	Tetrachloro-m-xylene	147	70	130	Re

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F026.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F026.D	Vial:	22
Acq Date:	03/15/2018 01:17	Quant Date:	03/22/2018 13:33
Run Type:	MB	MethodJoinID:	MJ1662
Lab ID:	KWG1801348-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8082A PCB	Collect Date:		Receive Date:	03/09/2018

Analysis Lot:	KWG1801562	Prep Lot:	KWG1801348	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1666775	Prep Date:	03/09/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	6.86	8.27	8777139	9942447	5.38	7.33			147 *
			%Recovery =		108 OK	147 *	Limits =	70-130	
Decachlorobiphenyl	16.75 ^{+0.00}	18.03 ^{+0.00}	4256020	5667728	4.23 ^{CCV}	5.16			103 OK
			%Recovery =		85 OK	103 OK	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	0.0280U	0.0280U	0.0280U
Aroclor 1016 {1}			0	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {2}			0	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {3}			0	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {4}			0	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1016 {5}			0	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1221 {1}			0	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {2}			0	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {3}			0	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1232 {1}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {2}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {3}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {4}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {5}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1242 {1}			0d	0	0.0000	0.0000	0.028U	0.028U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\031418.B\0314F026.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F026.D	Vial:	22
Acqu Date:	03/15/2018 01:17	Quant Date:	03/22/2018 13:33
Run Type:	MB	MethodJoinID:	MJ1662
Lab ID:	KWG1801348-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {3}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {4}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {5}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1254 {1}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {2}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {3}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {4}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {5}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclors, Total			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1260			0	0	0.0000	0.0000	0.0280U	0.0280U	0.0280U
Aroclor 1260 {1}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1260 {2}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1260 {3}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1260 {4}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1260 {5}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1262 {1}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {2}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {3}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {4}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {5}			0d	0	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 100 ml **Dilution:** 1.0
Prep Final Vol: 5 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F026.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F026.D
Inj Date : 15-MAR-2018 01:17
Sample Info: KWG1801348-MB
Misc Info :
Cal Date : 15-MAR-2018 10:26
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.857	8.274	8777139	9942447	5.37	7.33		100.00 (R)
Decachlorobiphenyl	16.750	18.031	4256020	5667728	4.23	5.16		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\031418.b\0314F026.D
Date : 15-MAR-2018 01:17

Client ID:

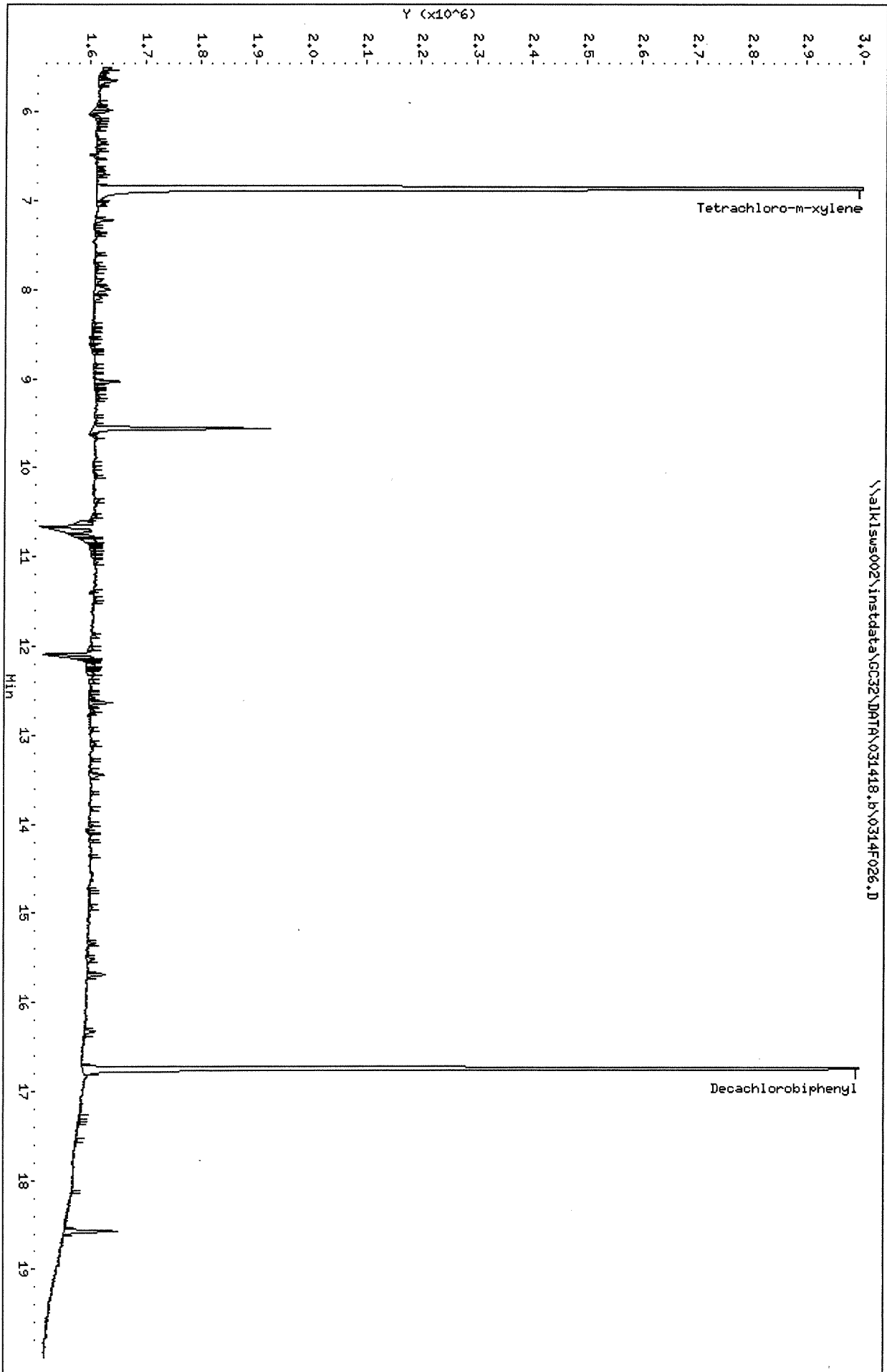
Sample Info: KMG1801348-NB

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alkl1sus002\instdata\GC32\DATA\031418_r_b\0314F026.D

Date : 15-MAR-2018 01:17

Client ID:

Sample Info: KUG1801348-HB

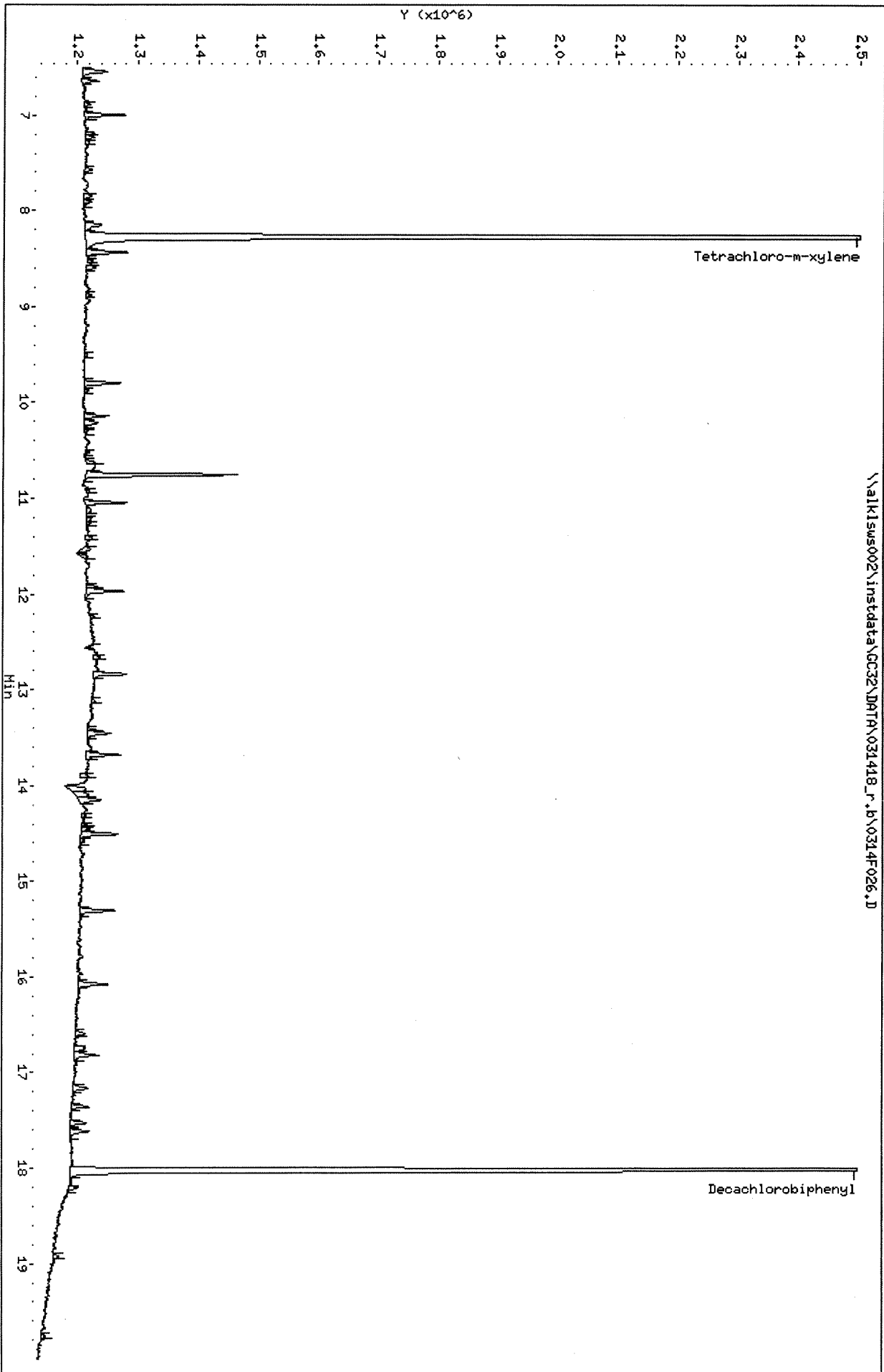
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alkl1sus002\instdata\GC32\DATA\031418_r_b\0314F026.D




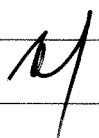
Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223FX15.D
Lab ID: K1801267-001
Run Type: SMPL
Matrix: SEDIMENT

Date Acquired: 02/23/2018 18:28
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	*	NA	NA		x

Primary Review:  _____
 Secondary Review:  _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223FX15.D
Lab ID: K1801267-001
Run Type: SMPL
Matrix: SEDIMENT

Date Acquired: 02/23/2018 18:28
Date Quantitated: 02/26/2018 10:31
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	*	NA	NA		x

Primary Review: _____
 Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223FX15.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223FX15.D	Vial:	4
Acqu Date:	02/23/2018 18:28	Quant Date:	02/26/2018 10:30
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	SEDIMENT
Prod Code:	8082A PCB	Collect Date:	02/06/2018	Receive Date:	02/08/2018

Analysis Lot:	KWG1801127	Prep Lot:	KWG1800943	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664047	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18762
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Method ID:	MJ1660
		Quant based on Report List	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2		Rpt
Decachlorobiphenyl	16.75	18.03 ^{+0.00}	267375	322459	0.2660	0.2930		117 #
			%Recovery =		106 #	117 #	Limits =	70-130

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: ug/Kg Dry Weight				Rpt
					ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1016			0	0	0.0000	0.0000	77U	77U	77U
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1221 {1}			0d	0	0.0000	0.0000	77U	77U	
Aroclor 1221			0	0	0.0000	0.0000	77U	77U	77U
Aroclor 1221 {2}			0d	0	0.0000	0.0000	77U	77U	
Aroclor 1221 {3}			0d	0	0.0000	0.0000	77U	77U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1232			0	0	0.0000	0.0000	77U	77U	77U
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1242 {1}	9.18	10.20	46145	66455	2.45	5.42	260JD	580D	
Aroclor 1242			0	0	6.83	9.62	720D	1000D	720D
Aroclor 1242 {2}	9.63	10.83	287971	221103	6.45	6.37	680D	680D	
Aroclor 1242 {3}	10.28	11.32	0	0	0.0000	0.0000	77U	77U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223FX15.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223FX15.D	Vial:	4
Acqu Date:	02/23/2018 18:28	Quant Date:	02/26/2018 10:30
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}	10.97	11.63	276452	385570	11.58	17.08	1200D	1800D	
Aroclor 1242 {5}	11.31	12.43	0	0	0.0000	0.0000	77U	77U	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1248			0	0	0.0000	0.0000	77U	77U	77U
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	77U	77U	
Aroclor 1254 {1}	11.37	12.31	1035134	889680	18.92	17.40	2000D	1800D	
Aroclor 1254			0	0	18.37	17.49	1900D	1900D	1900D
Aroclor 1254 {2}	12.15	12.36	594820	495122	14.38	21.74	1500D	2300D	
Aroclor 1254 {3}	12.30	12.69	1377259	970227	16.89	16.25	1800D	1700D	
Aroclor 1254 {4}	12.55	13.01	799695	354003	19.82	16.12	2100D	1700D	
Aroclor 1254 {5}	12.83	14.25	675192	499156	21.85	15.93	2300D	1700D	
Aroclor 1260 {1}	12.55 ^{+0.00}	14.09 ^{0.00}	799695	0	13.61	0.0000	1400D	77U	
Aroclor 1260			0	0	8.09	5.25	860D	560D	560PD
Aroclor 1260 {2}	13.14 ^{+0.00}	14.68 ^{+0.00}	422560	206518	11.73	5.01	1200D	530D	
Aroclor 1260 {3}	13.95 ^{+0.00}	15.05 ^{+0.00}	188849	239685	4.86	5.92	520D	630D	
Aroclor 1260 {4}	14.33 ^{0.00}	15.58	414995	417801	4.92	4.86	520D	520D	
Aroclor 1260 {5}	14.96 ^{0.00}	16.08 ^{+0.00}	347810	323434	5.35	5.19	570D	550D	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.372 g **Dilution:** 20.0
Prep Final Vol: 8 mL **Unit Factor:** 1
Solids: 63.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223FX15.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223FX15.D
 Inj Date : 23-FEB-2018 18:28
 Sample Info: K1801267-001@20X
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.280	439982	351617	0.269	0.259		100.00 (R)
Aroclor 1242	9.183	10.197	46145	66455	2.45	5.42	80.00- 120.00	100.00
	9.633	10.834	287971	221103	6.45	6.37	188.17- 282.25	624.06
	10.277	11.317					129.73- 194.59	0.00
	10.970	11.630	276452	385570	11.6	17.1	97.61- 146.41	599.09
	11.310	12.434					145.18- 217.78	0.00
	Average of Peak Amounts =				6.83	9.63		
Aroclor 1254	11.367	12.310	1035134	889680	18.9	17.4	80.00- 120.00	100.00 (H)
	12.147	12.364	594820	495122	14.4	21.7	64.52- 96.78	57.46 (H)
	12.303	12.687	1377259	970227	16.9	16.2	121.44- 182.17	133.05 (H)
	12.547	13.007	799695	354003	19.8	16.1	61.81- 92.72	77.26 (H)
	12.830	14.250	675192	499156	21.8	15.9	47.38- 71.07	65.23 (H)
	Average of Peak Amounts =				18.4	17.5		
Aroclor 1260	12.547	14.094	799695		13.6		80.00- 120.00	100.00
	13.137	14.677	422560	206518	11.7	5.01	49.73- 74.59	52.84
	13.953	15.047	188849	239685	4.86	5.92	54.16- 81.24	23.62
	14.330	15.580	414995	417801	4.92	4.86	105.05- 157.58	51.89
	14.957	16.084	347810	323434	5.35	5.19	78.29- 117.43	43.49
	Average of Peak Amounts =				8.09	5.25		
Decachlorobiphenyl	16.753	18.034	267375	322459	0.266	0.293		100.00 (R)
Aroclors, Total	1.000	1.000	1534724	1162873	33.3	32.4		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 H - Operator selected an alternate compound hit.

Data File: \\alki\sws002\inst\data\GC32\DATA\022318.b\0223FX15.D

Date: 23-FEB-2018 18:28

Client ID:

Sample Info: K1801267-001020X

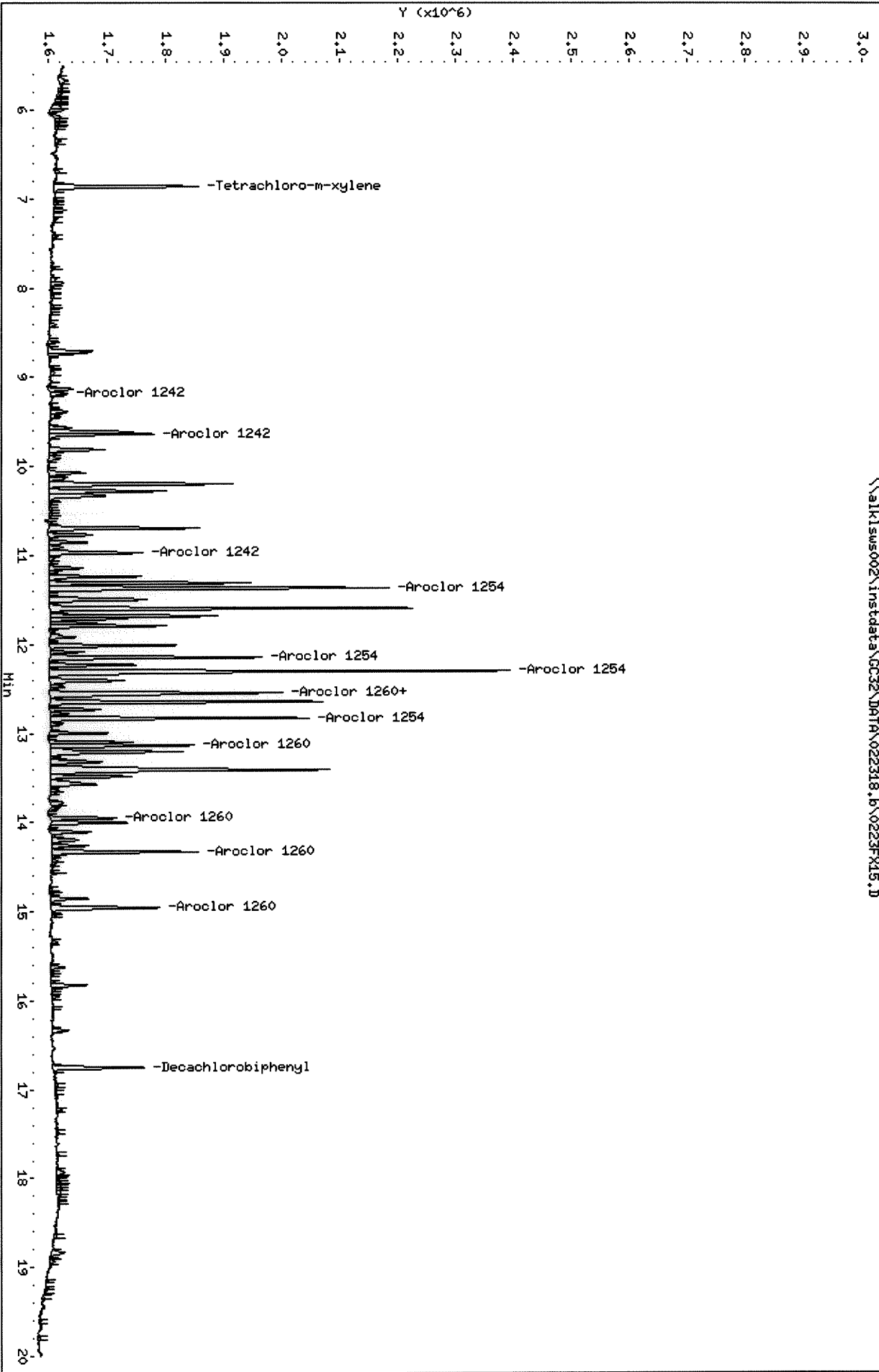
Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32

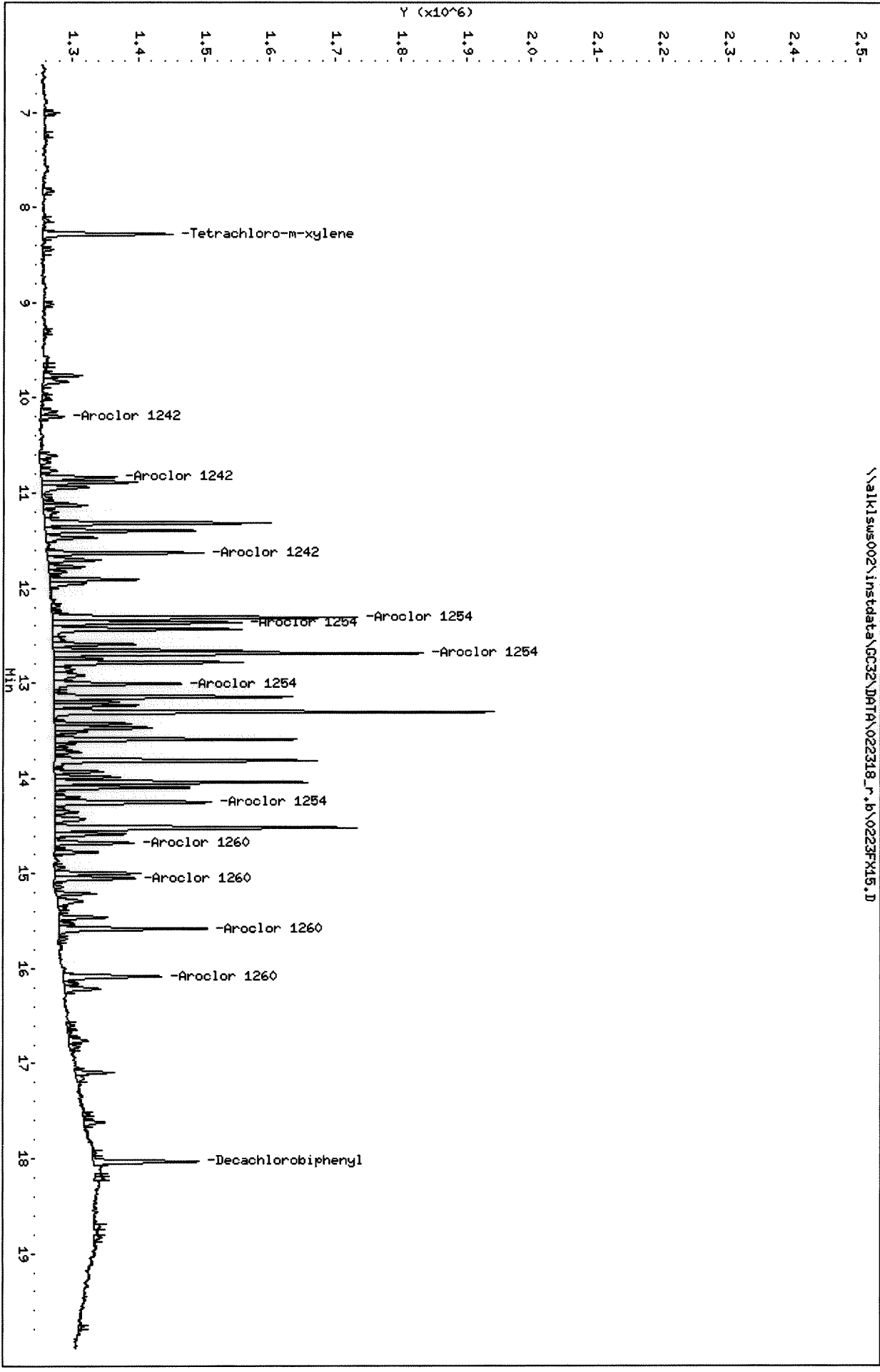
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Data File: \\alk1sus002\instdata\GC32\DATA\022318_r.b\0223FX15.D
Date: 23-FEB-2018 18:28
Client ID:
Sample Info: K1801267-001@20X
Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022318_r.b\0223FX15.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F006.D
Lab ID: K1801267-001
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 02/23/2018 13:42
Date Quantitated: 02/26/2018 10:28
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

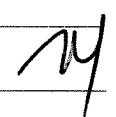
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-21.1	NA	20	Ro
Above Highest ICAL Level	Aroclor 1242	178.07	NA	100	DIT
	Aroclor 1242 {2}	108.04	NA	100	
	Aroclor 1242 {3}	249.10	NA	100	
	Aroclor 1242 {4}	167.05	NA	100	
	Aroclor 1242 {5}	308.01	NA	100	
	Aroclor 1254 {1}	267.15	NA	100	
	Aroclor 1254	268.03	NA	100	
	Aroclor 1254 {2}	217.49	NA	100	
	Aroclor 1254 {3}	254.63	NA	100	
	Aroclor 1254 {4}	280.40	NA	100	
	Aroclor 1254 {5}	320.46	NA	100	
	Aroclor 1260 {1}	192.54	NA	100	
	Aroclor 1260	119.12	NA	100	
	Aroclor 1260 {2}	162.15	NA	100	

Primary Review: 

Secondary Review: 

Exception Report

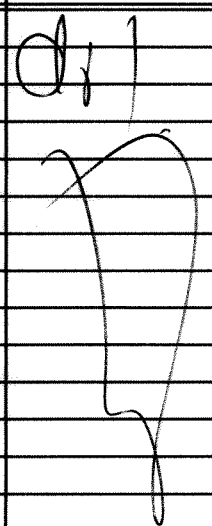
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F006.D
Lab ID: K1801267-001
RunType: SMPL
Matrix: SEDIMENT


Date Acquired: 02/23/2018 13:42
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

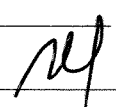
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Above Highest ICAL Level	Aroclor 1242	245.34	NA	100	
	Aroclor 1242 {2}	115.76	NA	100	
	Aroclor 1242 {3}	395.33	NA	100	
	Aroclor 1242 {4}	284.83	NA	100	
	Aroclor 1242 {5}	336.46	NA	100	
	Aroclor 1254 {1}	276.00	NA	100	
	Aroclor 1254	290.16	NA	100	
	Aroclor 1254 {2}	366.91	NA	100	
	Aroclor 1254 {3}	252.42	NA	100	
	Aroclor 1254 {4}	249.81	NA	100	
	Aroclor 1254 {5}	305.64	NA	100	
	Aroclor 1260 {1}	268.38	NA	100	
	Aroclor 1260	128.56	NA	100	
	Aroclor 1260 {3}	107.74	NA	100	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F006.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F006.D	Vial:	4
Acqu Date:	02/23/2018 13:42	Quant Date:	02/26/2018 10:28
Run Type:	SMPL	List.JoinID:	LJ18762
Lab ID:	K1801267-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	SEDIMENT
Prod Code:	8082A PCB	Collect Date:	02/06/2018	Receive Date:	02/08/2018

Analysis Lot:	KWG1801127	Prep Lot:	KWG1800943	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664047	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18762
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Method ID:	MJ1660
		Quant based on Report List	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt
Decachlorobiphenyl	16.75	18.03 ^{0.00}	4267762	5420609	4.24 ^{CCV}	4.93	NR
%Recovery =					85 OK	99 OK	Limits = 70-130

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1016			0	0	0.0000	0.0000	3.9U	3.9U	NR
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1221			0	0	0.0000	0.0000	3.9U	3.9U	NR
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1232			0	0	0.0000	0.0000	3.9U	3.9U	NR
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1242 {1}	9.18	10.20	1095649	1155601	58.17	94.32	310	500	
Aroclor 1242			0	0	178.07	245.34	940	1300	NR
Aroclor 1242 {2}	9.63	10.83	4825948	4021153	108.04	115.76	570E	610E	
Aroclor 1242 {3}	10.27	11.32	4749105	8621172	249.10	395.33	1300E	2100E	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 c: Compound manually deleted
 NR: Analyte not reported from this analysis

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 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223F006.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F006.D	Vial:	4
Acqu Date:	02/23/2018 13:42	Quant Date:	02/26/2018 10:28
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-001	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}	10.97	11.63	3988202	6431565	167.05	284.83	890E	1500E	
Aroclor 1242 {5}	11.31	12.43	7437061	8300673	308.01	336.46	1600E	1800E	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1248			0	0	0.0000	0.0000	3.9U	3.9U	NR
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	3.9U	3.9U	
Aroclor 1254 {1}	11.37	12.31	14614999	14113858	267.15	276.00	1400E	1500E	
Aroclor 1254			0	0	268.03	290.16	1400	1500	NR
Aroclor 1254 {2}	12.14	12.36	8997131	8358281	217.49	366.91	1200E	1900E	
Aroclor 1254 {3}	12.30	12.69	20757450	15072751	254.63	252.42	1400E	1300E	
Aroclor 1254 {4}	12.54	13.01	11315939	5484850	280.40	249.81	1500E	1300E	
Aroclor 1254 {5}	12.83	14.25	9903072	9579384	320.46	305.64	1700E	1600E	
Aroclor 1260 {1}	12.54 ^{0.00}	14.09	11315939	5756109	192.54	268.38	1000E	1400E	
Aroclor 1260			0	0	119.12	128.56	630	680	NR
Aroclor 1260 {2}	13.13 ^{0.00}	14.68 ^{+0.00}	5839037	3669486	162.15	89.01	860E	470	
Aroclor 1260 {3}	13.95	15.05	3062099	4363932	78.87	107.74	420	570E	
Aroclor 1260 {4}	14.33 ^{+0.00}	15.58	6617212	7527020	78.39	87.58	420	460	
Aroclor 1260 {5}	14.95 ^{0.00}	16.08 ^{0.00}	5438194	5609941	83.64	90.08	440	480	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.372 g **Dilution:** 1.0
Prep Final Vol: 8 mL **Unit Factor:** 1
Solids: 63.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F006.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F006.D
 Inj Date : 23-FEB-2018 13:42
 Sample Info: K1801267-001
 Misc Info :
 Cal Date : 23-FEB-2018 16:50
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.856	8.276	6296609	6577470	3.86	4.85		100.00 (R)
Aroclor 1242	9.176	10.196	1095649	1155601	58.2	94.3	80.00- 120.00	100.00
	9.629	10.833	4825948	4021153	108	116	188.17- 282.25	440.46
	10.272	11.316	4749105	8621172	249	395	75.98- 113.97	433.45
	10.966	11.629	3988202	6431565	167	285	97.61- 146.41	364.00
	11.306	12.429	7437061	8300673	308	336	98.63- 147.94	678.78
	Average of Peak Amounts =				178	245		
Aroclor 1254	11.366	12.306	14614999	14113858	267	276	80.00- 120.00	100.00
	12.142	12.359	8997131	8358281	217	367	64.52- 96.78	61.56
	12.299	12.686	20757450	15072751	255	252	121.44- 182.17	142.03
	12.542	13.006	11315939	5484850	280	250	61.81- 92.72	77.43
	12.829	14.249	9903072	9579384	320	306	47.38- 71.07	67.76
	Average of Peak Amounts =				268	290		
Aroclor 1260	12.542	14.093	11315939	5756109	193	268	80.00- 120.00	100.00
	13.132	14.676	5839037	3669486	162	89.0	49.73- 74.59	51.60
	13.949	15.046	3062099	4363932	78.9	108	54.16- 81.24	27.06
	14.329	15.576	6617212	7527020	78.4	87.6	105.05- 157.58	58.48
	14.952	16.079	5438194	5609941	83.6	90.1	78.29- 117.43	48.06
	Average of Peak Amounts =				119	129		
Decachlorobiphenyl	16.749	18.029	4267762	5420609	4.24	4.93		100.00 (R)
Aroclors, Total	1.000	1.000	23991407	21613155	565	664		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\022318.b\0223F006.D

Date : 23-FEB-2018 13:42

Client ID:

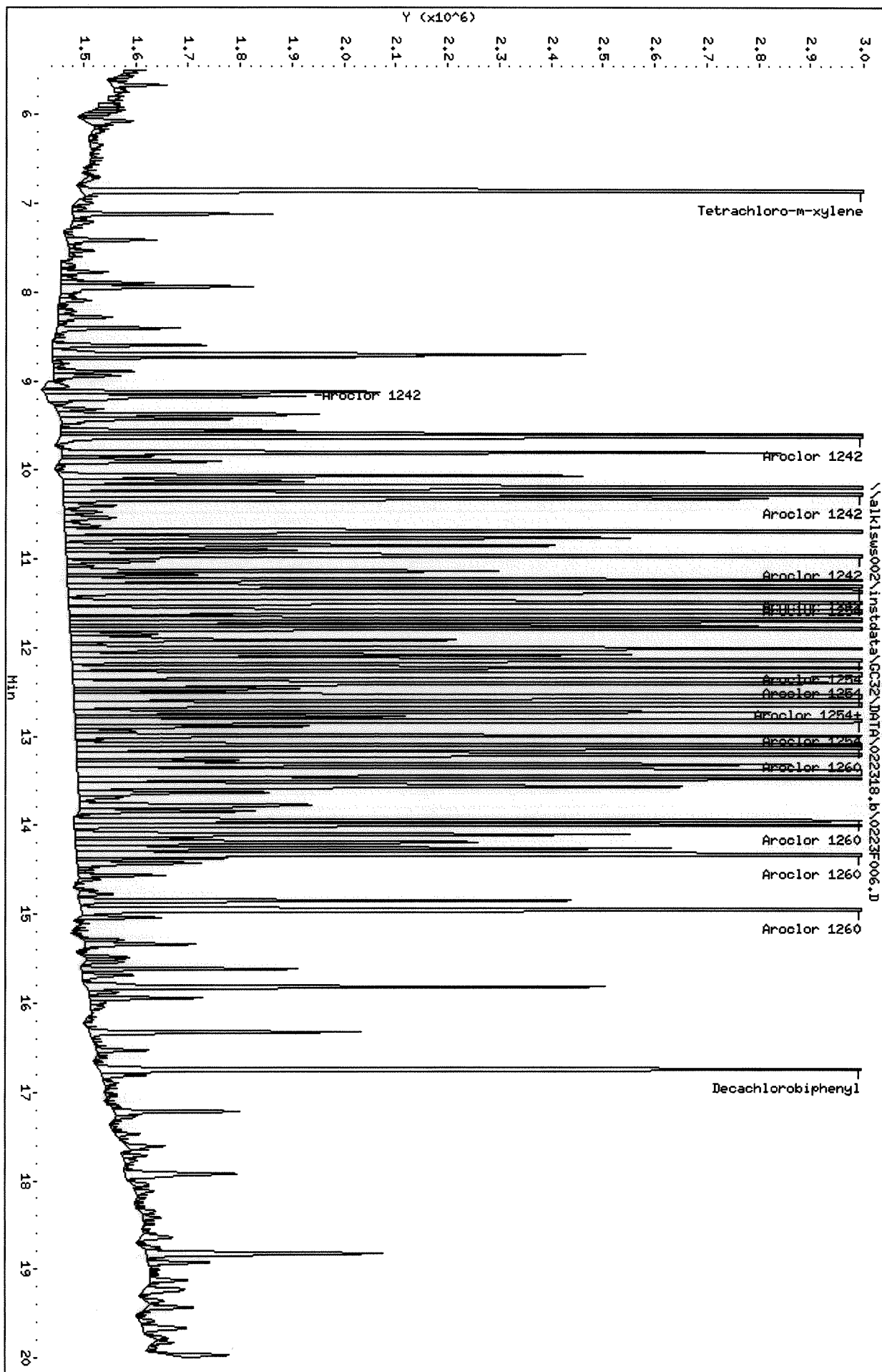
Sample Info: K1801267-001

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alklsws002\instdata\GC32\DATA\022318_r_b\0223F006.D

Date : 23-FEB-2018 13:42

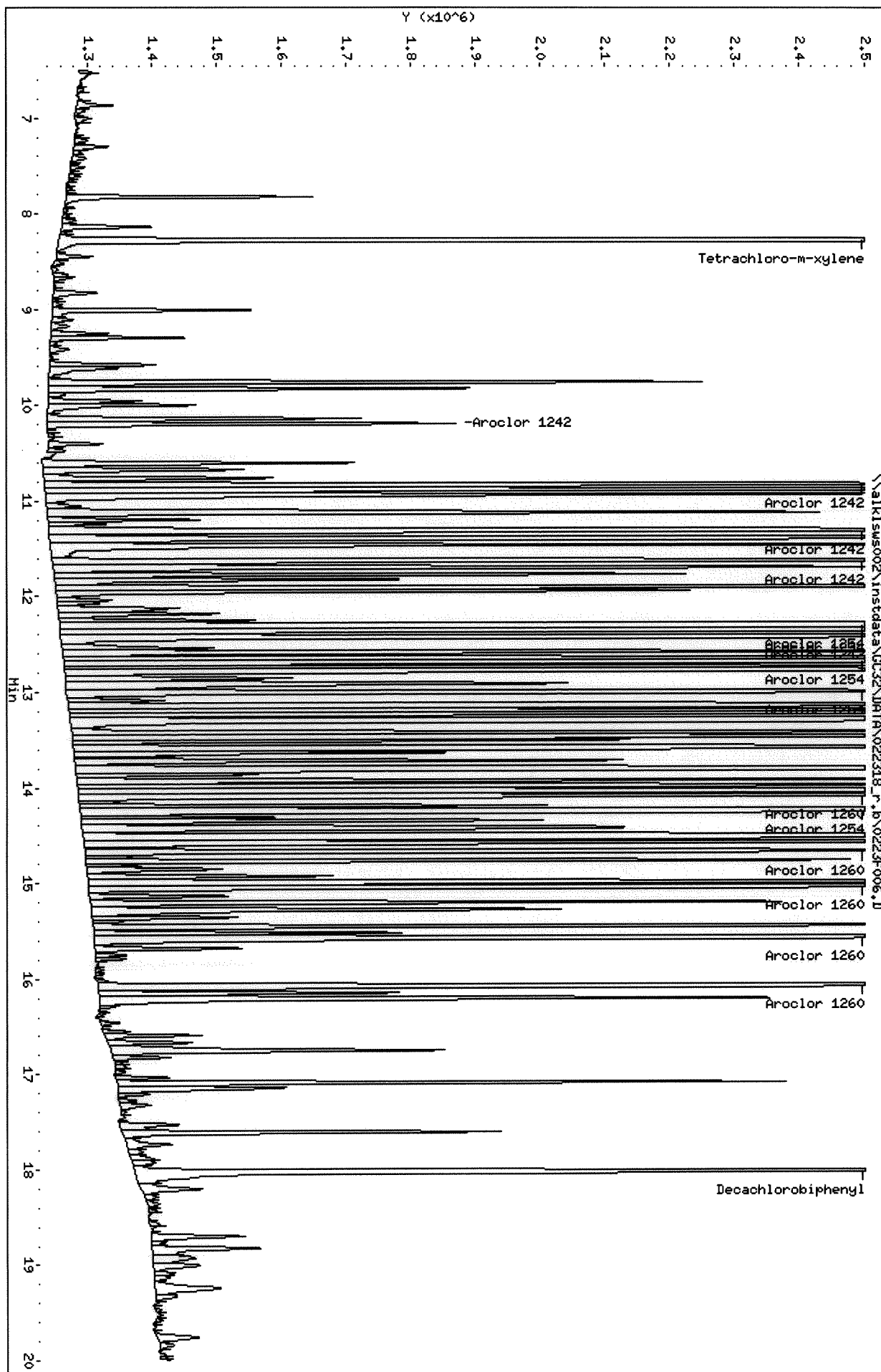
Client ID:

Sample Info: K1801267-001

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY
Column diameter: 0.32



Exception Report


Data File: \\ALKLWS002\INSTDATA\GC32\DATA\022318.B\0223F007.D
Lab ID: K1801267-009
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 02/23/2018 14:14
Date Quantitated: 02/26/2018 10:28
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762


Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-21.1	NA	20	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F007.D
Lab ID: K1801267-009
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 02/23/2018 14:14
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F007.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F007.D	Vial:	5
Acqu Date:	02/23/2018 14:14	Quant Date:	02/26/2018 10:28
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-009	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	SEDIMENT
Prod Code:	8082A PCB	Collect Date:	02/07/2018	Receive Date:	02/08/2018

Analysis Lot:	KWG1801127	Prep Lot:	KWG1800943	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664048	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18762
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Method ID:	MJ1660
		Quant based on Report List	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Rpt
Decachlorobiphenyl	16.75	18.03	3780037	4503851	3.75 ^{CCV}	4.10	82 OK
%Recovery =					75 OK	82 OK	Limits = 70-130

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: ug/Kg Dry Weight				Rpt
					ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1016			0	0	0.0000	0.0000	3.2U	3.2U	3.2U
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1221			0	0	0.0000	0.0000	3.2U	3.2U	3.2U
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1232			0	0	0.0000	0.0000	3.2U	3.2U	3.2U
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1242 {1}	9.23	10.22	135092m	243707	7.17	19.89	31	86	
Aroclor 1242			0	0	13.95	28.39	60	120	60P
Aroclor 1242 {2}	9.63	10.84	261647m	581503	5.86	16.74	25	72	
Aroclor 1242 {3}	10.27	11.31	0m	1078468	0.0000	49.45	3.2U	210	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 #: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223F007.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F007.D	Vial:	5
Acqu Date:	02/23/2018 14:14	Quant Date:	02/26/2018 10:28
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-009	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}	10.97	11.63	363127m	556687	15.21	24.65	66	110	
Aroclor 1242 {5}	11.31	12.43	665732m	769730	27.57	31.20	120	130	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1248			0	0	0.0000	0.0000	3.2U	3.2U	3.2U
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	3.2U	3.2U	
Aroclor 1254 {1}	11.36	12.31	1651409m	1359011	30.19	26.58	130	110	
Aroclor 1254			0	0	29.33	25.83	130	110	110
Aroclor 1254 {2}	12.14	12.36	1089457m	545640	26.34	23.95	110	100	
Aroclor 1254 {3}	12.30	12.69	2124321m	2066115	26.06	34.60	110	150	
Aroclor 1254 {4}	12.54	13.01	1283092m	484698	31.79	22.08	140	95	
Aroclor 1254 {5}	12.83	14.25	997593m	687481	32.28	21.94	140	95	
Aroclor 1260 {1}	12.54	14.09	0m	0	0.0000	0.0000	3.2U	3.2U	
Aroclor 1260			0	0	5.89	8.02	25	35	25
Aroclor 1260 {2}	13.13 ^{0.00}	14.67	0m	236837	0.0000	5.75	3.2U	25	
Aroclor 1260 {3}	13.95 ^{0.00}	15.04 ^{-0.01}	233439m	572410	6.01	14.13	26	61	
Aroclor 1260 {4}	14.33	15.58	456341m	449999	5.41	5.24	23	23	
Aroclor 1260 {5}	14.96	16.08	406631m	434821	6.25	6.98	27	30	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.438 g **Dilution:** 1.0
Prep Final Vol: 8 mL **Unit Factor:** 1
Solids: 75.9 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F007.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F007.D
 Inj Date : 23-FEB-2018 14:14
 Sample Info: K1801267-009
 Misc Info :
 Cal Date : 23-FEB-2018 16:50
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.856	8.276	6398069	6110032	3.92	4.51		100.00 (R)
Aroclor 1242	9.233	10.220	135092	243707	7.17	19.9	80.00- 120.00	100.00 (MH)
	9.629	10.840	261647	581503	5.86	16.7	188.17- 282.25	193.68 (MH)
	10.273	11.313		1078468		49.5	129.73- 194.59	442.53 (MH)
	10.966	11.630	363127	556687	15.2	24.7	97.61- 146.41	268.80 (MH)
	11.306	12.430	665732	769730	27.6	31.2	98.63- 147.94	492.80 (MH)
	Average of Peak Amounts =				14.0	28.4		
Aroclor 1254	11.363	12.306	1651409	1359011	30.2	26.6	80.00- 120.00	100.00 (MH)
	12.143	12.363	1089457	545640	26.3	24.0	64.52- 96.78	65.97 (MH)
	12.299	12.686	2124321	2066115	26.1	34.6	121.44- 182.17	128.64 (MH)
	12.543	13.006	1283092	484698	31.8	22.1	61.81- 92.72	77.70 (MH)
	12.826	14.250	997593	687481	32.3	21.9	47.38- 71.07	60.41 (MH)
	Average of Peak Amounts =				29.3	25.8		
Aroclor 1260	12.543	14.093					80.00- 120.00	0.00 (M)
	13.133	14.673		236837		5.74	149.16- 223.74	44.73 (M)
	13.946	15.040	233439	572410	6.01	14.1	54.16- 81.24	18.19 (M)
	14.326	15.576	456341	449999	5.41	5.24	105.05- 157.58	35.57 (M)
	14.956	16.080	406631	434821	6.25	6.98	78.29- 117.43	31.69 (M)
	Average of Peak Amounts =				5.89	8.02		
Decachlorobiphenyl	16.749	18.030	3780037	4503851	3.75	4.10		100.00 (R)
Aroclors, Total	1.000	1.000	2151044	2098124	49.2	62.2		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\alkisus002\instdata\GC32\DATA\022318.b\0223F007.D

Date : 23-FEB-2018 14:14

Client ID:

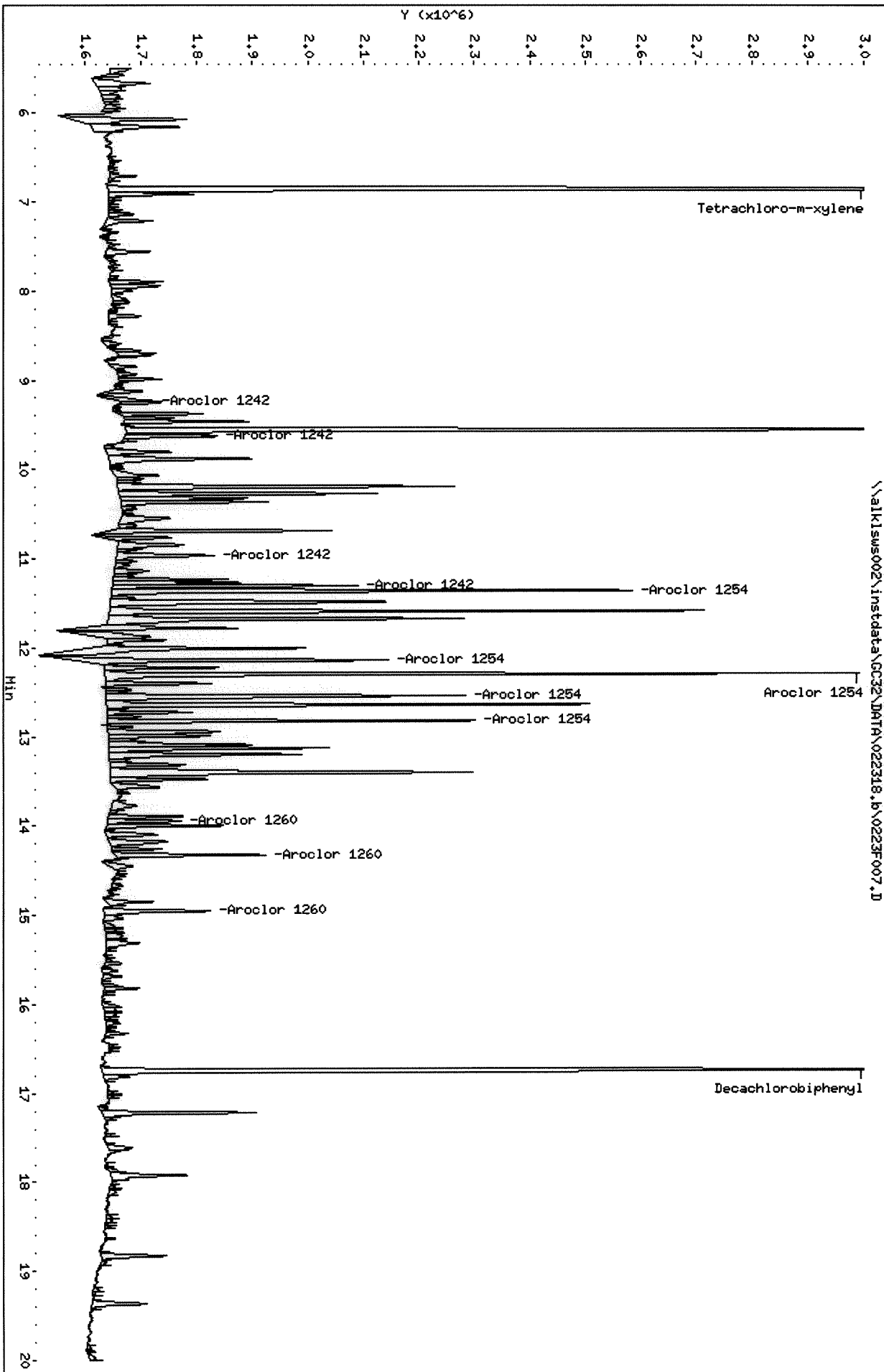
Sample Info: K1801267-009

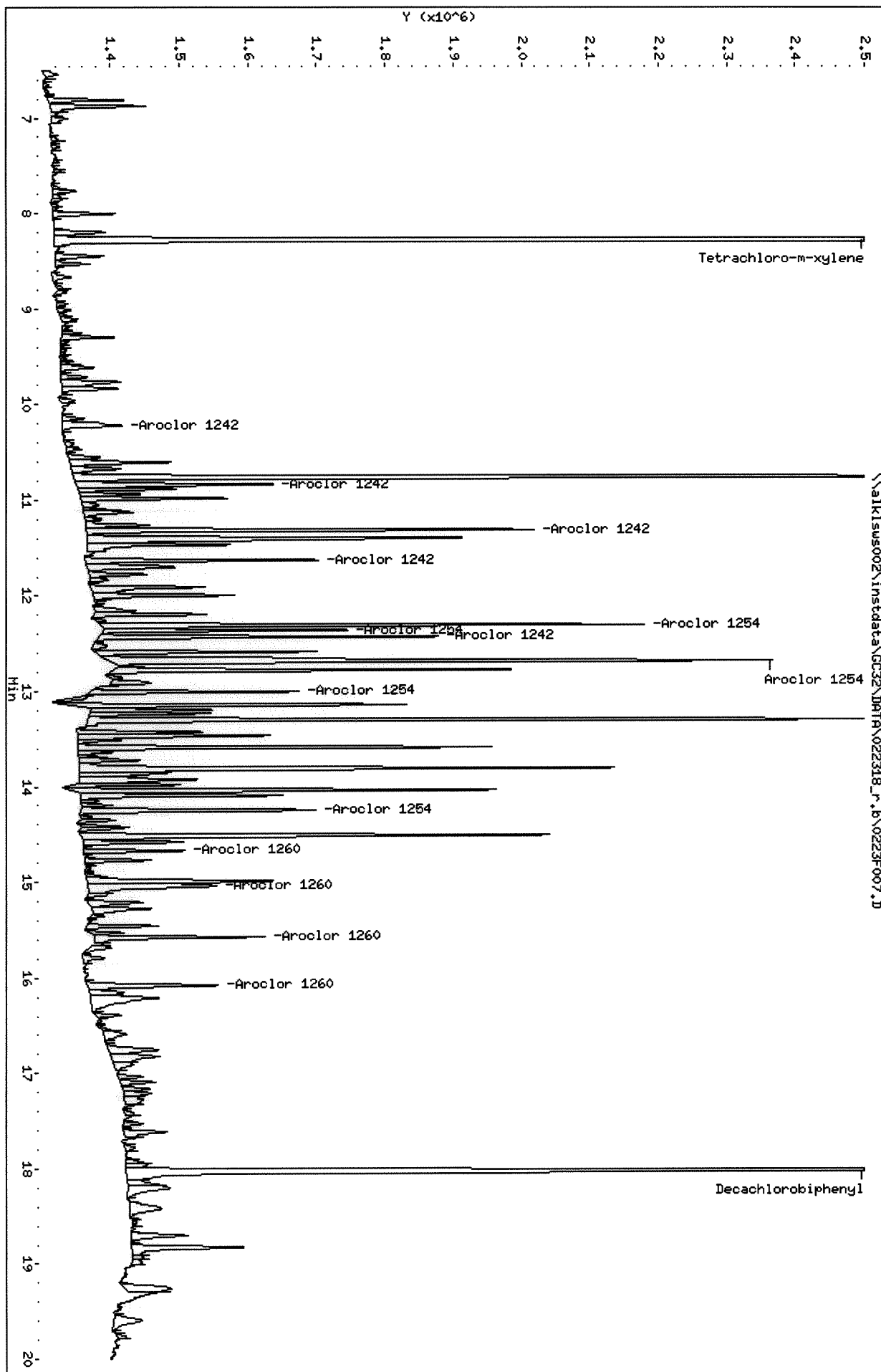
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

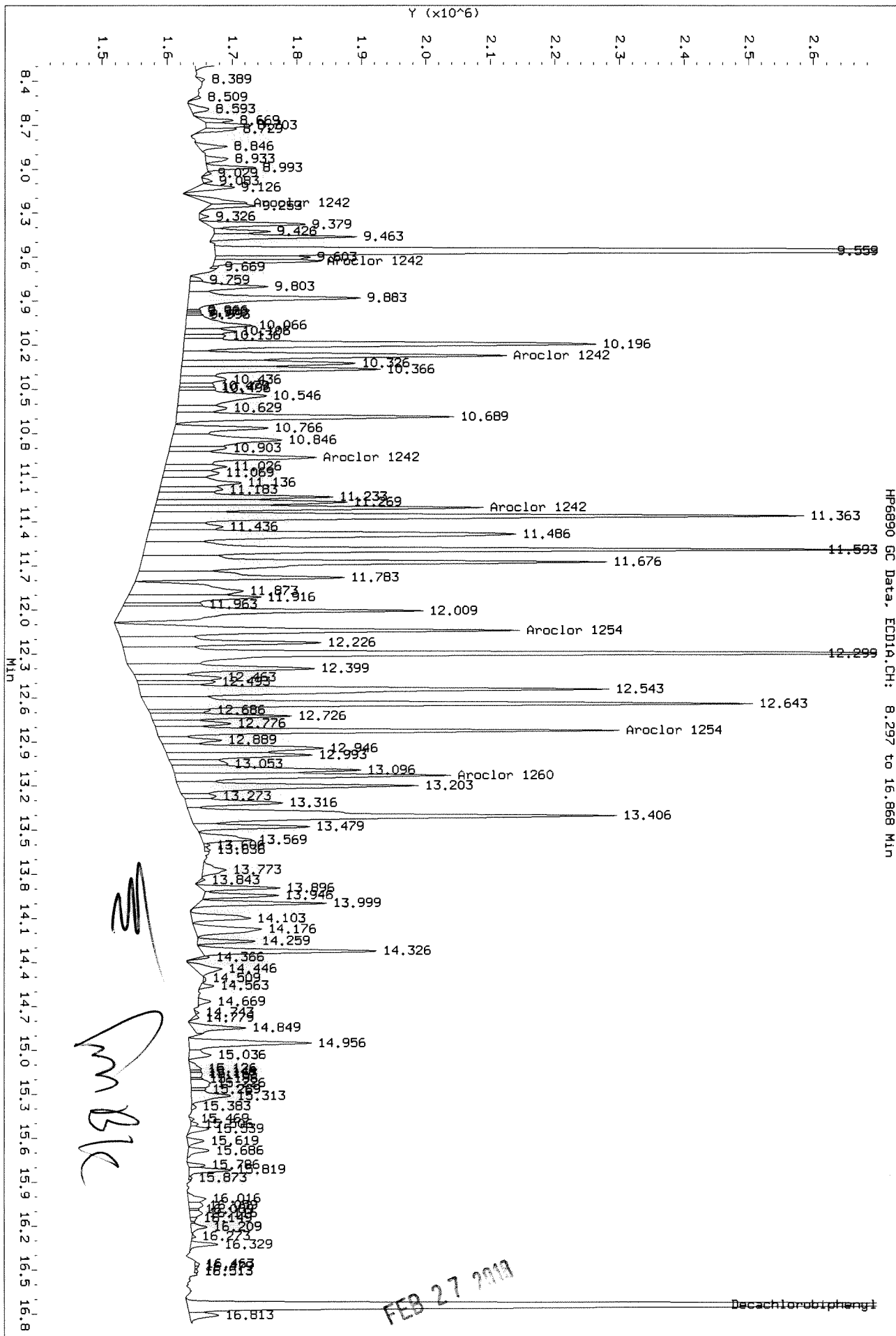
Column diameter: 0.32



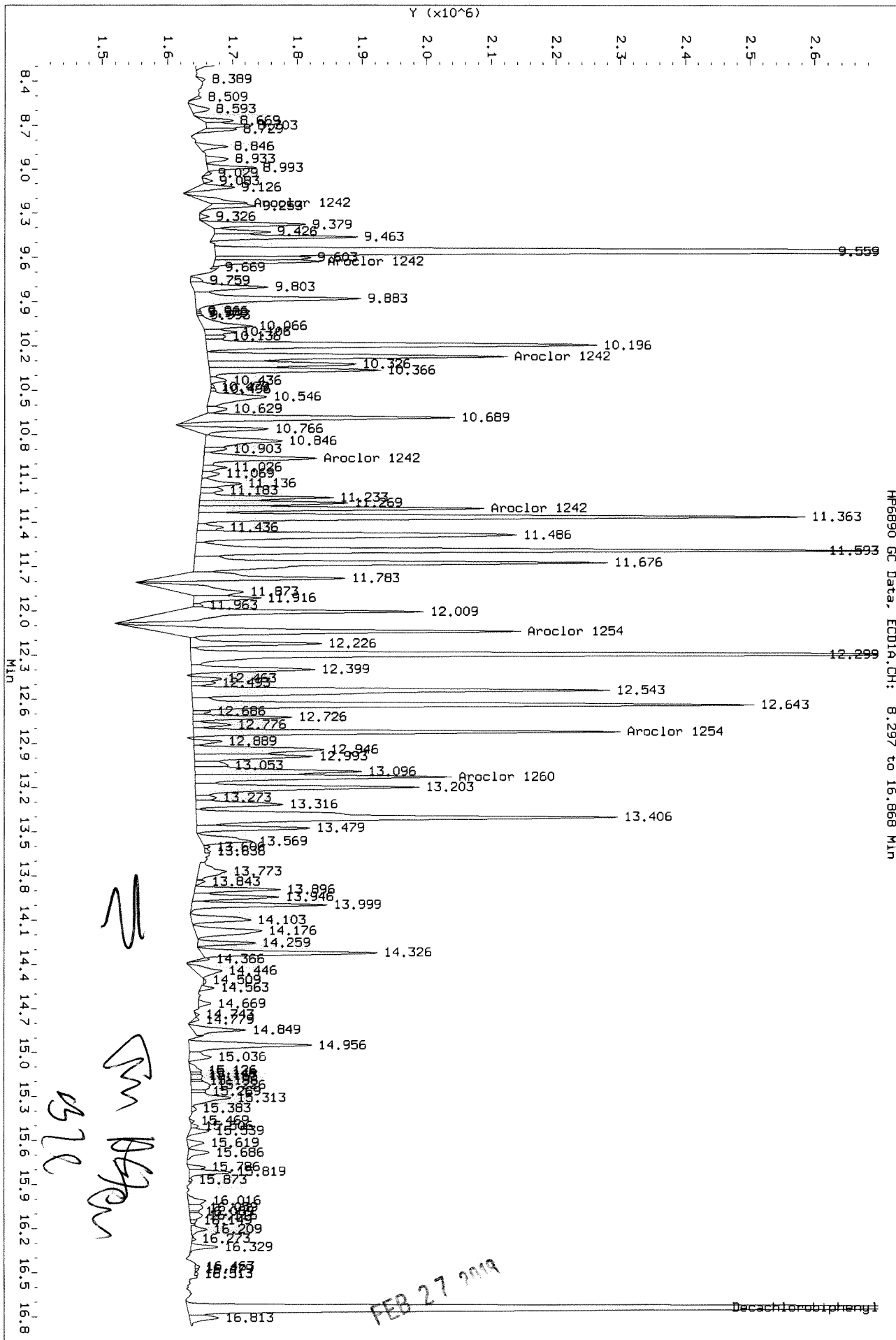


Data File: \\alk1swws002\instdata\GC32\DATA\022318.b\022318007.D
Injection Date: 23-FEB-2018 14:14
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 8.297 to 16.868 Min



Data File: \\alkjsws002\instdata\GC32\DATA\022318.B\022318007.D
 Injection Date: 23-FEB-2018 14:14
 Instrument: GC32.1
 Client Sample ID:



HF6890 GC Data, ECD1A.CH: 8.297 to 16.868 Min

FEB 27 2018

Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F008.D
Lab ID: K1801267-013
RunType: SMPL
Matrix: SEDIMENT


Date Acquired: 02/23/2018 14:46
Date Quantitated: 02/26/2018 10:28
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

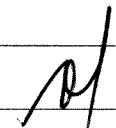
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-21.1	NA	20	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F008.D
Lab ID: K1801267-013
RunType: SMPL
Matrix: SEDIMENT

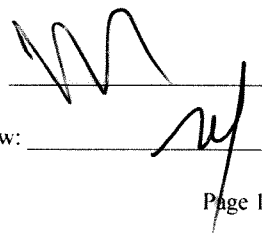
Date Acquired: 02/23/2018 14:46
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
ListJoinID: LJ18762

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F008.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F008.D	Vial:	6
Acqu Date:	02/23/2018 14:46	Quant Date:	02/26/2018 10:28
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-013	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	SEDIMENT
Prod Code:	8082A PCB	Collect Date:	02/06/2018	Receive Date:	02/08/2018

Analysis Lot:	KWG1801127	Prep Lot:	KWG1800943	Report Group:	K1801267
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664049	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18762
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Method ID:	MJ1660
Quant based on Report List			

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg Dry Weight		Rpt
Decachlorobiphenyl	16.75 ^{0.00}	18.03 ^{+0.00}	4807580	5717412	4.78 ^{CCV}	5.20			104 OK
%Recovery =					96 OK	104 OK	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1016			0	0	0.0000	0.0000	3.6U	3.6U	3.6U
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1221 {1}			0d	0	0.0000	0.0000	3.6U	3.6U	
Aroclor 1221			0	0	0.0000	0.0000	3.6U	3.6U	3.6U
Aroclor 1221 {2}			0d	0	0.0000	0.0000	3.6U	3.6U	
Aroclor 1221 {3}			0d	0	0.0000	0.0000	3.6U	3.6U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1232			0	0	0.0000	0.0000	3.6U	3.6U	3.6U
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1242 {1}	9.21	10.20	210838m	128413	11.19	10.48	55	52	
Aroclor 1242			0	0	10.79	20.30	53	100	53P
Aroclor 1242 {2}	9.63	10.84	302154m	324197	6.76	9.33	33	46	
Aroclor 1242 {3}	10.28	11.32	0m	0	0.0000	0.0000	3.6U	3.6U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223F008.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F008.D	Vial:	6
Acqu Date:	02/23/2018 14:46	Quant Date:	02/26/2018 10:28
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801267-013	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Parameter Name	RT		Resp		ng/mL		ug/Kg		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {4}	10.97	11.63	343840m	639550	14.40	28.32	71	140	
Aroclor 1242 {5}	11.31	12.43	0m	815611	0.0000	33.06	3.6U	160	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1248			0	0	0.0000	0.0000	3.6U	3.6U	3.6U
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	3.6U	3.6U	
Aroclor 1254 {1}	11.36	12.31	2036024	2179906	37.22	42.63	180	210	
Aroclor 1254			0	0	41.84	39.44	210	190	190
Aroclor 1254 {2}	12.15	12.36	1593269	848830	38.52	37.26	190	180	
Aroclor 1254 {3}	12.30	12.69	4058803	0	49.79	0.0000	250	3.6U	
Aroclor 1254 {4}	12.55	13.01	0	843716	0.0000	38.43	3.6U	190	
Aroclor 1254 {5}	12.83	14.25	0	0	0.0000	0.0000	3.6U	3.6U	
Aroclor 1260 {1}	12.55 ^{+0.00}	14.10 ^{+0.00}	2922665	0	49.73	0.0000	250	3.6U	
Aroclor 1260			0	0	41.74	40.91	210	200	200
Aroclor 1260 {2}	13.14 ^{0.00}	14.68 ^{+0.00}	1775262	1571018	49.30	38.11	240	190	
Aroclor 1260 {3}	13.95 ^{0.00}	15.05 ^{0.00}	1368342	1854847	35.25	45.79	170	230	
Aroclor 1260 {4}	14.33 ^{+0.00}	15.58 ^{0.00}	3090097	3325997	36.61	38.70	180	190	
Aroclor 1260 {5}	14.96 ^{0.00}	16.08 ^{+0.00}	2458047	2556937	37.81	41.06	190	200	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.402 g **Dilution:** 1.0
Prep Final Vol: 8 mL **Unit Factor:** 1
Solids: 67.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F008.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F008.D
 Inj Date : 23-FEB-2018 14:46
 Sample Info: K1801267-013
 Misc Info :
 Cal Date : 23-FEB-2018 16:50
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.855	8.279	6864971	7001653	4.20	5.16		100.00 (R)
Aroclor 1242	9.205	10.195	210838	128413	11.2	10.5	80.00- 120.00	100.00 (MH)
	9.632	10.835	302154	324197	6.76	9.33	188.17- 282.25	143.31 (MH)
	10.275	11.315					129.73- 194.59	0.00 (MH)
	10.965	11.629	343840	639550	14.4	28.3	97.61- 146.41	163.08 (MH)
	11.308	12.432		815611		33.1	145.18- 217.78	635.14 (MH)
	Average of Peak Amounts =				10.8	20.3		
Aroclor 1254	11.362	12.305	2036024	2179906	37.2	42.6	80.00- 120.00	100.00
	12.145	12.362	1593269	848830	38.5	37.3	64.52- 96.78	78.25
	12.298	12.685	4058803		49.8		121.44- 182.17	199.35
	12.545	13.005		843716		38.4	31.29- 46.94	38.70
	12.828	14.245					49.74- 74.61	0.00
	Average of Peak Amounts =				41.8	39.4		
Aroclor 1260	12.545	14.095	2922665		49.7		80.00- 120.00	100.00 (H)
	13.135	14.675	1775262	1571018	49.3	38.1	49.73- 74.59	60.74 (H)
	13.948	15.045	1368342	1854847	35.2	45.8	54.16- 81.24	46.82 (H)
	14.328	15.575	3090097	3325997	36.6	38.7	105.05- 157.58	105.73 (H)
	14.955	16.082	2458047	2556937	37.8	41.1	78.29- 117.43	84.10 (H)
	Average of Peak Amounts =				41.7	40.9		
Decachlorobiphenyl	16.748	18.032	4807580	5717412	4.77	5.20		100.00 (R)
Aroclors, Total	1.000	1.000	5171191	4094959	94.4	101		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.
 H - Operator selected an alternate compound hit.

Data File: \\alk1sus002\instdata\GC32\DATA\022318.16\0223F008.D

Date : 23-FEB-2018 14:46

Client ID:

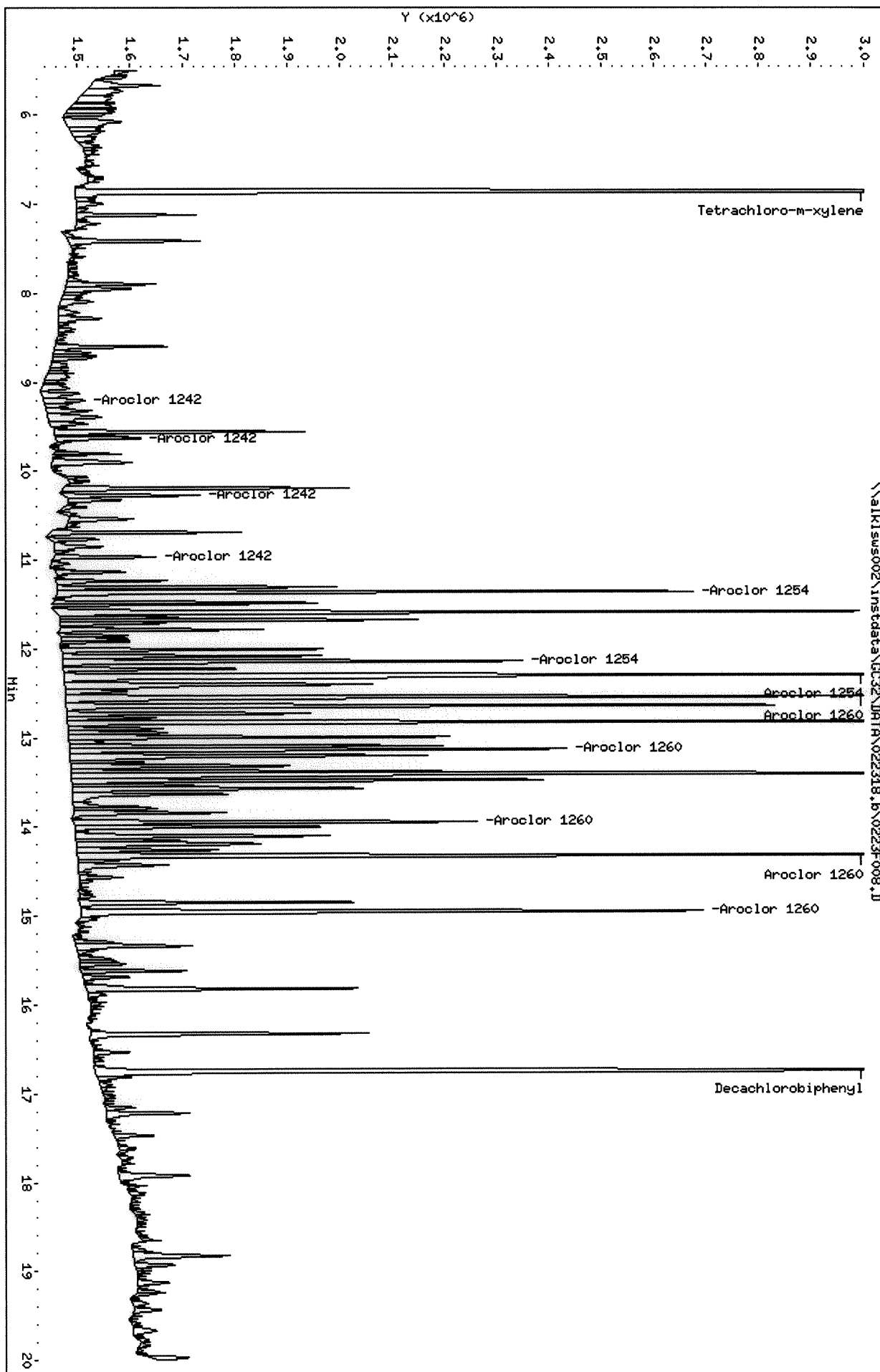
Sample Info: K1801267-013

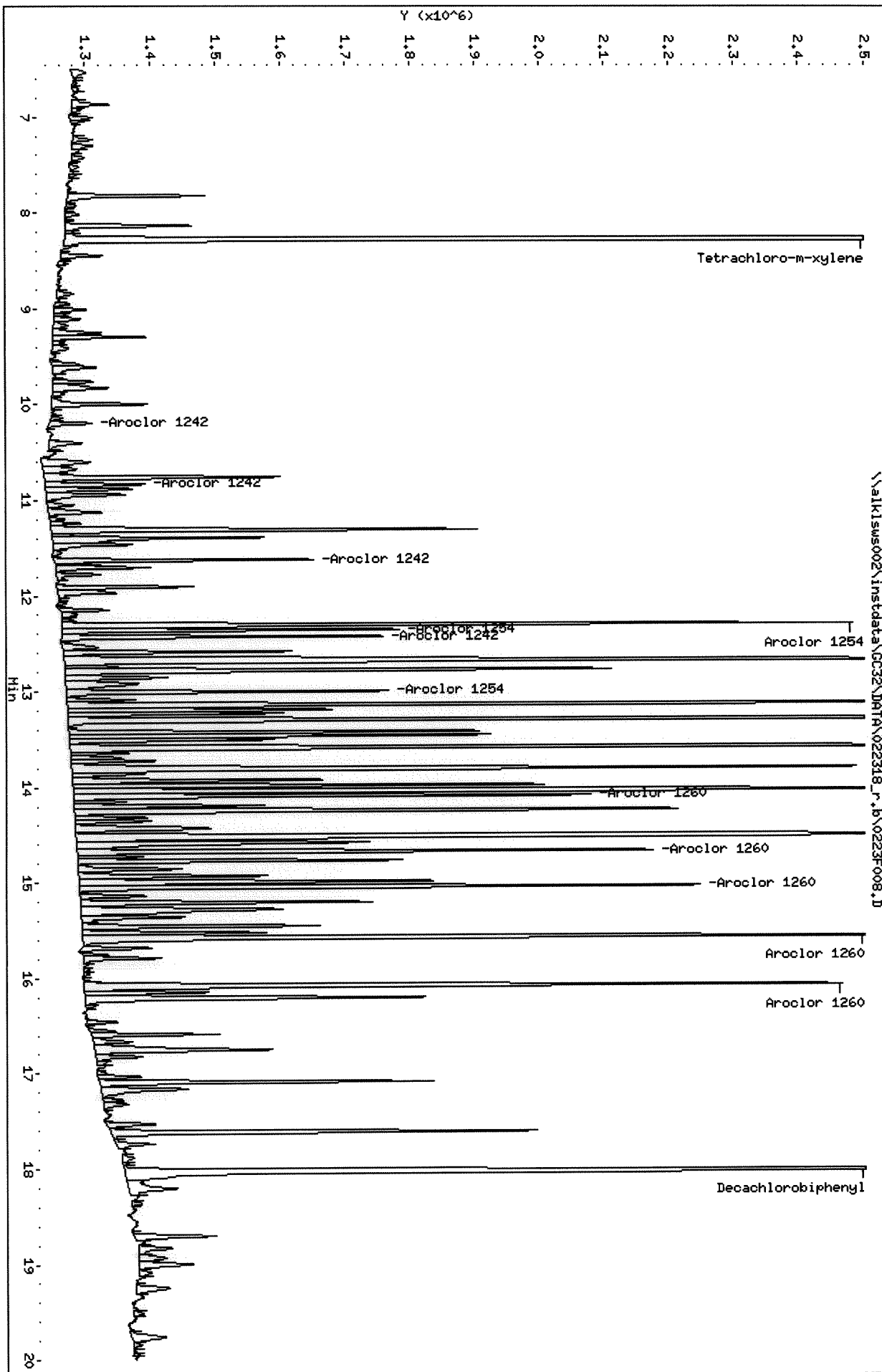
Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32





Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F029.D
Lab ID: KWG1800943-4
RunType: MB
Matrix: SEDIMENT

Date Acquired: 02/22/2018 14:05
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F029.D
Lab ID: KWG1800943-4
RunType: MB
Matrix: SEDIMENT

Date Acquired: 02/22/2018 14:05
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F029.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F029.D	Vial:	27
Acqu Date:	02/22/2018 14:05	Quant Date:	02/22/2018 16:41
Run Type:	MB	MethodJoinID:	MJ1660
Lab ID:	KWG1800943-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8082A PCB LL	Collect Date:		Receive Date:	02/19/2018

Analysis Lot:	KWG1801092	Prep Lot:	KWG1800943	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664068	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg Wet Weight		Rpt
Tetrachloro-m-xylene	6.86	8.28 ^{0.00}	6214561	5665288	3.81	4.18	76 OK	84 OK	84 OK
			%Recovery =		76 OK	84 OK	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03 ^{0.00}	3762510	4137617	3.74	3.77	75 OK	75 OK	75 OK
			%Recovery =		75 OK	75 OK	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000	2.90U	2.90U	2.90U
Aroclor 1016 {1}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1016 {2}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1016 {3}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1016 {4}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1016 {5}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1221			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1221 {1}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1221 {2}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1221 {3}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1232 {1}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {2}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {3}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {4}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {5}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1242 {1}			0d	0	0.0000	0.0000	2.9U	2.9U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F029.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F029.D	Vial:	27
Acqu Date:	02/22/2018 14:05	Quant Date:	02/22/2018 16:41
Run Type:	MB	MethodJoinID:	MJ1660
Lab ID:	KWG1800943-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds Final Conc. Units: ug/Kg Wet Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242 {3}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242 {4}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242 {5}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1248 {1}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {2}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {3}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {4}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {5}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1254 {1}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {2}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {3}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {4}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {5}			0d	0	0.0000	0.0000	2.9U	2.9U	
Aroclors, Total			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1260			0	0	0.0000	0.0000	2.90U	2.90U	2.90U
Aroclor 1260 {1}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1260 {2}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1260 {3}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1260 {4}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1260 {5}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1262 {1}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {2}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {3}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {4}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {5}			0	0	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.438 g **Dilution:** 1.0
Prep Final Vol: 8 mL **Unit Factor:** 1
Solids: %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

- U: Undetected at or above MDL
- J: Analyte detected above MDL, but below MRL
- B: Hit above MRL also found in Method Blank
- E: Analyte concentration above high point of ICAL
- N: Presumptive evidence of compound
- D: Result from dilution
- m: Manual integration performed
- d: Compound manually deleted
- NR: Analyte not reported from this analysis
- *: Result fails acceptance criteria
- #: Acceptance criteria not applicable
- ?: Insufficient information to determine acceptance
- e: Result >= MRL, but MRL less than low point of ICAL
- c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F029.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F029.D
Inj Date : 22-FEB-2018 14:05
Sample Info: KWG1800943-MB
Misc Info :
Cal Date : 22-FEB-2018 16:12
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.861	8.278	6214561	5665288	3.81	4.18		100.00 (R)
Decachlorobiphenyl	16.751	18.031	3762510	4137617	3.74	3.77		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisw002\instdata\GC32\DATA\022118.b\0221F029.D

Date: 22-FEB-2018 14:05

Client ID:

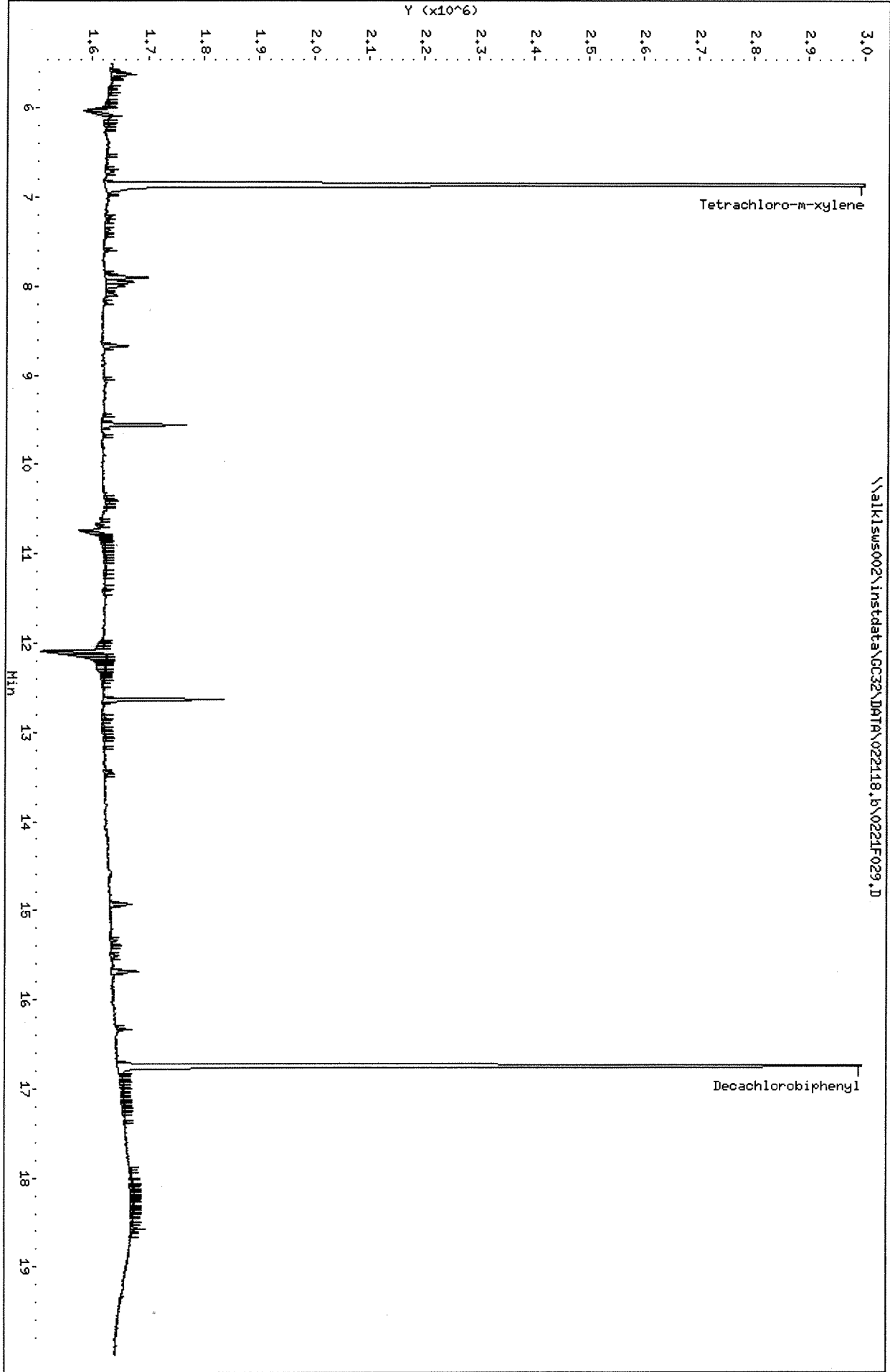
Sample Info: KMCI800943-HB

Column phase: DB-35MS

Instrument: GC32.1

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F029.D

Date : 22-FEB-2018 14:05

Client ID:

Sample Info: KMG1800943-HB

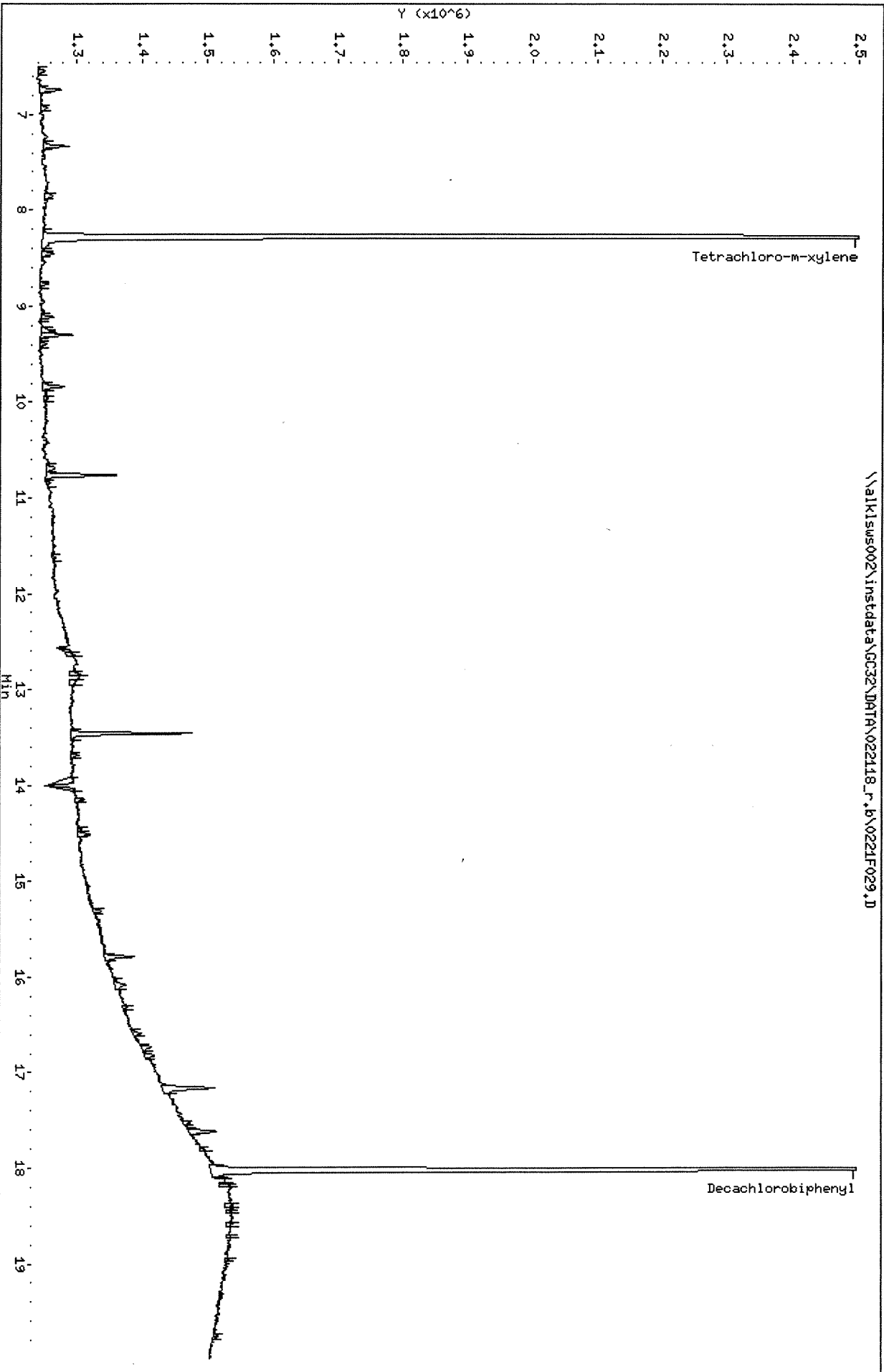
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F029.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F002.D
Lab ID: K1801096-023
Run Type: SMPL
Matrix: SEDIMENT

Date Acquired: 02/21/2018 23:47
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
ListJoinID: LJ18762

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F002.D
Lab ID: K1801096-023
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 02/21/2018 23:47
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
ListJoinID: LJ18762

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F002.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F002.D	Vial:	4
Acqu Date:	02/21/2018 23:47	Quant Date:	02/22/2018 16:41
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801096-023	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:	IV	Matrix:	SEDIMENT
Prod Code:	8082A PCB LL	Collect Date:	02/03/2018	Receive Date:	02/06/2018

Analysis Lot:	KWG1801092	Prep Lot:	KWG1800943	Report Group:	K1801096
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664051	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:	Polychlorinated Biphenyls (PCBs)	Report List ID:	LJ18762
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Method ID:	MJ1660
		Quant based on Report List	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg Dry Weight		Rpt
Decachlorobiphenyl	16.75 ^{+0.00}	18.03	3721969	4310850	3.70	3.92	74 OK	78 OK	78 OK
			%Recovery =		74 OK	78 OK	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1016			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1016 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1016 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1016 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1016 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1221 {1}			0d	0	0.0000	0.0000	30U	30U	
Aroclor 1221			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1221 {2}			0d	0	0.0000	0.0000	30U	30U	
Aroclor 1221 {3}			0d	0	0.0000	0.0000	30U	30U	
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	30U	30U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F002.D	Instrument:	GC32.i
Data File #2:	\\alkslws002\instdata\GC32\DATA\022118_r.b\0221F002.D	Vial:	4
Acqu Date:	02/21/2018 23:47	Quant Date:	02/22/2018 16:41
Run Type:	SMPL	ListJoinID:	LJ18762
Lab ID:	K1801096-023	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1254 {1}	11.37	12.31	154377	126188	2.82	2.47	110	99J	
Aroclor 1254			0	0	2.39	2.49	96J	100J	96J
Aroclor 1254 {2}	12.15		72215	0	1.75	0.0000	70J	30U	
Aroclor 1254 {3}	12.30	12.69	212470	251664	2.61	4.22	100J	170	
Aroclor 1254 {4}	12.55	13.01	0	18068	0.0000	0.8230	30U	33J	
Aroclor 1254 {5}	12.83	14.24	0	76787	0.0000	2.45	30U	98J	
Aroclor 1260 {1}	12.55 ^{+0.00}	14.10	0	0	0.0000	0.0000	30U	30U	
Aroclor 1260			0	0	2.69	2.85	110J	110	110
Aroclor 1260 {2}	13.14 ^{+0.01}	14.68	93897	133907	2.61	3.25	100J	130	
Aroclor 1260 {3}	13.95 ^{+0.00}	15.05	107503	116620	2.77	2.88	110	120	
Aroclor 1260 {4}	14.33 ^{+0.00}	15.58	227121	208886	2.69	2.43	110J	97J	
Aroclor 1260 {5}	14.95 ^{-0.01}	16.08	0	177047	0.0000	2.84	30U	110	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.070 g **Dilution:** 1.0
Prep Final Vol: 8 mL **Unit Factor:** 1
Solids: 9.65 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F002.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F002.D
 Inj Date : 21-FEB-2018 23:47
 Sample Info: K1801096-024
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.281	5769972	5214589	3.53	3.85		100.00 (R)
Aroclor 1254	11.367	12.307	154377	126188	2.82	2.47	80.00- 120.00	100.00
	12.150	0.000	72215		1.75		64.52- 96.78	46.78
	12.304	12.691	212470	251664	2.61	4.21	121.44- 182.17	137.63
	12.547	13.011		18068		0.823	31.29- 46.94	14.32
	12.834	14.244		76787		2.45	49.74- 74.61	60.85
	Average of Peak Amounts =				2.39	2.49		
Aroclor 1260	12.547	14.101					80.00- 120.00	0.00 (H)
	13.144	14.677	93897	133907	2.61	3.25	51.72- 77.58	32.44 (H)
	13.954	15.051	107503	116620	2.77	2.88	52.73- 79.10	37.15 (H)
	14.334	15.581	227121	208886	2.69	2.43	104.00- 156.00	78.48 (H)
	14.950	16.084		177047		2.84	175.51- 263.27	143.14 (H)
	Average of Peak Amounts =				2.69	2.85		
Decachlorobiphenyl	16.754	18.034	3721969	4310850	3.70	3.92		100.00 (R)
Aroclors, Total	1.000	1.000	289194	277291	5.08	5.34		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 H - Operator selected an alternate compound hit.

Data File: \\alklsws002\instdata\GC32\DATA\022118.b\0221F002.D

Date: 21-FEB-2018 23:47

Client ID:

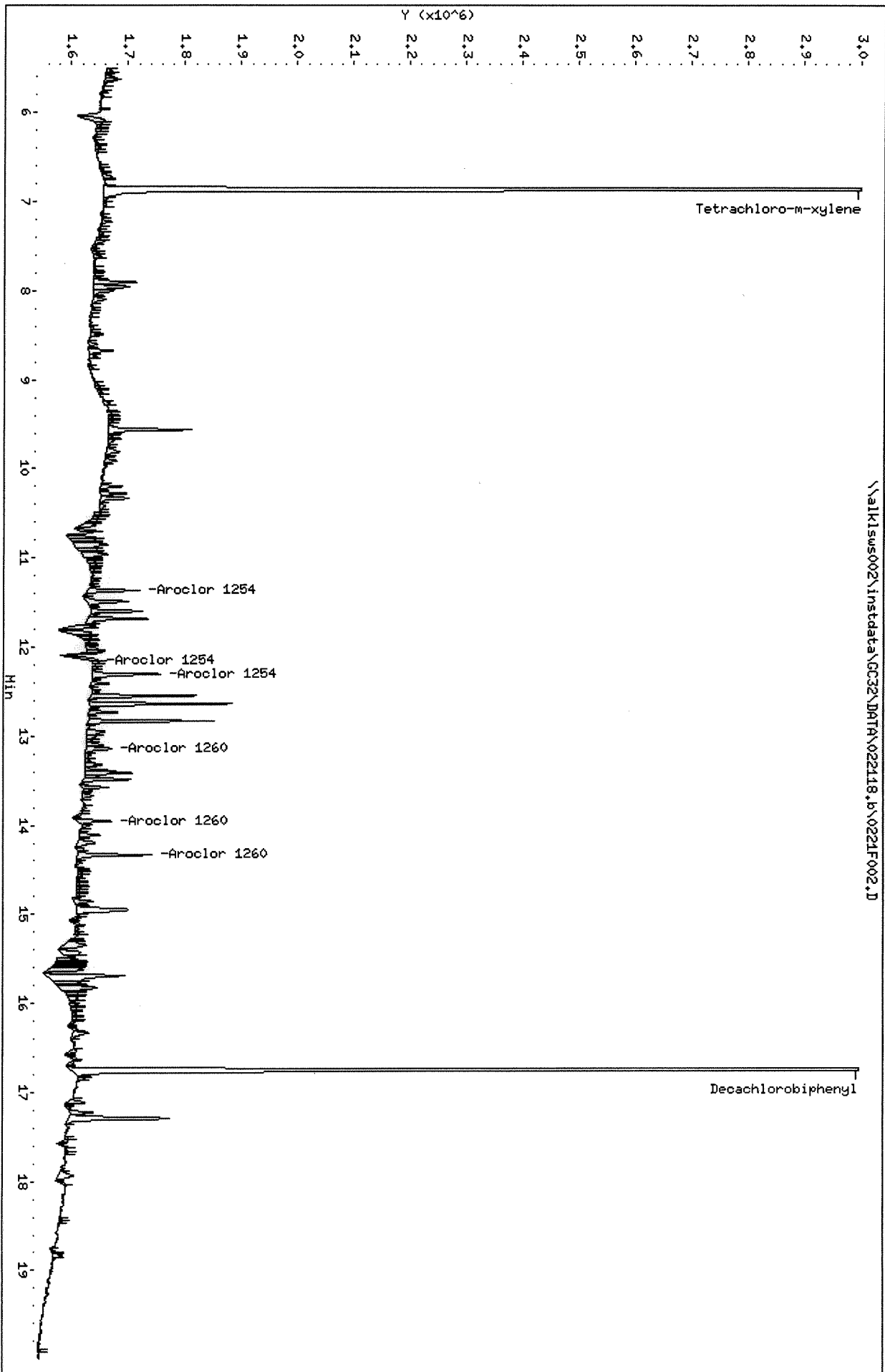
Sample Info: K1801096-024

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alkisus002\instdata\GC32\DATA\022118_r.b\0221F002.D

Date: 21-FEB-2018 23:47

Client ID:

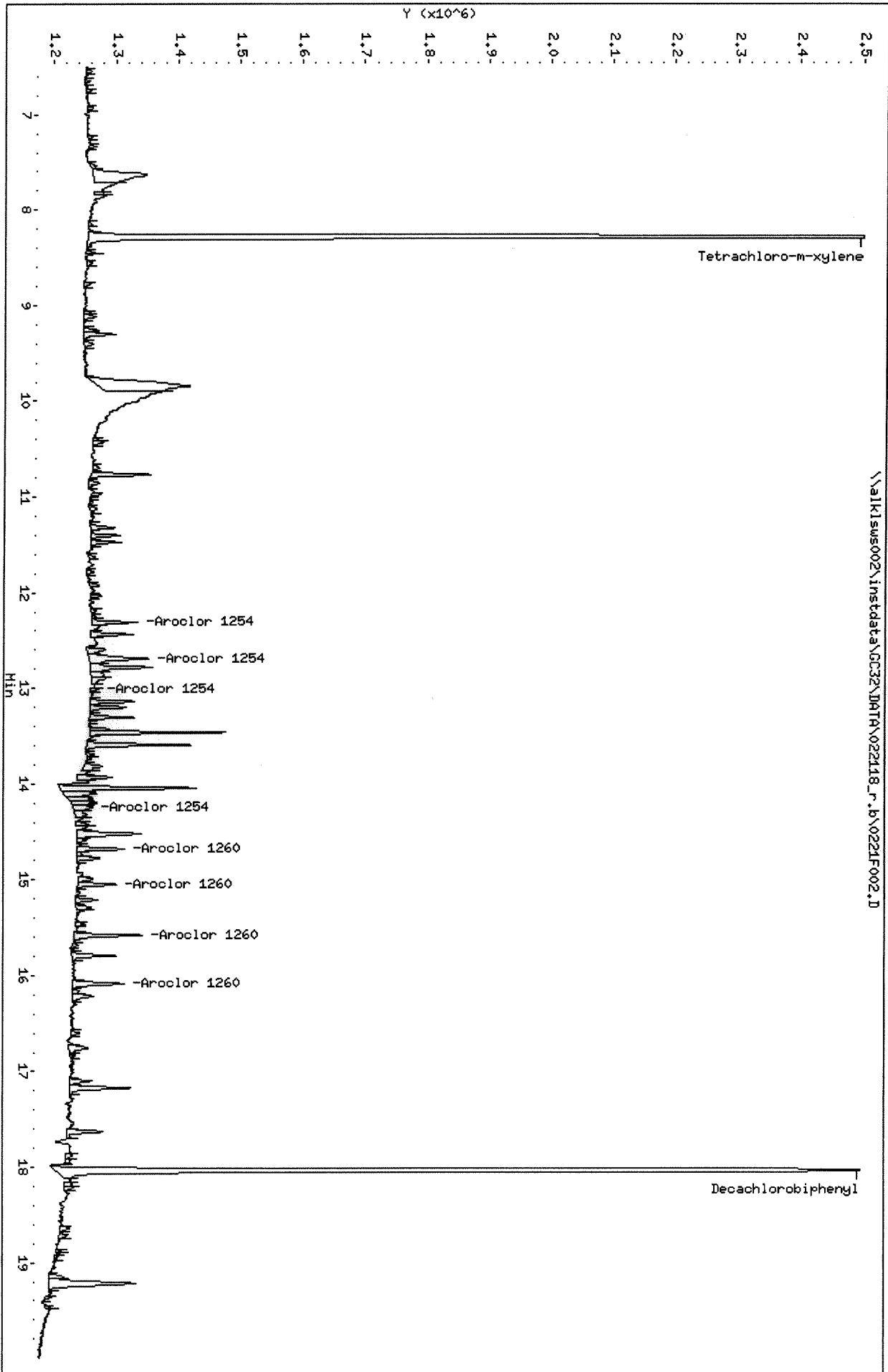
Sample Info: K1801096-024

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F026.D
Lab ID: KWG1800943-1 -- K1801096-023MS
RunType: MS
Matrix: SEDIMENT

Date Acquired: 02/22/2018 12:30
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

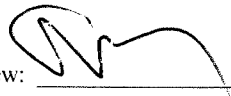
Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F026.D
Lab ID: KWG1800943-1 -- K1801096-023MS
RunType: MS
Matrix: SEDIMENT

Date Acquired: 02/22/2018 12:30
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F026.D	Instrument:	GC32.i	
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F026.D	Vial:	24	
Acqu Date:	02/22/2018 12:30	Quant Date:	02/22/2018 16:41	
Run Type:	MS	MethodJoinID:	MJ1660	
Lab ID:	KWG1800943-1 -- K1801096-023MS		Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB	

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8082A PCB LL	Collect Date:		Receive Date:	02/19/2018

Analysis Lot:	KWG1801092	Prep Lot:	KWG1800943	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664065	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg Dry Weight		Rpt
Tetrachloro-m-xylene	6.86 ^{-0.01}	8.28 ^{0.00}	6134397	5667607	3.76	4.18	75 OK	84 OK	84 OK
			%Recovery =		75 OK	84 OK	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	3727634	4249817	3.70	3.87	74 OK	77 OK	77 OK
			%Recovery =		74 OK	77 OK	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.25	27.27	1000	1090	1000
Aroclor 1016 {1}	9.18 ^{0.00}	9.83	562579	659584	23.75	25.21	945	1000	
Aroclor 1016 {2}	9.63 ^{-0.01}	10.14	1501585	550799	25.84	27.37	1030	1090	
Aroclor 1016 {3}	9.81 ^{0.00}	10.89 ^{0.00}	1008773	1299241	25.66	26.44	1020	1050	
Aroclor 1016 {4}	10.20 ^{0.00}	11.40 ^{0.00}	738034	836790	23.31	26.33	928	1050	
Aroclor 1016 {5}	10.32 ^{0.00}	11.91 ^{0.00}	655901	496384	27.68	31.01	1100	1230	
Aroclor 1221			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1232			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1242			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	29U	29U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F026.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F026.D	Vial:	24
Acqu Date:	02/22/2018 12:30	Quant Date:	02/22/2018 16:41
Run Type:	MS	MethodJoinID:	MJ1660
Lab ID:	KWG1800943-1 -- K1801096-023MS	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1248			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1254			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	29U	29U	
Aroclors, Total	1.00	1.00	2500712	2150239	53.54	54.24	2130J	2160J	2130J
Aroclor 1260			0	0	28.30	26.96	1130	1070	1070
Aroclor 1260 {1}	12.54 ^{0.00}	14.10 ^{0.00}	1651541	458790	28.10	21.39	1120	851	
Aroclor 1260 {2}	13.14 ^{0.00}	14.68 ^{0.00}	904645	1274185	25.12	30.91	1000	1230	
Aroclor 1260 {3}	13.95 ^{0.00}	15.05 ^{0.00}	1206673	1180874	31.08	29.16	1240	1160	
Aroclor 1260 {4}	14.33 ^{0.00}	15.58	2421146	2435059	28.68	28.33	1140	1130	
Aroclor 1260 {5}	14.96 ^{0.00}	16.08	1852683	1559489	28.50	25.04	1130	997	
Aroclor 1262			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1268			0	0	0.0000	0.0000	29U	29U	29U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	29U	29U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	29U	29U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.083 g Dilution: 1.0
 Prep Final Vol: 8 mL Unit Factor: 1
 Solids: 9.65 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F026.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F026.D
 Inj Date : 22-FEB-2018 12:30
 Sample Info: K1801096-23MS
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.855	8.278	6134397	5667607	3.76	4.18		100.00 (R)
Aroclor 1016	9.178	9.832	562579	659584	23.8	25.2	80.00- 120.00	100.00
	9.628	10.142	1501585	550799	25.8	27.4	196.19- 294.28	266.91
	9.805	10.885	1008773	1299241	25.7	26.4	131.48- 197.21	179.31
	10.195	11.395	738034	836790	23.3	26.3	99.08- 148.62	131.19
	10.315	11.908	655901	496384	27.7	31.0	79.53- 119.29	116.59
	Average of Peak Amounts =				25.3	27.3		
Aroclor 1260	12.541	14.095	1651541	458790	28.1	21.4	80.00- 120.00	100.00
	13.138	14.675	904645	1274185	25.1	30.9	51.72- 77.58	54.78
	13.948	15.045	1206673	1180874	31.1	29.2	52.73- 79.10	73.06
	14.328	15.578	2421146	2435059	28.7	28.3	104.00- 156.00	146.60
	14.955	16.082	1852683	1559489	28.5	25.0	80.89- 121.33	112.18
	Average of Peak Amounts =				28.3	27.0		
Decachlorobiphenyl	16.751	18.032	3727634	4249817	3.70	3.87		100.00 (R)
Aroclors, Total	1.000	1.000	2500712	2150239	53.5	54.2		0.00

QC Flag Legend

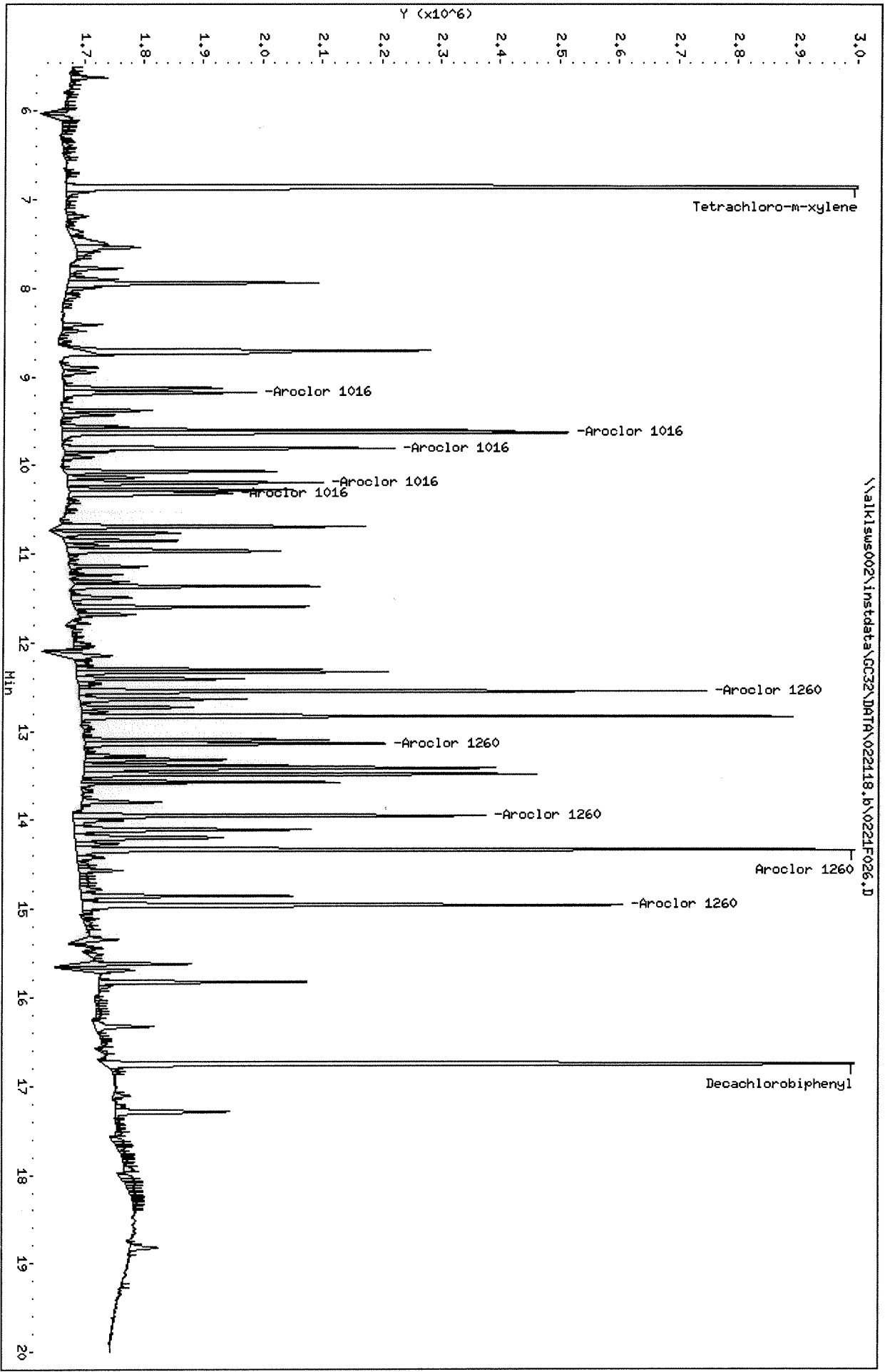
R - Spike/Surrogate failed recovery limits.

Data File: \\alklism002\instdata\GC32\DATA\022118.b\0221F026.D
Date: 22-FEB-2018 12:30

Client ID:
Sample Info: K1801096-23HS

Column phase: DB-35MS

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32



Data File: \\alk1s002\inst\data\GC32\DATA\022118_r.b\0221F026.D

Date: 22-FEB-2018 12:30

Client ID:

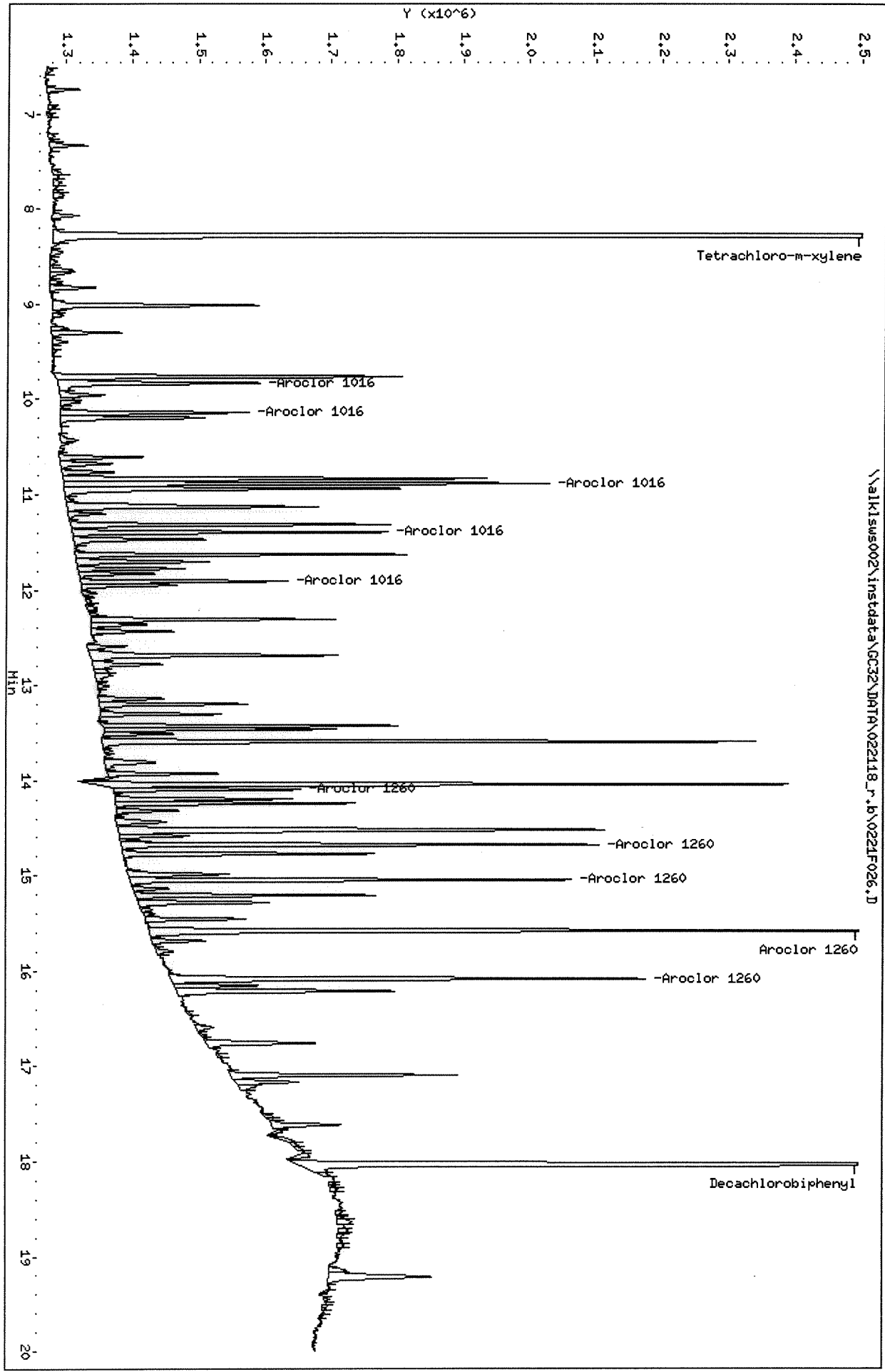
Sample Info: K1901096-23MS

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F027.D
Lab ID: KWG1800943-2 -- K1801096-023DMS
RunType: DMS
Matrix: SEDIMENT

Date Acquired: 02/22/2018 13:02
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F027.D
Lab ID: KWG1800943-2 -- K1801096-023DMS
RunType: DMS
Matrix: SEDIMENT

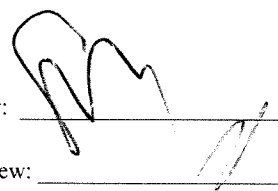
Date Acquired: 02/22/2018 13:02
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F027.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F027.D	Vial:	25
Acqu Date:	02/22/2018 13:02	Quant Date:	02/22/2018 16:41
Run Type:	DMS	MethodJoinID:	MJ1660
Lab ID:	KWG1800943-2 -- K1801096-023DMS		
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8082A PCB LL	Collect Date:		Receive Date:	02/19/2018

Analysis Lot:	KWG1801092	Prep Lot:	KWG1800943	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664066	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg Dry Weight		Rpt
Tetrachloro-m-xylene	6.86 ^{-0.01}	8.28 ^{0.00}	6103040	5618013	3.74	4.14	Limits =	70-130	83 OK
			%Recovery =		75 OK	83 OK			
Decachlorobiphenyl	16.75 ^{0.00}	18.03	3715570	4220692	3.69	3.84	Limits =	70-130	77 OK
			%Recovery =		74 OK	77 OK			

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.19	26.98	1030	1110	1030
Aroclor 1016 {1}	9.18 ^{-0.01}	9.83	553383	629969	23.36	24.08	960	989	
Aroclor 1016 {2}	9.63 ^{-0.01}	10.14 ^{0.00}	1447552	544053	24.91	27.03	1020	1110	
Aroclor 1016 {3}	9.81 ^{0.00}	10.89 ^{0.00}	1007907	1276239	25.64	25.97	1050	1070	
Aroclor 1016 {4}	10.20 ^{0.00}	11.40 ^{0.00}	743690	840101	23.49	26.44	965	1090	
Aroclor 1016 {5}	10.32 ^{+0.00}	11.91 ^{0.00}	677089	502040	28.57	31.37	1170	1290	
Aroclor 1221			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	30U	30U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F027.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F027.D	Vial:	25
Acqu Date:	02/22/2018 13:02	Quant Date:	02/22/2018 16:41
Run Type:	DMS	MethodJoinID:	MJ1660
Lab ID:	KWG1800943-2 -- K1801096-023DMS	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1254			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclors, Total	1.00	1.00	2480373	2171550	53.33	54.70	2190J	2250J	2190J
Aroclor 1260			0	0	28.14	27.73	1160	1140	1140
Aroclor 1260 {1}	12.54 ^{0.00}	14.10 ^{0.00}	1652344	492322	28.11	22.95	1150	943	
Aroclor 1260 {2}	13.14 ^{0.00}	14.68 ^{0.00}	922144	1289356	25.61	31.27	1050	1280	
Aroclor 1260 {3}	13.95 ^{0.00}	15.05 ^{0.00}	1189954	1220145	30.65	30.12	1260	1240	
Aroclor 1260 {4}	14.33 ^{0.00}	15.58 ^{+0.00}	2377502	2480934	28.17	28.87	1160	1190	
Aroclor 1260 {5}	14.96 ^{0.00}	16.08	1830304	1582591	28.15	25.41	1160	1040	
Aroclor 1262			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1268			0	0	0.0000	0.0000	30U	30U	30U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	30U	30U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	30U	30U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.018 g Dilution: 1.0
 Prep Final Vol: 8 mL Unit Factor: 1
 Solids: 9.65 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F027.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F027.D
 Inj Date : 22-FEB-2018 13:02
 Sample Info: K1801096-23DMS
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.855	8.279	6103040	5618013	3.74	4.14		100.00 (R)
Aroclor 1016	9.175	9.832	553383	629969	23.4	24.1	80.00- 120.00	100.00
	9.629	10.139	1447552	544053	24.9	27.0	196.19- 294.28	261.58
	9.805	10.886	1007907	1276239	25.6	26.0	131.48- 197.21	182.14
	10.195	11.396	743690	840101	23.5	26.4	99.08- 148.62	134.39
	10.319	11.909	677089	502040	28.6	31.4	79.53- 119.29	122.35
	Average of Peak Amounts =				25.2	27.0		
Aroclor 1260	12.542	14.096	1652344	492322	28.1	23.0	80.00- 120.00	100.00
	13.135	14.676	922144	1289356	25.6	31.3	51.72- 77.58	55.81
	13.949	15.046	1189954	1220145	30.7	30.1	52.73- 79.10	72.02
	14.329	15.579	2377502	2480934	28.2	28.9	104.00- 156.00	143.89
	14.955	16.082	1830304	1582591	28.2	25.4	80.89- 121.33	110.77
	Average of Peak Amounts =				28.2	27.7		
Decachlorobiphenyl	16.749	18.032	3715570	4220692	3.69	3.84		100.00 (R)
Aroclors, Total	1.000	1.000	2480373	2171550	53.3	54.7		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alklisms002\instdata\GC32\DATA\022118.b\0221F027.D

Date: 22-FEB-2018 13:02

Client ID:

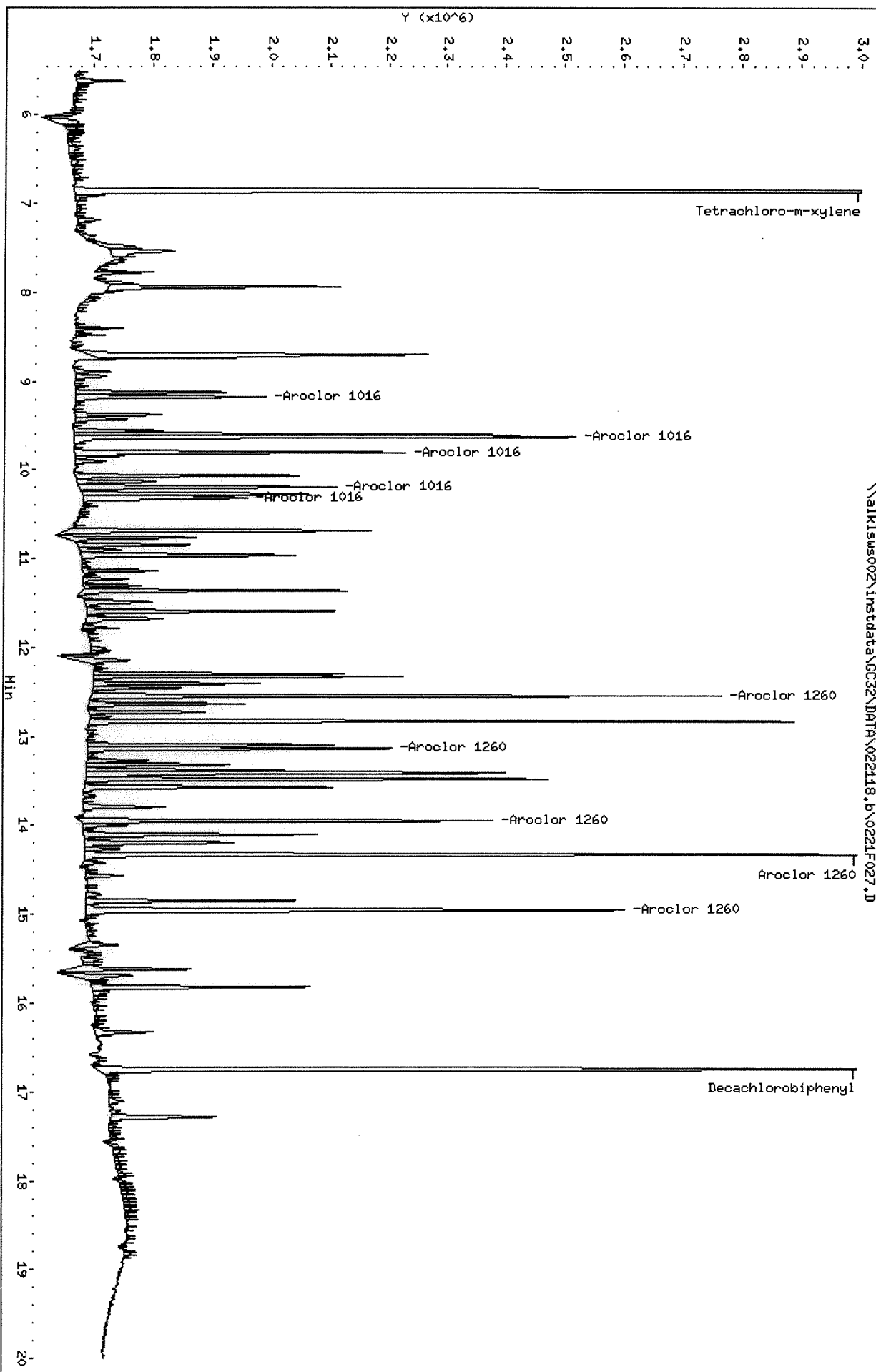
Sample Info: K1801096-23DM5

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1s002\instdata\GC32\DATA\022118_r.j\0221F027.D

Date: 22-FEB-2018 13:02

Client ID:

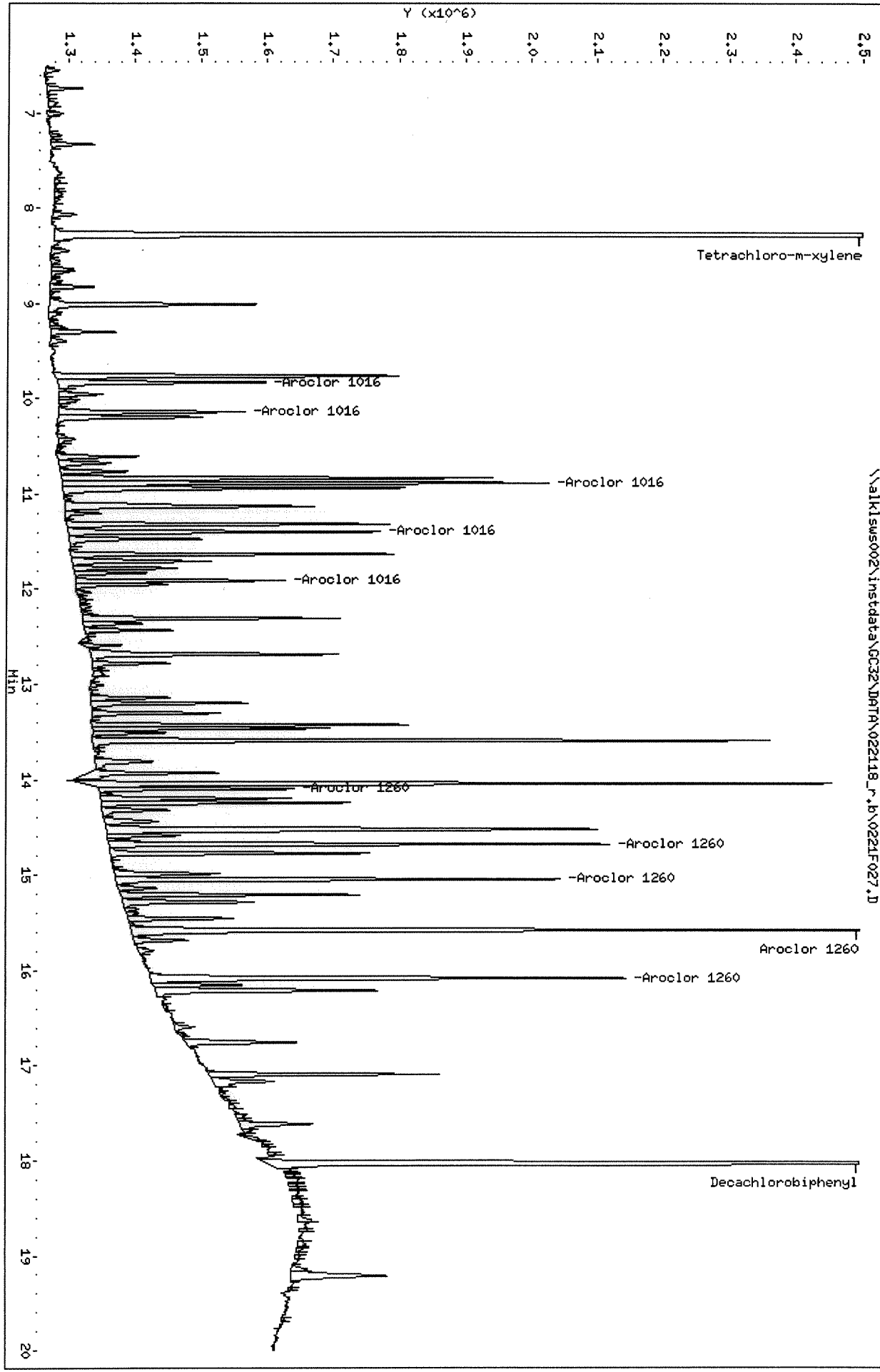
Sample Info: K1801096-23DM8

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



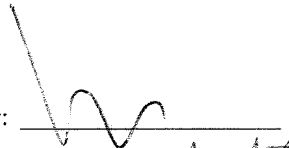
Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F018.D
Lab ID: KWG1800932-1
RunType: LCS
Matrix: WATER

Date Acquired: 02/15/2018 16:57
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F018.D
Lab ID: KWG1800932-1
RunType: LCS
Matrix: WATER

Date Acquired: 02/15/2018 16:57
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F018.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F018.D	Vial:	14
Acqu Date:	02/15/2018 16:57	Quant Date:	02/16/2018 10:14
Run Type:	LCS	MethodJoinID:	MJ702
Lab ID:	KWG1800932-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8082A PCB ULL	Collect Date:		Receive Date:	02/14/2018

Analysis Lot:	KWG1800961	Prep Lot:	KWG1800932	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1663955	Prep Date:	02/14/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ702
MB Ref:	J:\GC32\DATA\021518.B\0215F020.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.86	8.28	6903084	6291227	4.23	4.64			93 OK
			%Recovery =		85 OK	93 OK	Limits =	37-121	
Decachlorobiphenyl	16.75	18.03	4284665	4637447	4.26	4.22			85 OK
			%Recovery =		85 OK	84 OK	Limits =	39-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: ug/L				Rpt
					ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	
Aroclor 1016			0	0	29.11	29.70	0.146	0.148	0.146
Aroclor 1016 {1}	9.18	9.84	708584	601554	29.92	22.99	0.150	0.115	
Aroclor 1016 {2}	9.63	10.15	1701456	651788	29.28	32.39	0.146	0.162	
Aroclor 1016 {3}	9.81	10.89	1131224	1454477	28.78	29.60	0.144	0.148	
Aroclor 1016 {4}	10.20	11.40 ^{0.00}	856104	912762	27.04	28.72	0.135	0.144	
Aroclor 1016 {5}	10.32	11.91 ^{0.00}	723435	556618	30.53	34.78	0.153	0.174	
Aroclor 1221			0	0	0.0000	0.0000	0.0060U	0.0060U	0.0060U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0060U	0.0060U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0060U	0.0060U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0060U	0.0060U	
Aroclor 1232			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F018.D	Instrument:	GC32.i
Data File #2:	\\alkisws002\instdata\GC32\DATA\021518_r.b\0215F018.D	Vial:	14
Acqu Date:	02/15/2018 16:57	Quant Date:	02/16/2018 10:14
Run Type:	LCS	MethodJoinID:	MJ702
Lab ID:	KWG1800932-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260			0	0	30.24	29.37	0.151	0.147	0.147
Aroclor 1260 {1}	12.55	14.10	1747008	563065	29.73	26.25	0.149	0.131	
Aroclor 1260 {2}	13.14	14.68	1033385	1357779	28.70	32.93	0.143	0.165	
Aroclor 1260 {3}	13.95 ^{0.00}	15.05 ^{+0.00}	1312240	1272221	33.80	31.41	0.169	0.157	
Aroclor 1260 {4}	14.33 ^{0.00}	15.58	2539213	2585984	30.08	30.09	0.150	0.150	
Aroclor 1260 {5}	14.96	16.09 ^{+0.00}	1879579	1629632	28.91	26.17	0.145	0.131	
Aroclor 1262			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 400 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F018.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F018.D
 Inj Date : 15-FEB-2018 16:57
 Sample Info: KWG1800932-LCS
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.282	6903084	6291227	4.23	4.64		100.00 (R)
Aroclor 1016	9.178	9.835	708584	601554	29.9	23.0	80.00- 120.00	100.00
	9.631	10.145	1701456	651788	29.3	32.4	202.22- 303.33	240.12
	9.808	10.888	1131224	1454477	28.8	29.6	130.26- 195.39	159.65
	10.198	11.395	856104	912762	27.0	28.7	98.62- 147.93	120.82
	10.318	11.908	723435	556618	30.5	34.8	83.08- 124.62	102.10
	Average of Peak Amounts =				29.1	29.7		
Aroclor 1260	12.545	14.095	1747008	563065	29.7	26.3	80.00- 120.00	100.00
	13.138	14.675	1033385	1357779	28.7	32.9	52.79- 79.18	59.15
	13.948	15.048	1312240	1272221	33.8	31.4	53.29- 79.94	75.11
	14.328	15.578	2539213	2585984	30.1	30.1	105.45- 158.17	145.35
	14.958	16.085	1879579	1629632	28.9	26.2	81.06- 121.59	107.59
	Average of Peak Amounts =				30.2	29.4		
Decachlorobiphenyl	16.751	18.032	4284665	4637447	4.26	4.22		100.00 (R)
Aroclors, Total	1.000	1.000	2726445	2317176	59.3	59.1		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1swe002\instdata\GC32\DATA\021518.B\0215F018.D
Date: 15-FEB-2018 16:57

Client ID:

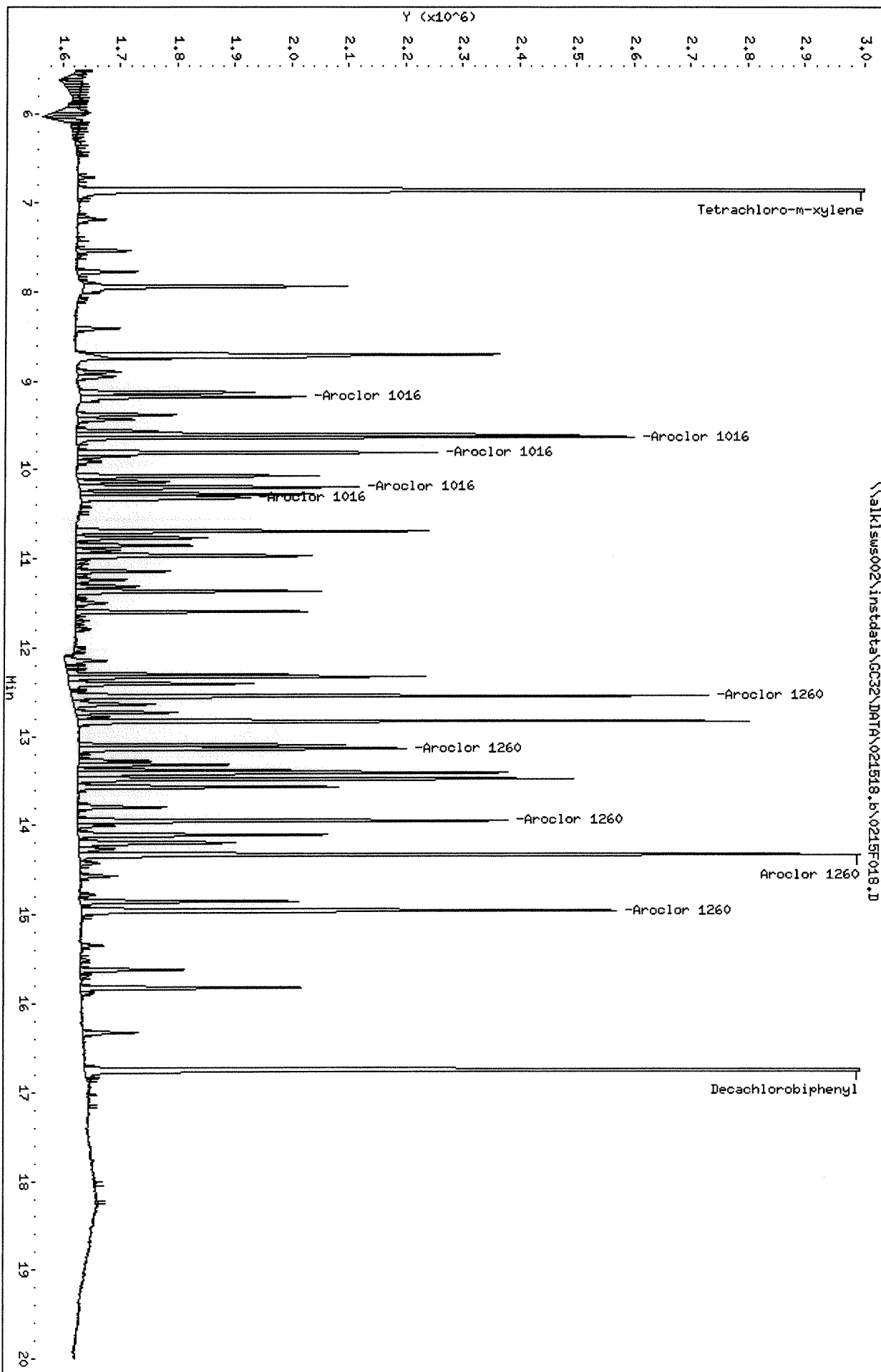
Sample Info: KMG1800932-LCS

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

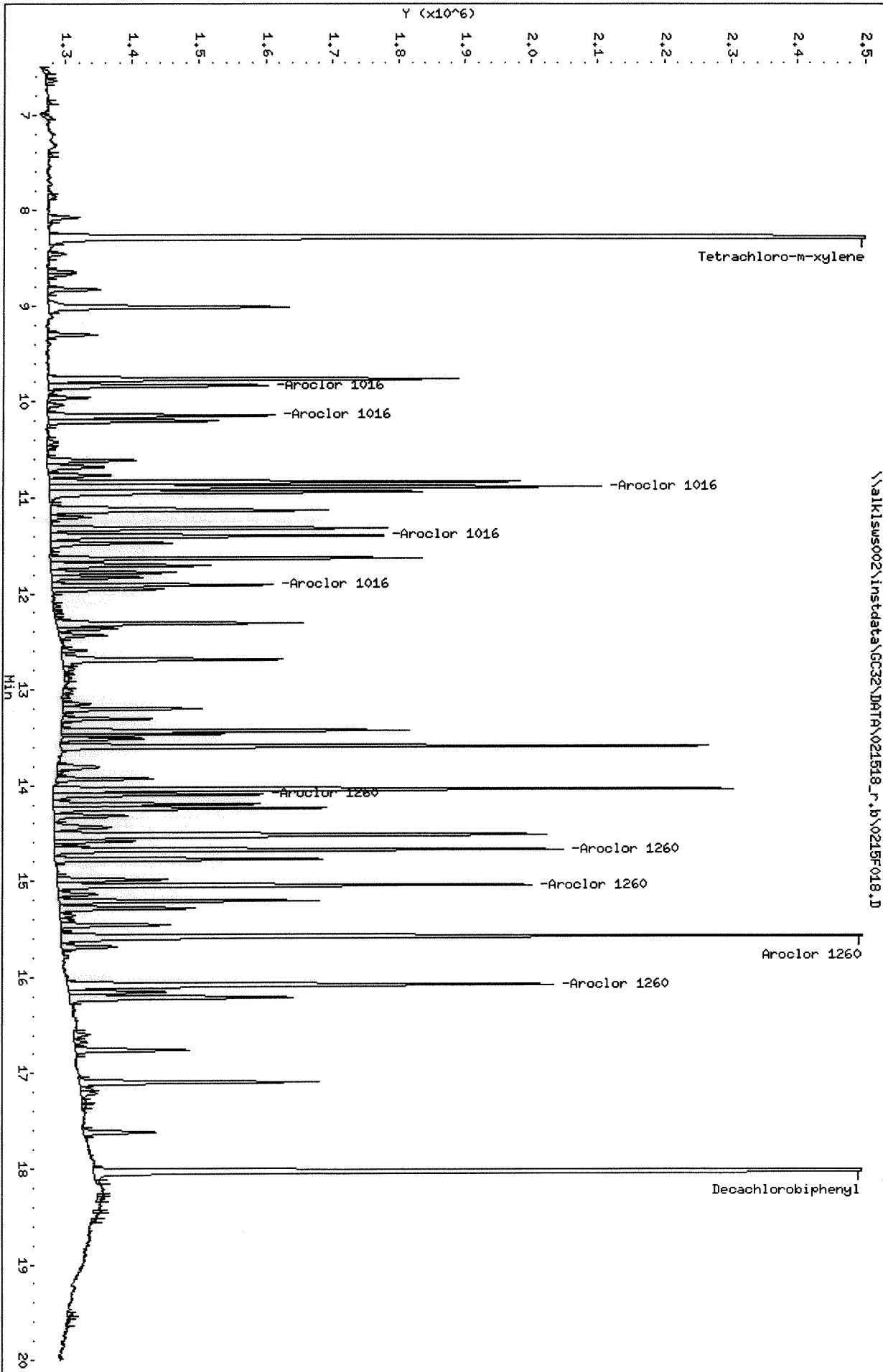


Data File: \\alkisus002\instdata\GC32\DATA\021518_r_b\0215F018.D
Date : 15-FEB-2018 16:57

Client ID:
Sample Info: KMG1800332-LCS

Column phase: DB-XLB

Instrument: GC32.1
Operator: SHURRAY
Column diameter: 0.32




Exception Report

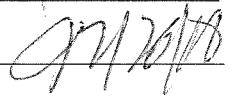
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F019.D
Lab ID: KWG1800932-2
RunType: DLCS
Matrix: WATER

Date Acquired: 02/15/2018 17:29
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F019.D
Lab ID: KWG1800932-2
RunType: DLCS
Matrix: WATER

Date Acquired: 02/15/2018 17:29
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ702

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F019.D	Instrument:	GC32.i
Data File #2:	\\alkslws002\instdata\GC32\DATA\021518_r.b\0215F019.D	Vial:	15
Acqu Date:	02/15/2018 17:29	Quant Date:	02/16/2018 10:14
Run Type:	DLCS	MethodJoinID:	MJ702
Lab ID:	KWG1800932-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8082A PCB ULL	Collect Date:		Receive Date:	02/14/2018

Analysis Lot:	KWG1800961	Prep Lot:	KWG1800932	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1663956	Prep Date:	02/14/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ702
MB Ref:	J:\GC32\DATA\021518.B\0215F020.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.86	8.28	7355496	6768805	4.50	4.99			100 OK
			%Recovery =		90 OK	100 OK	Limits =	37-121	
Decachlorobiphenyl	16.75 ^{+0.00}	18.03	4441699	4859508	4.41	4.42			88 OK
			%Recovery =		88 OK	88 OK	Limits =	39-140	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units:		ug/L		Rpt
					ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	
Aroclor 1016			0	0	29.98	32.32	0.150	0.162	0.150
Aroclor 1016 {1}	9.18	9.84	666845	675137	28.15	25.80	0.141	0.129	
Aroclor 1016 {2}	9.63 ^{+0.00}	10.15	1828860	699545	31.47	34.76	0.157	0.174	
Aroclor 1016 {3}	9.81	10.89 ^{+0.00}	1195298	1582959	30.40	32.21	0.152	0.161	
Aroclor 1016 {4}	10.20	11.40 ^{+0.00}	911883	988750	28.80	31.12	0.144	0.156	
Aroclor 1016 {5}	10.32	11.91	736508	603688	31.08	37.72	0.155	0.189	
Aroclor 1221			0	0	0.0000	0.0000	0.0060U	0.0060U	0.0060U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.0060U	0.0060U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.0060U	0.0060U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.0060U	0.0060U	
Aroclor 1232			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F019.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F019.D	Vial:	15
Acqu Date:	02/15/2018 17:29	Quant Date:	02/16/2018 10:14
Run Type:	DLCS	MethodJoinID:	MJ702
Lab ID:	KWG1800932-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Parameter Name	RT		Resp		ng/mL		ug/L		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1260			0	0	31.53	30.67	0.158	0.153	0.153
Aroclor 1260 {1}	12.55	14.10	1775517	588545	30.21	27.44	0.151	0.137	
Aroclor 1260 {2}	13.14	14.68 ^{+0.00}	1094944	1408185	30.41	34.16	0.152	0.171	
Aroclor 1260 {3}	13.95 ^{+0.00}	15.05 ^{+0.00}	1362505	1333591	35.10	32.93	0.175	0.165	
Aroclor 1260 {4}	14.33 ^{+0.00}	15.58 ^{+0.00}	2642713	2700604	31.31	31.42	0.157	0.157	
Aroclor 1260 {5}	14.96	16.08	1991400	1707291	30.63	27.41	0.153	0.137	
Aroclor 1262			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268			0	0	0.0000	0.0000	0.0024U	0.0024U	0.0024U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.0024U	0.0024U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 400 ml Dilution: 1.0
 Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

- U: Undetected at or above MDL
- J: Analyte detected above MDL, but below MRL
- B: Hit above MRL also found in Method Blank
- E: Analyte concentration above high point of ICAL
- N: Presumptive evidence of compound
- D: Result from dilution
- m: Manual integration performed
- d: Compound manually deleted
- NR: Analyte not reported from this analysis
- *: Result fails acceptance criteria
- #: Acceptance criteria not applicable
- ?: Insufficient information to determine acceptance
- e: Result >= MRL, but MRL less than low point of ICAL
- c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F019.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F019.D
 Inj Date : 15-FEB-2018 17:29
 Sample Info: KWG1800932-DLCS
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.282	7355496	6768805	4.50	4.99		100.00 (R)
Aroclor 1016	9.178	9.835	666845	675137	28.2	25.8	80.00- 120.00	100.00
	9.632	10.145	1828860	699545	31.5	34.8	202.22- 303.33	274.26
	9.808	10.889	1195298	1582959	30.4	32.2	130.26- 195.39	179.25
	10.198	11.399	911883	988750	28.8	31.1	98.62- 147.93	136.75
	10.318	11.912	736508	603688	31.1	37.7	83.08- 124.62	110.45
	Average of Peak Amounts =				30.0	32.3		
Aroclor 1260	12.545	14.095	1775517	588545	30.2	27.4	80.00- 120.00	100.00
	13.138	14.679	1094944	1408185	30.4	34.2	52.79- 79.18	61.67
	13.952	15.049	1362505	1333591	35.1	32.9	53.29- 79.94	76.74
	14.332	15.579	2642713	2700604	31.3	31.4	105.45- 158.17	148.84
	14.958	16.082	1991400	1707291	30.6	27.4	81.06- 121.59	112.16
	Average of Peak Amounts =				31.5	30.7		
Decachlorobiphenyl	16.752	18.032	4441699	4859508	4.41	4.42		100.00 (R)
Aroclors, Total	1.000	1.000	2841294	2457659	61.5	63.0		0.00

QC Flag Legend

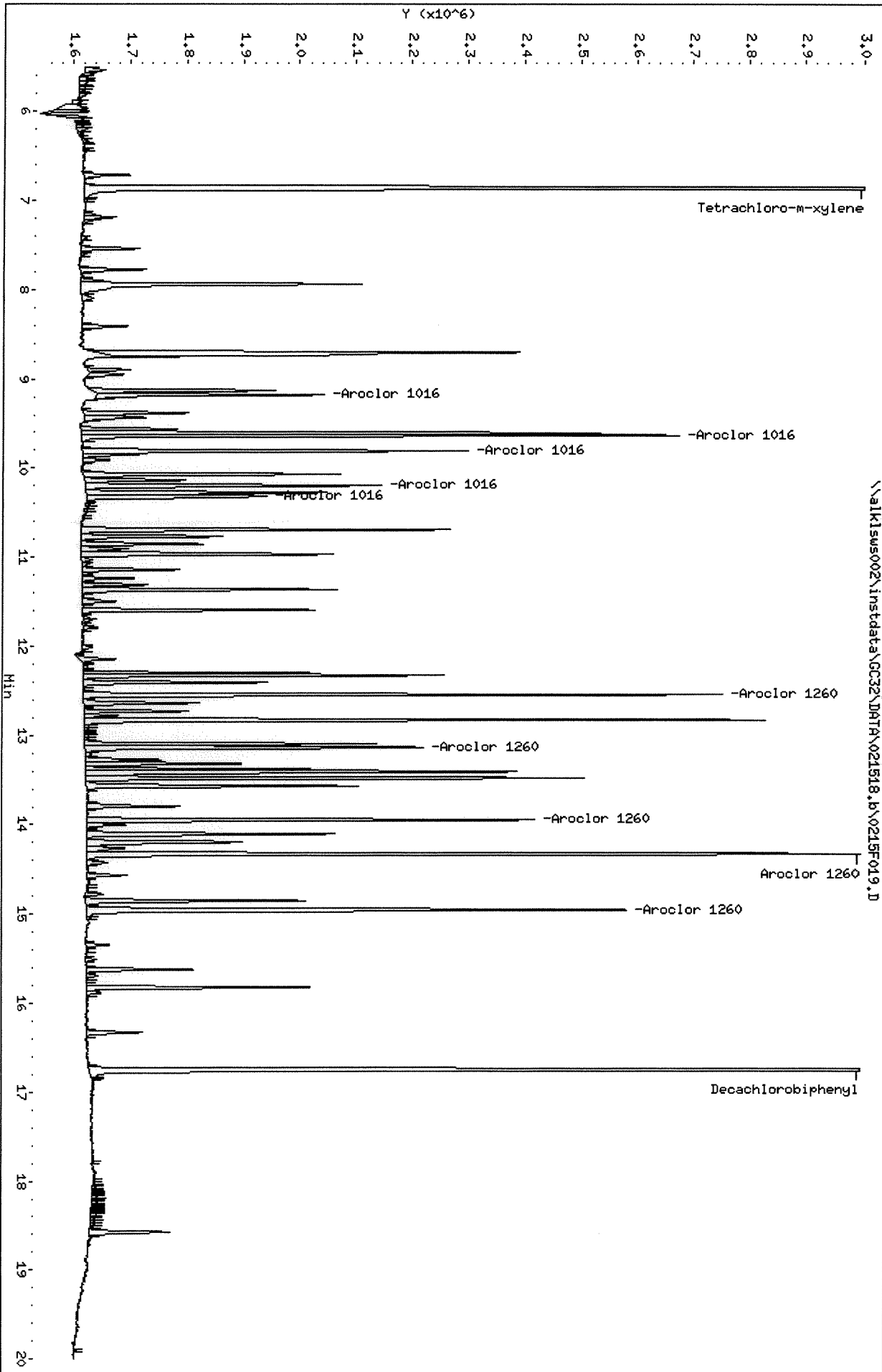
R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sus002\instdata\GC32\DATA\021518 JB\0215F019.D
Date: 15-FEB-2018 17:29

Client ID:
Sample Info: KMG180932-DLCS

Column phase: DB-35MS

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32



Data File: \\alk1s02\instdata\GC32\DATA\021518_r.b\0215F019.D
Date: 15-FEB-2018 17:29

Client ID:

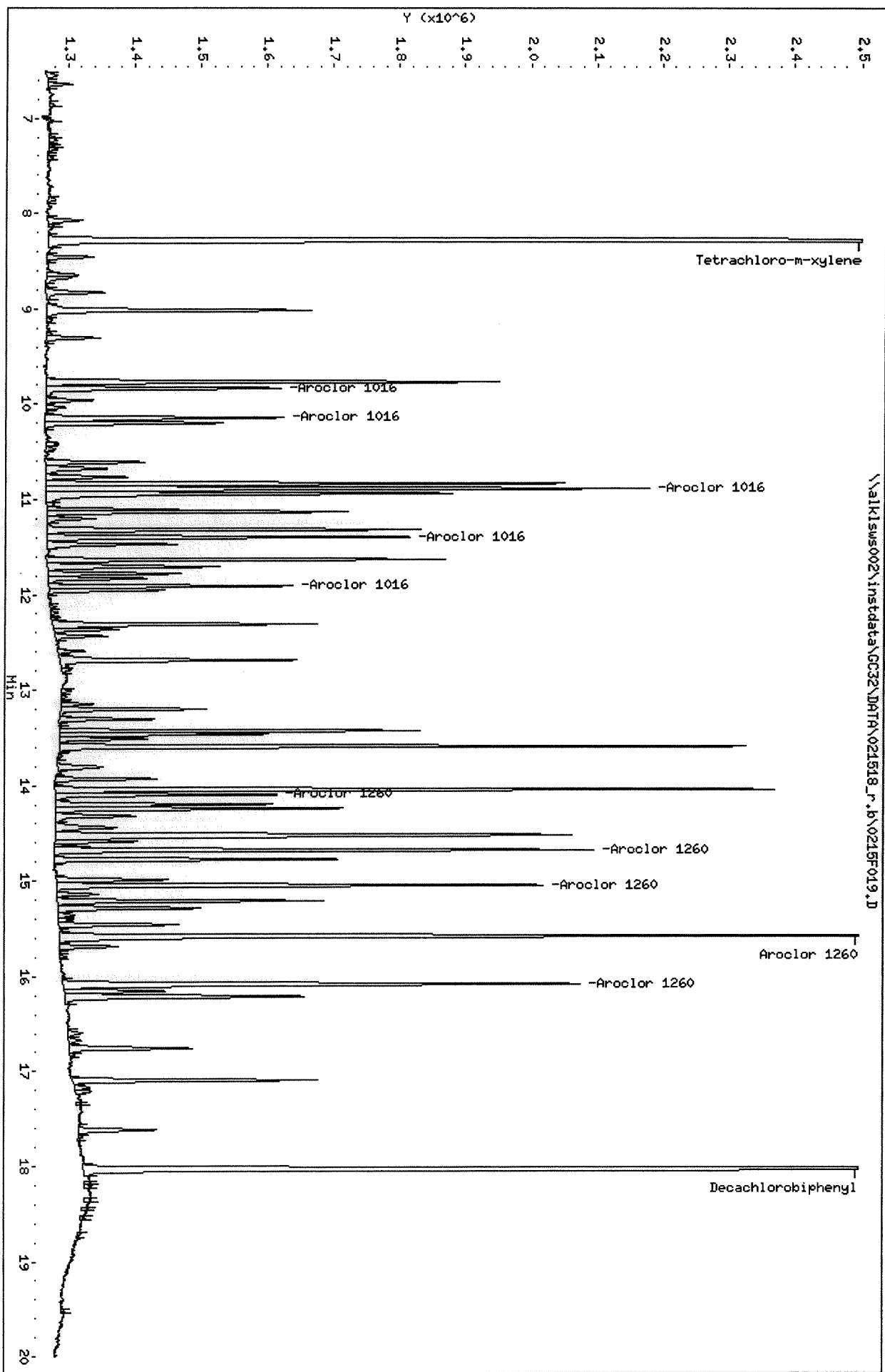
Sample Info: KMG1800932-DLCS

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32




Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F028.D
Lab ID: KWG1800943-3
Run Type: LCS
Matrix: SEDIMENT

Date Acquired: 02/22/2018 13:33
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

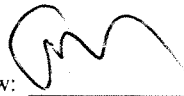
Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F028.D
Lab ID: KWG1800943-3
Run Type: LCS
Matrix: SEDIMENT

Date Acquired: 02/22/2018 13:33
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F028.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F028.D	Vial:	26
Acqu Date:	02/22/2018 13:33	Quant Date:	02/22/2018 16:41
Run Type:	LCS	MethodJoinID:	MJ1660
Lab ID:	KWG1800943-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	SEDIMENT
Prod Code:	8082A PCB LL	Collect Date:		Receive Date:	02/19/2018

Analysis Lot:	KWG1801092	Prep Lot:	KWG1800943	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3546		
Prep Ref:	1664067	Prep Date:	02/15/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:	J:\GC32\DATA\022118.B\0221F029.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg Wet Weight		Rpt
Tetrachloro-m-xylene	6.86 ^{0.00}	8.28 ^{0.00}	6428149	5829430	3.94	4.30	79 OK	86 OK	86 OK
			%Recovery =		79 OK	86 OK	Limits =	70-130	
Decachlorobiphenyl	16.75 ^{0.00}	18.03 ^{0.00}	3674371	4099623	3.65	3.73	73 OK	75 OK	75 OK
			%Recovery =		73 OK	75 OK	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	24.48	25.88	97.9	104	97.9
Aroclor 1016 {1}	9.18 ^{0.00}	9.83 ^{0.00}	596861	593479	25.20	22.68	101	90.7	
Aroclor 1016 {2}	9.63 ^{0.00}	10.14 ^{0.00}	1386511	548528	23.86	27.26	95.4	109	
Aroclor 1016 {3}	9.81	10.89 ^{0.00}	966363	1238357	24.58	25.20	98.3	101	
Aroclor 1016 {4}	10.19 ^{0.00}	11.40 ^{0.00}	733228	789394	23.16	24.84	92.6	99.4	
Aroclor 1016 {5}	10.31 ^{0.00}	11.91 ^{0.00}	606417	470674	25.59	29.41	102	118	
Aroclor 1221			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1: J:\GC32\DATA\022118.B\0221F028.D
 Data File #2: \\alkisws002\instdata\GC32\DATA\022118_r.b\0221F028.D
 Acq Date: 02/22/2018 13:33
 Run Type: LCS
 Lab ID: KWG1800943-3
 Signal #1: DB-35MS

Instrument: GC32.i
 Vial: 26
 Dilution: 1.0
 Soln Conc. Units: ng/mL

Quant Date: 02/22/2018 16:41
 MethodJoinID: MJ1660
 Signal #2: DB-XLB

Target Compounds

Final Conc. Units: ug/Kg Wet Weight

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclors, Total	1.00	1.00	2350936	2003198	51.00	50.83	204J	203J	204J
Aroclor 1260			0	0	26.52	24.95	106	99.8	99.8
Aroclor 1260 {1}	12.54 ^{0.00}	14.10 ^{0.00}	1689114	437272	28.74	20.39	115	81.6	
Aroclor 1260 {2}	13.14	14.68 ^{0.00}	899022	1156777	24.97	28.06	99.9	112	
Aroclor 1260 {3}	13.95 ^{0.00}	15.05 ^{0.00}	1104769	1099010	28.46	27.13	114	109	
Aroclor 1260 {4}	14.33 ^{0.00}	15.58	2145625	2255058	25.42	26.24	102	105	
Aroclor 1260 {5}	14.95 ^{0.00}	16.08 ^{0.00}	1626772	1427444	25.02	22.92	100	91.7	
Aroclor 1262			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268			0	0	0.0000	0.0000	2.9U	2.9U	2.9U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	2.9U	2.9U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	2.9U	2.9U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 2.000 g Dilution: 1.0
 Prep Final Vol: 8 mL Unit Factor: 1
 Solids: %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F028.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F028.D
 Inj Date : 22-FEB-2018 13:33
 Sample Info: KWG1800943-LCS
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.278	6428149	5829430	3.94	4.30		100.00 (R)
Aroclor 1016	9.178	9.831	596861	593479	25.2	22.7	80.00- 120.00	100.00
	9.631	10.141	1386511	548528	23.9	27.3	196.19- 294.28	232.30
	9.808	10.885	966363	1238357	24.6	25.2	131.48- 197.21	161.91
	10.194	11.395	733228	789394	23.2	24.8	99.08- 148.62	122.85
	10.314	11.908	606417	470674	25.6	29.4	79.53- 119.29	101.60
	Average of Peak Amounts =				24.5	25.9		
Aroclor 1260	12.544	14.095	1689114	437272	28.7	20.4	80.00- 120.00	100.00
	13.138	14.675	899022	1156777	25.0	28.1	51.72- 77.58	53.22
	13.948	15.045	1104769	1099010	28.5	27.1	52.73- 79.10	65.41
	14.328	15.578	2145625	2255058	25.4	26.2	104.00- 156.00	127.03
	14.954	16.081	1626772	1427444	25.0	22.9	80.89- 121.33	96.31
	Average of Peak Amounts =				26.5	24.9		
Decachlorobiphenyl	16.748	18.031	3674371	4099623	3.65	3.73		100.00 (R)
Aroclors, Total	1.000	1.000	2350936	2003198	51.0	50.8		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sus002\instdata\GC32\DATA\022118.b\0221F028.D

Date : 22-FEB-2018 13:33

Client ID:

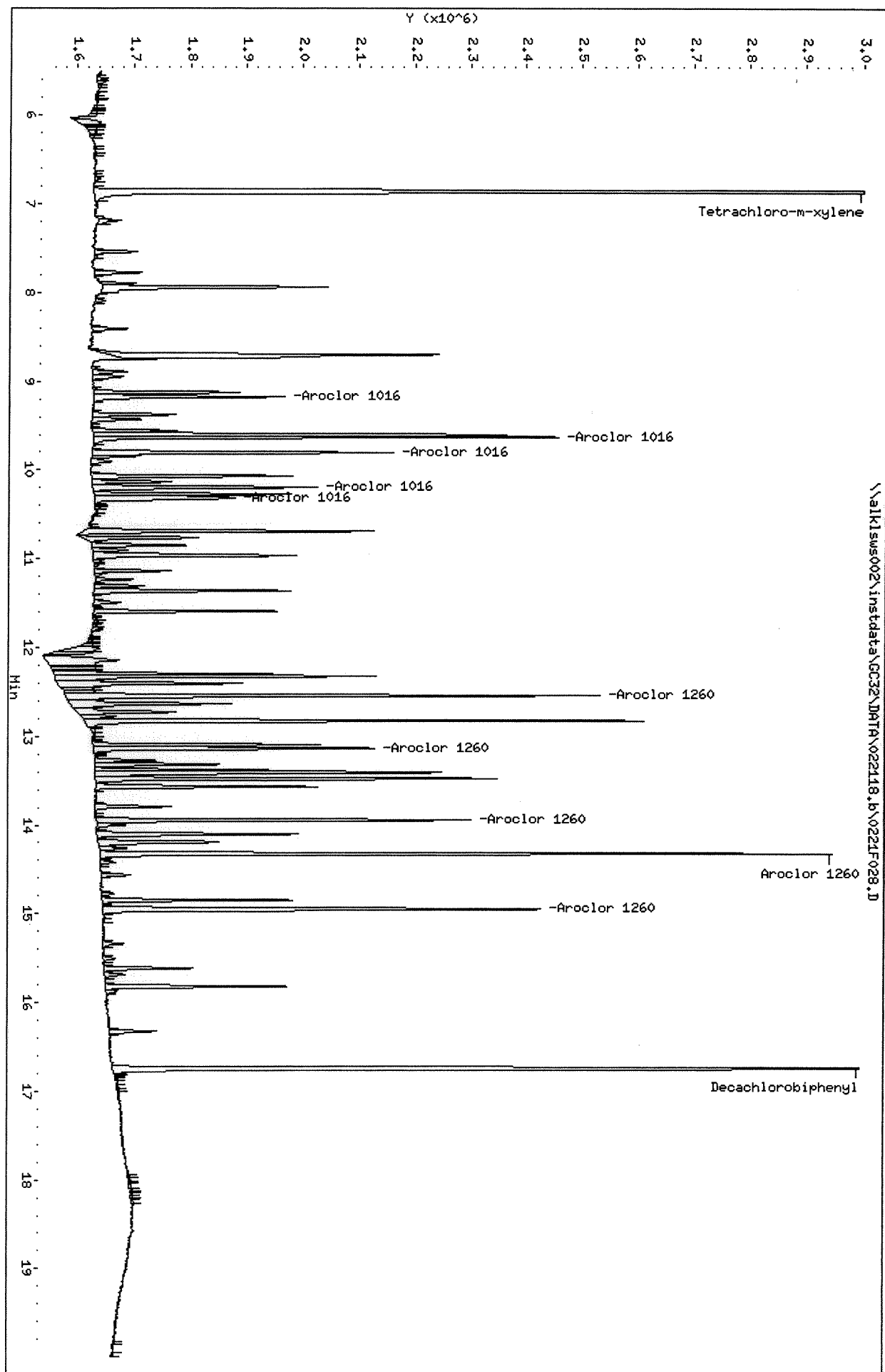
Sample Info: KMG1800943-LCS

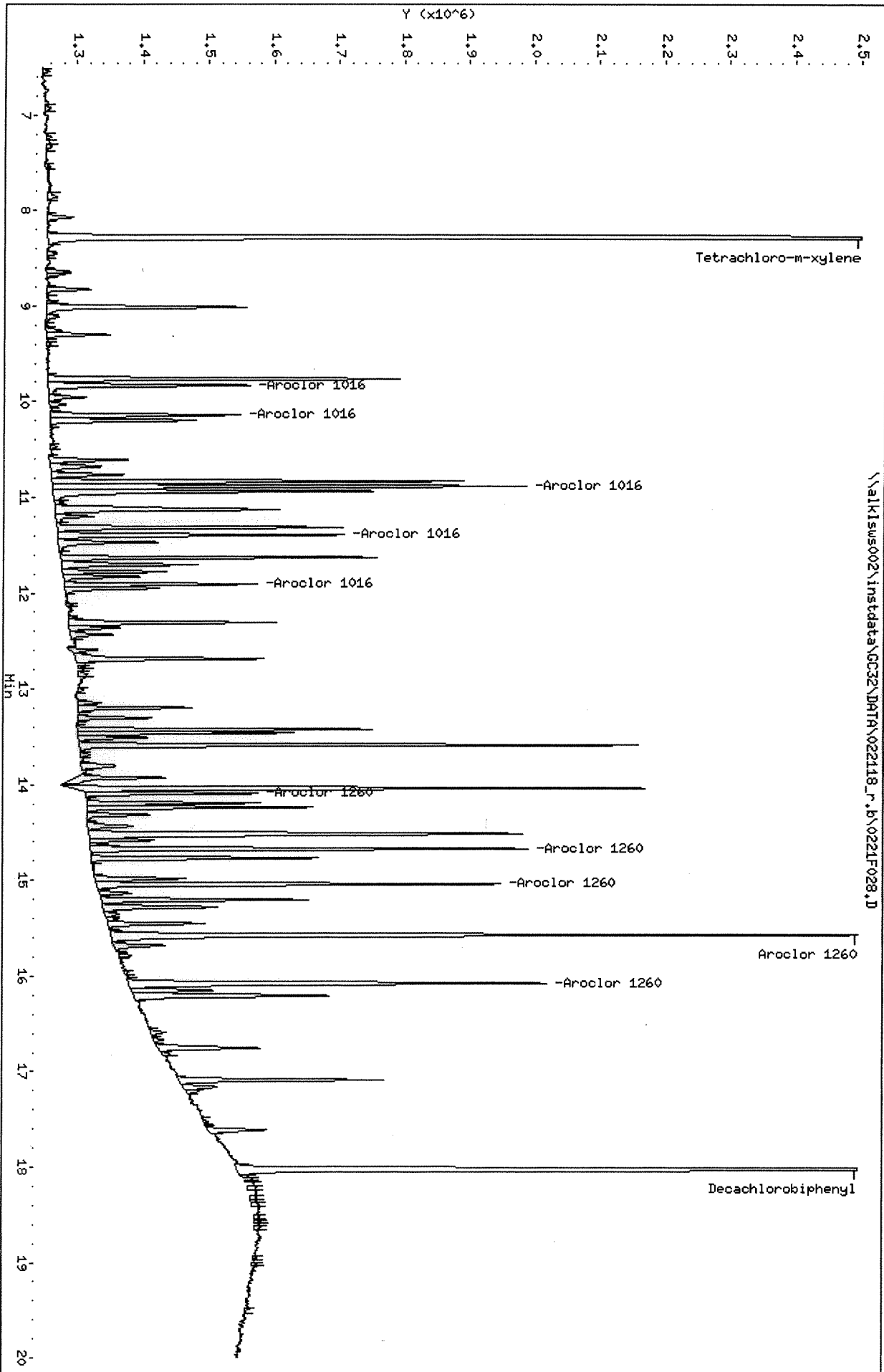
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32





Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F024.D
Lab ID: KWG1801348-1
RunType: LCS
Matrix: WATER


Date Acquired: 03/15/2018 00:13
Date Quantitated: 03/22/2018 13:32
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1662

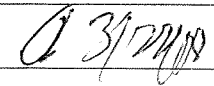
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-23.4	NA	20	<i>R</i>

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F024.D
Lab ID: KWG1801348-1
RunType: LCS
Matrix: WATER


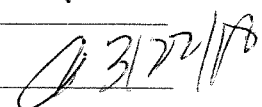
Date Acquired: 03/15/2018 00:13
Date Quantitated: 03/22/2018 13:34
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery (Closing)	Aroclor 1016	21.6	NA	20	MCAJ
Surrogates	Tetrachloro-m-xylene	151	70	130	RD

Primary Review: 
 Secondary Review:  3/22/18

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F024.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F024.D	Vial:	20
Acqu Date:	03/15/2018 00:13	Quant Date:	03/22/2018 13:32
Run Type:	LCS	MethodJoinID:	MJ1662
Lab ID:	KWG1801348-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8082A PCB	Collect Date:		Receive Date:	03/09/2018

Analysis Lot:	KWG1801562	Prep Lot:	KWG1801348	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1666773	Prep Date:	03/09/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:	J:\GC32\DATA\031418.B\0314F026.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2		Rpt
Tetrachloro-m-xylene	6.86 ^{+0.00}	8.28 ^{+0.00}	9053384	10232099	5.54	7.55		151 *
			%Recovery =		111 OK	151 *	Limits = 70-130	
Decachlorobiphenyl	16.75 ^{+0.01}	18.03 ^{+0.00}	4366961	5894834	4.34 ^{CCV}	5.36		107 OK
			%Recovery =		87 OK	107 OK	Limits = 70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: ug/L				Rpt
					ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	
Aroclor 1016			0	0	57.54	70.35 ^{CCV}	2.88	3.52	2.88
Aroclor 1016 {1}	9.18 ^{0.00}	9.83 ^{+0.00}	1407662	1503723	59.43	57.47	2.97	2.87	
Aroclor 1016 {2}	9.63 ^{0.00}	10.14 ^{+0.00}	3264347	1558690	56.17	77.45	2.81	3.87	
Aroclor 1016 {3}	9.81 ^{+0.00}	10.88 ^{0.00}	2196919	3443822	55.88	70.08	2.79	3.50	
Aroclor 1016 {4}	10.20 ^{+0.00}	11.39 ^{+0.00}	1693134	2077718	53.47	65.39	2.67	3.27	
Aroclor 1016 {5}	10.31 ^{+0.00}	11.91 ^{+0.00}	1487046	1302361	62.75	81.37	3.14	4.07	
Aroclor 1221			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\031418.B\0314F024.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F024.D	Vial:	20
Acqu Date:	03/15/2018 00:13	Quant Date:	03/22/2018 13:32
Run Type:	LCS	MethodJoinID:	MJ1662
Lab ID:	KWG1801348-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclors, Total	1.00?	1.00?	5309057	5598865	116.32	142.66	5.82J	7.13J	5.82J
Aroclor 1260			0	0	58.77	72.31	2.94	3.62	2.94
Aroclor 1260 {1}	12.55 ^{+0.00}	14.09 ^{+0.00}	3343265	1434271	56.89	66.87	2.84	3.34	
Aroclor 1260 {2}	13.14 ^{+0.01}	14.67 ^{0.00}	2067162	3398787	57.41	82.44	2.87	4.12	
Aroclor 1260 {3}	13.95 ^{+0.00}	15.05 ^{+0.00}	2543819	3065330	65.52	75.68	3.28	3.78	
Aroclor 1260 {4}	14.33 ^{+0.00}	15.58 ^{+0.01}	4901930	6194311	58.07	72.07	2.90	3.60	
Aroclor 1260 {5}	14.96 ^{+0.00}	16.08 ^{+0.00}	3640002	4015316	55.99	64.47	2.80	3.22	
Aroclor 1262			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 100 ml Dilution: 1.0
 Prep Final Vol: 5 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Lab Control Spike Summary Report

Lab Control Spike Information

ListJoinID : LJ18637

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F024.E	Instrument: GC32.i
Lab ID: KWG1801348-1	Dilution: 1
Client ID: Lab Control Sample	Units: ug/L
Prod Code: 8082A PCB	Acqu Date: 03/15/2018 00:13
Matrix: WATER	Quant Date: 03/22/2018 13:32

Duplicate Lab Control Spike Information

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F025.E	Instrument: GC32.i
Lab ID: KWG1801348-2	Dilution: 1
Client ID: Duplicate Lab Control Sample	Units: ug/L
Prod Code: 8082A PCB	Acqu Date: 03/15/2018 00:45
Matrix: WATER	Quant Date: 03/22/2018 13:32

Parameter Name	LCS			DLCS			%Rec Limits	RPD	RPD Limit
	Result	Expected	%Rec	Result	Expected	%Rec			
Aroclor 1016	2.88	2.50	115	2.77	2.50	111	70-130	4	30
Aroclor 1260	2.94	2.50	118	2.91	2.50	117	70-130	1	30

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F024.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F024.D
 Inj Date : 15-MAR-2018 00:13
 Sample Info: KWG1801348-LCS
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.859	8.276	9053384	10232099	5.54	7.55		100.00 (R)
Aroclor 1016	9.175	9.829	1407662	1503723	59.4	57.5	80.00- 120.00	100.00
	9.629	10.139	3264347	1558690	56.2	77.4	214.79- 322.18	231.90
	9.805	10.882	2196919	3443822	55.9	70.1	129.79- 194.69	156.07
	10.195	11.392	1693134	2077718	53.5	65.4	102.46- 153.69	120.28
	10.312	11.906	1487046	1302361	62.8	81.4	86.76- 130.14	105.64
	Average of Peak Amounts =				57.6	70.4		
Aroclor 1260	12.545	14.092	3343265	1434271	56.9	66.9	80.00- 120.00	100.00
	13.139	14.672	2067162	3398787	57.4	82.4	49.80- 74.70	61.83
	13.949	15.046	2543819	3065330	65.5	75.7	53.43- 80.14	76.09
	14.329	15.579	4901930	6194311	58.1	72.1	101.63- 152.44	146.62
	14.959	16.079	3640002	4015316	56.0	64.5	79.27- 118.91	108.88
	Average of Peak Amounts =				58.8	72.3		
Decachlorobiphenyl	16.752	18.029	4366961	5894834	4.34	5.36		100.00 (R)
Aroclors, Total	1.000	1.000	5309057	5598865	116	143		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sws002\instdata\GC32\DATA\031418.b\0314F024.D
Date : 15-MAR-2018 00:13

Client ID:

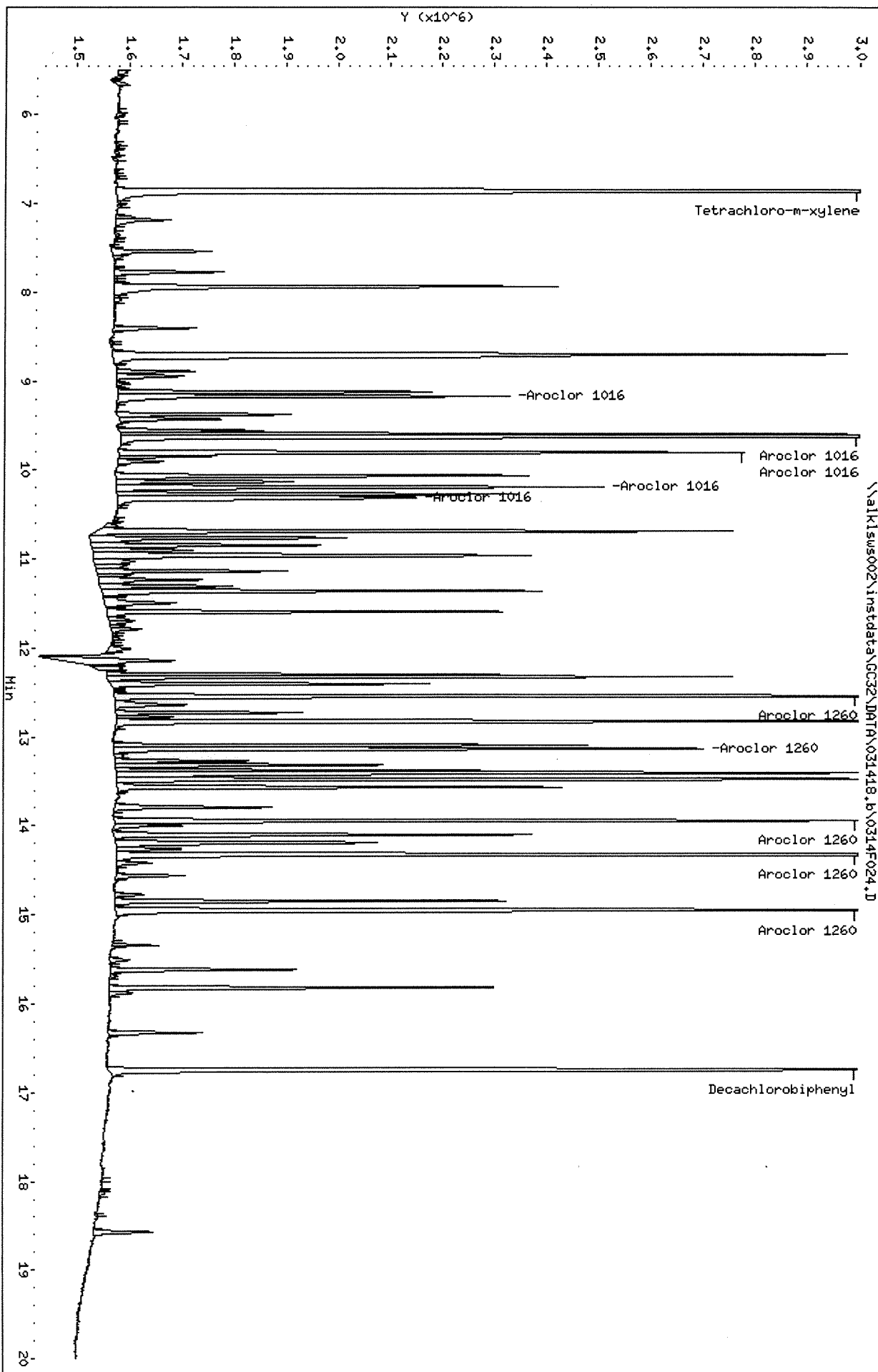
Sample Info: KMG1801348-LCS

Column phase: DB-35MS

Instrument: GC32.1

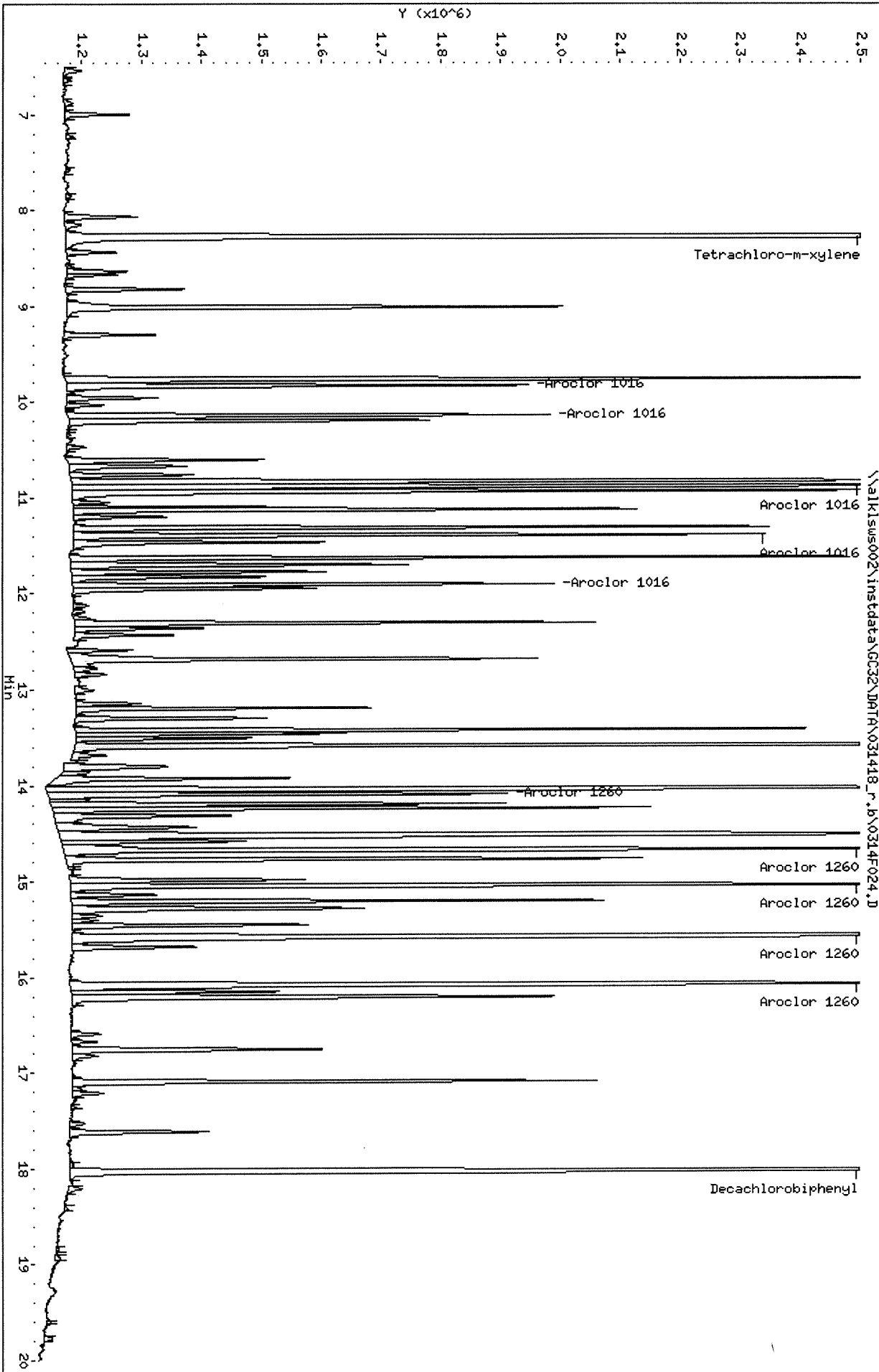
Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1s002\instdata\GC32\DATA\031418_r_b\0314F024.D
Date : 15-MAR-2018 00:13
Client ID:
Sample Info: KMG1801348-LCS
Column phase: DB-XLB

Instrument: GC32.1
Operator: SHURRY
Column diameter: 0.32



Exception Report

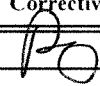
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F025.D
Lab ID: KWG1801348-2
RunType: DLCS
Matrix: WATER

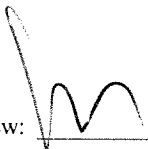
Date Acquired: 03/15/2018 00:45
Date Quantitated: 03/22/2018 13:32
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1662

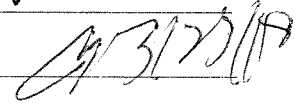
Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-23.4	NA	20	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F025.D
Lab ID: KWG1801348-2
RunType: DLCS
Matrix: WATER

Date Acquired: 03/15/2018 00:45
Date Quantitated: 03/22/2018 13:34
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery (Closing)	Aroclor 1016	21.6	NA	20	RO
Surrogates	Tetrachloro-m-xylene	144	70	130	RO

Primary Review: _____

Secondary Review: _____

Handwritten signature and date: 3/22/18

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F025.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F025.D	Vial:	21
Acqu Date:	03/15/2018 00:45	Quant Date:	03/22/2018 13:32
Run Type:	DLCS	MethodJoinID:	MJ1662
Lab ID:	KWG1801348-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8082A PCB	Collect Date:		Receive Date:	03/09/2018

Analysis Lot:	KWG1801562	Prep Lot:	KWG1801348	Report Group:	
Analysis Method:	8082A	Prep Method:	EPA 3511		
Prep Ref:	1666774	Prep Date:	03/09/2018		

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:	J:\GC32\DATA\031418.B\0314F026.D	Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt	
Tetrachloro-m-xylene	6.86 ^{+0.00}	8.27	8755395	9745629	5.36	7.19	107 OK	144 *	Limits = 70-130	144 *
Decachlorobiphenyl	16.75 ^{+0.00}	18.03 ^{0.00}	4623857	6112908	4.59 ^{CCV}	5.56	92 OK	111 OK	Limits = 70-130	111 OK

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	55.44	69.44 ^{CCV}	2.77	3.47	2.77
Aroclor 1016 {1}	9.18	9.83 ^{0.00}	1398011	1526459	59.02	58.34	2.95	2.92	
Aroclor 1016 {2}	9.63	10.14 ^{0.00}	3072775	1550283	52.87	77.03	2.64	3.85	
Aroclor 1016 {3}	9.81 ^{+0.00}	10.88	2136648	3446604	54.35	70.14	2.72	3.51	
Aroclor 1016 {4}	10.19 ^{0.00}	11.39	1630058	2057932	51.48	64.76	2.57	3.24	
Aroclor 1016 {5}	10.31	11.91 ^{+0.00}	1409476	1231662	59.48	76.95	2.97	3.85	
Aroclor 1221			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1221 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1221 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1232 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1232 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1242 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\031418.B\0314F025.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F025.D	Vial:	21
Acqu Date:	03/15/2018 00:45	Quant Date:	03/22/2018 13:32
Run Type:	DLCS	MethodJoinID:	MJ1662
Lab ID:	KWG1801348-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1242 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1248 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1248 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1254 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1254 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclors, Total	1.00?	1.00?	5203203	5530666	113.71	140.88	5.69J	7.04J	5.69J
Aroclor 1260			0	0	58.27	71.44	2.91	3.57	2.91
Aroclor 1260 {1}	12.54 ^{0.00}	14.09	3289510m	1474911	55.97	68.77	2.80	3.44	
Aroclor 1260 {2}	13.14 ^{+0.00}	14.67	2040456m	3256310	56.66	78.99	2.83	3.95	
Aroclor 1260 {3}	13.95 ^{+0.00}	15.04 ^{+0.00}	2515973m	3015124	64.81	74.44	3.24	3.72	
Aroclor 1260 {4}	14.33 ^{+0.00}	15.58 ^{+0.00}	4863267m	6123007	57.61	71.24	2.88	3.56	
Aroclor 1260 {5}	14.96 ^{+0.00}	16.08 ^{+0.00}	3659843m	3971040	56.29	63.76	2.81	3.19	
Aroclor 1262			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1262 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1262 {5}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268			0	0	0.0000	0.0000	0.028U	0.028U	0.028U
Aroclor 1268 {1}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {2}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {3}			0d	0d	0.0000	0.0000	0.028U	0.028U	
Aroclor 1268 {4}			0d	0d	0.0000	0.0000	0.028U	0.028U	

The +/- after Retention Time symbolize the direction of the RT shift

Prep Amount: 100 ml **Dilution:** 1.0
Prep Final Vol: 5 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL, also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound
D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F025.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F025.D
 Inj Date : 15-MAR-2018 00:45
 Sample Info: KWG1801348-DLCS
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.274	8755395	9745629	5.36	7.19		100.00 (R)
Aroclor 1016	9.177	9.827	1398011	1526459	59.0	58.3	80.00- 120.00	100.00
	9.630	10.137	3072775	1550283	52.9	77.0	214.79- 322.18	219.80
	9.807	10.884	2136648	3446604	54.3	70.1	129.79- 194.69	152.83
	10.193	11.391	1630058	2057932	51.5	64.8	102.46- 153.69	116.60
	10.310	11.907	1409476	1231662	59.5	76.9	86.76- 130.14	100.82
	Average of Peak Amounts =				55.4	69.4		
Aroclor 1260	12.543	14.091	3289510	1474911	56.0	68.8	80.00- 120.00	100.00 (M)
	13.137	14.674	2040456	3256310	56.7	79.0	49.80- 74.70	62.03 (M)
	13.950	15.044	2515973	3015124	64.8	74.4	53.43- 80.14	76.48 (M)
	14.330	15.577	4863267	6123007	57.6	71.2	101.63- 152.44	147.84 (M)
	14.957	16.081	3659843	3971040	56.3	63.8	79.27- 118.91	111.26 (M)
	Average of Peak Amounts =				58.3	71.4		
Decachlorobiphenyl	16.750	18.027	4623857	6112908	4.59	5.56		100.00 (R)
Aroclors, Total	1.000	1.000	5203203	5530666	114	141		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
 M - Compound response manually integrated.

Data File: \\alklsws002\instdata\GC32\DATA\031418.b\0314F025.D
Date: 15-HAR-2018 00:45

Client ID:

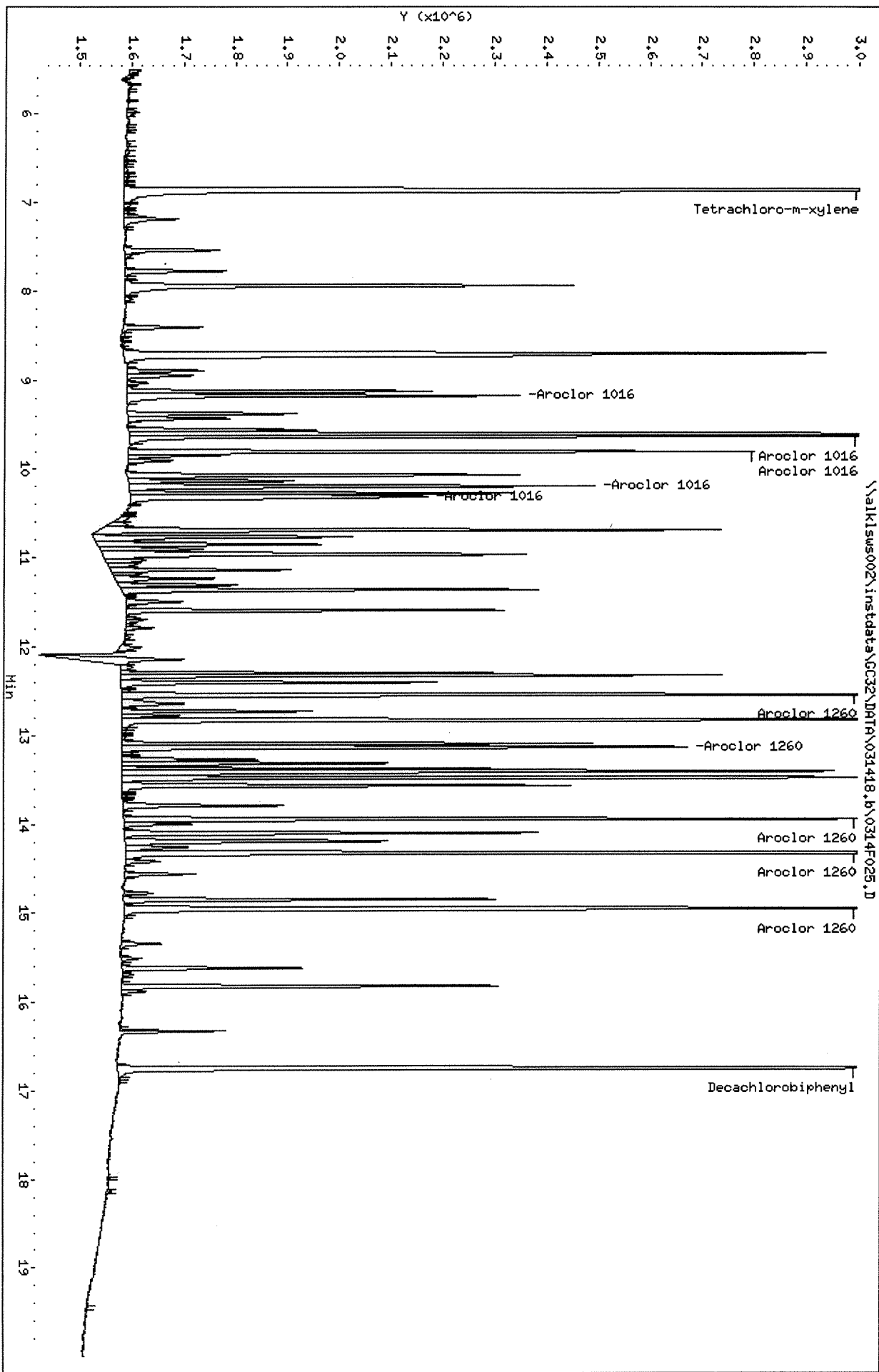
Sample Info: KMG1801348-DLCS

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alkisws002\instdata\GC32\DATA\031418_r_b\0314F025.D

Date : 15-MAR-2018 00:45

Client ID:

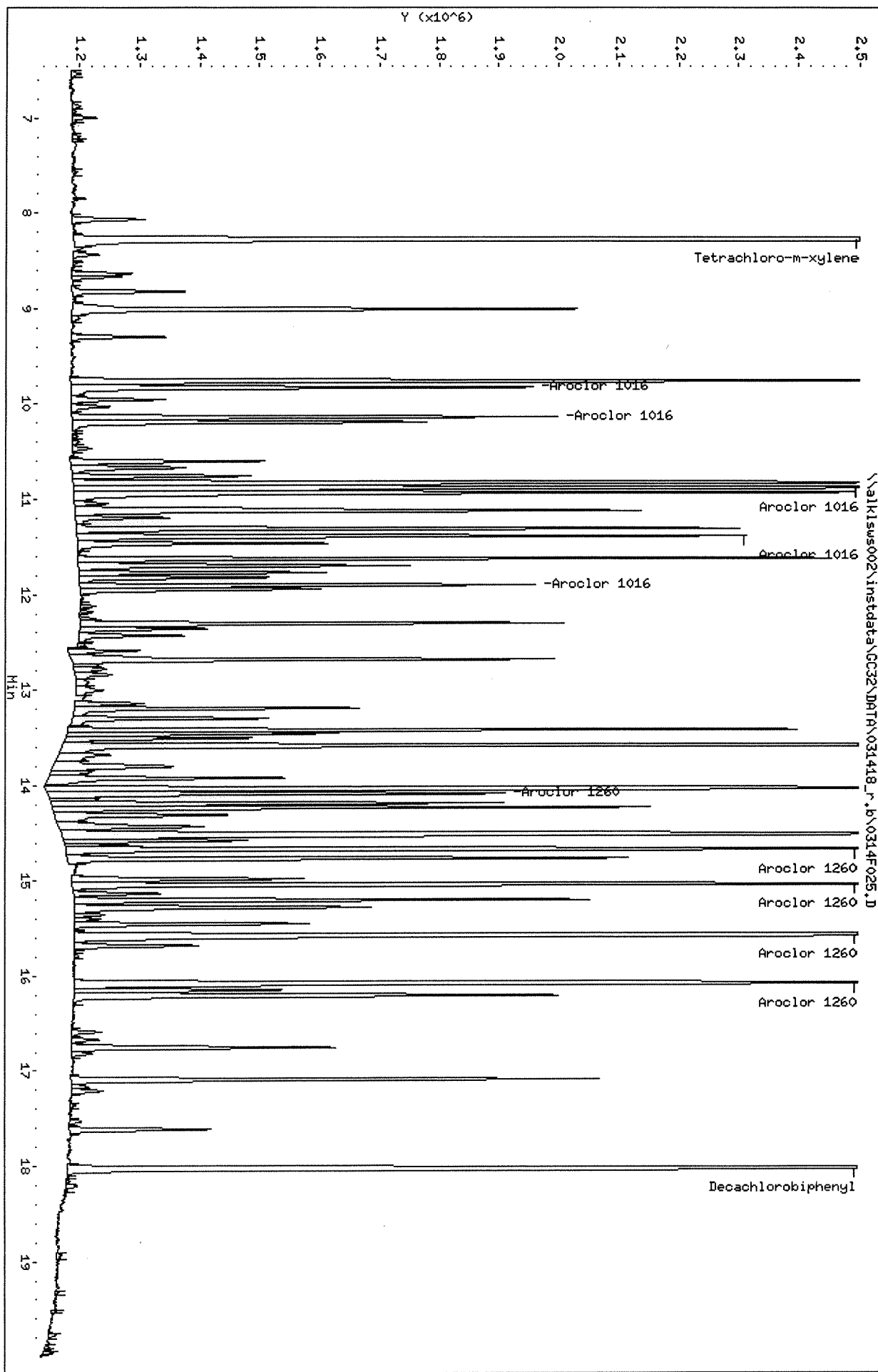
Sample Info: KMG1801348-DLCS

Column phase: DB-XLB

Instrument: GC32.i

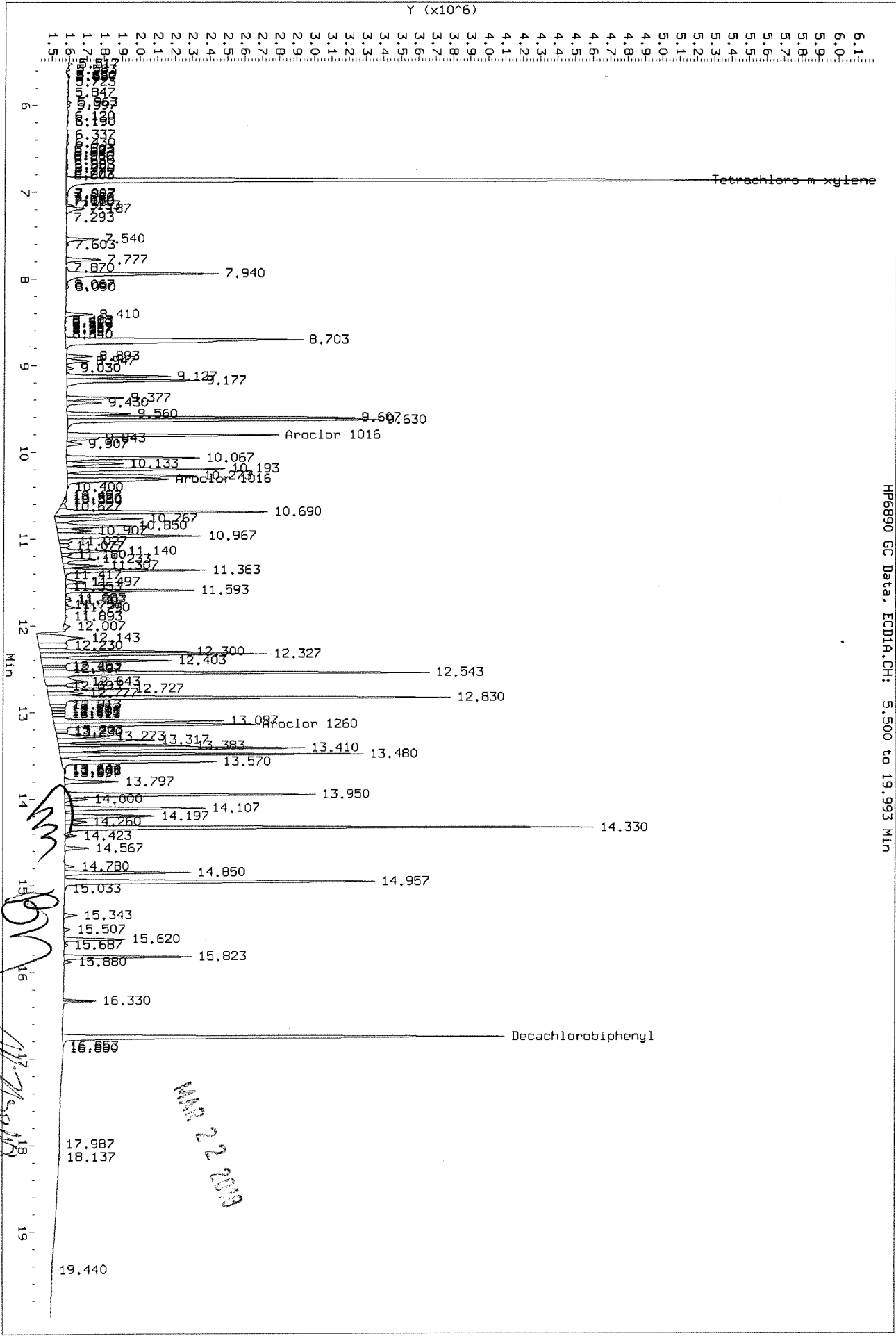
Operator: SHURRAY

Column diameter: 0.32



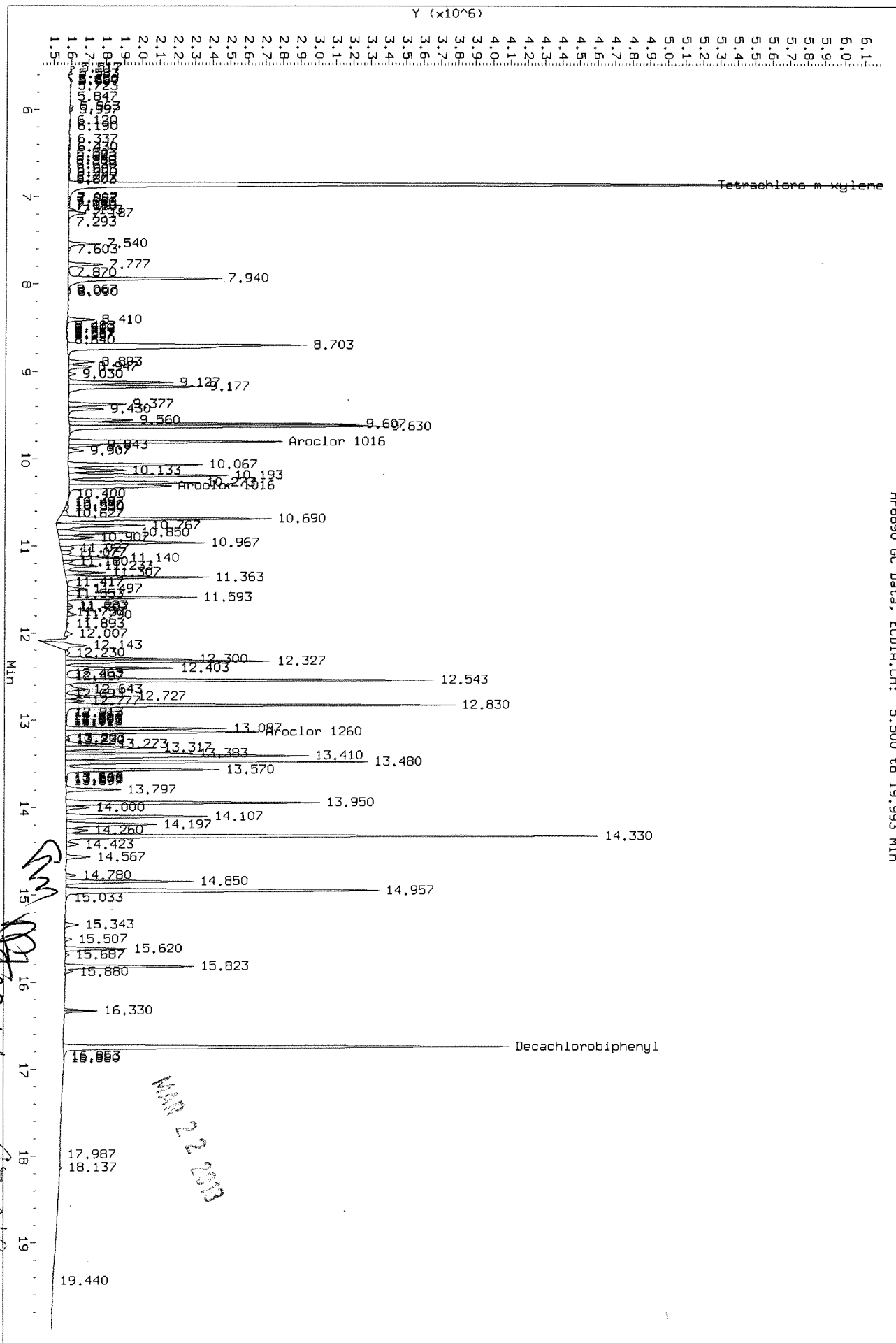
Data File: \\alklsws002\instdata\GC32\DATA\031418.b\0314F025.D
Injection Date: 15-MAR-2018 00:45
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 5.500 to 19.993 MIN



Data File: \\alklsws002\instdata\GC32\DATA\031418.B\0314F025.D
Injection Date: 15-MAR-2018 00:45
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 5.500 to 19.993 MIN



Injection Log

Directory: J:\GC32\DATA\022318

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	100	0223f001.d	1.	PRIMER		23 Feb 2018 11:04
2	100	0223f002.d	1.	PRIMER		23 Feb 2018 11:36
3	1	0223f003.d	1.	1660 25PPB PCB7-22J		23 Feb 2018 12:07
4	2	0223f004.d	1.	IB		23 Feb 2018 12:39
5	3	0223f005.d	1.	K1801096-001		23 Feb 2018 13:11
6	4	0223f006.d	1.	K1801267-001	- See 20x also	23 Feb 2018 13:42
7	5	0223f007.d	1.	K1801267-009		23 Feb 2018 14:14
8	6	0223f008.d	1.	K1801267-013		23 Feb 2018 14:46
9	7	0223f009.d	1.	K1801467-001		23 Feb 2018 15:18
10	8	0223f010.d	1.	KWG1801004-LCS		23 Feb 2018 15:49
11	9	0223f011.d	1.	KWG1801004-DLCS		23 Feb 2018 16:21
12	10	0223f012.d	1.	KWG1801004-MB		23 Feb 2018 16:53
13	1	0223f013.d	1.	1660 25PPB PCB7-22J		23 Feb 2018 17:24
14	2	0223f014.d	1.	IB		23 Feb 2018 17:56
15	11	0223f015.d	1.	K1801467-002		23 Feb 2018 18:59
16	12	0223f016.d	1.	K1801467-003@2X		23 Feb 2018 19:31
17	13	0223f017.d	1.	K1801467-004		23 Feb 2018 20:03
18	14	0223f018.d	1.	K1801467-005@2X		23 Feb 2018 20:34
19	15	0223f019.d	1.	K1801467-006@2X		23 Feb 2018 21:06
20	16	0223f020.d	1.	K1801491-001		23 Feb 2018 21:38
21	17	0223f021.d	1.	K1801491-002		23 Feb 2018 22:09
22	18	0223f022.d	1.	K1801491-003		23 Feb 2018 22:41
23	19	0223f023.d	1.	KWG1800969-LCS		23 Feb 2018 23:12
24	20	0223f024.d	1.	KWG1800969-DLCS		23 Feb 2018 23:44
25	21	0223f025.d	1.	KWG1800969-MB		24 Feb 2018 00:16
26	1	0223f026.d	1.	1660 25PPB PCB7-22J		24 Feb 2018 00:47
27	2	0223f027.d	1.	IB		24 Feb 2018 01:19
28	22	0223f028.d	1.	K1801426-001		24 Feb 2018 01:51
29	23	0223f029.d	1.	K1801426-002		24 Feb 2018 02:22
30	24	0223f030.d	1.	K1801447-002		24 Feb 2018 02:54
31	25	0223f031.d	1.	K1801447-003		24 Feb 2018 03:25
32	26	0223f032.d	1.	K1801447-002MS		24 Feb 2018 03:57
33	27	0223f033.d	1.	K1801447-002DMS		24 Feb 2018 04:29
34	28	0223f034.d	1.	KWG1800947-LCS		24 Feb 2018 05:00
35	29	0223f035.d	1.	KWG1800947-MB		24 Feb 2018 05:32
36	1	0223f036.d	1.	1660 25PPB PCB7-22J		24 Feb 2018 06:04
37	2	0223f037.d	1.	IB		24 Feb 2018 06:35
38	30	0223f038.d	1.	K1801403-001@10X		24 Feb 2018 07:07
39	31	0223f039.d	1.	K1801403-002@10X		24 Feb 2018 07:39
40	32	0223f040.d	1.	K1801403-001MS@10X		24 Feb 2018 08:10
41	3	0223f041.d	1.	K1801403-001DMS@10X		24 Feb 2018 08:42
42	4	0223f042.d	1.	KWG1800975-LCS		24 Feb 2018 09:14
43	5	0223f043.d	1.	KWG1800975-MB		24 Feb 2018 09:45
44	84	0223f044.d	1.	1660 25PPB PCB7-22J		24 Feb 2018 10:17
45	85	0223f045.d	1.	IB		24 Feb 2018 10:49
46	4	0223fx15.d	1.	K1801267-001@20X ✓		23 Feb 2018 18:28

ONE: (1588)
RUN: 58/536


Exception Report

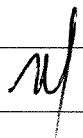
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F003.D
Lab ID: KWG1801127-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 12:07
Date Quantitated: 02/26/2018 10:28
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F003.D
Lab ID: KWG1801127-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 12:07
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F003.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F003.D	Vial:	1
Acqu Date:	02/23/2018 12:07	Quant Date:	02/26/2018 10:28
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801127-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3545020	3125314	2.17	2.31			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	1986932	2227282	1.97	2.03			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	24.57	23.26			
Aroclor 1016 {1}	9.18	9.83	598732	526317	25.28	20.12			
Aroclor 1016 {2}	9.63	10.14	1488289	502444	25.61	24.97			
Aroclor 1016 {3}	9.81	10.89	935340	1186224	23.79	24.14			
Aroclor 1016 {4}	10.20	11.40	731352	725674	23.10	22.84			
Aroclor 1016 {5}	10.32	11.91	593757	388305	25.06	24.26			
Aroclor 1260			0	0	22.90	22.42			
Aroclor 1260 {1}	12.54	14.09	1384526	513576	23.56	23.95			
Aroclor 1260 {2}	13.14	14.67	867286	972739	24.08	23.60			
Aroclor 1260 {3}	13.95	15.05	937951	929054	24.16	22.94			
Aroclor 1260 {4}	14.33	15.58	1805639	1889121	21.39	21.98			
Aroclor 1260 {5}	14.96	16.08	1384003	1223658	21.29	19.65			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F003.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F003.D
 Inj Date : 23-FEB-2018 12:07
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 23-FEB-2018 16:50
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.859	8.280	3545020	3125314	2.17	2.30		100.00
Aroclor 1016	9.179	9.833	598732	526317	25.3	20.1	80.00- 120.00	100.00
	9.629	10.140	1488289	502444	25.6	25.0	195.40- 293.10	248.57
	9.809	10.886	935340	1186224	23.8	24.1	127.44- 191.16	156.22
	10.196	11.396	731352	725674	23.1	22.8	102.03- 153.04	122.15
	10.316	11.906	593757	388305	25.1	24.3	85.85- 128.77	99.17
	Average of Peak Amounts =				24.6	23.3		
Aroclor 1260	12.543	14.093	1384526	513576	23.6	23.9	80.00- 120.00	100.00
	13.136	14.673	867286	972739	24.1	23.6	49.73- 74.59	62.64
	13.949	15.046	937951	929054	24.2	22.9	54.16- 81.24	67.75
	14.326	15.576	1805639	1889121	21.4	22.0	105.05- 157.58	130.42
	14.956	16.080	1384003	1223658	21.3	19.6	78.29- 117.43	99.96
	Average of Peak Amounts =				22.9	22.4		
Decachlorobiphenyl	16.749	18.030	1986932	2227282	1.97	2.03		100.00

Data File: \\alklsws002\instdata\GC32\DATA\022318.b\0223F003.D

Date : 23-FEB-2018 12:07

Client ID:

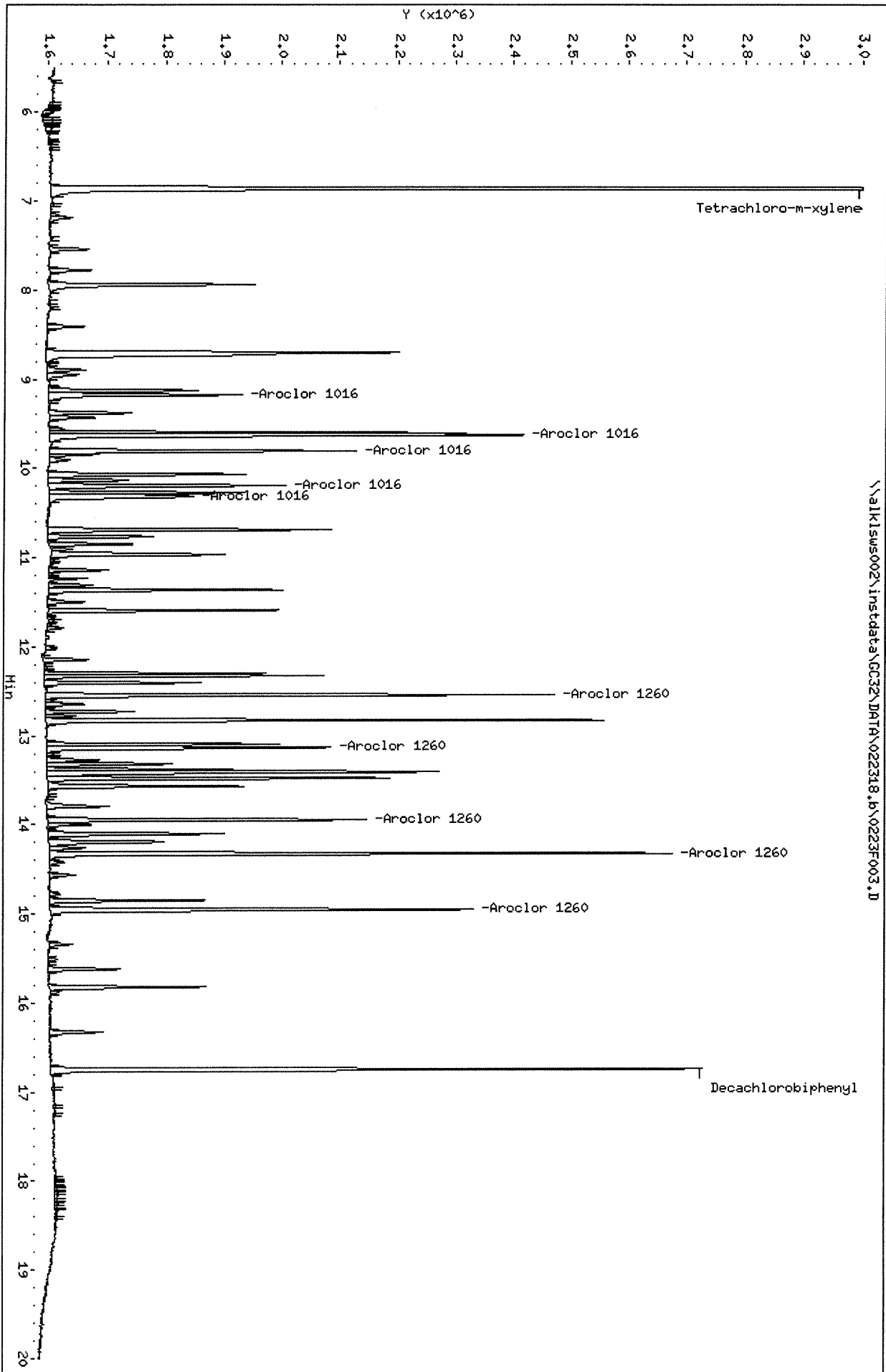
Sample Info: 1660 29PP3 PCB7-22J

Column phase: DB-35MS

Instrument: GC32.1

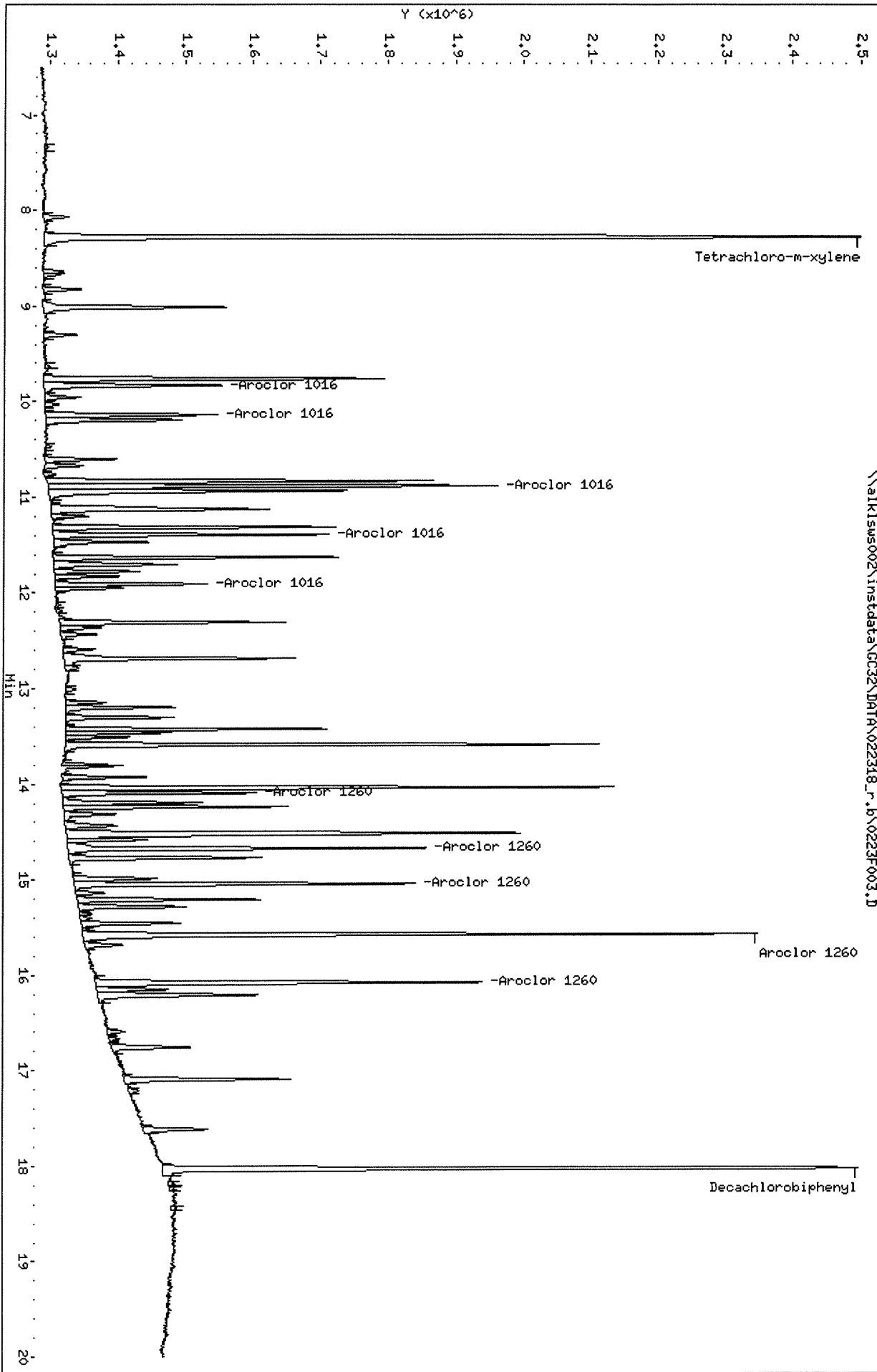
Operator: SHURRAY

Column diameter: 0.32



Data File: \\alkisw002\instdata\GC32\DATA\022318_r_b\0223F003.D
Date : 23-FEB-2018 12:07
Client ID:
Sample Info: 1660 25PPB PCB7-22J
Column phase: DB-XLB

Instrument: GC32.1
Operator: SHURRAY
Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F004.D
Lab ID: KWG1801127-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 12:39
Date Quantitated: 02/26/2018 10:28
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F004.D
Lab ID: KWG1801127-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 12:39
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F004.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F004.D	Vial:	2
Acqu Date:	02/23/2018 12:39	Quant Date:	02/26/2018 10:28
Run Type:	IB	MethodJoinID:	MJ1716
Lab ID:	KWG1801127-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1716
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units: mg/Kg		Rpt
Tetrachloro-m-xylene	6.85		11113	0	0.0070	0.0000			NA
			%Recovery =		NA	NA	Limits =	20-123	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	49-133	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	1.67	0.0000			
Aroclor 1232 {1}	8.00		7376	0	0.2250	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}	10.21		48381	0	4.17	0.0000			
Aroclor 1232 {5}	11.40		13225	0	0.6180	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1: J:\GC32\DATA\022318.B\0223F004.D
Data File #2: \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F004.D
Acqu Date: 02/23/2018 12:39
Run Type: IB
Lab ID: KWG1801127-2
Signal #1: DB-35MS

Instrument: GC32.i
Vial: 2
Dilution: 1.0
Soln Conc. Units: ng/mL

Quant Date: 02/26/2018 10:28
MethodJoinID: MJ1716
Signal #2: DB-XLB

Target Compounds

Final Conc. Units: mg/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.6223	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}	10.21		48381	0	1.22	0.0000			
Aroclor 1248 {3}	11.25		9458	0	0.3730	0.0000			
Aroclor 1248 {4}	11.40		13225	0	0.2700	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F004.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F004.D
 Inj Date : 23-FEB-2018 12:39
 Sample Info: IB
 Misc Info :
 Cal Date : 23-FEB-2018 16:50
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.853	0.000	11113	0	0.00681	0.000		100.00 (R)
Aroclor 1232	8.000	0.000	7376	0	0.225	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	75.51- 113.27	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	61.92- 92.88	0.00 (T)
	10.206	0.000	48381	0	4.17	0.000	29.43- 44.14	655.88 (T)
	11.396	0.000	13225	0	0.618	0.000	50.90- 76.34	179.30 (T)
	Average of Peak Amounts =				1.67	0.000		
Aroclor 1248	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	10.206	0.000	48381	0	1.22	0.000	123.60- 185.40	0.00 (T)
	11.250	0.000	9458	0	0.373	0.000	74.96- 112.44	0.00 (T)
	11.396	0.000	13225	0	0.270	0.000	153.18- 229.78	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	76.00- 114.01	0.00 (T)
	Average of Peak Amounts =				0.621	0.000		
Aroclors, Total	1.000	0.000	46682	0	2.29	0.000		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sws002\instdata\GC32\DATA\022318.b\0223F004.D
Date : 23-FEB-2018 12:39

Client ID:

Sample Info: IB

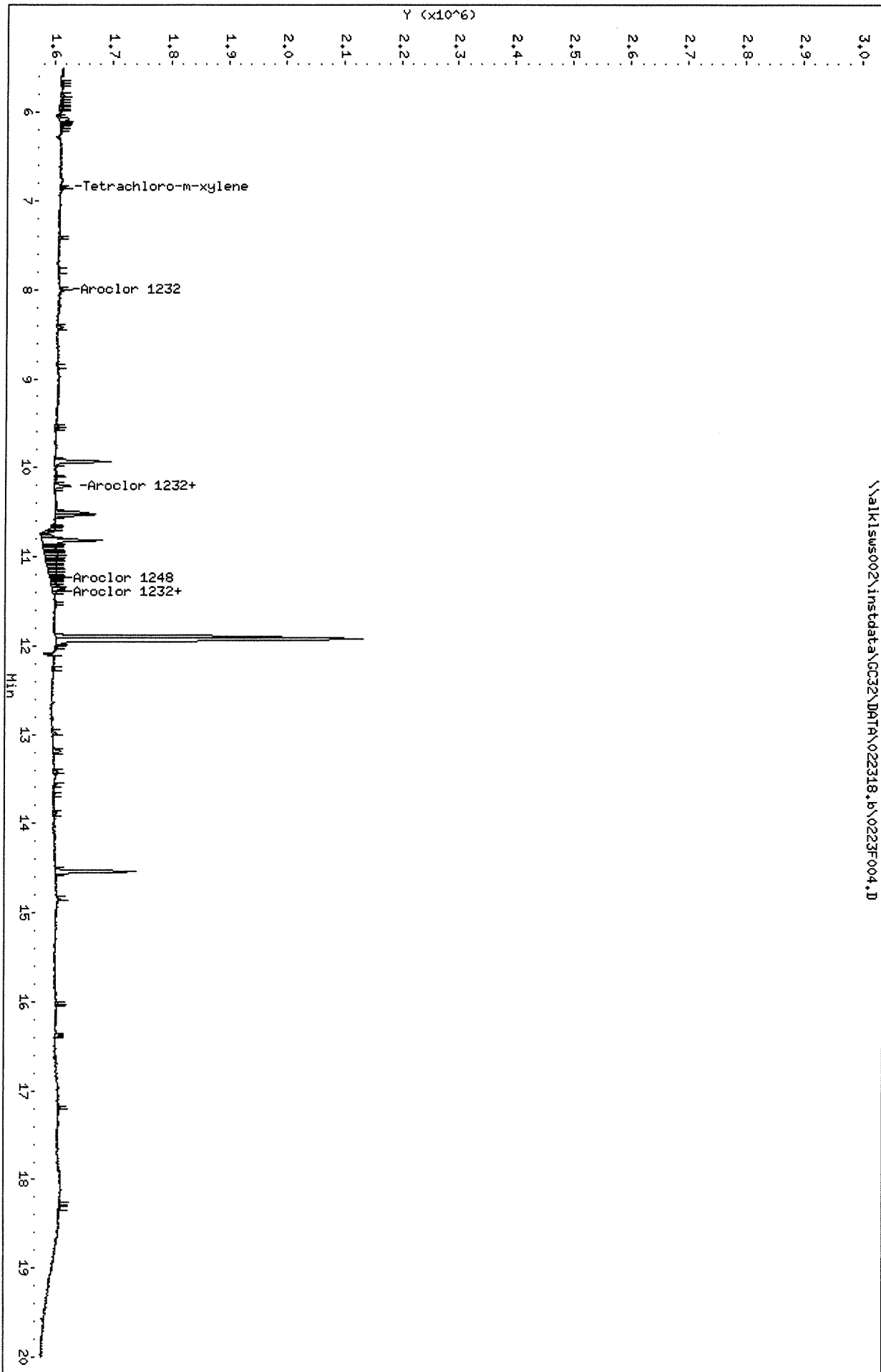
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\022318.b\0223F004.D



Data File: \\alk1sus002\instdata\GC32\DATA\022318_r.b\0223F004.D

Date : 23-FEB-2018 12:39

Client ID:

Sample Info: IB

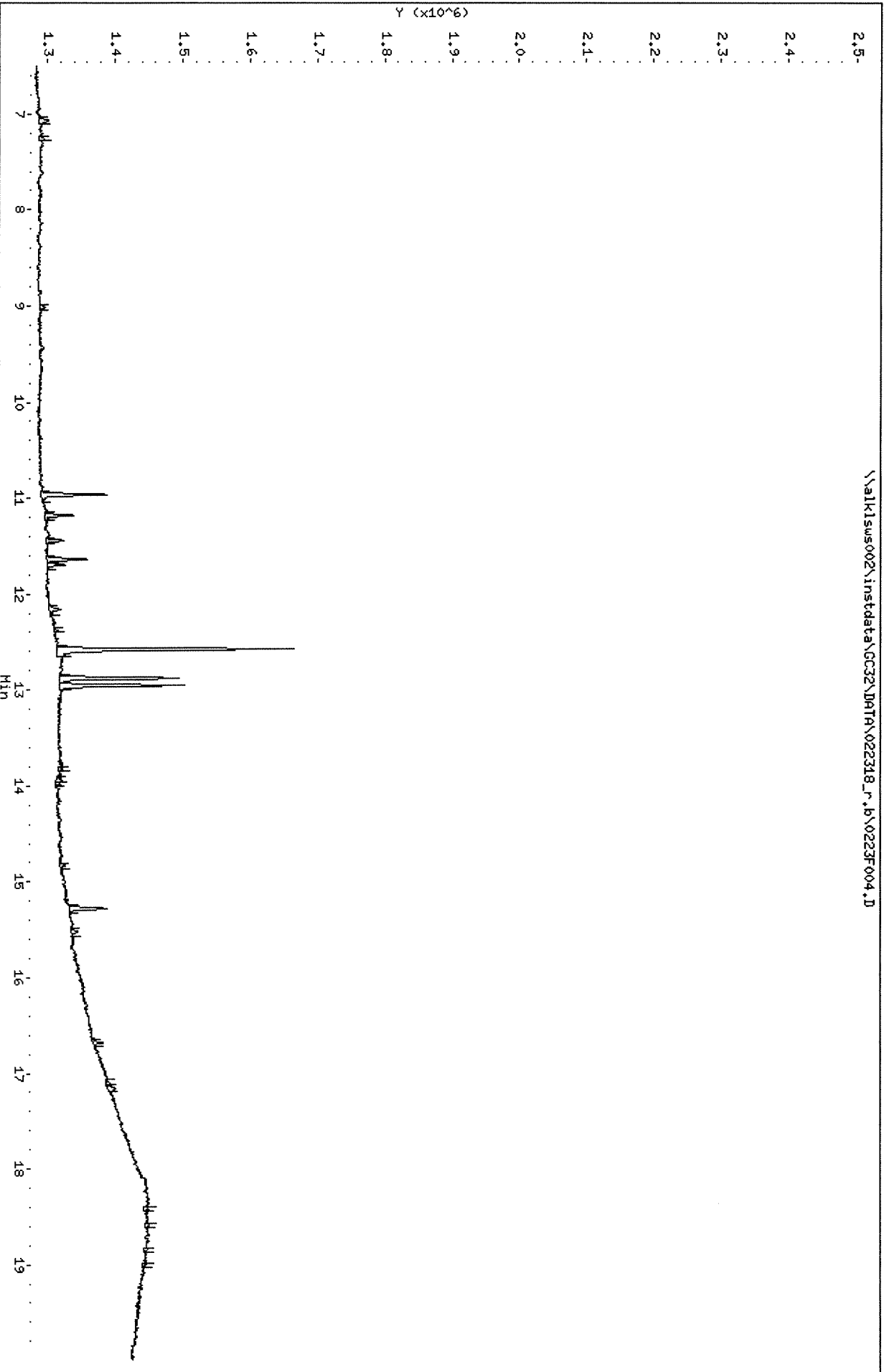
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022318_r.b\0223F004.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F013.D
Lab ID: KWG1801127-3
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 17:24
Date Quantitated: 02/26/2018 10:28
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F013.D
Lab ID: KWG1801127-3
RunType: CCV
Matrix: NOT APPLICABLE

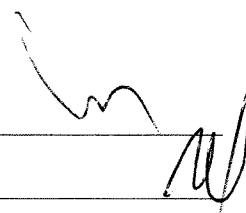
Date Acquired: 02/23/2018 17:24
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F013.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F013.D	Vial:	1
Acqu Date:	02/23/2018 17:24	Quant Date:	02/26/2018 10:28
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801127-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3713394	3322245	2.27	2.45			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2135937	2376229	2.12	2.16			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	26.94	24.88			
Aroclor 1016 {1}	9.18	9.83	631625m	540498	26.67	20.66			
Aroclor 1016 {2}	9.63	10.14	1586839m	549138	27.31	27.29			
Aroclor 1016 {3}	9.81	10.89	1027129m	1257206	26.13	25.59			
Aroclor 1016 {4}	10.20	11.40	800164m	798814	25.27	25.14			
Aroclor 1016 {5}	10.32	11.91	694843m	412285	29.32	25.76			
Aroclor 1260			0	0	25.20	23.70			
Aroclor 1260 {1}	12.55	14.10	1502430m	532355	25.56	24.82			
Aroclor 1260 {2}	13.14	14.68	963958m	1009485	26.77	24.49			
Aroclor 1260 {3}	13.95	15.05	1024735m	986524	26.40	24.36			
Aroclor 1260 {4}	14.33	15.58	2010114m	2041339	23.81	23.75			
Aroclor 1260 {5}	14.96	16.08	1524262m	1313456	23.44	21.09			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F013.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F013.D
 Inj Date : 23-FEB-2018 17:24
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.859	8.280	3713394	3322245	2.27	2.45		100.00
Aroclor 1016	9.179	9.833	631625	540498	26.7	20.7	80.00- 120.00	100.00 (M)
	9.633	10.143	1586839	549138	27.3	27.3	195.40- 293.10	251.23 (M)
	9.809	10.886	1027129	1257206	26.1	25.6	127.44- 191.16	162.62 (M)
	10.199	11.396	800164	798814	25.3	25.1	102.03- 153.04	126.68 (M)
	10.316	11.910	694843	412285	29.3	25.8	85.85- 128.77	110.01 (M)
	Average of Peak Amounts =				26.9	24.9		
Aroclor 1260	12.546	14.096	1502430	532355	25.6	24.8	80.00- 120.00	100.00 (M)
	13.136	14.676	963958	1009485	26.8	24.5	49.73- 74.59	64.16 (M)
	13.949	15.046	1024735	986524	26.4	24.4	54.16- 81.24	68.21 (M)
	14.333	15.580	2010114	2041339	23.8	23.8	105.05- 157.58	133.79 (M)
	14.959	16.083	1524262	1313456	23.4	21.1	78.29- 117.43	101.45 (M)
	Average of Peak Amounts =				25.2	23.7		
Decachlorobiphenyl	16.753	18.033	2135937	2376229	2.12	2.16		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alkl1sws002\instdata\GC32\DATA\022318_16\0223F013.D

Date: 23-FEB-2018 17:24

Client ID:

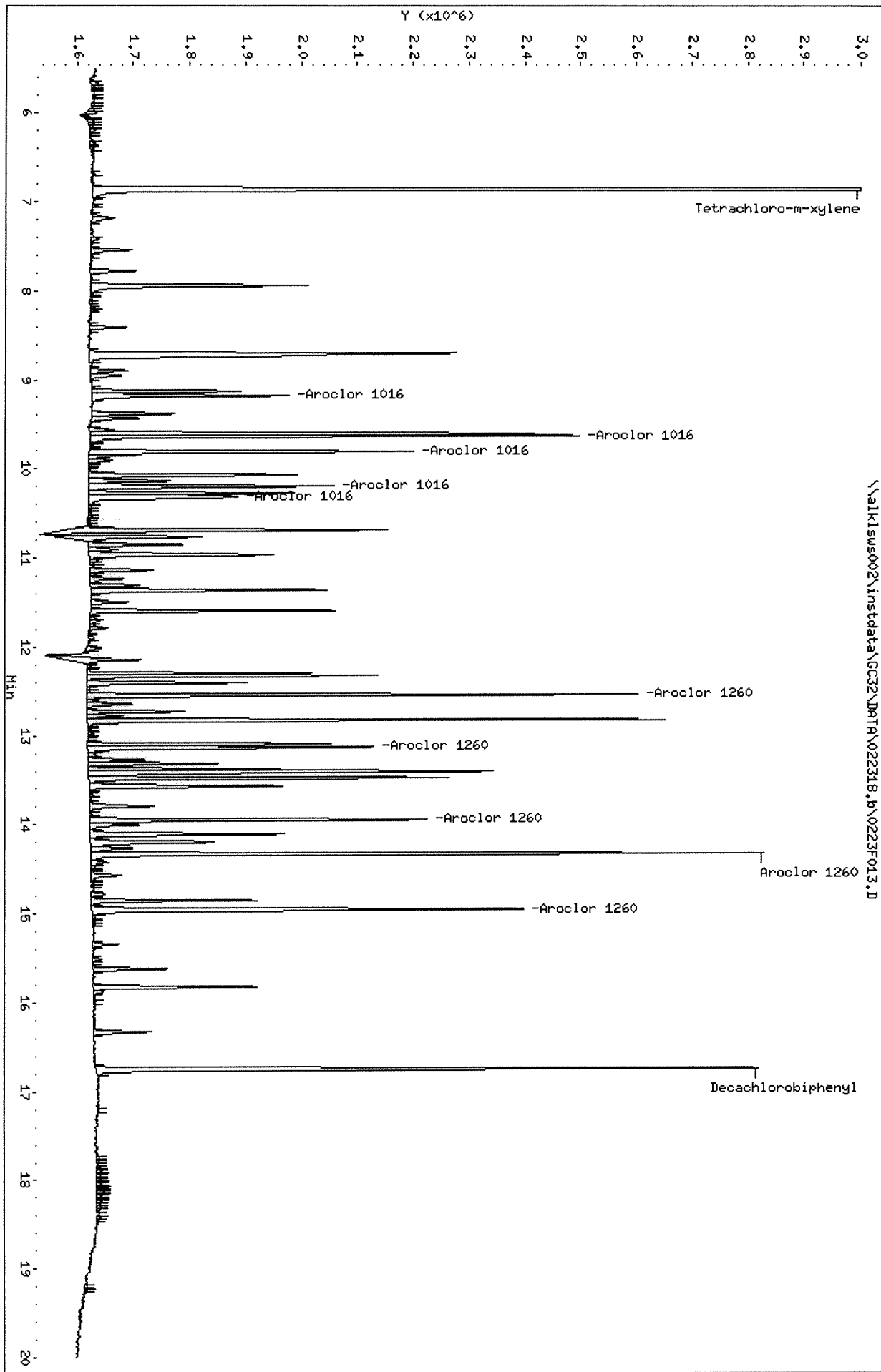
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

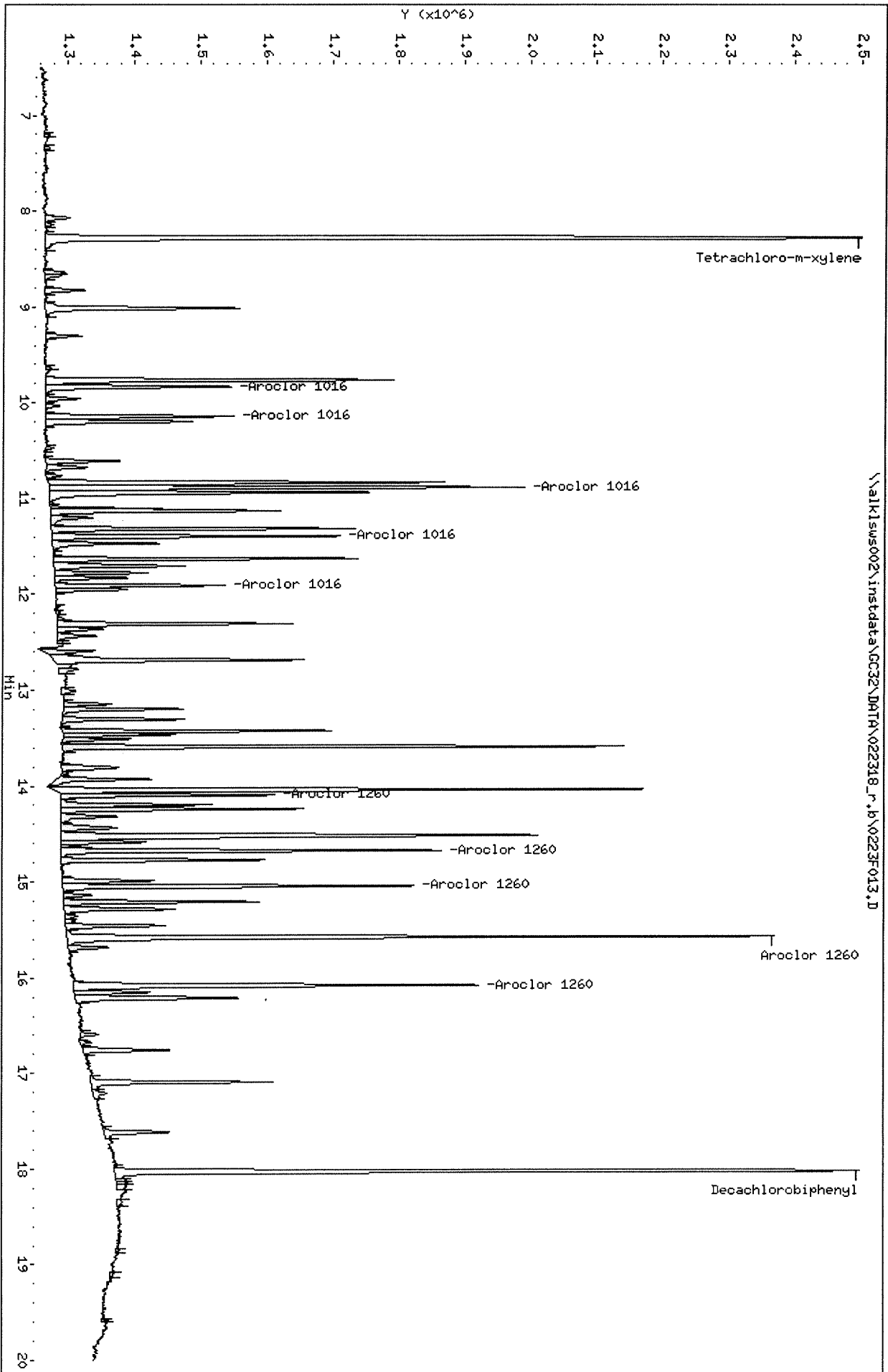


Data File: \\alkisws002\instdata\GC32\DATA\022318_r_b\0223F013.D
Date: 23-FEB-2018 17:24

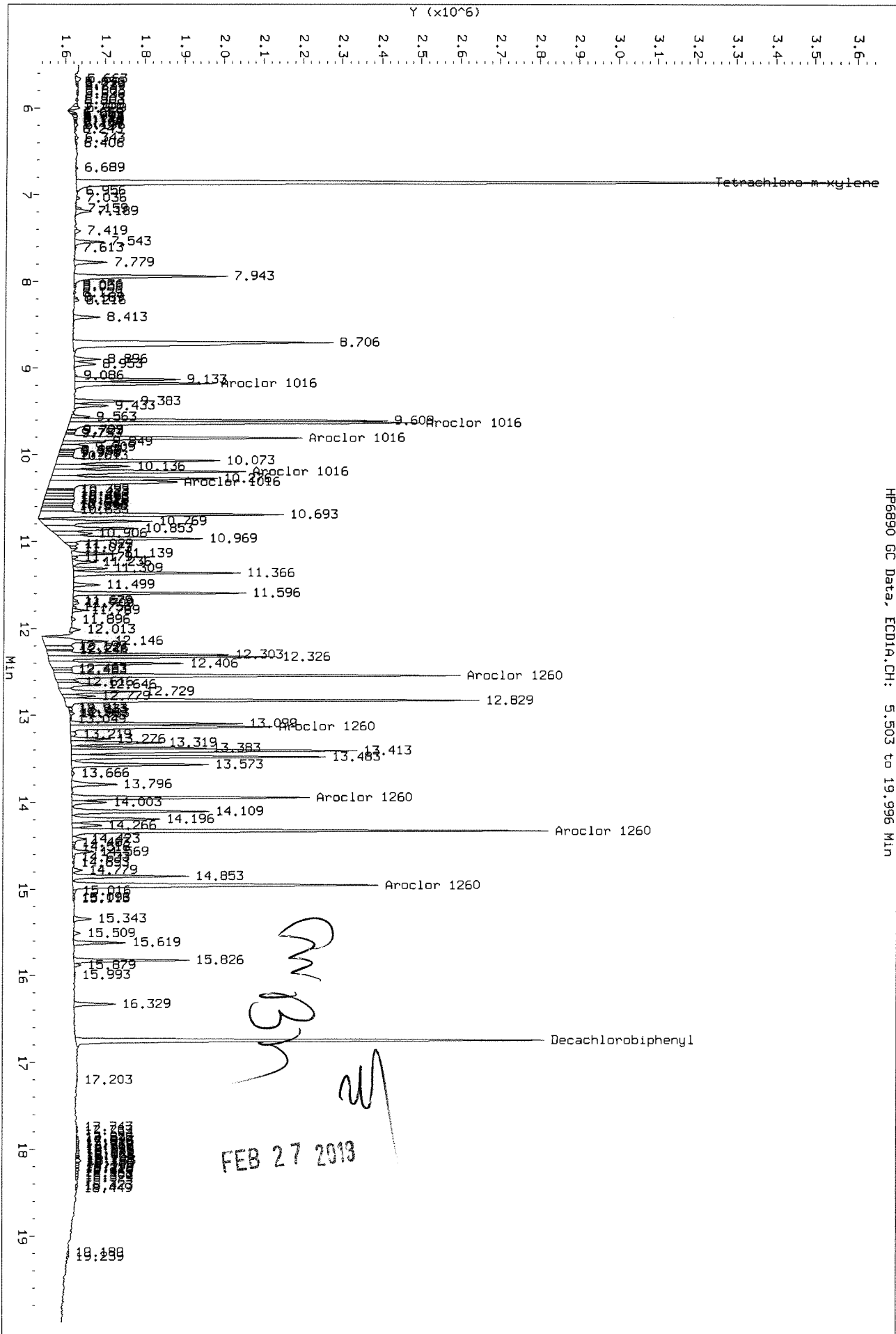
Client ID:
Sample Info: 1660 25PPB PCB-223

Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

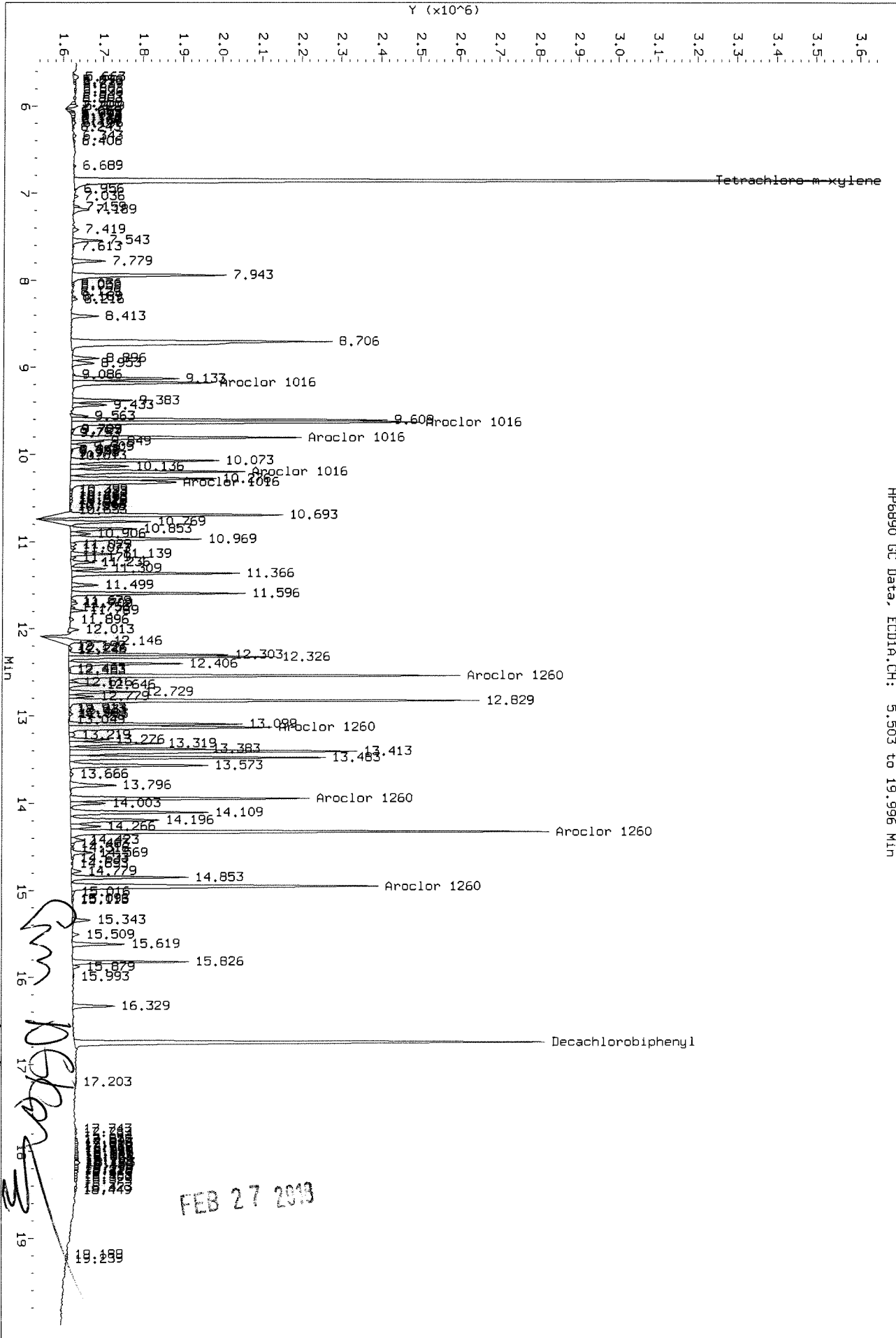


Data File: \\alkisus002\Instdata\GC32\DATA\022318_b\0223F013.D
Injection Date: 23-FEB-2018 17:24
Instrument: GC32.1
Client Sample ID:



HP6890 GC Data, ECD14.CH1: 5.503 to 19.996 MIN

MB
FEB 27 2013



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F014.D
Lab ID: KWG1801127-4
Run Type: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 17:56
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F014.D
Lab ID: KWG1801127-4
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/23/2018 17:56
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F014.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F014.D	Vial:	2
Acqu Date:	02/23/2018 17:56	Quant Date:	02/26/2018 10:29
Run Type:	IB	MethodJoinID:	MJ1716
Lab ID:	KWG1801127-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1716
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.85		16129	0	0.0100	0.0000			NA
			%Recovery =		NA	NA	Limits =	20-123	
Decachlorobiphenyl	0.00	18.03	0	10637		0.0100			NA
			%Recovery =		NA	NA	Limits =	49-133	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: mg/Kg				Rpt
					ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	6.01	0.0000			
Aroclor 1242 {1}	9.16		5775	0	0.3070	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1: J:\GC32\DATA\022318.B\0223F014.D
Data File #2: \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F014.D
Acqu Date: 02/23/2018 17:56
Run Type: IB
Lab ID: KWG1801127-4
Signal #1: DB-35MS

Instrument: GC32.i
Vial: 2
Dilution: 1.0
Soln Conc. Units: ng/mL

Quant Date: 02/26/2018 10:29
MethodJoinID: MJ1716
Signal #2: DB-XLB

Target Compounds

Final Conc. Units: mg/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}	10.97		410769	0	17.21	0.0000			
Aroclor 1242 {5}	11.33		12339	0	0.5110	0.0000			
Aroclor 1248			0	0	0.9545	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}	10.21		67263	0	1.70	0.0000			
Aroclor 1248 {3}	11.26		11350	0	0.4470	0.0000			
Aroclor 1248 {4}	11.36		47418	0	0.9670	0.0000			
Aroclor 1248 {5}	12.30		17532	0	0.7020	0.0000			
Aroclor 1254			0	0	1.63	0.0000			
Aroclor 1254 {1}	11.36		47418	0	0.8670	0.0000			
Aroclor 1254 {2}	12.16		157109	0	3.80	0.0000			
Aroclor 1254 {3}	12.30		17532	0	0.2150	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.1247	0.0000			
Aroclor 1268 {1}	14.85		17697	0	0.1310	0.0000			
Aroclor 1268 {2}	14.93		5248	0	0.0430	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}	16.38		62138	0	0.2000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F014.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F014.D
 Inj Date : 23-FEB-2018 17:56
 Sample Info: IB
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.853	0.000	16129	0	0.00988	0.000		100.00 (R)
Aroclor 1242	9.163	0.000	5775	0	0.307	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	188.17- 282.25	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	75.98- 113.97	0.00 (T)
	10.970	0.000	410769	0	17.2	0.000	97.61- 146.41	7111.78 (T)
	11.330	0.000	12339	0	0.511	0.000	98.63- 147.94	213.63 (T)
	Average of Peak Amounts =				6.01	0.000		
Aroclor 1248	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	10.206	0.000	67263	0	1.70	0.000	123.60- 185.40	0.00 (T)
	11.256	0.000	11350	0	0.447	0.000	74.96- 112.44	0.00 (T)
	11.363	0.000	47418	0	0.967	0.000	153.18- 229.78	0.00 (T)
	12.300	0.000	17532	0	0.702	0.000	76.00- 114.01	0.00 (T)
	Average of Peak Amounts =				0.954	0.000		
Aroclor 1254	11.363	0.000	47418	0	0.867	0.000	80.00- 120.00	100.00 (T)
	12.156	0.000	157109	0	3.80	0.000	64.52- 96.78	331.32 (T)
	12.300	0.000	17532	0	0.215	0.000	121.44- 182.17	36.97 (T)
	0.000	0.000	0	0	0.000	0.000	61.81- 92.72	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	47.38- 71.07	0.00 (T)
	Average of Peak Amounts =				1.63	0.000		
Aroclor 1268	14.850	0.000	17697	0	0.131	0.000	80.00- 120.00	100.00 (T)
	14.933	0.000	5248	0	0.0427	0.000	73.17- 109.75	29.66 (T)
	0.000	0.000	0	0	0.000	0.000	67.31- 100.97	0.00 (T)
	16.383	0.000	62138	0	0.200	0.000	191.78- 287.67	351.11 (T)
	Average of Peak Amounts =				0.125	0.000		
Decachlorobiphenyl	0.000	18.033	0	10637	0.000	0.00968		
Aroclors, Total	1.000	0.000	281232	0	8.71	0.000		0.00

Data File: \\alklsws002\instdata\GC32\DATA\022318.b\0223F014.D
Report Date: 26-Feb-2018 10:29

QC Flag Legend

T - Target compound detected outside RT window.
R - Spike/Surrogate failed recovery limits.

Data File: \\alklsws002\instdata\GC32\DATA\022318.16\0223F014.D
Date : 23-FEB-2018 17:56

Client ID:

Sample Info: IB

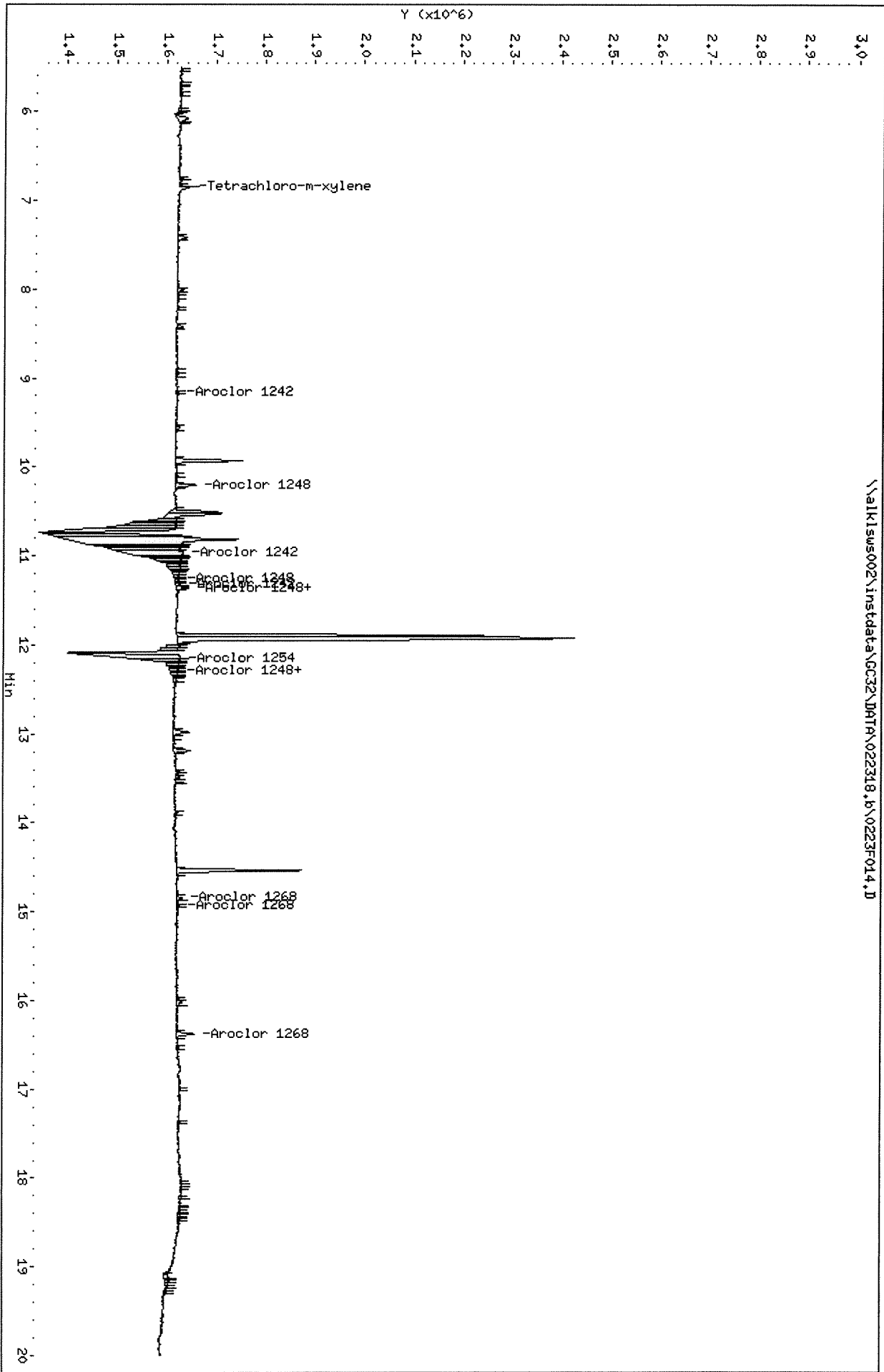
Column phase: DB-39MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022318.16\0223F014.D



Data File: \\alk1sus002\instdata\GC32\DATA\022318_r.b\0223F014.D

Date : 23-FEB-2018 17:56

Client ID:

Sample Info: IB

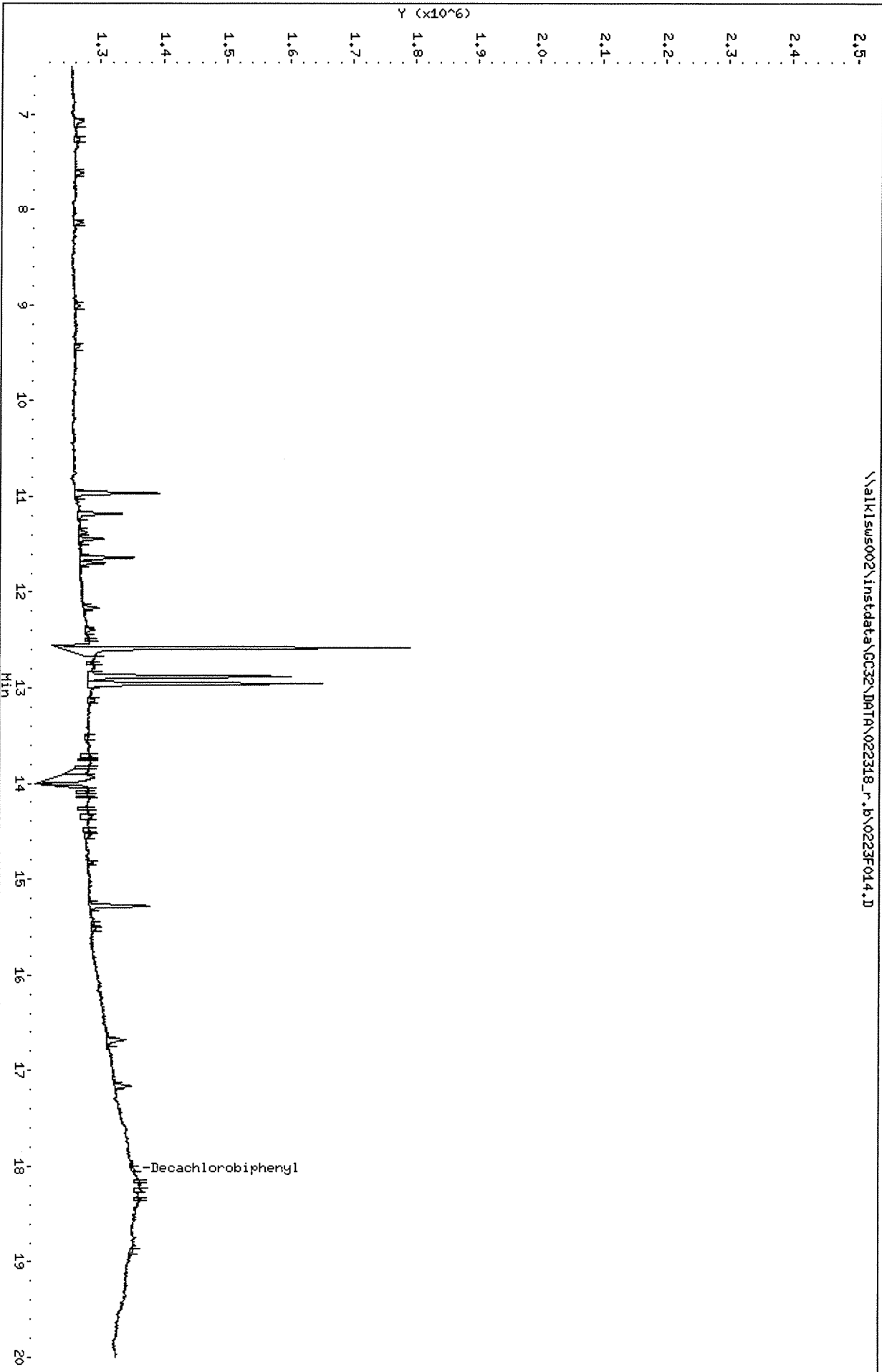
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022318_r.b\0223F014.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F026.D
Lab ID: KWG1801127-5
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 00:47
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F026.D
Lab ID: KWG1801127-5
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 00:47
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F026.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F026.D	Vial:	1
Acqu Date:	02/24/2018 00:47	Quant Date:	02/26/2018 10:29
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801127-5	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3804255	3533917	2.33	2.61			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.76	18.03	2092564	2443751	2.08	2.22			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	27.28	27.02			
Aroclor 1016 {1}	9.18	9.83	671391	582690	28.35	22.27			
Aroclor 1016 {2}	9.64	10.14	1645730	604719	28.32	30.05			
Aroclor 1016 {3}	9.81	10.89	1065052	1374690	27.09	27.98			
Aroclor 1016 {4}	10.20	11.40	802122	855812	25.33	26.93			
Aroclor 1016 {5}	10.32	11.91	646844	445900	27.30	27.86			
Aroclor 1260			0	0	25.05	24.56			
Aroclor 1260 {1}	12.55	14.10	1531933	564732	26.07	26.33			
Aroclor 1260 {2}	13.14	14.68	925101	1049489	25.69	25.46			
Aroclor 1260 {3}	13.95	15.05	1016791	1031173	26.19	25.46			
Aroclor 1260 {4}	14.33	15.58	2014363	2069740	23.86	24.08			
Aroclor 1260 {5}	14.96	16.08	1524053	1338724	23.44	21.50			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F026.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F026.D
 Inj Date : 24-FEB-2018 00:47
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.863	8.280	3804255	3533917	2.33	2.61		100.00
Aroclor 1016	9.183	9.834	671391	582690	28.3	22.3	80.00- 120.00	100.00
	9.637	10.144	1645730	604719	28.3	30.0	195.40- 293.10	245.12
	9.813	10.887	1065052	1374690	27.1	28.0	127.44- 191.16	158.63
	10.200	11.397	802122	855812	25.3	26.9	102.03- 153.04	119.47
	10.320	11.910	646844	445900	27.3	27.9	85.85- 128.77	96.34
	Average of Peak Amounts =				27.3	27.0		
Aroclor 1260	12.547	14.097	1531933	564732	26.1	26.3	80.00- 120.00	100.00
	13.140	14.677	925101	1049489	25.7	25.5	49.73- 74.59	60.39
	13.953	15.047	1016791	1031173	26.2	25.5	54.16- 81.24	66.37
	14.333	15.580	2014363	2069740	23.9	24.1	105.05- 157.58	131.49
	14.963	16.084	1524053	1338724	23.4	21.5	78.29- 117.43	99.49
	Average of Peak Amounts =				25.1	24.6		
Decachlorobiphenyl	16.757	18.034	2092564	2443751	2.08	2.22		100.00

Data File: \\alklsws002\instadata\GC32\DATA\022318.B\0223F026.D
Date : 24-FEB-2018 00:47

Client ID:

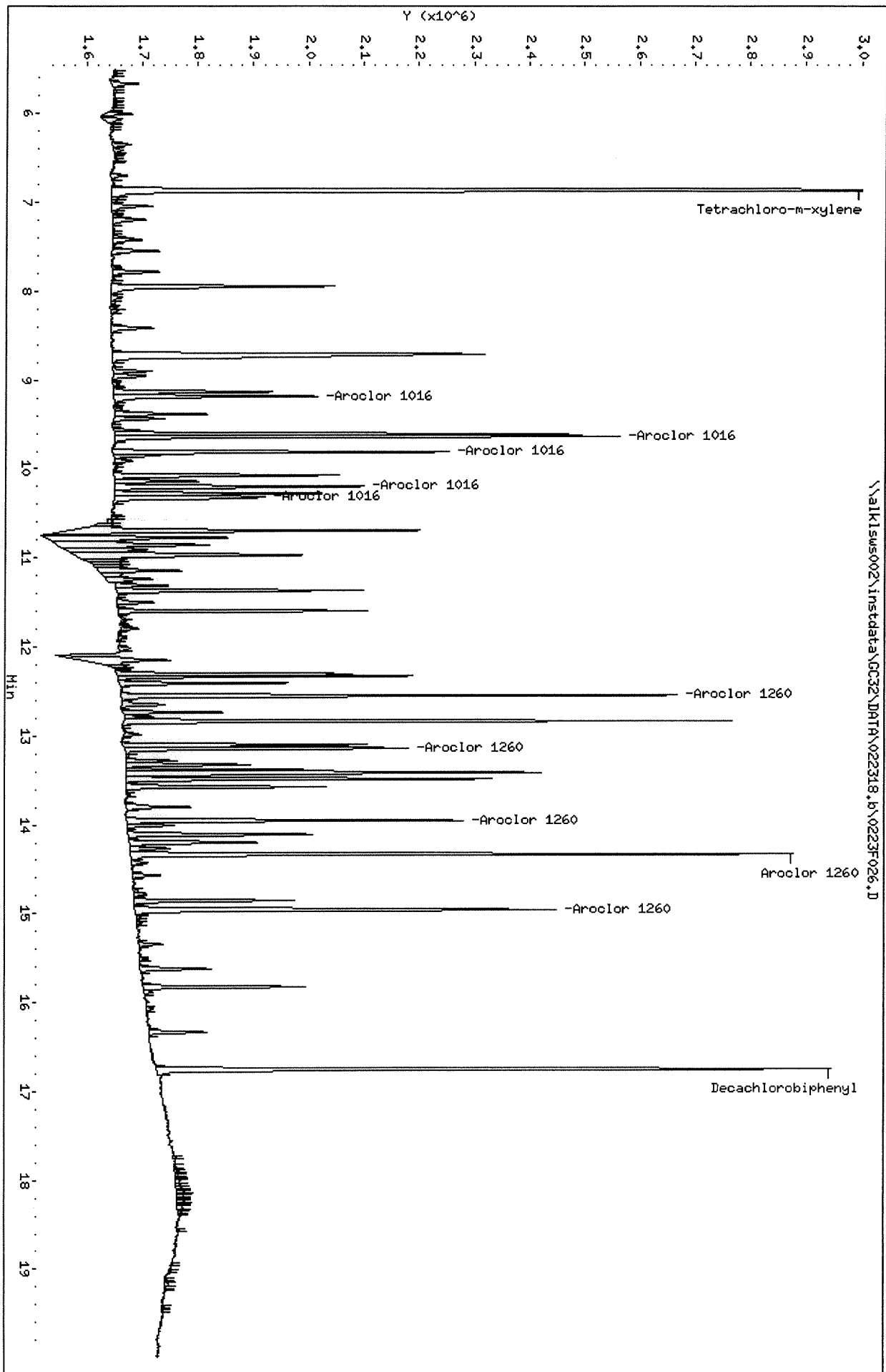
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\022318_r*.b\0223F026.D

Date : 24-FEB-2018 00:47

Client ID:

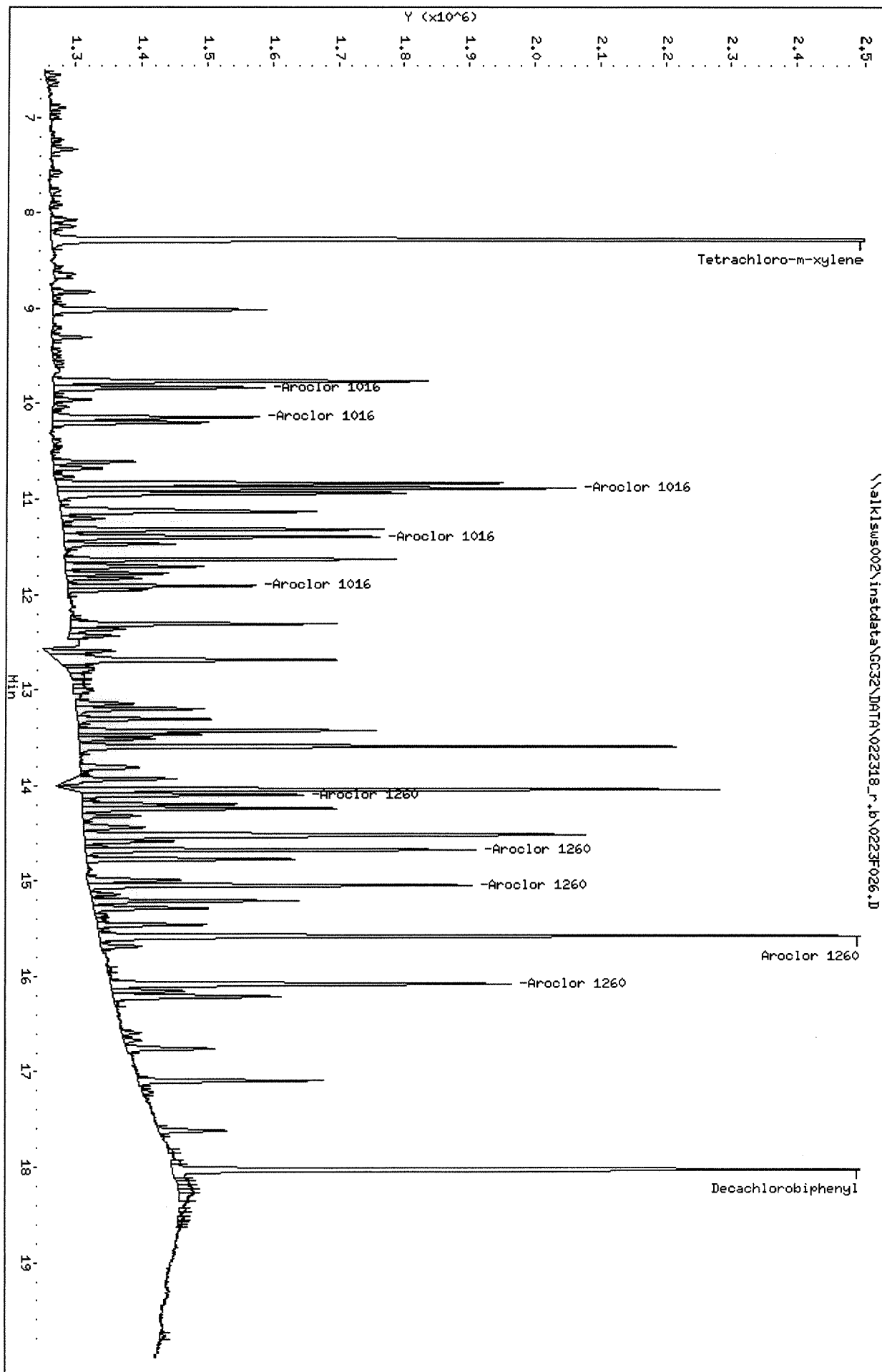
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F027.D
Lab ID: KWG1801127-6
RunType: IB
Matrix: NOT APPLICABLE

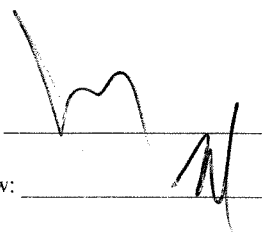
Date Acquired: 02/24/2018 01:19
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Exception Report

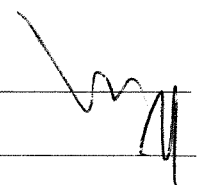
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F027.D
Lab ID: KWG1801127-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 01:19
Date Quantitated: 02/26/2018 10:30
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F027.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F027.D	Vial:	2
Acqu Date:	02/24/2018 01:19	Quant Date:	02/26/2018 10:29
Run Type:	IB	MethodJoinID:	MJ1716
Lab ID:	KWG1801127-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1716
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: mg/Kg		Rpt
Tetrachloro-m-xylene	6.85	8.24	68714	11562	0.0420	0.0090			NA
			%Recovery =		NA	NA	Limits =	20-123	
Decachlorobiphenyl	0.00	18.04	0d	29055		0.0260			NA
			%Recovery =		NA	NA	Limits =	49-133	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1016			0	0	0.9540	0.0000			
Aroclor 1016 {1}	9.20		6724	0	0.2840	0.0000			
Aroclor 1016 {2}	9.66		30214	0	0.5200	0.0000			
Aroclor 1016 {3}	9.81		5126	0	0.1300	0.0000			
Aroclor 1016 {4}	10.21		91248	0	2.88	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	6.88			
Aroclor 1232 {1}		9.01	0d	16661	0.0000	0.6180			
Aroclor 1232 {2}		9.81	0d	27788	0.0000	1.62			
Aroclor 1232 {3}			0d	0	0.0000	0.0000			
Aroclor 1232 {4}			0d	0	0.0000	0.0000			
Aroclor 1232 {5}		10.97	0d	291719	0.0000	18.41			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223F027.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F027.D	Vial:	2
Acqu Date:	02/24/2018 01:19	Quant Date:	02/26/2018 10:29
Run Type:	IB	MethodJoinID:	MJ1716
Lab ID:	KWG1801127-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: mg/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1242 {2}			0d	0	0.0000	0.0000			
Aroclor 1242 {3}			0d	0	0.0000	0.0000			
Aroclor 1242 {4}			0d	0	0.0000	0.0000			
Aroclor 1242 {5}			0d	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	7.31			
Aroclor 1248 {1}		10.97	0d	291719	0.0000	19.72			
Aroclor 1248 {2}			0d	0	0.0000	0.0000			
Aroclor 1248 {3}		12.49	0d	13591	0.0000	0.3580			
Aroclor 1248 {4}			0d	0	0.0000	0.0000			
Aroclor 1248 {5}		12.76	0d	27308	0.0000	1.84			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0	0.0000	0.0000			
Aroclor 1254 {2}			0d	0	0.0000	0.0000			
Aroclor 1254 {3}			0d	0	0.0000	0.0000			
Aroclor 1254 {4}			0d	0	0.0000	0.0000			
Aroclor 1254 {5}			0d	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.9560			
Aroclor 1262 {1}			0d	0	0.0000	0.0000			
Aroclor 1262 {2}		13.60	0d	29511	0.0000	0.6450			
Aroclor 1262 {3}		14.26	0d	32721	0.0000	1.25			
Aroclor 1262 {4}		14.83	0d	26722	0.0000	0.9780			
Aroclor 1262 {5}			0d	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0	0.0000	0.0000			
Aroclor 1268 {2}			0d	0	0.0000	0.0000			
Aroclor 1268 {3}			0d	0	0.0000	0.0000			
Aroclor 1268 {4}			0d	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F027.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F027.D
 Inj Date : 24-FEB-2018 01:19
 Sample Info: IB
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.854	8.241	68714	11562	0.0421	0.00853		100.00(R)
Aroclor 1016	9.201	0.000	6724	0	0.284	0.000	80.00- 120.00	100.00(T)
	9.661	0.000	30214	0	0.520	0.000	195.40- 293.10	449.33(T)
	9.814	0.000	5126	0	0.130	0.000	127.44- 191.16	76.24(T)
	10.211	0.000	91248	0	2.88	0.000	102.03- 153.04	1356.99(T)
	0.000	0.000	0	0	0.000	0.000	85.85- 128.77	0.00(T)
	Average of Peak Amounts =				0.954	0.000		
Aroclor 1232	0.000	9.008	0	16661	0.000	0.618		
	0.000	9.808	0	27788	0.000	1.62		
	0.000	0.000	0	0	0.000	0.000		
	0.000	0.000	0	0	0.000	0.000		
	0.000	10.968	0	291719	0.000	18.4		
	Average of Peak Amounts =				0.000	6.88		
Aroclor 1248	0.000	10.968	0	291719	0.000	19.7		
	0.000	0.000	0	0	0.000	0.000		
	0.000	12.491	0	13591	0.000	0.358		
	0.000	0.000	0	0	0.000	0.000		
	0.000	12.755	0	27308	0.000	1.84		
	Average of Peak Amounts =				0.000	7.30		
Aroclor 1262	0.000	0.000	0	0	0.000	0.000		
	0.000	13.598	0	29511	0.000	0.645		
	0.000	14.255	0	32721	0.000	1.24		
	0.000	14.825	0	26722	0.000	0.978		
	0.000	0.000	0	0	0.000	0.000		
	Average of Peak Amounts =				0.000	0.954		
Decachlorobiphenyl	0.000	18.041	0	29055	0.000	0.0264		
Aroclors, Total	1.000	1.000	33328	252580	0.954	15.1		0.00

QC Flag Legend

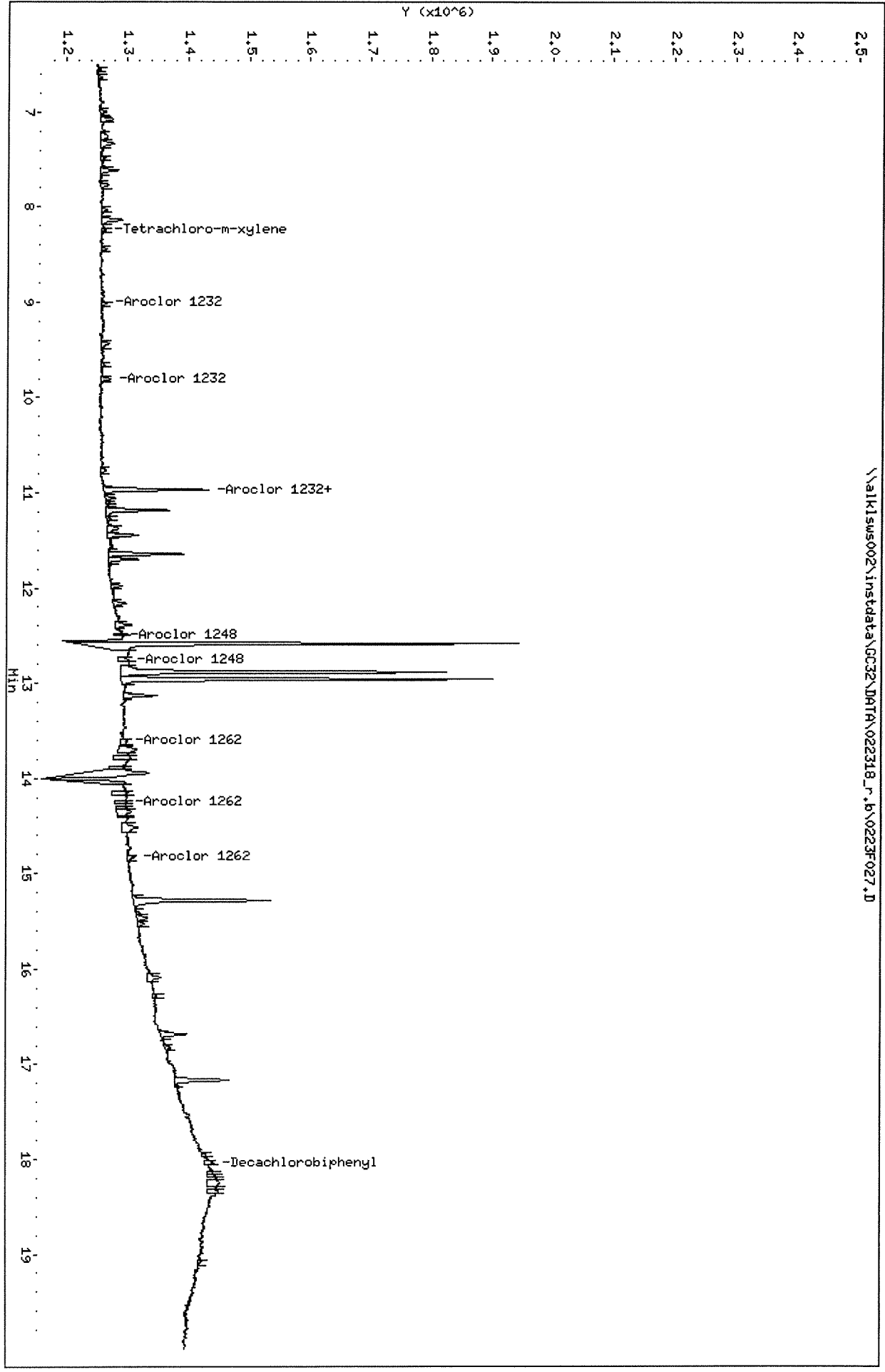
- T - Target compound detected outside RT window.
- R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\022318_r_b\0223F027.D
Date: 24-FEB-2018 01:19

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\022318.b\0223F027.D

Date : 24-FEB-2018 01:19

Client ID:

Sample Info: IB

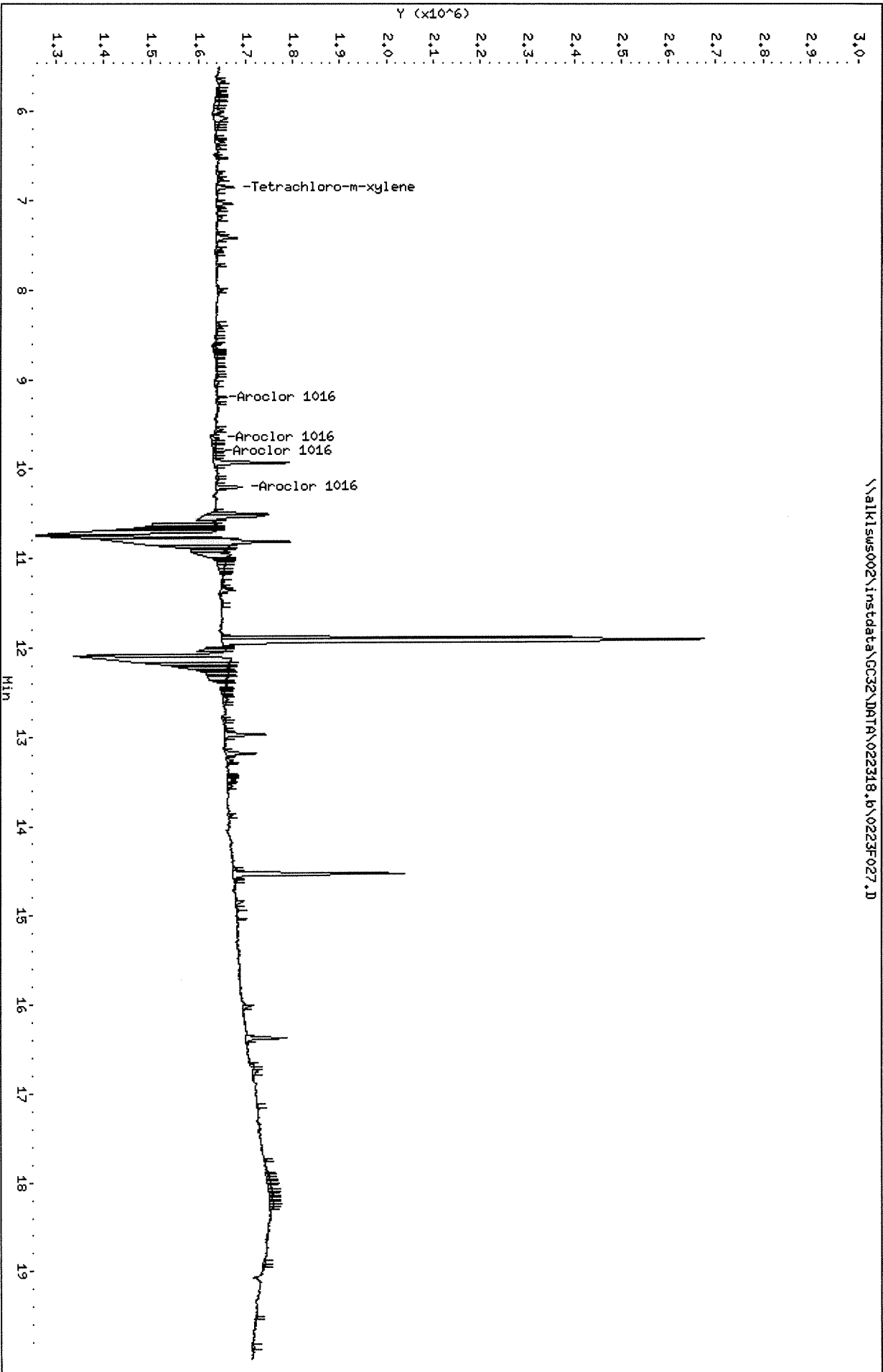
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\022318.b\0223F027.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F036.D
Lab ID: KWG1801127-7
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 06:04
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F036.D
Lab ID: KWG1801127-7
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 06:04
Date Quantitated: 02/26/2018 10:31
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F036.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F036.D	Vial:	1
Acqu Date:	02/24/2018 06:04	Quant Date:	02/26/2018 10:29
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801127-7	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3851650	3432141	2.36	2.53			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.76	18.04	2138361	2380854	2.12	2.17			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	27.47	26.47			
Aroclor 1016 {1}	9.18	9.83	658493	558410	27.80	21.34			
Aroclor 1016 {2}	9.64	10.14	1583861	575543	27.25	28.60			
Aroclor 1016 {3}	9.81	10.89	1058386	1374870	26.92	27.98			
Aroclor 1016 {4}	10.20	11.40	815795	843461	25.76	26.54			
Aroclor 1016 {5}	10.32	11.91	702087	446703	29.63	27.91			
Aroclor 1260			0	0	24.89	24.94			
Aroclor 1260 {1}	12.55	14.10	1525368	656974	25.95	30.63			
Aroclor 1260 {2}	13.14	14.68	916241	1018721	25.44	24.71			
Aroclor 1260 {3}	13.96	15.05	1017329	1002556	26.20	24.75			
Aroclor 1260 {4}	14.34	15.58	1994072	2012789	23.62	23.42			
Aroclor 1260 {5}	14.96	16.09	1509129	1320553	23.21	21.20			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F036.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F036.D
 Inj Date : 24-FEB-2018 06:04
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

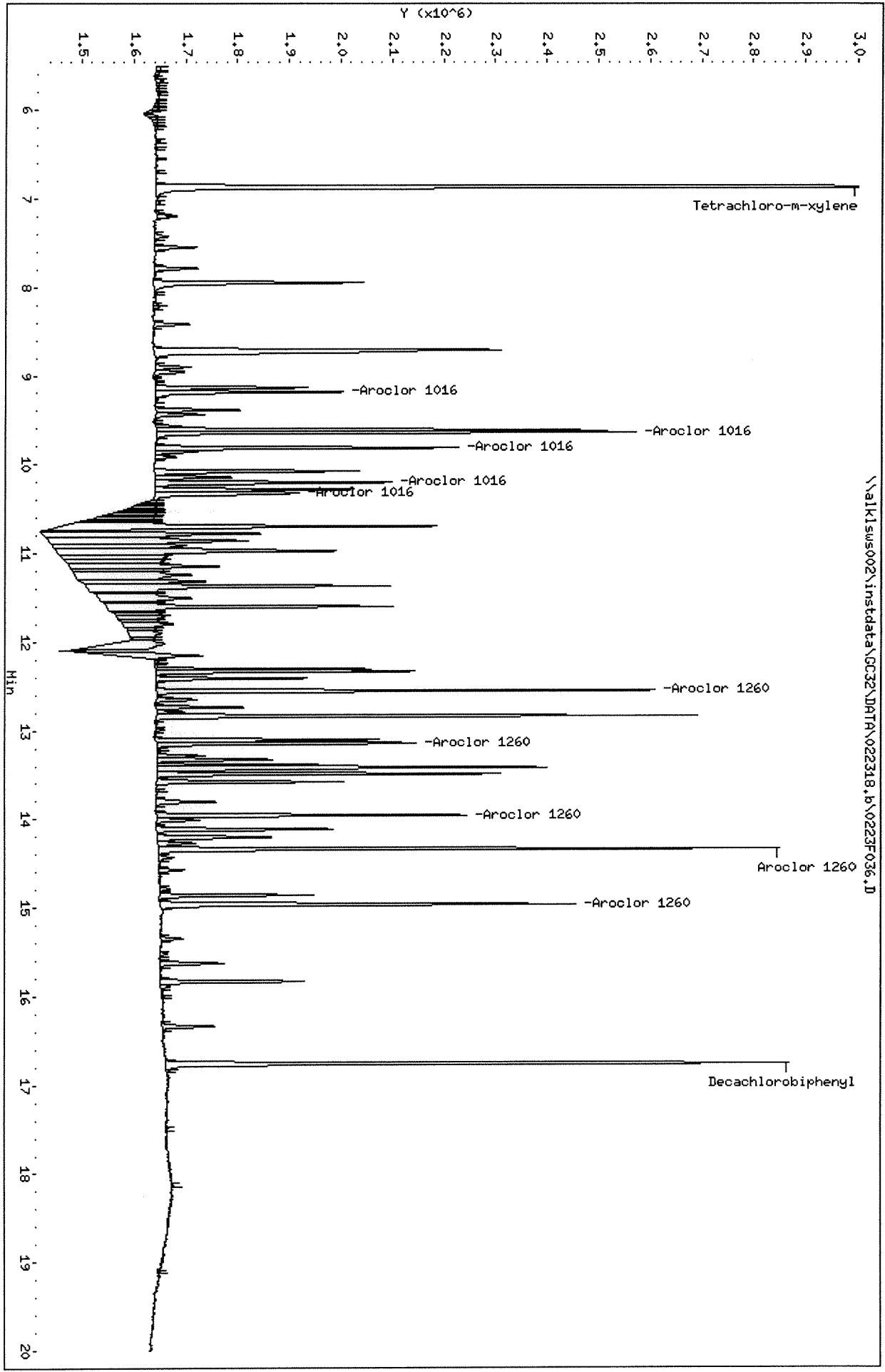
Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.863	8.283	3851650	3432141	2.36	2.53		100.00
Aroclor 1016	9.183	9.833	658493	558410	27.8	21.3	80.00- 120.00	100.00
	9.636	10.143	1583861	575543	27.3	28.6	195.40- 293.10	240.53
	9.813	10.890	1058386	1374870	26.9	28.0	127.44- 191.16	160.73
	10.203	11.397	815795	843461	25.8	26.5	102.03- 153.04	123.89
	10.320	11.913	702087	446703	29.6	27.9	85.85- 128.77	106.62
	Average of Peak Amounts =				27.5	26.5		
Aroclor 1260	12.550	14.100	1525368	656974	26.0	30.6	80.00- 120.00	100.00
	13.143	14.680	916241	1018721	25.4	24.7	49.73- 74.59	60.07
	13.956	15.050	1017329	1002556	26.2	24.8	54.16- 81.24	66.69
	14.336	15.583	1994072	2012789	23.6	23.4	105.05- 157.58	130.73
	14.963	16.087	1509129	1320553	23.2	21.2	78.29- 117.43	98.94
	Average of Peak Amounts =				24.9	24.9		
Decachlorobiphenyl	16.760	18.037	2138361	2380854	2.12	2.17		100.00

Data File: \\alkl1sws002\instdata\GC32\DATA\022318.b\0223F036.D
Date: 24-FEB-2018 06:04
Client ID:
Sample Info: 1660 25PPB PCB7-22J

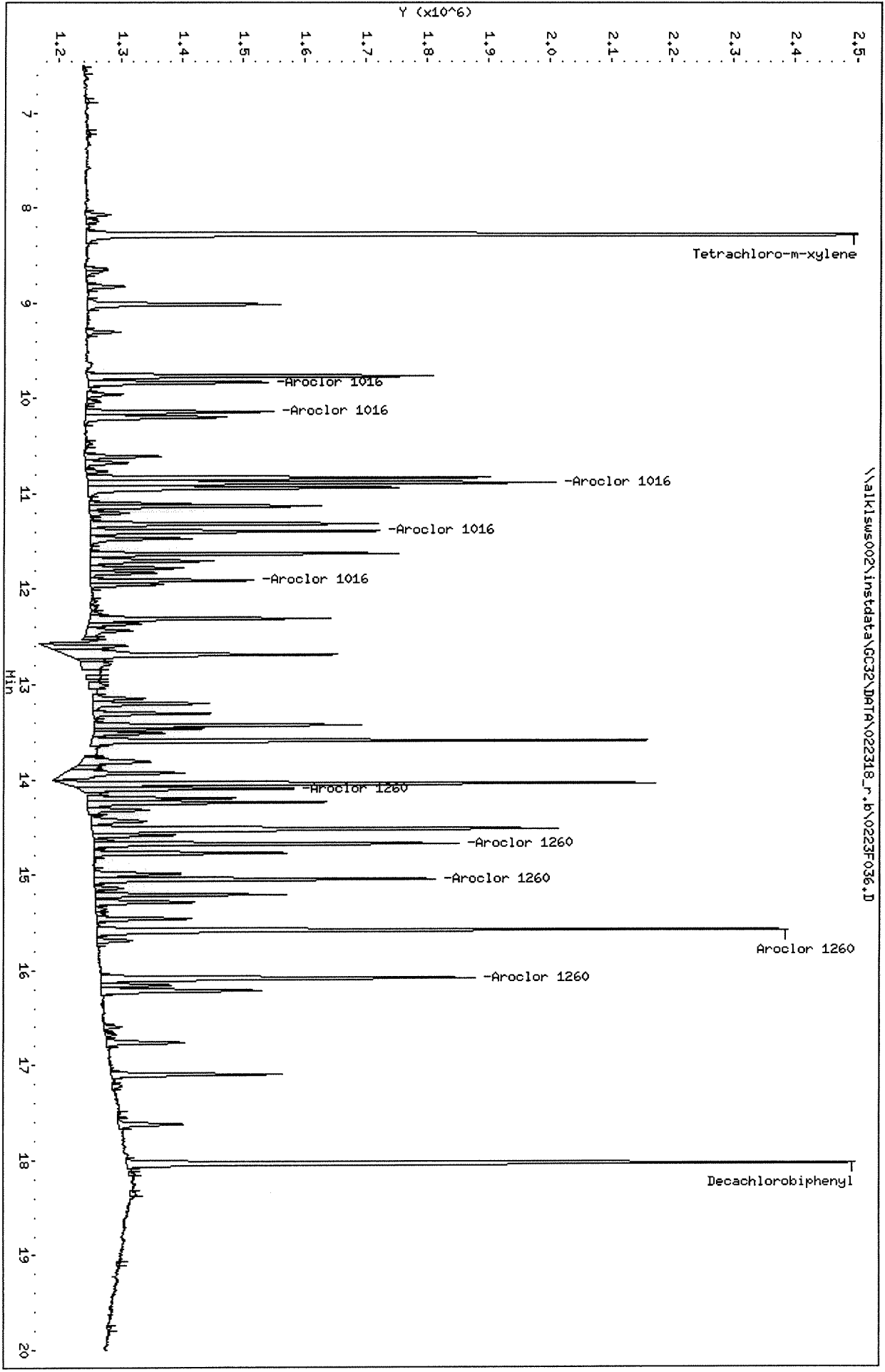
Column phase: DB-35MS

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32



Data File: \\alkisus002\instdata\GC32\DATA\022318_r.b\0223F036.D
Date: 24-FEB-2018 06:04
Client ID:
Sample Info: 1660 28PPB PCB7-22J
Column phase: DB-1LB

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F037.D
Lab ID: KWG1801127-8
Run Type: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 06:35
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F037.D
Lab ID: KWG1801127-8
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 06:35
Date Quantitated: 02/26/2018 10:31
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F037.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F037.D	Vial:	2
Acqu Date:	02/24/2018 06:35	Quant Date:	02/26/2018 10:29
Run Type:	1B	MethodJoinID:	MJ1707
Lab ID:	KWG1801127-8	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2				Rpt
Tetrachloro-m-xylene	6.86		48997	0	0.0300	0.0000				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	16.77		15753	0	0.0160	0.0000				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL		Final Conc. Units: ug/L		Rpt
					#1	#2	#1	#2	
Aroclor 1016			0	0	0.8098	0.0000			
Aroclor 1016 {1}	9.18		12761	0	0.5390	0.0000			
Aroclor 1016 {2}	9.65		10620	0	0.1830	0.0000			
Aroclor 1016 {3}	9.82		5402	0	0.1370	0.0000			
Aroclor 1016 {4}	10.21		88821	0	2.81	0.0000			
Aroclor 1016 {5}	10.34		9118	0	0.3850	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0d	0	0.0000	0.0000			
Aroclor 1232 {2}			0d	0	0.0000	0.0000			
Aroclor 1232 {3}			0d	0	0.0000	0.0000			
Aroclor 1232 {4}			0d	0	0.0000	0.0000			
Aroclor 1232 {5}			0d	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0d	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223F037.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F037.D	Vial:	2
Acqu Date:	02/24/2018 06:35	Quant Date:	02/26/2018 10:29
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWGI801127-8	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0d	0	0.0000	0.0000			
Aroclor 1242 {3}			0d	0	0.0000	0.0000			
Aroclor 1242 {4}			0d	0	0.0000	0.0000			
Aroclor 1242 {5}			0d	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	6.75			
Aroclor 1248 {1}		10.97	0d	261798	0.0000	17.70			
Aroclor 1248 {2}			0d	0	0.0000	0.0000			
Aroclor 1248 {3}		12.47	0d	28350	0.0000	0.7470			
Aroclor 1248 {4}			0d	0	0.0000	0.0000			
Aroclor 1248 {5}		12.75	0d	26494	0.0000	1.79			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0d	0	0.0000	0.0000			
Aroclor 1254 {2}			0d	0	0.0000	0.0000			
Aroclor 1254 {3}			0d	0	0.0000	0.0000			
Aroclor 1254 {4}			0d	0	0.0000	0.0000			
Aroclor 1254 {5}			0d	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0d	0	0.0000	0.0000			
Aroclor 1260 {2}			0d	0	0.0000	0.0000			
Aroclor 1260 {3}			0d	0	0.0000	0.0000			
Aroclor 1260 {4}			0d	0	0.0000	0.0000			
Aroclor 1260 {5}			0d	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	1.13			
Aroclor 1262 {1}			0d	0	0.0000	0.0000			
Aroclor 1262 {2}		13.60	0d	15078	0.0000	0.3300			
Aroclor 1262 {3}		14.20	0d	44448	0.0000	1.69			
Aroclor 1262 {4}		14.83	0d	37616	0.0000	1.38			
Aroclor 1262 {5}			0d	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0d	0	0.0000	0.0000			
Aroclor 1268 {2}			0d	0	0.0000	0.0000			
Aroclor 1268 {3}			0d	0	0.0000	0.0000			
Aroclor 1268 {4}			0d	0	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F037.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F037.D
 Inj Date : 24-FEB-2018 06:35
 Sample Info: IB
 Misc Info :
 Cal Date : 24-FEB-2018 07:36
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.856	0.000	48997	0	0.0300	0.000		100.00 (R)
Aroclor 1016	9.176	0.000	12761	0	0.539	0.000	80.00- 120.00	100.00
	9.653	0.000	10620	0	0.183	0.000	195.40- 293.10	83.23
	9.816	0.000	5402	0	0.137	0.000	127.44- 191.16	42.34
	10.213	0.000	88821	0	2.81	0.000	102.03- 153.04	696.02
	10.336	0.000	9118	0	0.385	0.000	85.85- 128.77	71.45
	Average of Peak Amounts =				0.811	0.000		
Aroclor 1248	0.000	10.970	0	261798	0.000	17.7		
	0.000	0.000	0	0	0.000	0.000		
	0.000	12.467	0	28350	0.000	0.747		
	0.000	0.000	0	0	0.000	0.000		
	0.000	12.753	0	26494	0.000	1.79		
	Average of Peak Amounts =				0.000	6.75		
Aroclor 1262	0.000	0.000	0	0	0.000	0.000		
	0.000	13.603	0	15078	0.000	0.330		
	0.000	14.197	0	44448	0.000	1.69		
	0.000	14.827	0	37616	0.000	1.38		
	0.000	0.000	0	0	0.000	0.000		
	Average of Peak Amounts =				0.000	1.13		
Decachlorobiphenyl	16.773	0.000	15753	0	0.0156	0.000		100.00 (R)
Aroclors, Total	1.000	1.000	25344	137928	0.810	7.88		0.00

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sus002\instdata\GC32\DATA\022318_b\0223F037.D
Date : 24-FEB-2018 06:35

Client ID:
Sample Info: 1B

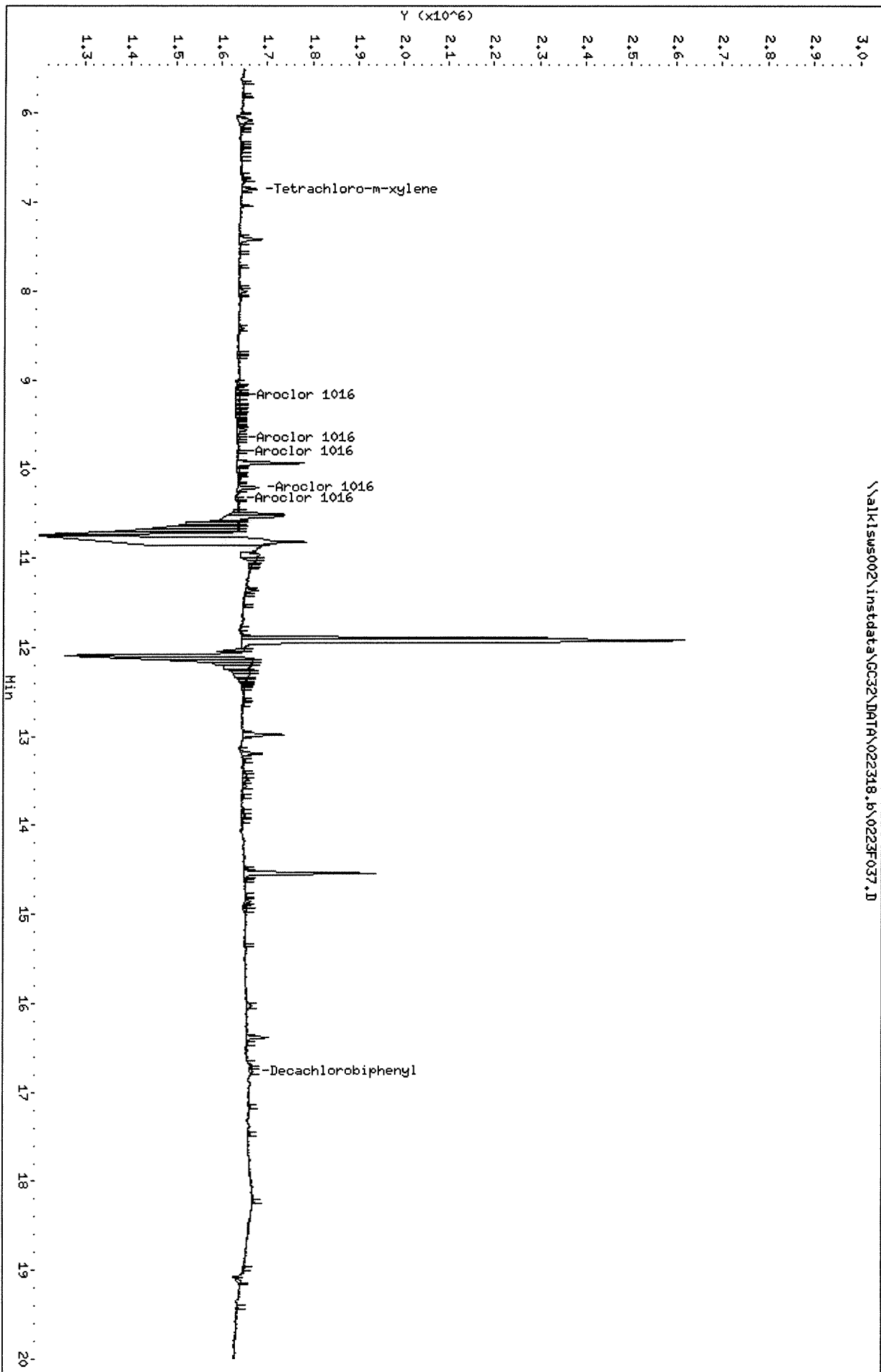
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022318_b\0223F037.D



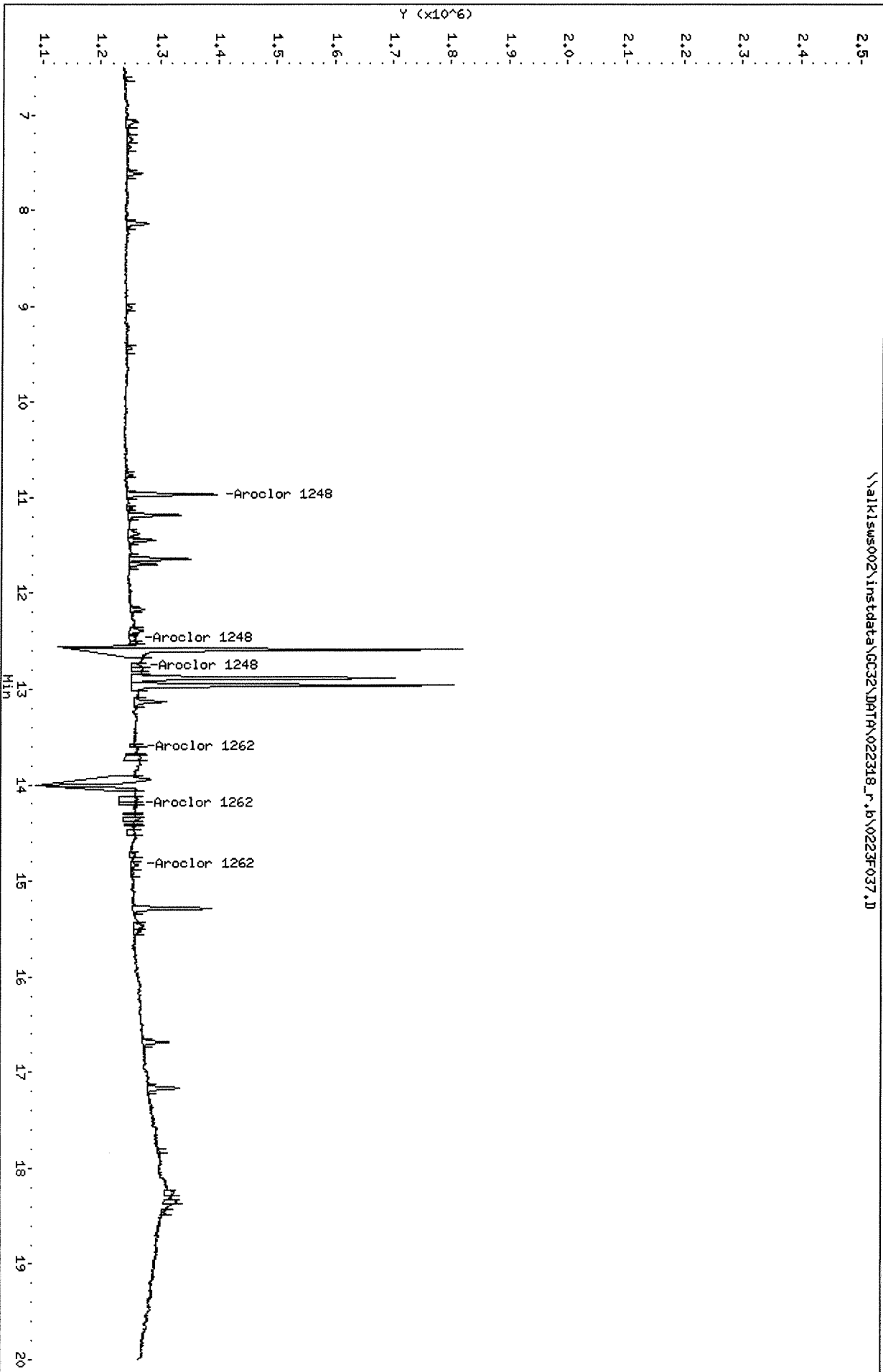
Data File: \\alkisus002\instdata\GC32\DATA\022318_r.b\0223F037.D
Date : 24-FEB-2018 06:35

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRY
Column diameter: 0.32

\\alkisus002\instdata\GC32\DATA\022318_r.b\0223F037.D



Data File: \\alklsws002\instdata\GC32\DATA\022318.B\0223F037.D

Date : 24-FEB-2018 06:35

Client ID:

Sample Info: 1B

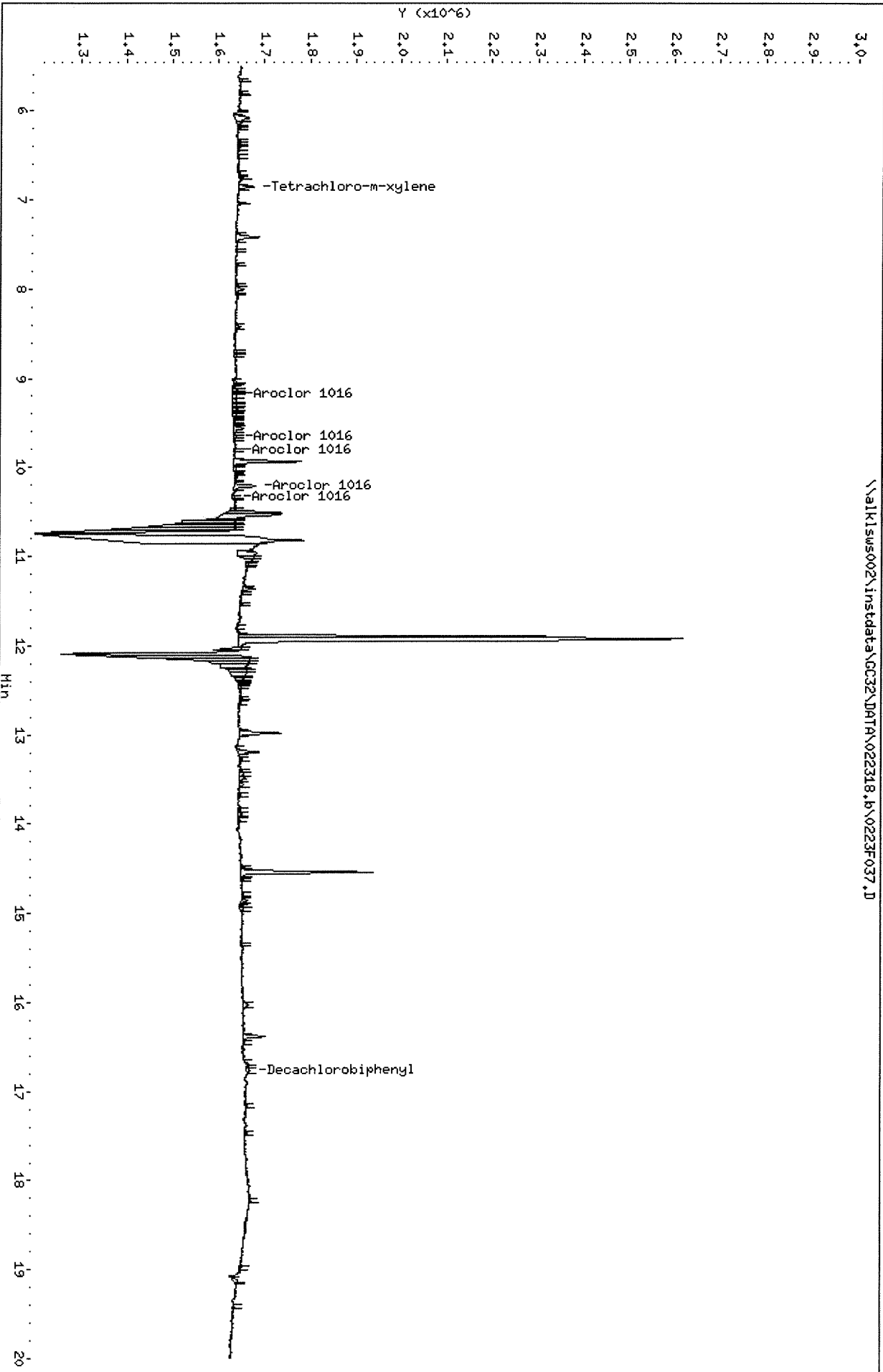
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022318.B\0223F037.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F044.D
Lab ID: KWG1801127-9
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 10:17
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F044.D
Lab ID: KWG1801127-9
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/24/2018 10:17
Date Quantitated: 02/26/2018 10:31
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F044.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F044.D	Vial:	84
Acqu Date:	02/24/2018 10:17	Quant Date:	02/26/2018 10:29
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801127-9	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:			Rpt
Tetrachloro-m-xylene	6.87	8.28	3612181	3348864	2.21	2.47				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	16.76	18.03	1941986	2228914	1.93	2.03				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	24.90	24.96			
Aroclor 1016 {1}	9.18	9.83	591904	542904	24.99	20.75			
Aroclor 1016 {2}	9.64	10.14	1445745	550618	24.88	27.36			
Aroclor 1016 {3}	9.81	10.89	942894	1260597	23.98	25.65			
Aroclor 1016 {4}	10.20	11.40	754889	792610	23.84	24.94			
Aroclor 1016 {5}	10.32	11.91	635154	417878	26.80	26.11			
Aroclor 1260			0	0	23.56	23.21			
Aroclor 1260 {1}	12.55	14.10	1430889	538641	24.35	25.11			
Aroclor 1260 {2}	13.14	14.68	889395	1004294	24.70	24.36			
Aroclor 1260 {3}	13.96	15.05	968655	956678	24.95	23.62			
Aroclor 1260 {4}	14.34	15.58	1878993	1939250	22.26	22.56			
Aroclor 1260 {5}	14.96	16.09	1400248	1268826	21.54	20.37			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F044.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F044.D
 Inj Date : 24-FEB-2018 10:17
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 26-FEB-2018 10:10
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.865	8.282	3612181	3348864	2.21	2.47		100.00
Aroclor 1016	9.181	9.832	591904	542904	25.0	20.7	80.00- 120.00	100.00
	9.635	10.142	1445745	550618	24.9	27.4	195.40- 293.10	244.25
	9.811	10.888	942894	1260597	24.0	25.7	127.44- 191.16	159.30
	10.201	11.398	754889	792610	23.8	24.9	102.03- 153.04	127.54
	10.318	11.912	635154	417878	26.8	26.1	85.85- 128.77	107.31
	Average of Peak Amounts =				24.9	25.0		
Aroclor 1260	12.548	14.098	1430889	538641	24.3	25.1	80.00- 120.00	100.00
	13.141	14.678	889395	1004294	24.7	24.4	49.73- 74.59	62.16
	13.955	15.048	968655	956678	25.0	23.6	54.16- 81.24	67.70
	14.335	15.582	1878993	1939250	22.3	22.6	105.05- 157.58	131.32
	14.961	16.085	1400248	1268826	21.5	20.4	78.29- 117.43	97.86
	Average of Peak Amounts =				23.6	23.2		
Decachlorobiphenyl	16.755	18.032	1941986	2228914	1.93	2.03		100.00

Data File: \\alkl1sws002\instdata\GC32\DATA\022318.b\0223F044.D
Date : 24-FEB-2018 10:17

Client ID:

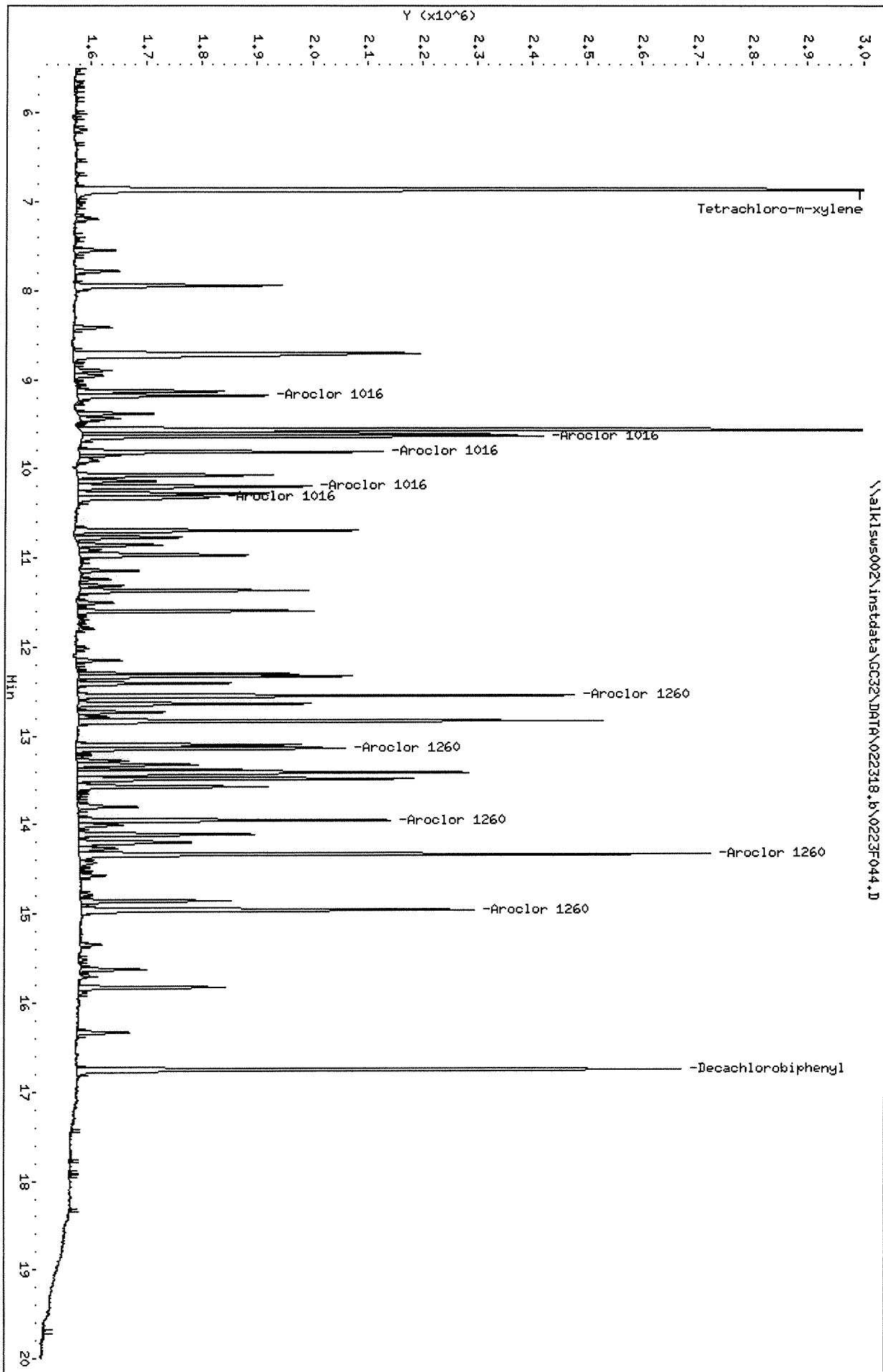
Sample Info: 1660 25PPB PCB7-22J

Column Phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alkisus002\instdata\GC32\DATA\022318_r_b\0223f044.D

Date : 24-FEB-2018 10:17

Client ID:

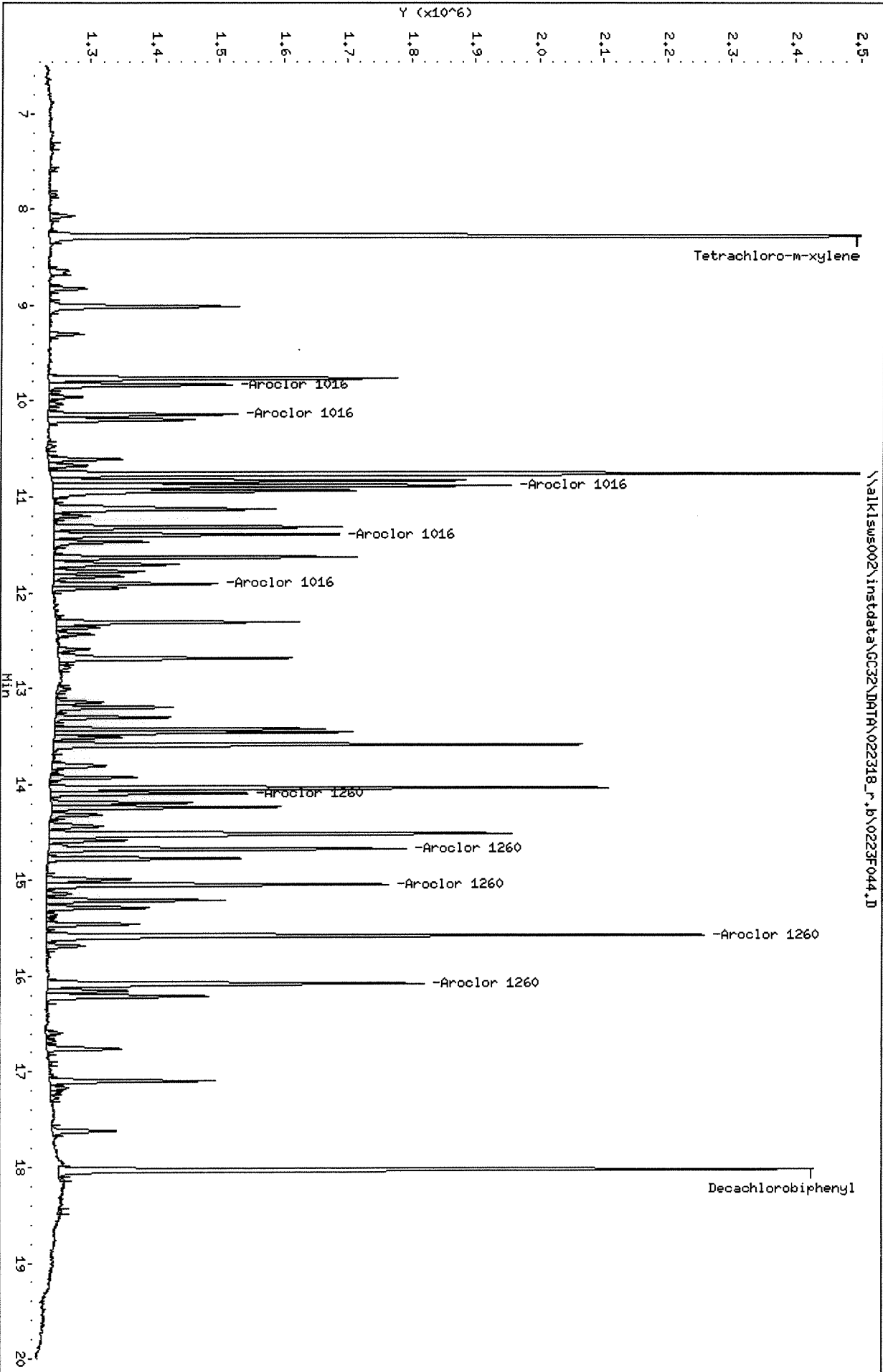
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\0223F045.D
Lab ID: KWG1801127-10
RunType: IB
Matrix: NOT APPLICABLE

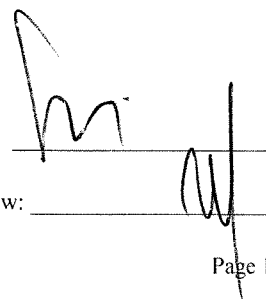
Date Acquired: 02/24/2018 10:49
Date Quantitated: 02/26/2018 10:29
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022318_R.B\0223F045.D
Lab ID: KWG1801127-10
RunType: IB
Matrix: NOT APPLICABLE

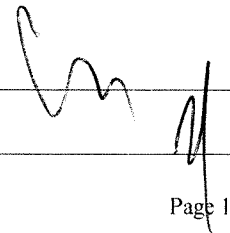
Date Acquired: 02/24/2018 10:49
Date Quantitated: 02/26/2018 10:31
Batch ID: KWG1801127
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022318.B\0223F045.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F045.D	Vial:	85
Acqu Date:	02/24/2018 10:49	Quant Date:	02/26/2018 10:29
Run Type:	IB	MethodJoinID:	MJ1716
Lab ID:	KWG1801127-10	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	02/26/2018

Analysis Lot:	KWG1801127	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022318.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1716
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	20-123	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	49-133	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: mg/Kg				Rpt
					ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	
Aroclor 1016			0	0	0.0000	0.4583			
Aroclor 1016 {1}		9.81	0	12665	0.0000	0.4840			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}		10.85	0	23394	0.0000	0.4760			
Aroclor 1016 {4}		11.42	0	13193	0.0000	0.4150			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	1.14			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}		9.81	0	12665	0.0000	0.7370			
Aroclor 1232 {3}		10.85	0	23394	0.0000	1.23			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}		10.99	0	22957	0.0000	1.45			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022318.B\0223F045.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022318_r.b\0223F045.D	Vial:	85
Acqu Date:	02/24/2018 10:49	Quant Date:	02/26/2018 10:29
Run Type:	IB	MethodJoinID:	MJ1716
Lab ID:	KWG1801127-10	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Parameter Name	RT		Resp		ng/mL		mg/Kg		Rpt
	#1	#2	#1	#2	#1	#2	#1	#2	
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.1170	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}	13.18		6824	0	0.1900	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}	14.38		5465	0	0.0650	0.0000			
Aroclor 1260 {5}	14.98		6249	0	0.0960	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022318.b\0223F045.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\0223F045.D
 Inj Date : 24-FEB-2018 10:49
 Sample Info: IB
 Misc Info :
 Cal Date : 26-FEB-2018 10:10
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022318.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022318_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1016	0.000	9.805	0	12665	0.000	0.484		
	0.000	0.000	0	0	0.000	0.000		
	0.000	10.845	0	23394	0.000	0.476		
	0.000	11.415	0	13193	0.000	0.415		
	0.000	0.000	0	0	0.000	0.000		
	Average of Peak Amounts =				0.000	0.458		
Aroclor 1232	0.000	0.000	0	0	0.000	0.000		
	0.000	9.805	0	12665	0.000	0.737		
	0.000	10.845	0	23394	0.000	1.23		
	0.000	0.000	0	0	0.000	0.000		
	0.000	10.988	0	22957	0.000	1.45		
	Average of Peak Amounts =				0.000	1.14		
Aroclor 1260	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00(T)
	13.178	0.000	6824	0	0.190	0.000	49.73- 74.59	0.00(T)
	0.000	0.000	0	0	0.000	0.000	54.16- 81.24	0.00(T)
	14.378	0.000	5465	0	0.0647	0.000	105.05- 157.58	0.00(T)
	14.975	0.000	6249	0	0.0961	0.000	78.29- 117.43	0.00(T)
	Average of Peak Amounts =				0.117	0.000		
Aroclors, Total	1.000	1.000	6179	36089	0.117	1.60		0.00

QC Flag Legend

T - Target compound detected outside RT window.

Data File: \\alk1sus002\instdata\GC32\DATA\022318.B\0223F045.D
Date : 24-FEB-2018 10:49

Client ID:
Sample Info: IB

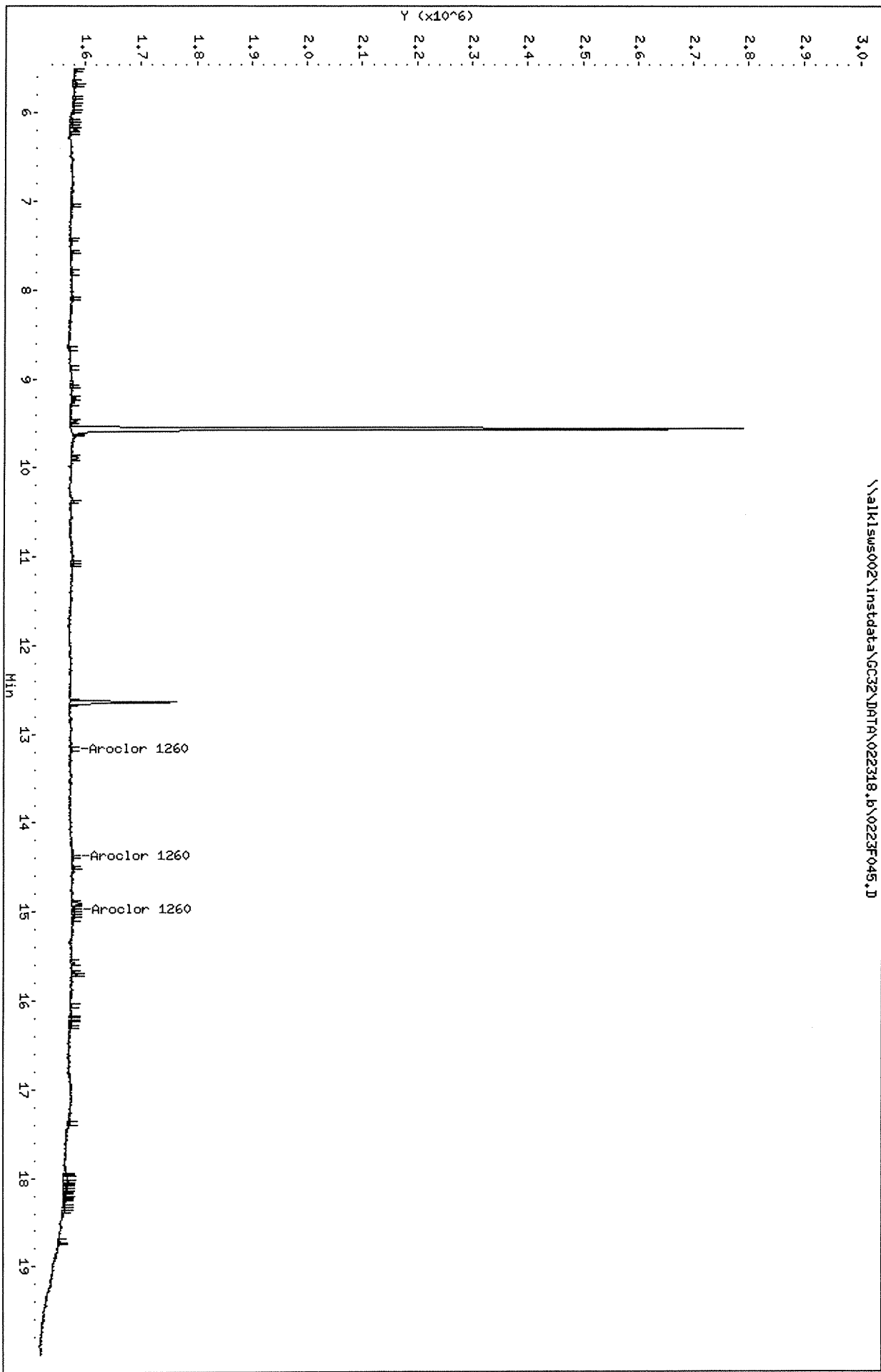
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022318.B\0223F045.D



Data File: \\alk1sus002\instdata\GC32\DATA\022318_r.b\0223F045.D

Date : 24-FEB-2018 10:49

Client ID:

Sample Info: IB

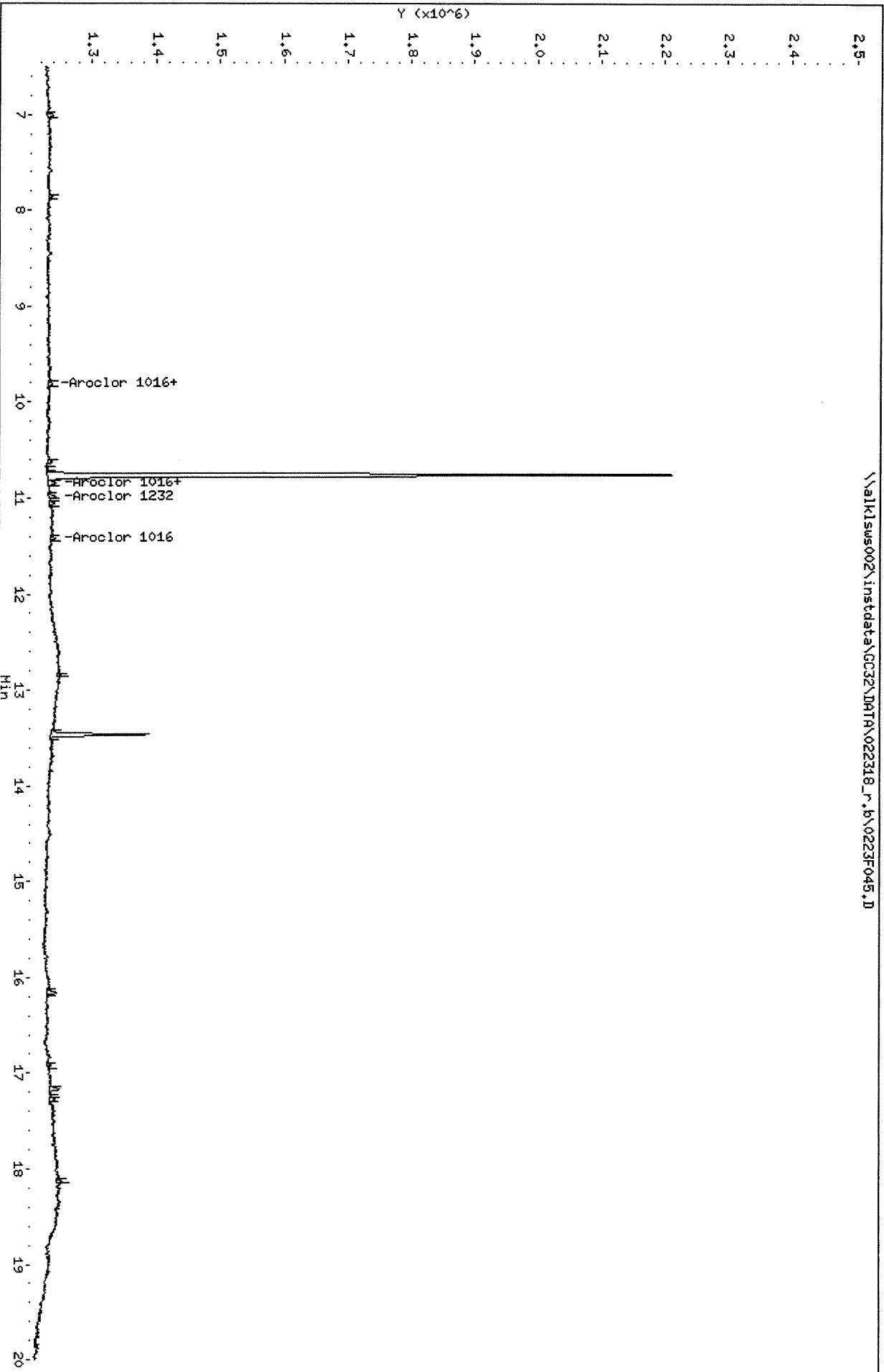
Column phase: DB-ALB

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022318_r.b\0223F045.D



Comment: Ultra Low Level PCB Aroclors by EPA 8082A
 Operator: SMURRAY
 Data Path: C:\GC32\DATA\021518\
 Pre-Seq Cmd:
 Post-Seq Cmd:

Method Sections To Run On A Barcode Mismatch
 (X) Full Method (X) Inject Anyway
 () Reprocessing Only () Don't Inject

OK = 15887
Run: 580439

Line	Type	Vial	DataFile	Method	Sample Name
1	SMPL	99	0215F001	ULSPLT	PRIMER
2	SMPL	99	0215F002	ULSPLT	PRIMER
3	CCV	1	0215F003	ULSPLT	1660 25PPB PCB7-22J
4	IB	2	0215F004	ULSPLT	IB
5	SMPL	3	0215F005	ULSPLT	K1801041-001
6	SMPL	4	0215F006	ULSPLT	K1801041-002
7	LCS	5	0215F007	ULSPLT	KWG1800821-LCS
8	DLCS	6	0215F008	ULSPLT	KWG1800821-DLCS
9	MB	7	0215F009	ULSPLT	KWG1800821-MB
10	CCV	1	0215F010	ULSPLT	1660 25PPB PCB7-22J
11	IB	2	0215F011	ULSPLT	IB
12	SMPL	8	0215F012	ULSPLT	K1801198-001
13	LCS	9	0215F013	ULSPLT	KWG1800880-LCS
14	DLCS	10	0215F014	ULSPLT	KWG1800880-DLCS
15	MB	11	0215F015	ULSPLT	KWG1800880-MB
16	SMPL	12	0215F016	ULSPLT	K1801267-004
17	SMPL	13	0215F017	ULSPLT	K1801267-018
18	LCS	14	0215F018	ULSPLT	KWG1800932-LCS
19	DLCS	15	0215F019	ULSPLT	KWG1800932-DLCS
20	MB	16	0215F020	ULSPLT	KWG1800932-MB
21	CCV	1	0215F021	ULSPLT	1660 25PPB PCB7-22J
22	IB	2	0215F022	ULSPLT	IB
23	PAR	17	0215F023	ULSPLT	KWG1800552-IPR1
24	PAR	18	0215F024	ULSPLT	KWG1800552-IPR2
25	PAR	19	0215F025	ULSPLT	KWG1800552-IPR3
26	PAR	20	0215F026	ULSPLT	KWG1800552-IPR4
27	MB	21	0215F027	ULSPLT	KWG1800552-MB
28	CCV	1	0215F028	ULSPLT	1660 25PPB PCB7-22J
29	IB	2	0215F029	ULSPLT	IB

Done

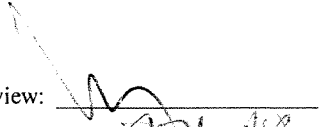
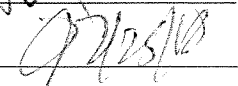
Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F003.D
Lab ID: KWG1800961-1
Run Type: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 09:01
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F003.D
Lab ID: KWG1800961-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 09:01
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F003.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F003.D	Vial:	1
Acqu Date:	02/15/2018 09:01	Quant Date:	02/16/2018 10:14
Run Type:	CCV	MethodJoinID:	MJ1662
Lab ID:	KWG1800961-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/16/2018

Analysis Lot:	KWG1800961	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.87	8.28	3552145	3054327	2.18	2.25			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.76	18.04	2035728	2311576	2.02	2.10			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
							ug/L #1	ug/L #2	
Aroclor 1016			0	0	24.15	23.02			
Aroclor 1016 {1}	9.19	9.84	590264	498687	24.92	19.06			
Aroclor 1016 {2}	9.64	10.15	1432475	507339	24.65	25.21			
Aroclor 1016 {3}	9.81	10.89	932040	1181786	23.71	24.05			
Aroclor 1016 {4}	10.20	11.40	727236	722427	22.97	22.74			
Aroclor 1016 {5}	10.32	11.91	580550	384685	24.50	24.03			
Aroclor 1260			0	0	22.91	21.76			
Aroclor 1260 {1}	12.55	14.10	1387541	487495	23.61	22.73			
Aroclor 1260 {2}	13.14	14.68	871155	935777	24.19	22.70			
Aroclor 1260 {3}	13.96	15.05	930383	903783	23.97	22.31			
Aroclor 1260 {4}	14.33	15.58	1809689	1848243	21.44	21.50			
Aroclor 1260 {5}	14.96	16.09	1386811	1217069	21.33	19.54			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1662

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F003.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					24.15	25.00	-3
Aroclor 1260		MS	NA	20					22.91	25.00	-8
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.4E+6	-13			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.4E+4	0			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	5.7E+4	-1			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.7E+4	-5			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	2.9E+4	-8			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.3E+4	-2			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.6E+4	-6			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.5E+4	-3			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.7E+4	-4			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.2E+4	-14			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.5E+4	-15			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.1E+5	-19			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1662

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F003.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					23.02	25.00	-8
Aroclor 1260		MS	NA	20					21.76	25.00	-13
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.2E+6	-10			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.0E+4	-24			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.0E+4	1			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	4.7E+4	-4			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	2.9E+4	-9			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.5E+4	-4			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	1.9E+4	-9			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	3.7E+4	-9			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	3.6E+4	-11			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	7.4E+4	-14			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	4.9E+4	-22			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.2E+5	-16			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F003.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F003.D
 Inj Date : 15-FEB-2018 09:01
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.865	8.282	3552145	3054327	2.18	2.25		100.00
Aroclor 1016	9.185	9.836	590264	498687	24.9	19.1	80.00- 120.00	100.00
	9.635	10.146	1432475	507339	24.6	25.2	202.22- 303.33	242.68
	9.812	10.892	932040	1181786	23.7	24.1	130.26- 195.39	157.90
	10.202	11.399	727236	722427	23.0	22.7	98.62- 147.93	123.21
	10.322	11.912	580550	384685	24.5	24.0	83.08- 124.62	98.35
	Average of Peak Amounts =				24.1	23.0		
Aroclor 1260	12.549	14.099	1387541	487495	23.6	22.7	80.00- 120.00	100.00
	13.142	14.679	871155	935777	24.2	22.7	52.79- 79.18	62.78
	13.955	15.049	930383	903783	24.0	22.3	53.29- 79.94	67.05
	14.332	15.582	1809689	1848243	21.4	21.5	105.45- 158.17	130.42
	14.959	16.086	1386811	1217069	21.3	19.5	81.06- 121.59	99.95
	Average of Peak Amounts =				22.9	21.7		
Decachlorobiphenyl	16.755	18.036	2035728	2311576	2.02	2.10		100.00

Data File: \\alk1s002\instdata\GC32\DATA\021518.b\0215F003.D
Date: 15-FEB-2018 09:01
Client ID:

Sample Info: 1660 25PPB PCB7-22J

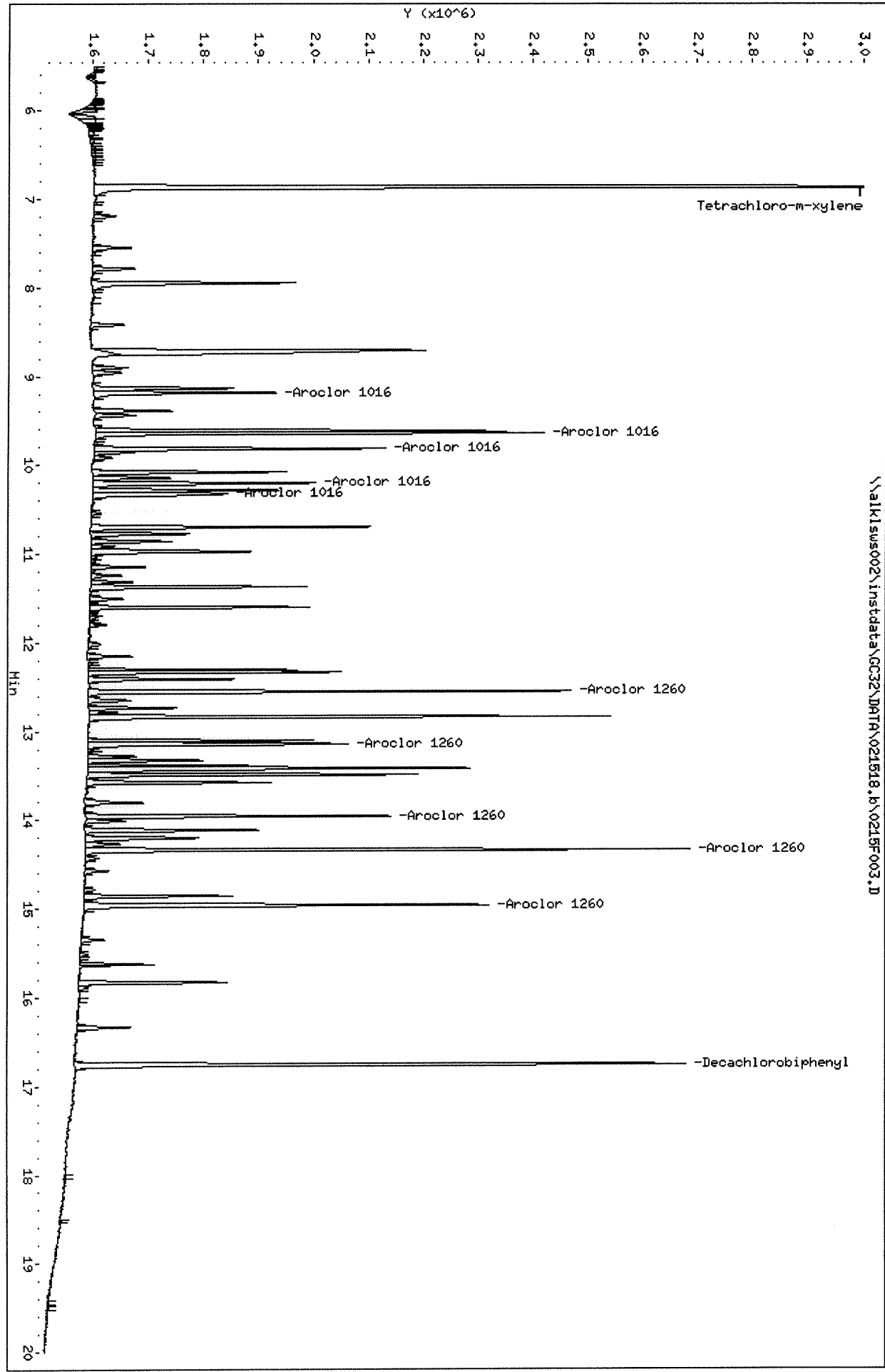
Column phase: DB-35MS

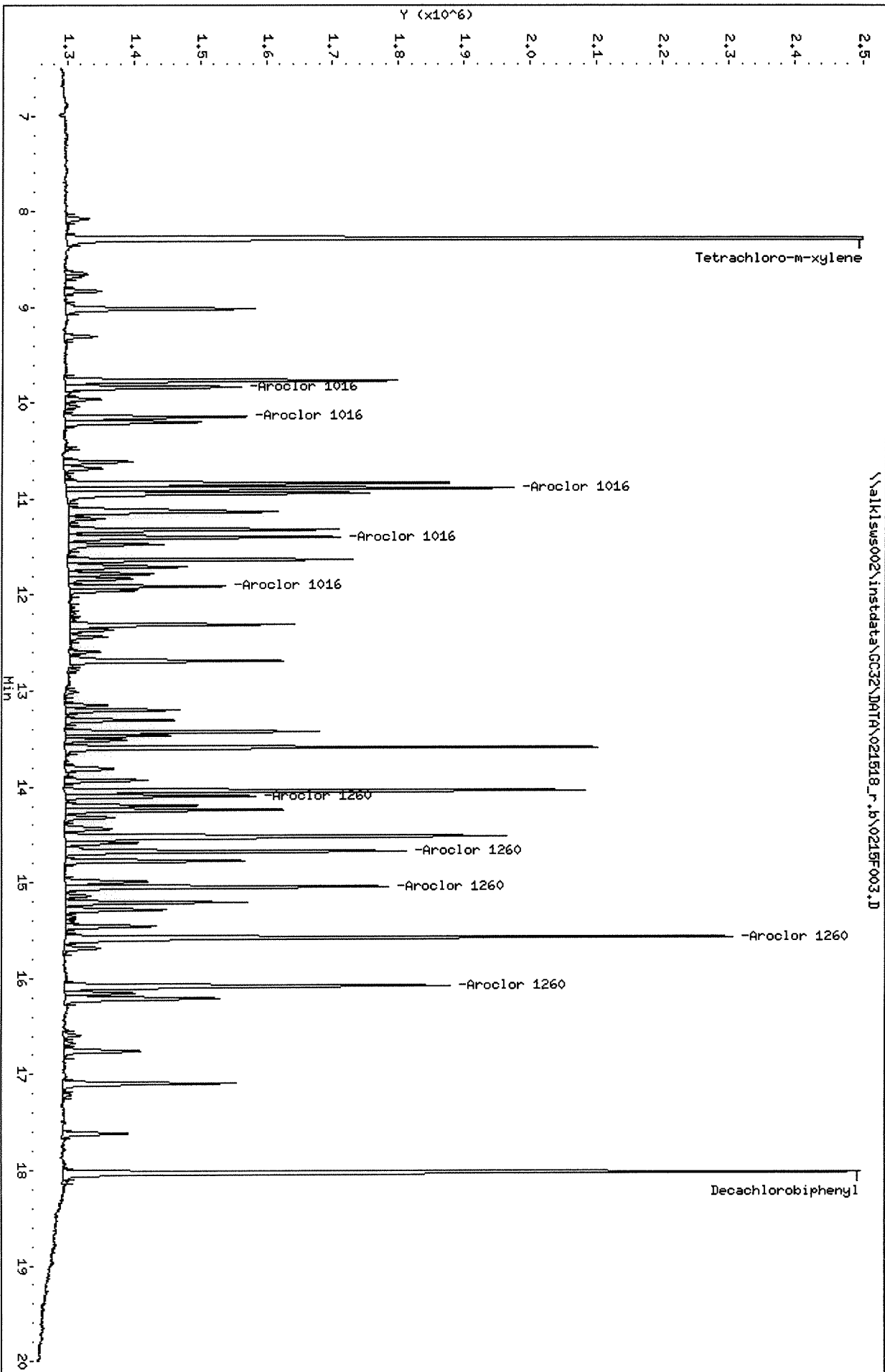
Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1s002\instdata\GC32\DATA\021518.b\0215F003.D





Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F004.D
Lab ID: KWG1800961-2
RunType: IB
Matrix: NOT APPLICABLE

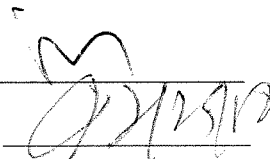
Date Acquired: 02/15/2018 09:33
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F004.D
Lab ID: KWG1800961-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 09:33
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F004.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F004.D	Vial:	2
Acqu Date:	02/15/2018 09:33	Quant Date:	02/16/2018 10:14
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1800961-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/16/2018

Analysis Lot:	KWG1800961	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units: ug/L				Rpt
					ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F004.D	Instrument:	GC32.i
Data File #2:	\\alkisws002\instdata\GC32\DATA\021518_r.b\0215F004.D	Vial:	2
Acqu Date:	02/15/2018 09:33	Quant Date:	02/16/2018 10:14
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1800961-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.1130	0.0000			
Aroclor 1254 {1}	11.39		5099	0	0.0930	0.0000			
Aroclor 1254 {2}	12.18		5056	0	0.1220	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}	12.59		5011	0	0.1240	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 F: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F004.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F004.D
 Inj Date : 15-FEB-2018 09:33
 Sample Info: IB
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1254	11.387	0.000	5099	0	0.0932	0.000	80.00- 120.00	100.00(T)
	12.181	0.000	5056	0	0.122	0.000	64.52- 96.78	99.16(T)
	0.000	0.000	0	0	0.000	0.000	121.44- 182.17	0.00(T)
	12.591	0.000	5011	0	0.124	0.000	61.81- 92.72	98.28(T)
	0.000	0.000	0	0	0.000	0.000	47.38- 71.07	0.00(T)
	Average of Peak Amounts =				0.113	0.000		
Aroclors, Total	1.000	0.000	5055	0	0.113	0.000		0.00

QC Flag Legend

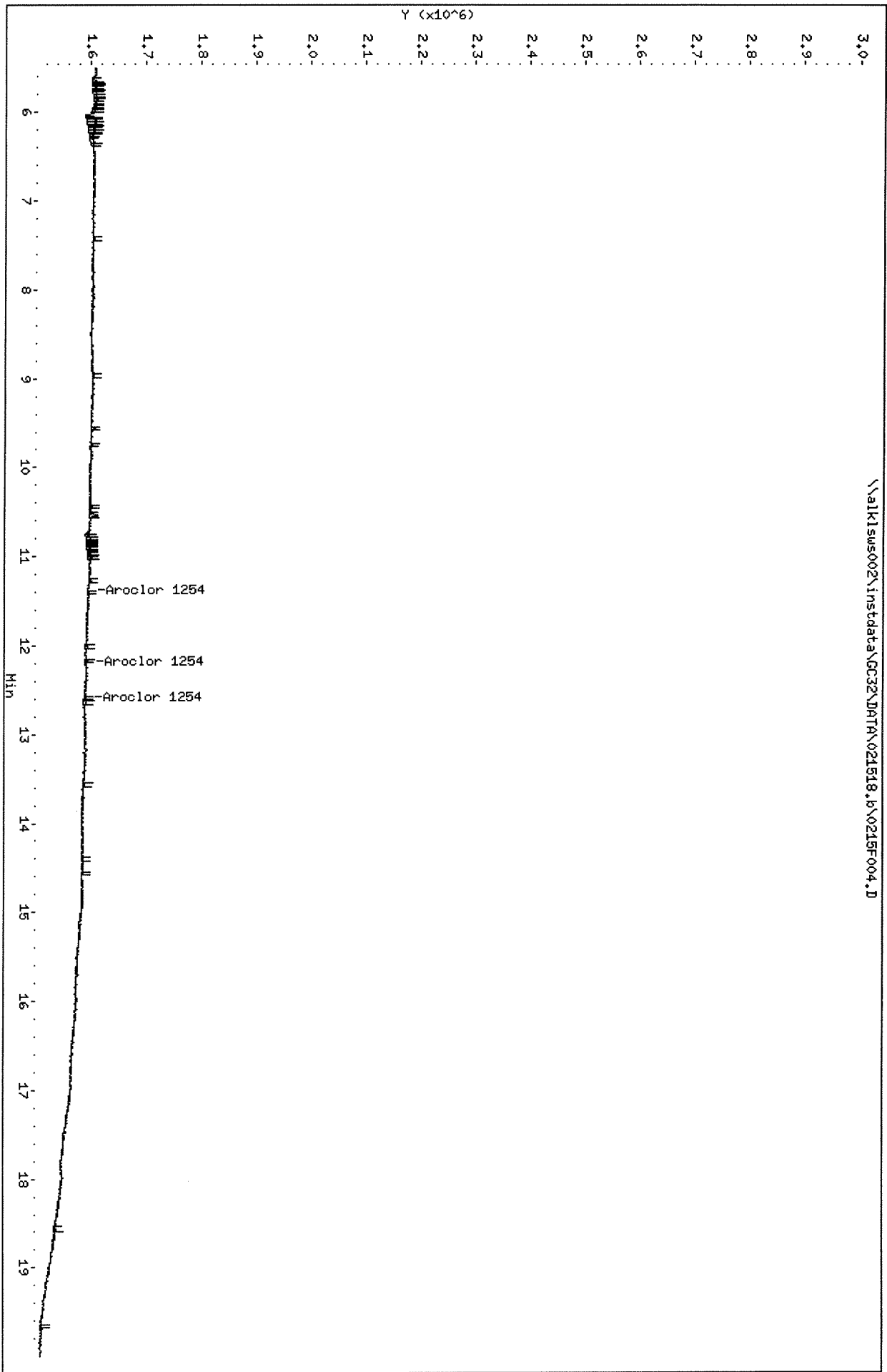
T - Target compound detected outside RT window.

Data File: \\alkisw002\instdata\GC32\DATA\021518.b\0215F004.D
Date : 15-FEB-2018 09:33

Client ID:
Sample Info: IB

Column phase: DB-35MS

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\021518_r.b\0215F004.D

Date : 15-FEB-2018 09:33

Client ID:

Sample Info: IB

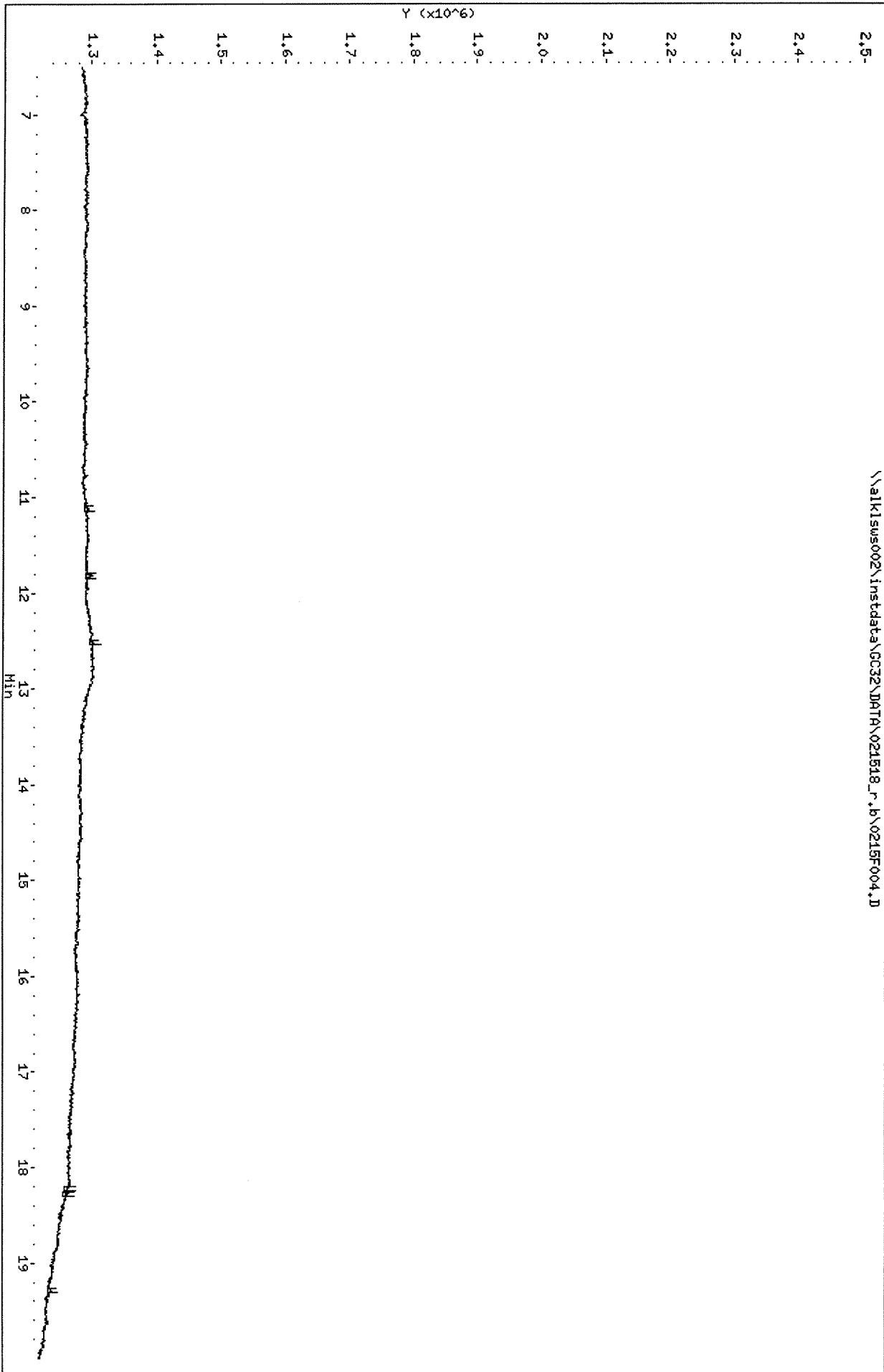
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\021518_r.b\0215F004.D



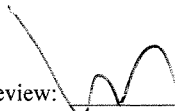
Exception Report

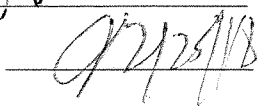
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F010.D
Lab ID: KWG1800961-3
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 12:43
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F010.D
Lab ID: KWG1800961-3
RunType: CCV
Matrix: NOT APPLICABLE

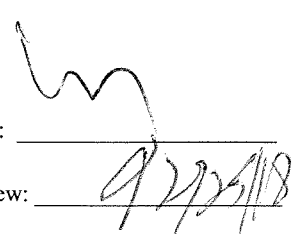
Date Acquired: 02/15/2018 12:43
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F010.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F010.D	Vial:	1
Acqu Date:	02/15/2018 12:43	Quant Date:	02/16/2018 10:14
Run Type:	CCV	MethodJoinID:	MJ1662
Lab ID:	KWG1800961-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/16/2018

Analysis Lot:	KWG1800961	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2				Rpt
Tetrachloro-m-xylene	6.86	8.28	3810208	3513012	2.33	2.59				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	16.75	18.03	2128697	2352334	2.11	2.14				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
							ug/L #1	ug/L #2	
Aroclor 1016			0	0	27.33	27.16			
Aroclor 1016 {1}	9.18	9.84	646135	578349	27.28	22.10			
Aroclor 1016 {2}	9.63	10.15	1607848	602189	27.67	29.92			
Aroclor 1016 {3}	9.81	10.89	1059331	1403739	26.95	28.57			
Aroclor 1016 {4}	10.20	11.40	814148	837913	25.71	26.37			
Aroclor 1016 {5}	10.32	11.91	687843	461368	29.03	28.83			
Aroclor 1260			0	0	25.12	25.52			
Aroclor 1260 {1}	12.55	14.10	1546686m	666557	26.32	31.08			
Aroclor 1260 {2}	13.14	14.68	939070m	1069017	26.08	25.93			
Aroclor 1260 {3}	13.95	15.05	1015524m	1018150	26.16	25.14			
Aroclor 1260 {4}	14.33	15.58	2016297m	2091444	23.89	24.33			
Aroclor 1260 {5}	14.96	16.08	1506705m	1316460	23.17	21.14			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1662

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F010.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					27.33	25.00	9
Aroclor 1260		MS	NA	20					25.12	25.00	0
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-7			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.6E+4	9			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.4E+4	11			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.2E+4	8			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.3E+4	3			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.8E+4	16			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	6.2E+4	5			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.8E+4	4			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	5			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	8.1E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	6.0E+4	-7			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.5E+5	-15			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1662

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F010.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					27.16	25.00	9
Aroclor 1260		MS	NA	20					25.52	25.00	2
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.4E+6	4			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.3E+4	-12			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.4E+4	20			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.6E+4	14			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.4E+4	5			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.8E+4	15			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.7E+4	24			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.3E+4	4			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.1E+4	1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.4E+4	-3			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.3E+4	-15			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.4E+5	-14			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F010.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F010.D
 Inj Date : 15-FEB-2018 12:43
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.282	3810208	3513012	2.33	2.59		100.00
Aroclor 1016	9.178	9.835	646135	578349	27.3	22.1	80.00- 120.00	100.00
	9.631	10.145	1607848	602189	27.7	29.9	202.22- 303.33	248.84
	9.808	10.888	1059331	1403739	26.9	28.6	130.26- 195.39	163.95
	10.198	11.398	814148	837913	25.7	26.4	98.62- 147.93	126.00
	10.318	11.912	687843	461368	29.0	28.8	83.08- 124.62	106.46
	Average of Peak Amounts =				27.3	27.2		
Aroclor 1260	12.545	14.095	1546686	666557	26.3	31.1	80.00- 120.00	100.00 (M)
	13.138	14.675	939070	1069017	26.1	25.9	52.79- 79.18	60.71 (M)
	13.951	15.045	1015524	1018150	26.2	25.1	53.29- 79.94	65.66 (M)
	14.331	15.578	2016297	2091444	23.9	24.3	105.45- 158.17	130.36 (M)
	14.958	16.082	1506705	1316460	23.2	21.1	81.06- 121.59	97.42 (M)
	Average of Peak Amounts =				25.1	25.5		
Decachlorobiphenyl	16.751	18.032	2128697	2352334	2.11	2.14		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alkisus002\instdata\GC32\DATA\021518.b\0215F010.D
Date: 15-FEB-2018 12:43

Client ID:

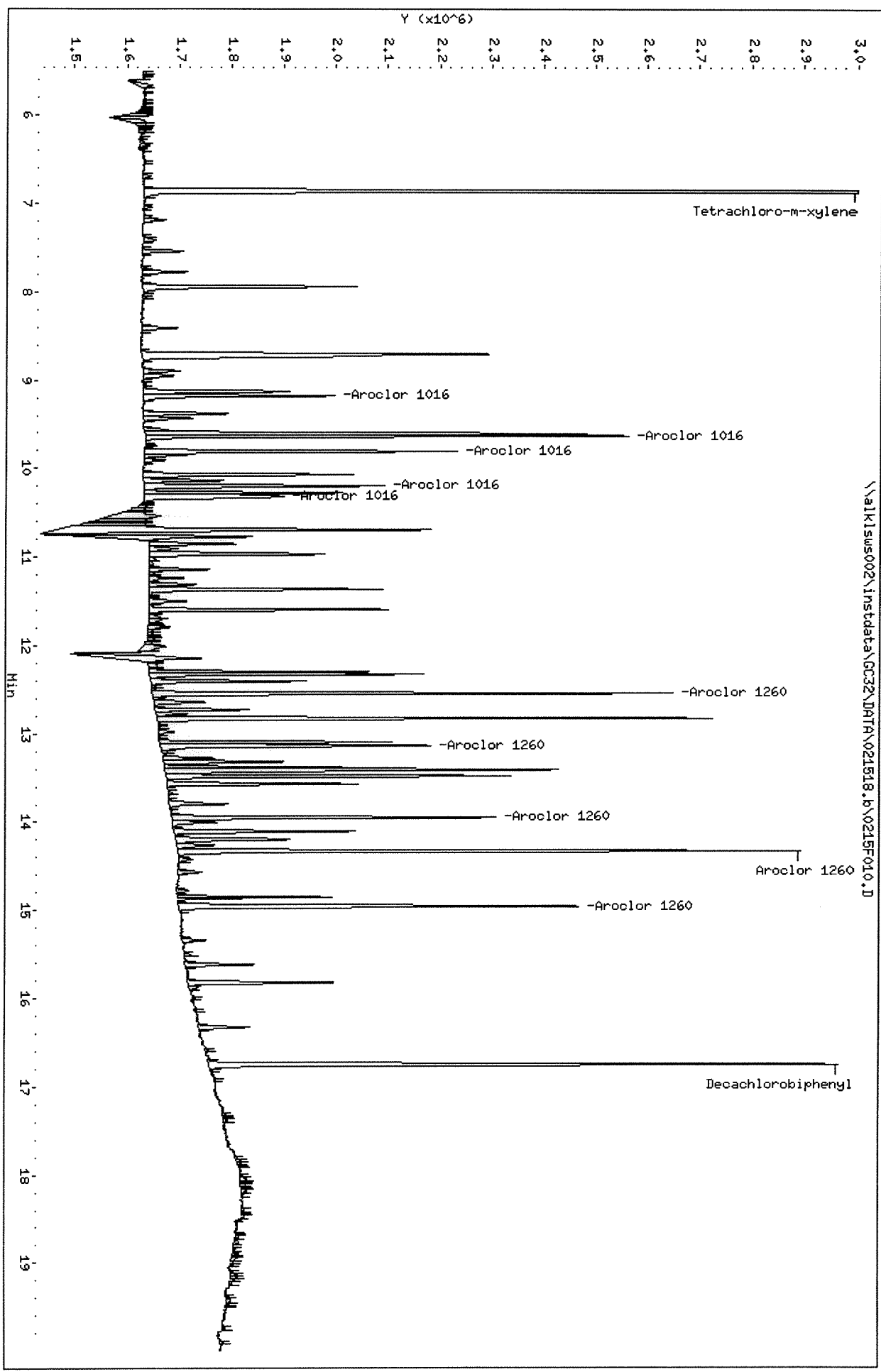
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\021518_r_b\0215F010.D

Date: 15-FEB-2018 12:43

Client ID:

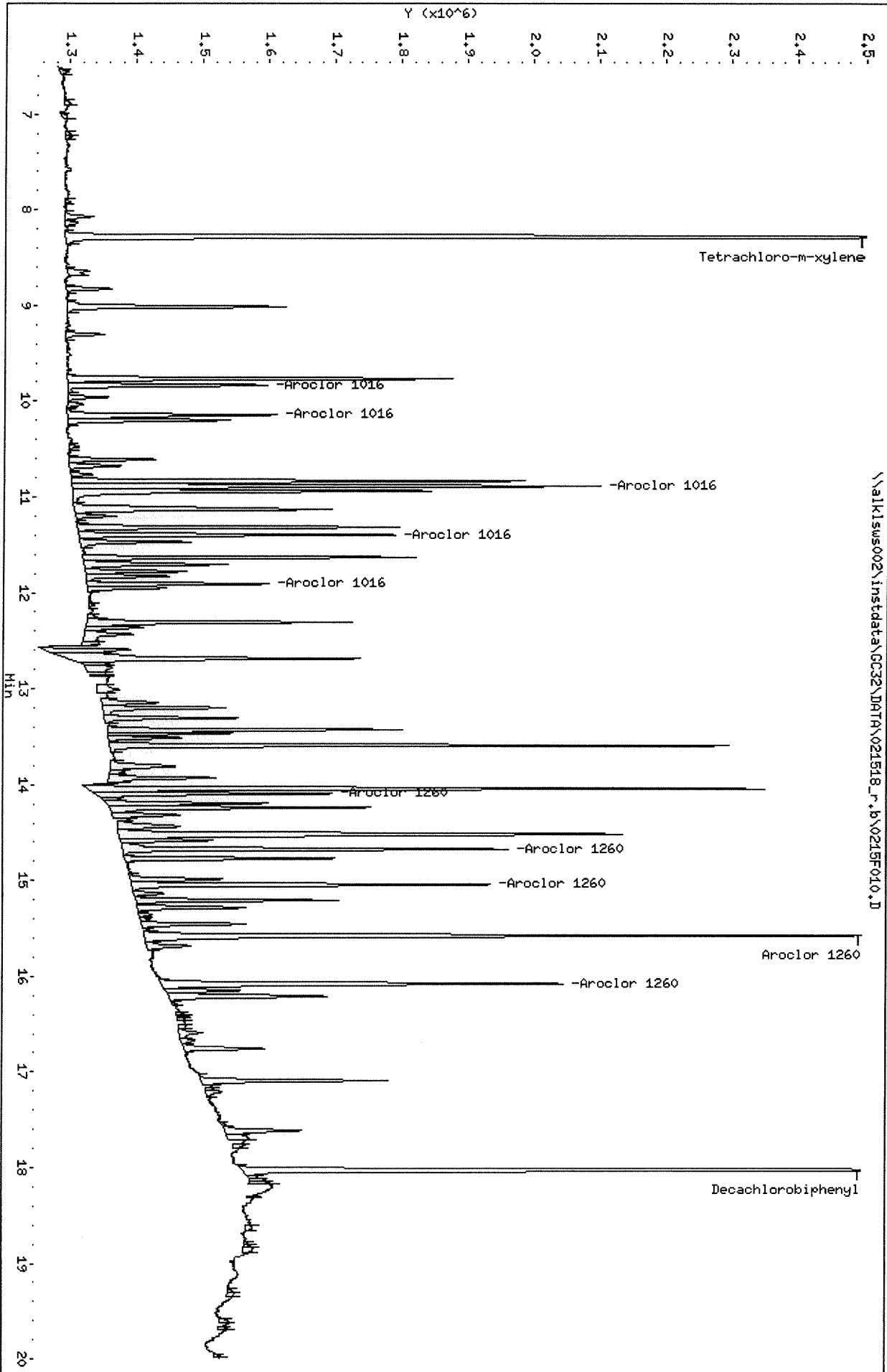
Sample Info: 1660 25PP3 PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

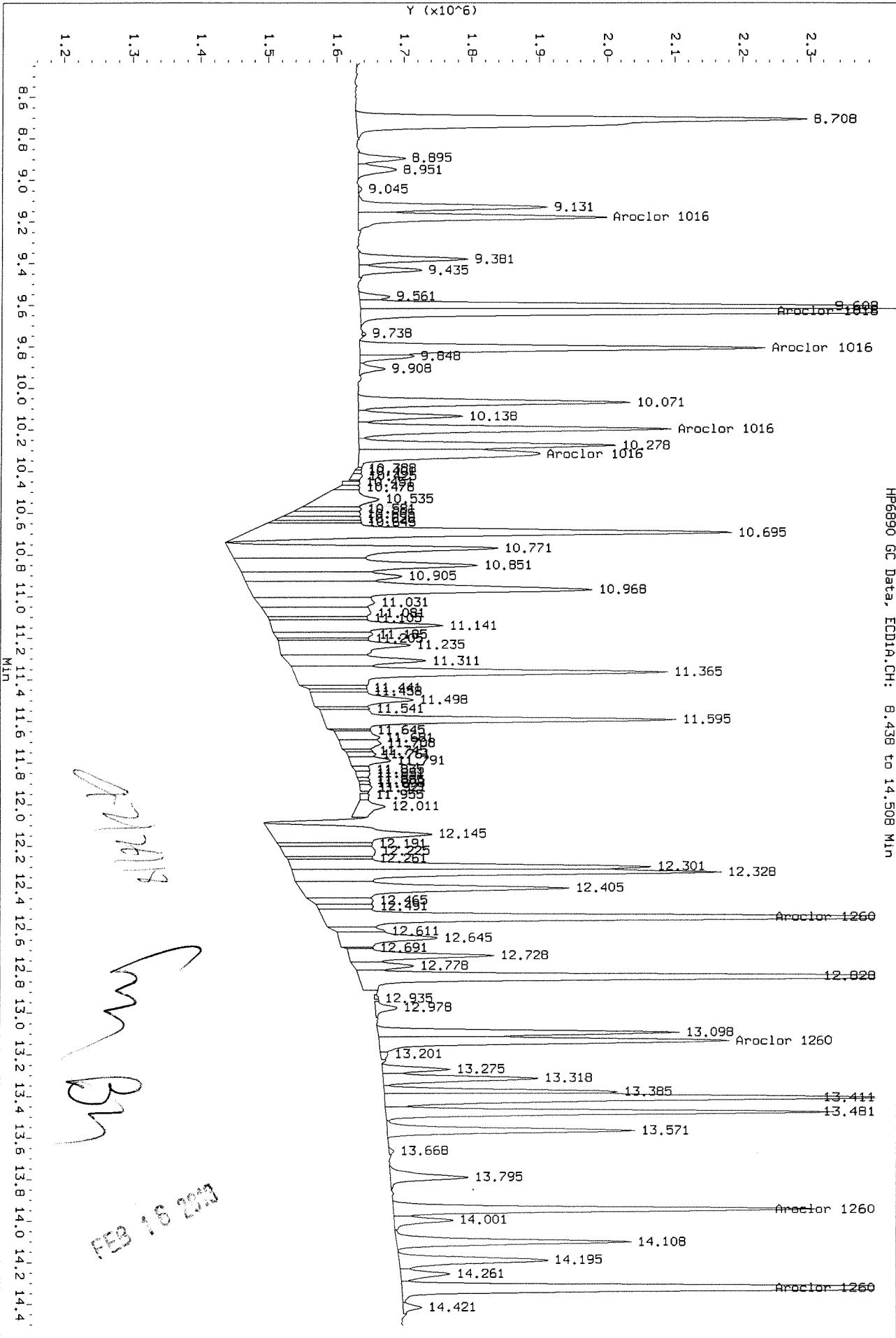
Operator: SHURRAY

Column diameter: 0.32

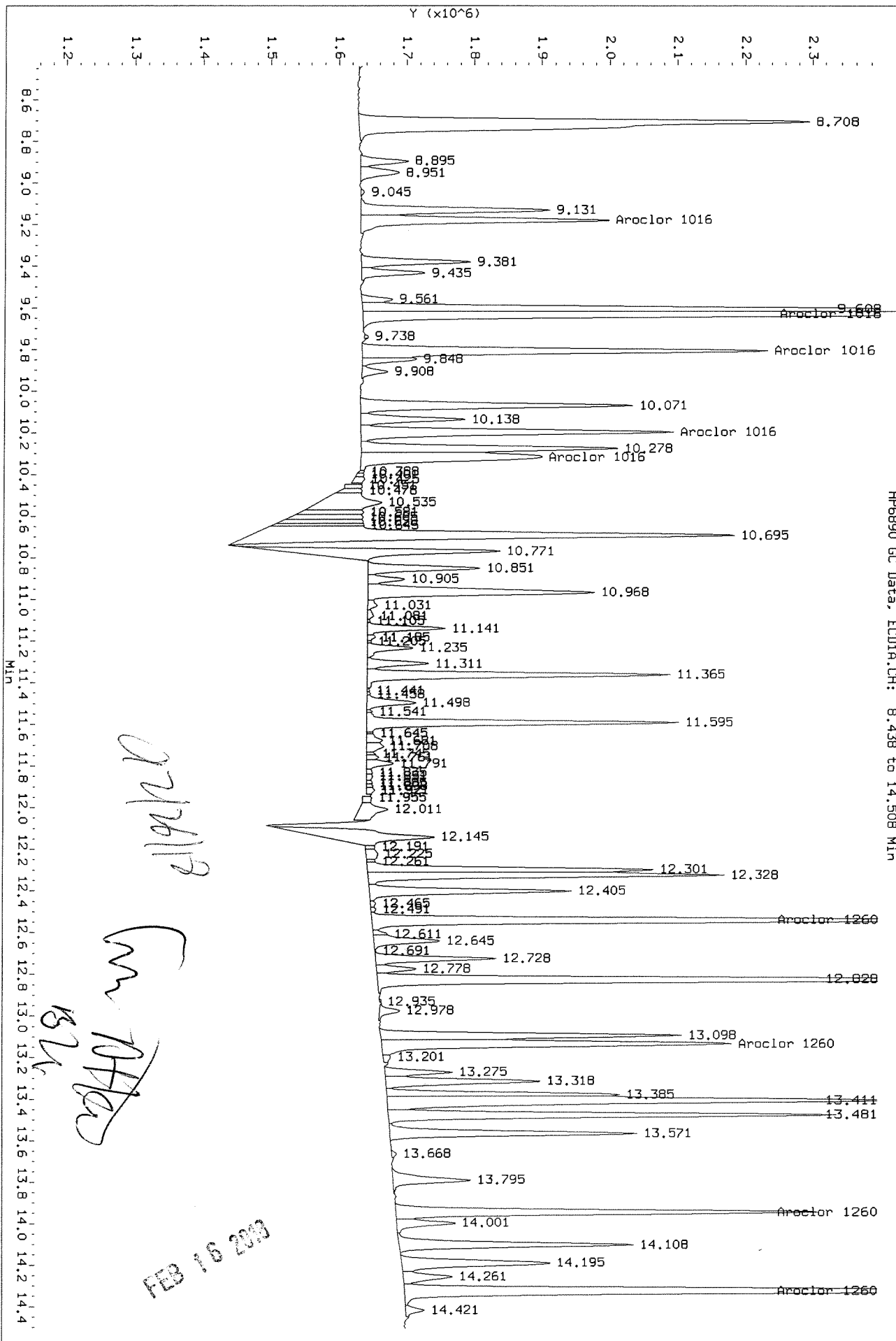


Data File: \\alklsws002\Instdata\GC32\DATA\021518.B\0215F010.D
Injection Date: 15-FEB-2018 12:43
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 8.438 to 14.508 MIN



HP6890 GC Data, ECD1A.CH: 8.438 to 14.508 MIN



Handwritten signature

Handwritten signature

FEB 16 2018

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F011.D
Lab ID: KWG1800961-4
RunType: IB
Matrix: NOT APPLICABLE


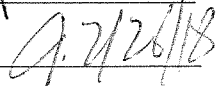
Date Acquired: 02/15/2018 13:15
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F011.D
Lab ID: KWG1800961-4
RunType: IB
Matrix: NOT APPLICABLE

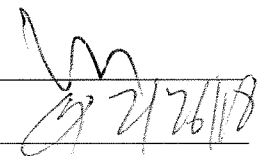
Date Acquired: 02/15/2018 13:15
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F011.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F011.D	Vial:	2
Acqu Date:	02/15/2018 13:15	Quant Date:	02/16/2018 10:14
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1800961-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/16/2018

Analysis Lot:	KWG1800961	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00	18.02	0	24271		0.0220			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F011.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F011.D	Vial:	2
Acqu Date:	02/15/2018 13:15	Quant Date:	02/16/2018 10:14
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1800961-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F011.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F011.D
Inj Date : 15-FEB-2018 13:15
Sample Info: IB
Misc Info :
Cal Date : 16-FEB-2018 09:45
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Decachlorobiphenyl	0.000	18.021	0	24271	0.000	0.0221		

Data File: \\alk1s02\instdata\GC32\DATA\021518.b\0215F011.D

Date: 15-FEB-2018 13:15

Client ID:

Sample Info: IB

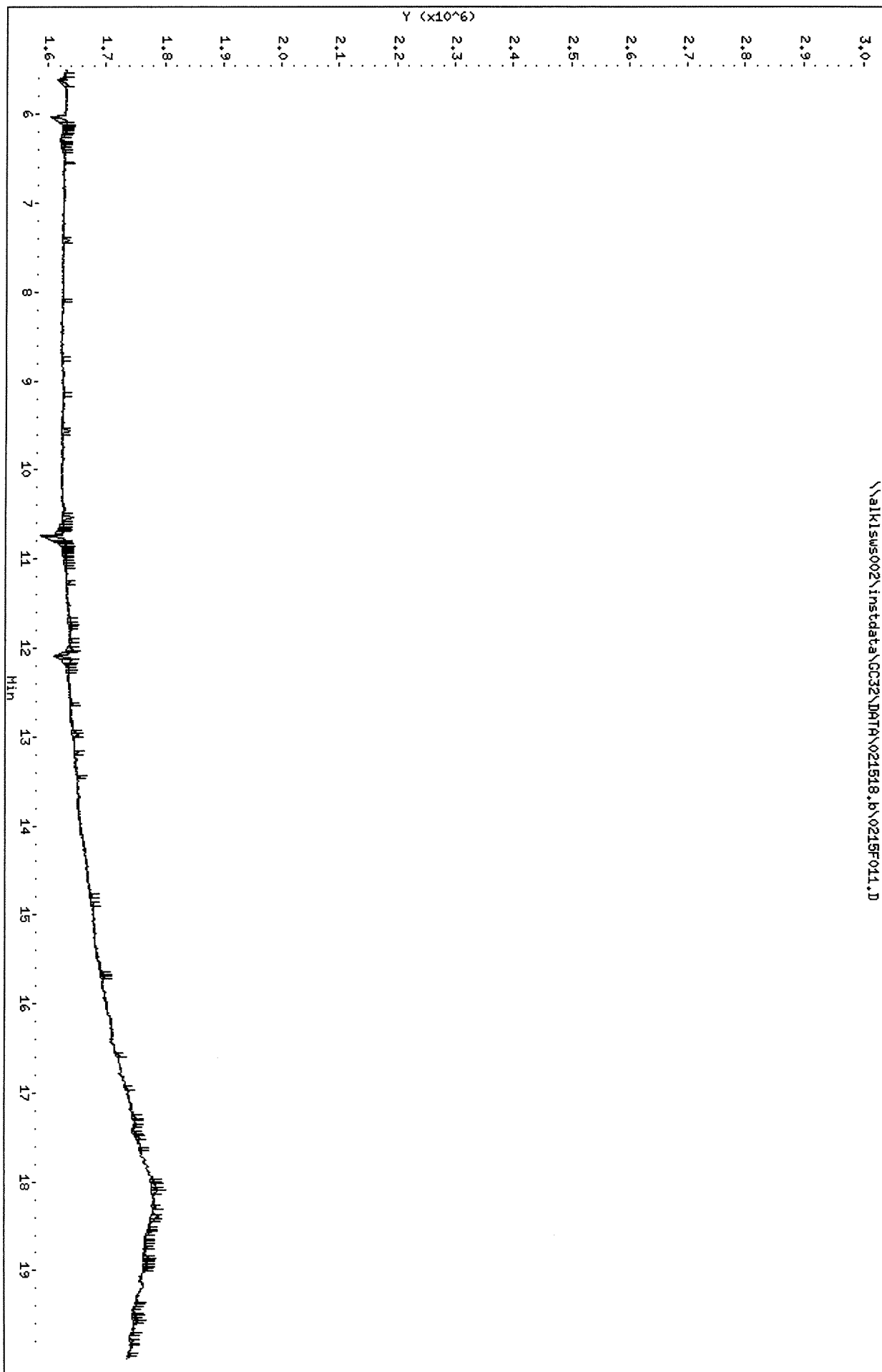
Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

Column phase: DB-35MS

\\alk1s02\instdata\GC32\DATA\021518.b\0215F011.D



Data File: \\alk1sws002\instdata\GC32\DATA\021518_r.b\0215F011.D

Date : 15-FEB-2018 13:15

Client ID:

Sample Info: IB

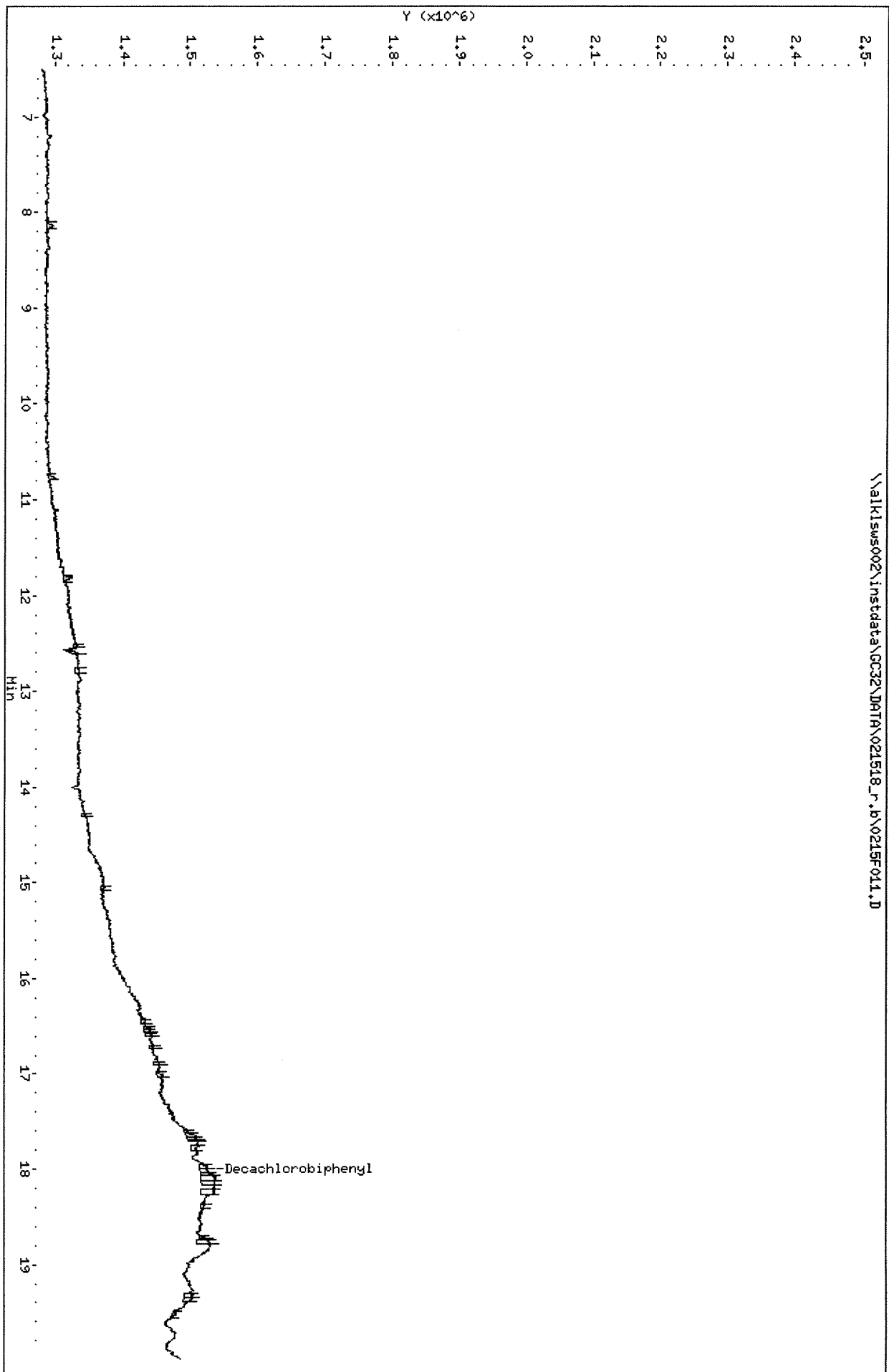
Column phase: DB-XXB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\021518_r.b\0215F011.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F021.D
Lab ID: KWG1800961-5
Run Type: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 18:32
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F021.D
Lab ID: KWG1800961-5
RunType: CCV
Matrix: NOT APPLICABLE

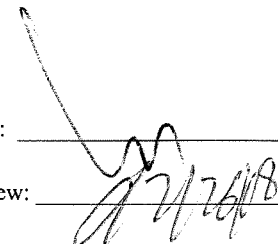
Date Acquired: 02/15/2018 18:32
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F021.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F021.D	Vial:	1
Acqu Date:	02/15/2018 18:32	Quant Date:	02/16/2018 10:14
Run Type:	CCV	MethodJoinID:	MJ1662
Lab ID:	KWG1800961-5	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/16/2018

Analysis Lot:	KWG1800961	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	6.86	8.28	3783207	3346037	2.32	2.47			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2260433	2482497	2.25	2.26			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	26.84	26.33			
Aroclor 1016 {1}	9.18	9.84	639340	553568	26.99	21.16			
Aroclor 1016 {2}	9.63	10.14	1616078	582732	27.81	28.95			
Aroclor 1016 {3}	9.81	10.89	1040979	1358112	26.48	27.64			
Aroclor 1016 {4}	10.20	11.40	788155	832972	24.89	26.21			
Aroclor 1016 {5}	10.32	11.91	663931	443218	28.02	27.69			
Aroclor 1260			0	0	25.61	24.42			
Aroclor 1260 {1}	12.55	14.10	1530102m	555339m	26.03	25.89			
Aroclor 1260 {2}	13.14	14.68	1009654m	1056511m	28.04	25.63			
Aroclor 1260 {3}	13.95	15.05	1019297m	1005512m	26.26	24.83			
Aroclor 1260 {4}	14.33	15.58	2016784m	2060704m	23.89	23.98			
Aroclor 1260 {5}	14.96	16.08	1550317m	1355189m	23.85	21.76			

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 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1662

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F021.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.84	25.00	7
Aroclor 1260		MS	NA	20					25.61	25.00	2
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-7			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.6E+4	8			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.5E+4	11			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.2E+4	6			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.2E+4	0			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.7E+4	12			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	6.1E+4	4			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	4.0E+4	12			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	5			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	8.1E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	6.2E+4	-5			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	9.0E+5	-10			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1662

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F021.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.33	25.00	5
Aroclor 1260		MS	NA	20					24.42	25.00	-2
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.3E+6	-1			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.2E+4	-15			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.3E+4	16			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.4E+4	11			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.3E+4	5			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.8E+4	11			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.2E+4	4			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.2E+4	3			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.0E+4	-1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.2E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.4E+4	-13			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.9E+5	-10			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F021.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F021.D
 Inj Date : 15-FEB-2018 18:32
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.282	3783207	3346037	2.32	2.47		100.00
Aroclor 1016	9.181	9.835	639340	553568	27.0	21.2	80.00- 120.00	100.00
	9.631	10.142	1616078	582732	27.8	29.0	202.22- 303.33	252.77
	9.808	10.888	1040979	1358112	26.5	27.6	130.26- 195.39	162.82
	10.198	11.395	788155	832972	24.9	26.2	98.62- 147.93	123.28
	10.318	11.912	663931	443218	28.0	27.7	83.08- 124.62	103.85
	Average of Peak Amounts =				26.8	26.3		
Aroclor 1260	12.545	14.098	1530102	555339	26.0	25.9	80.00- 120.00	100.00 (M)
	13.138	14.675	1009654	1056511	28.0	25.6	52.79- 79.18	65.99 (M)
	13.948	15.048	1019297	1005512	26.3	24.8	53.29- 79.94	66.62 (M)
	14.331	15.578	2016784	2060704	23.9	24.0	105.45- 158.17	131.81 (M)
	14.958	16.082	1550317	1355189	23.8	21.8	81.06- 121.59	101.32 (M)
	Average of Peak Amounts =				25.6	24.4		
Decachlorobiphenyl	16.751	18.032	2260433	2482497	2.25	2.26		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alkisw002\instdata\GC32\DATA\021518.b\0215F021.D
Date: 15-FEB-2018 18:32

Client ID:

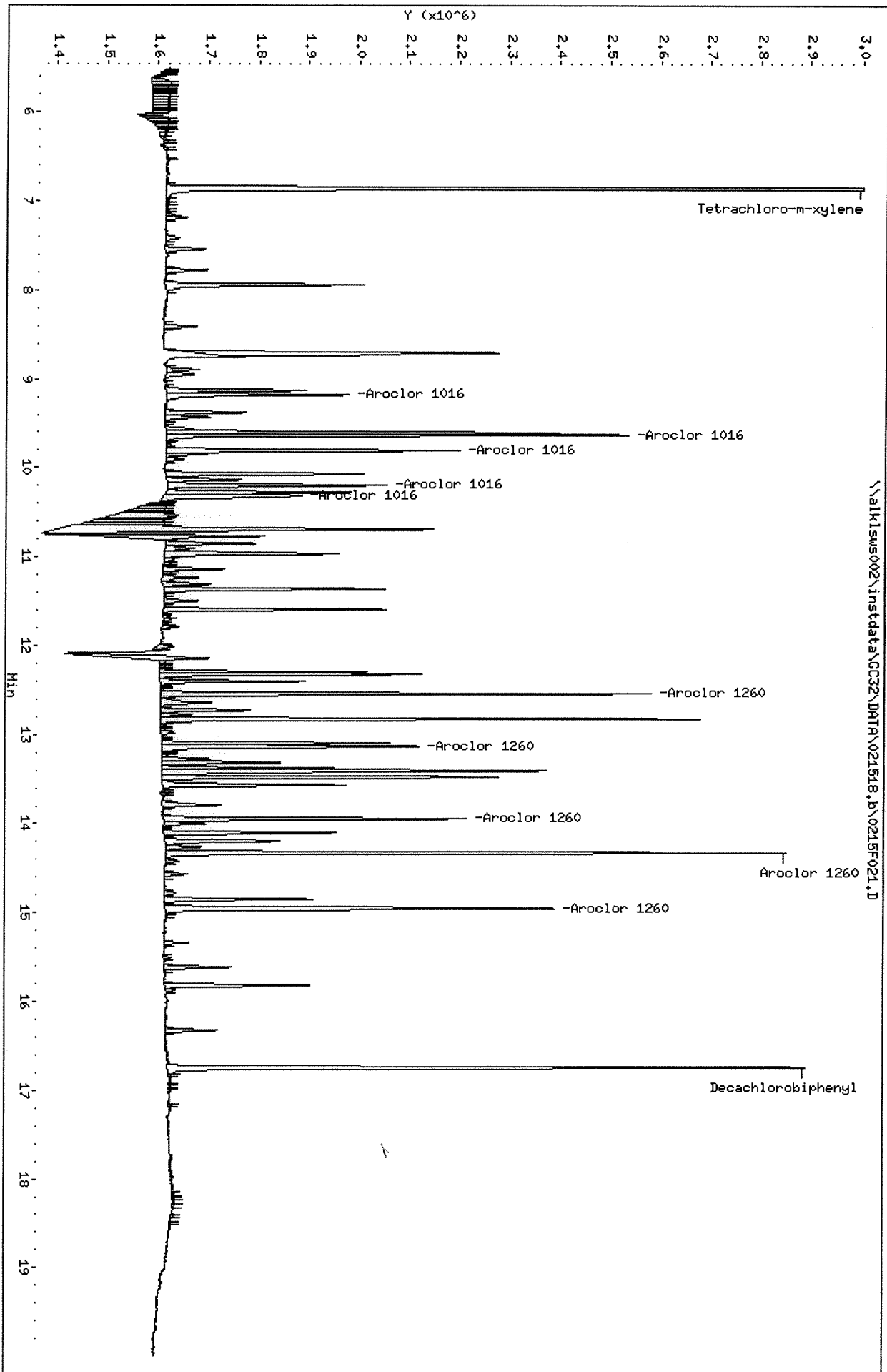
Sample Info: 1660 29PP8 PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\021518_r.b\0215F021.D
Date: 15-FEB-2018 18:32

Client ID:

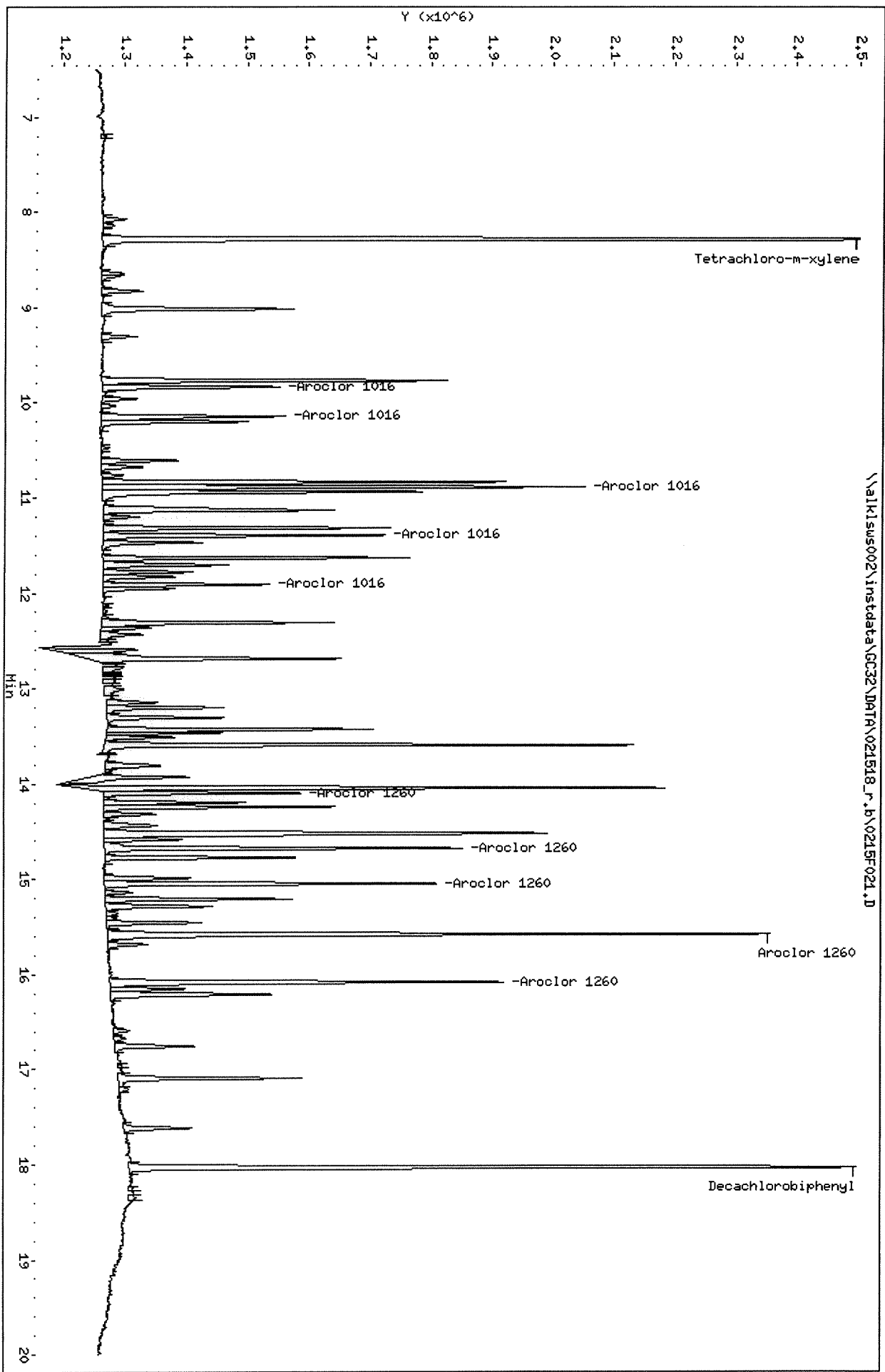
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

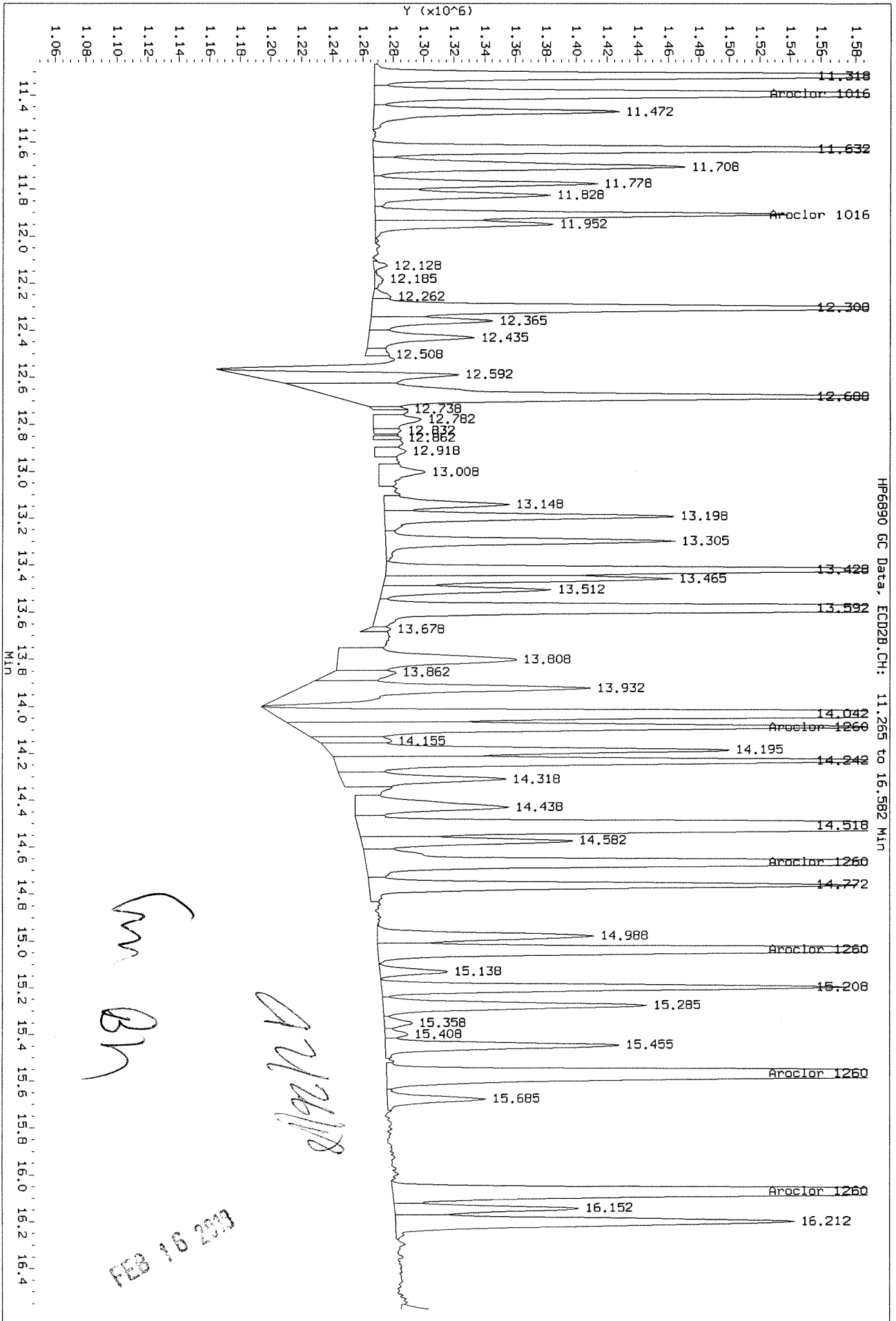
Instrument: GC32.i

Operator: SMURRAY

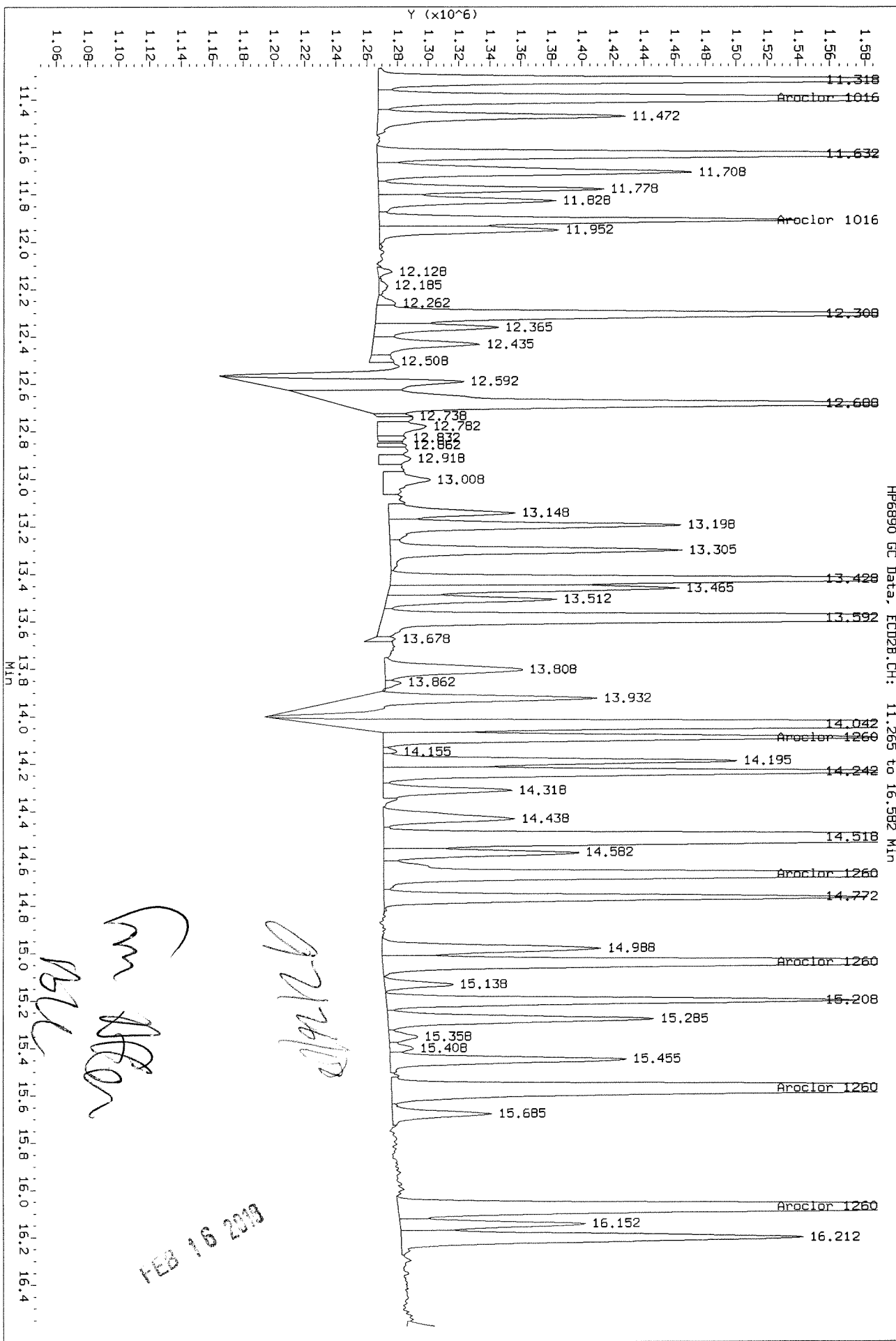
Column diameter: 0.32



Data File: \\alklms002\instdata\GC32\DATA\021518_r.p\0215F021.D
Injection Date: 15-FEB-2018 18:32
Instrument: GC32.1
Client Sample ID:



Data File: \\alkjsws002\inst\data\GC32\DATA\021518_r.b\0215F021.D
Injection Date: 15-FEB-2018 18:32
Instrument: GC32.1
Client Sample ID:

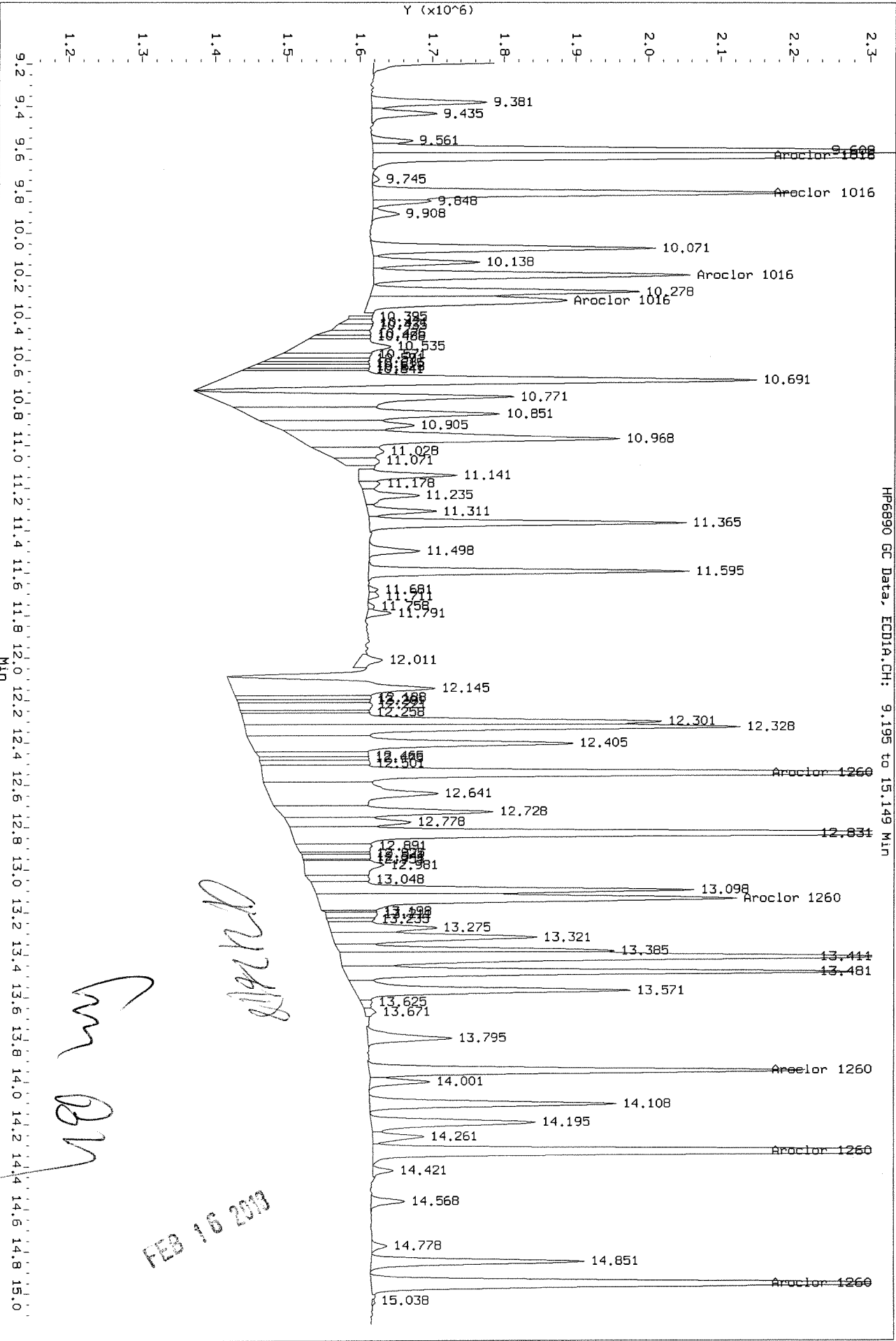


Sm
AKR

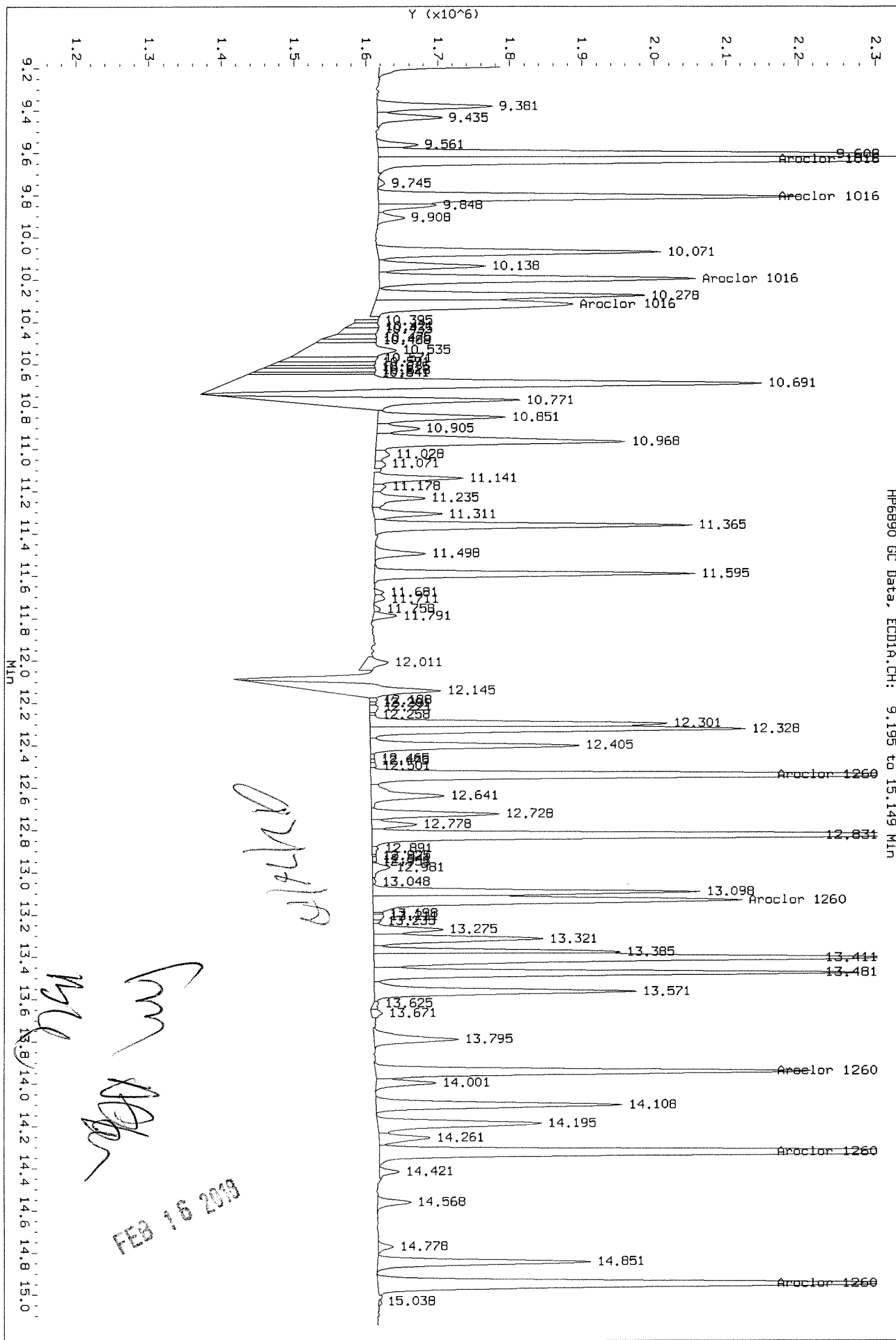
02/16/18

FEB 16 2018

HP6890 GC Data, ECD1A.CH: 9.195 to 15.149 MIN



Data File: \\alkjsws002\instdata\GC32\DATA\021518.b\0215F021.D
Injection Date: 15-FEB-2018 18:32
Instrument: GC32.1
Client Sample ID:



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\0215F022.D
Lab ID: KWG1800961-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 19:04
Date Quantitated: 02/16/2018 10:14
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

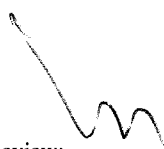
Exception Report

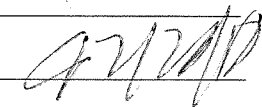
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\021518_R.B\0215F022.D
Lab ID: KWG1800961-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/15/2018 19:04
Date Quantitated: 02/16/2018 10:13
Batch ID: KWG1800961
Analysis Method: 8082A
MethodJoinID: MJ1662

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\021518.B\0215F022.D	Instrument:	GC32.i
Data File #2:	\\alkslws002\instdata\GC32\DATA\021518_r.b\0215F022.D	Vial:	2
Acqu Date:	02/15/2018 19:04	Quant Date:	02/16/2018 10:14
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1800961-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/16/2018

Analysis Lot:	KWG1800961	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\021518.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL, also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\021518.B\0215F022.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\021518_r.b\0215F022.D	Vial:	2
Acqu Date:	02/15/2018 19:04	Quant Date:	02/16/2018 10:14
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1800961-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F022.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F022.D
Inj Date : 15-FEB-2018 19:04
Sample Info: IB
Misc Info :
Cal Date : 16-FEB-2018 09:45
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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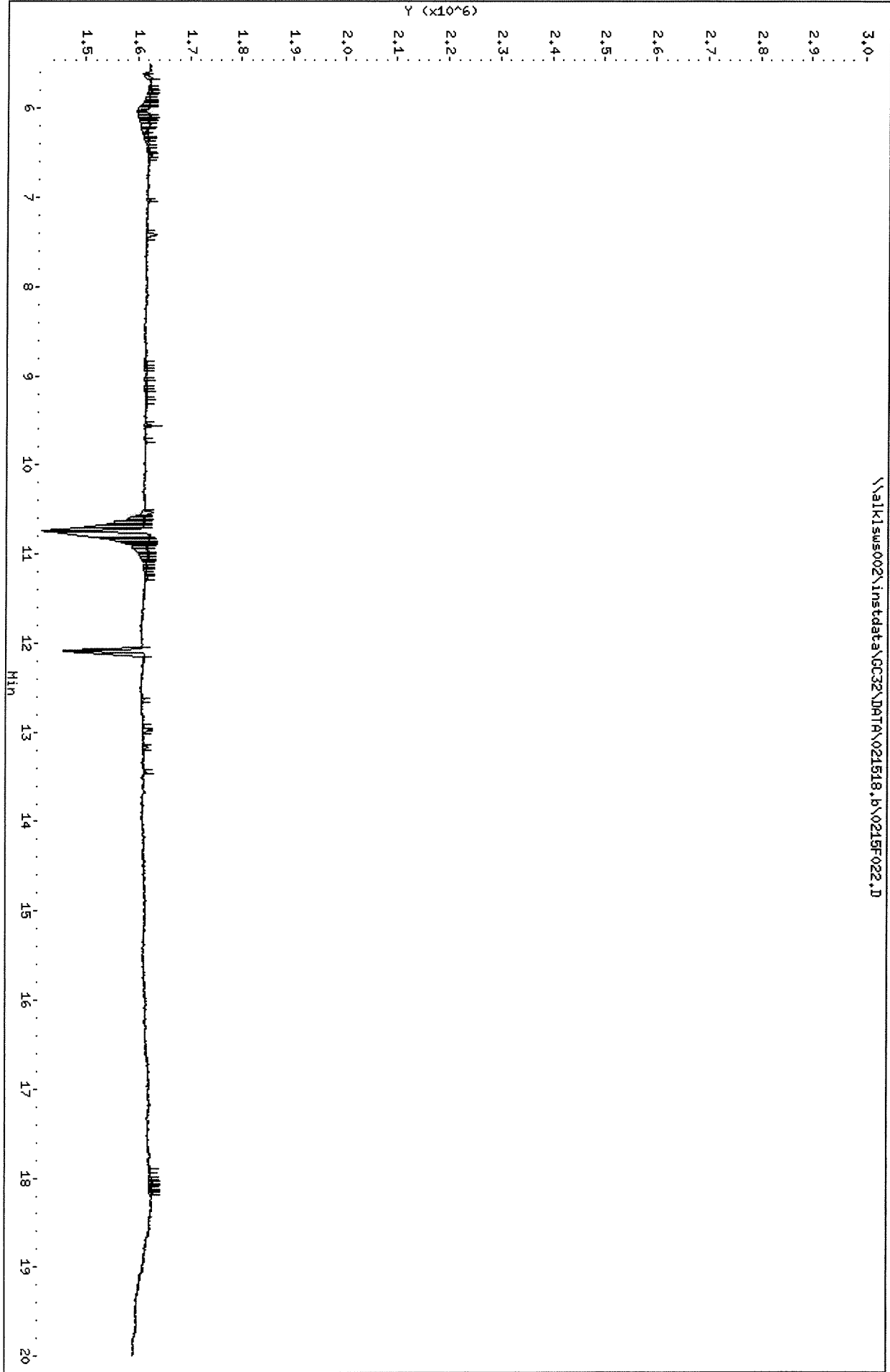
Data File: \\alk1sws002\instdata\GC32\DATA\021518,b\0215F022.D
Date : 15-FEB-2018 19:04

Client ID:
Sample Info: IB

Column phase: DB-35MS

Instrument: GC32.1
Operator: SHURRAY
Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\021518,b\0215F022.D



Data File: \\alk1sus002\instdata\GC32\DATA\021518_r.b\0215F022.D

Date : 15-FEB-2018 19:04

Client ID:

Sample Info: IB

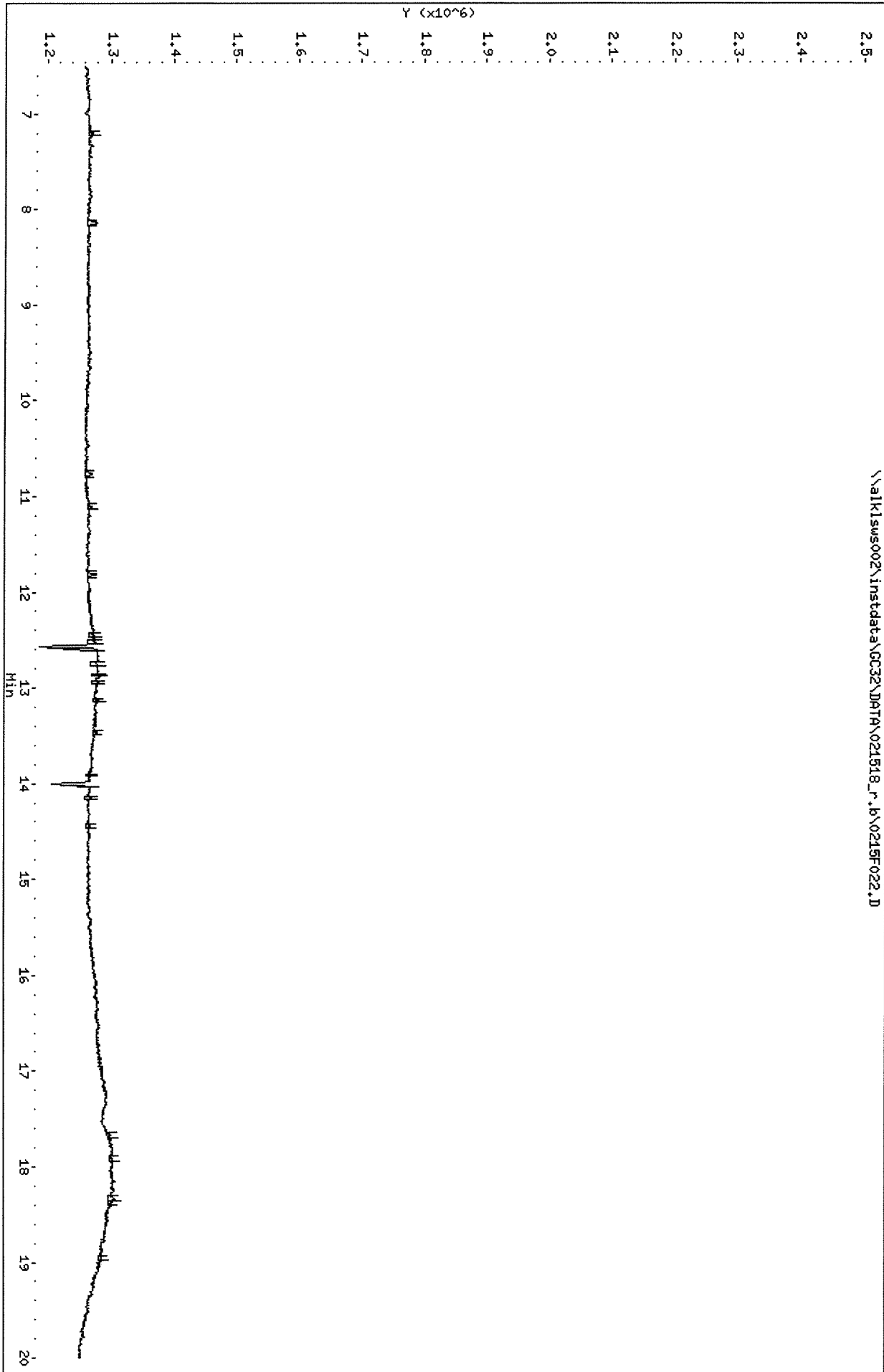
Column phase: DB-KLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\021518_r.b\0215F022.D



ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F023.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F023.D
 Inj Date : 15-FEB-2018 19:36
 Sample Info: KWG1800552-IPR1
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.282	7473184	6919754	4.58	5.10		100.00 (R)
Aroclor 1016	9.178	9.835	609738	604251	25.7	23.1	80.00- 120.00	100.00
	9.632	10.145	1458693	569420	25.1	28.3	202.22- 303.33	239.23
	9.808	10.889	986252	1302462	25.1	26.5	130.26- 195.39	161.75
	10.198	11.399	746804	808196	23.6	25.4	98.62- 147.93	122.48
	10.315	11.912	652161	490973	27.5	30.7	83.08- 124.62	106.96
	Average of Peak Amounts =				25.4	26.8		
Aroclor 1260	12.545	14.099	1778631	559156	30.3	26.1	80.00- 120.00	100.00
	13.138	14.679	1013950	1222692	28.2	29.7	52.79- 79.18	57.01
	13.952	15.049	1156940	1137244	29.8	28.1	53.29- 79.94	65.05
	14.332	15.579	2275252	2310163	27.0	26.9	105.45- 158.17	127.92
	14.958	16.082	1719167	1481867	26.4	23.8	81.06- 121.59	96.66
	Average of Peak Amounts =				28.3	26.9		
Decachlorobiphenyl	16.752	18.032	4878488	5439010	4.85	4.95		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1s02\instdata\GC32\DATA\021518.b\0215F023.D
Date: 15-FEB-2018 19:36

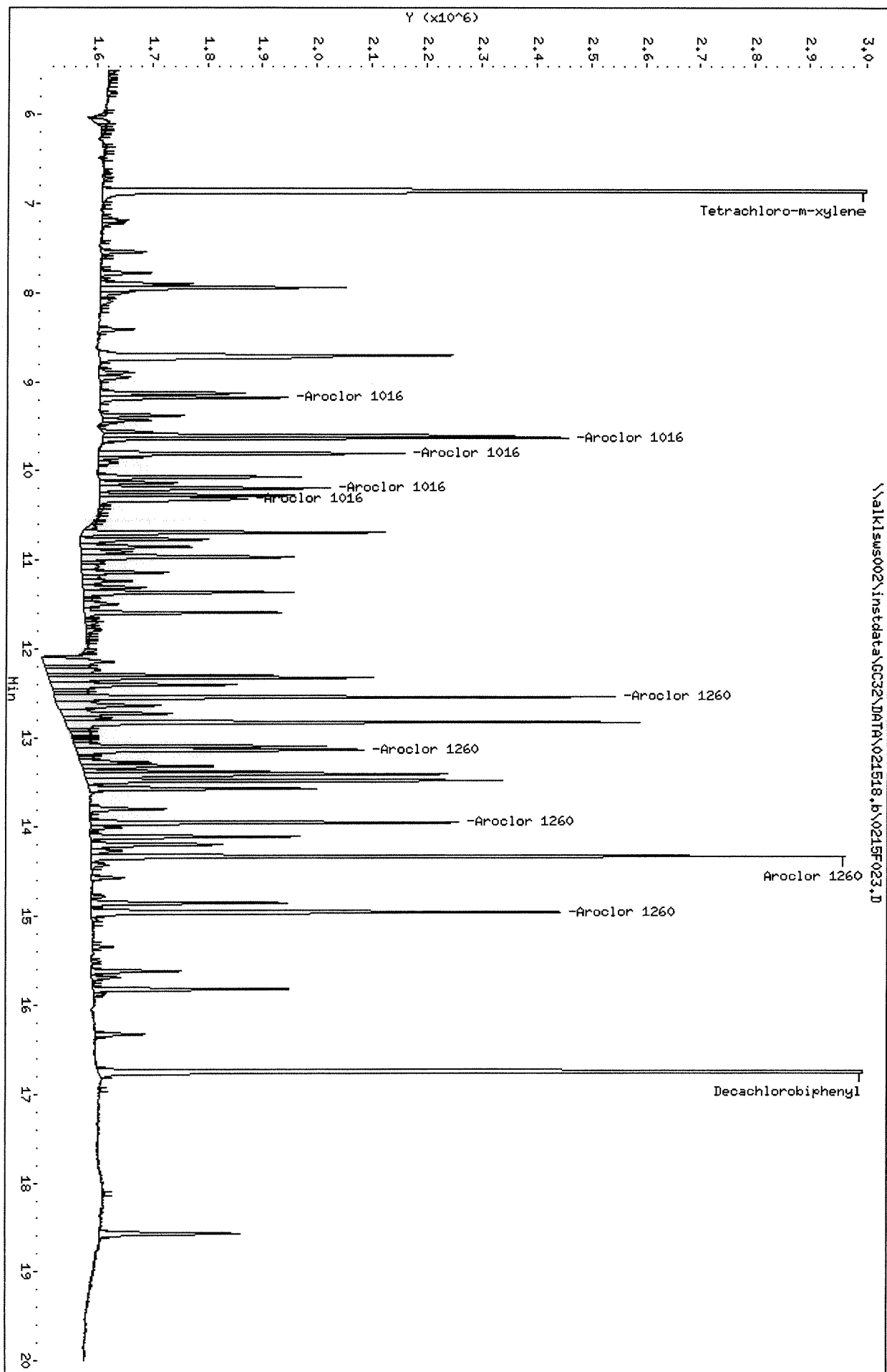
Client ID:

Sample Info: KMG1800552-IPR1

Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY
Column diameter: 0.32



Data File: \\alkl1sws002\instdata\GC32\DATA\021518_r.j\0215F023.D

Date : 15-FEB-2018 19:36

Client ID:

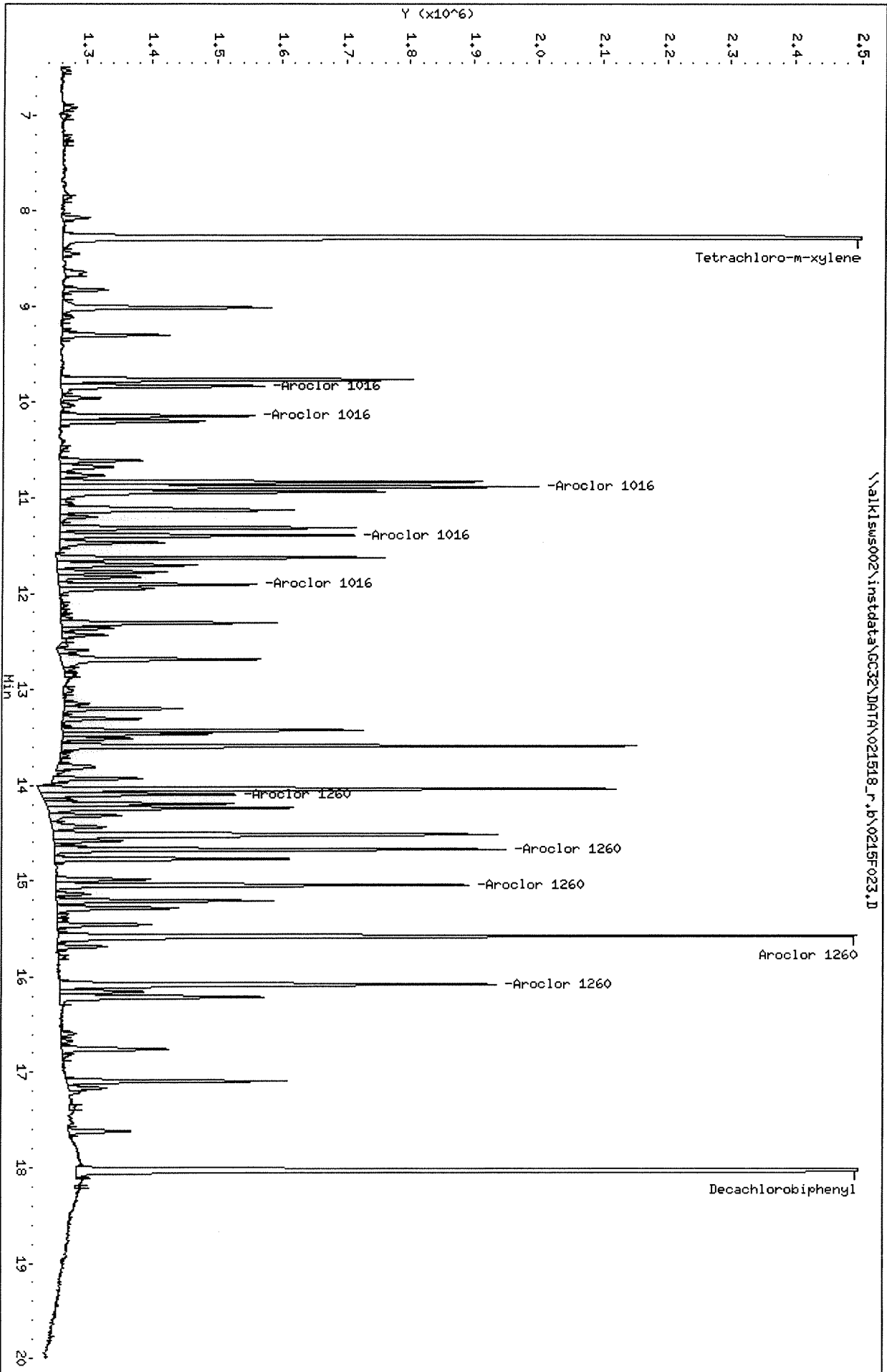
Sample Info: KMG1800552-IPR1

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F024.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F024.D
 Inj Date : 15-FEB-2018 20:07
 Sample Info: KWG1800552-IPR2
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.861	8.281	7556099	6973522	4.63	5.14		100.00 (R)
Aroclor 1016	9.181	9.835	594704	569601	25.1	21.8	80.00- 120.00	100.00
	9.634	10.145	1504331	552613	25.9	27.5	202.22- 303.33	252.95
	9.811	10.888	951138	1237319	24.2	25.2	130.26- 195.39	159.93
	10.198	11.398	705449	794537	22.3	25.0	98.62- 147.93	118.62
	10.318	11.911	591993	475628	25.0	29.7	83.08- 124.62	99.54
	Average of Peak Amounts =				24.5	25.8		
Aroclor 1260	12.548	14.098	1441457	474908	24.5	22.1	80.00- 120.00	100.00
	13.141	14.678	901269	1196030	25.0	29.0	52.79- 79.18	62.52
	13.951	15.048	1146258	1116613	29.5	27.6	53.29- 79.94	79.52
	14.331	15.581	2218099	2273735	26.3	26.5	105.45- 158.17	153.88
	14.958	16.085	1682439	1457431	25.9	23.4	81.06- 121.59	116.72
	Average of Peak Amounts =				26.2	25.7		
Decachlorobiphenyl	16.751	18.035	4578711	5144132	4.55	4.68		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sus002\instdata\GC32\DATA\021518.b\0215F024.D

Date : 15-FEB-2018 20:07

Client ID:

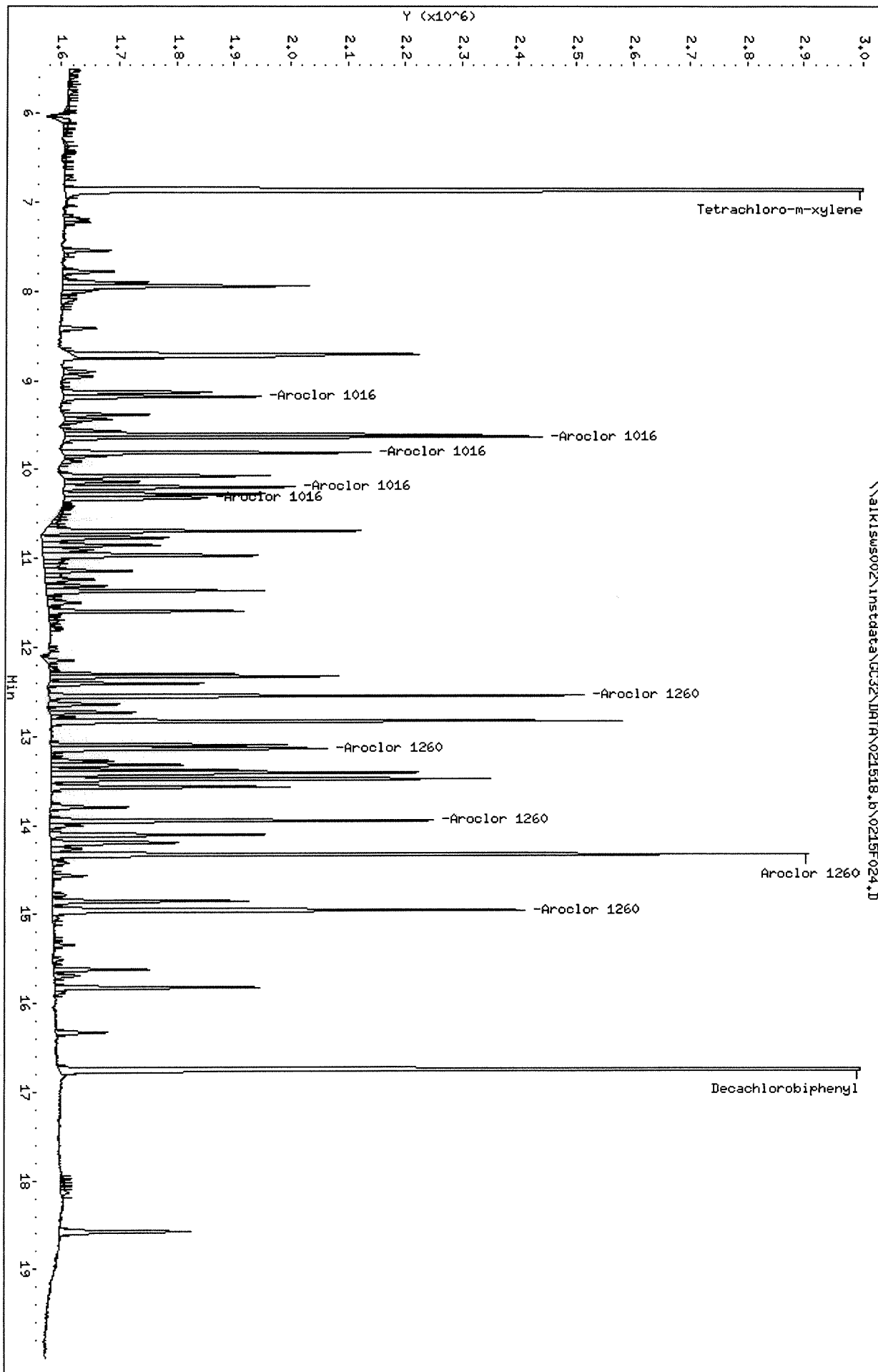
Sample Info: KMG1800552-IPR2

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\021518_r.b\0215F024.D

Date : 15-FEB-2018 20:07

Client ID:

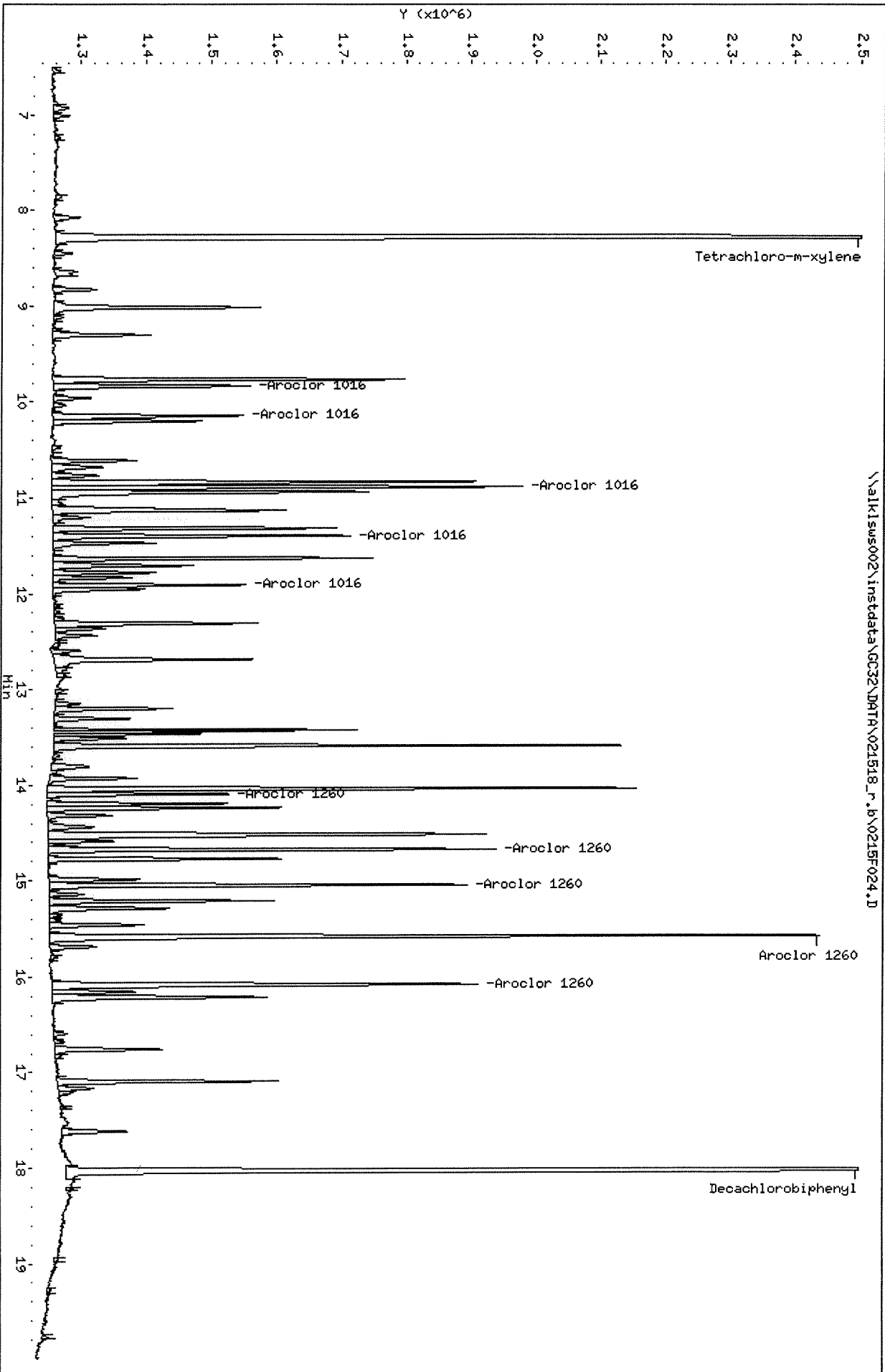
Sample Info: KMG1800552-IPR2

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F025.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F025.D
 Inj Date : 15-FEB-2018 20:39
 Sample Info: KWG1800552-IPR3
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.281	7684239	7082713	4.71	5.22		100.00 (R)
Aroclor 1016	9.180	9.834	599510	551812	25.3	21.1	80.00- 120.00	100.00
	9.634	10.144	1367606	548401	23.5	27.2	202.22- 303.33	228.12
	9.810	10.887	948263	1192410	24.1	24.3	130.26- 195.39	158.17
	10.200	11.397	708382	760848	22.4	23.9	98.62- 147.93	118.16
	10.317	11.911	592814	468609	25.0	29.3	83.08- 124.62	98.88
	Average of Peak Amounts =				24.1	25.2		
Aroclor 1260	12.547	14.097	1501092	466306	25.5	21.7	80.00- 120.00	100.00
	13.140	14.677	900504	1208330	25.0	29.3	52.79- 79.18	59.99
	13.950	15.047	1132150	1098210	29.2	27.1	53.29- 79.94	75.42
	14.330	15.581	2214242	2247473	26.2	26.1	105.45- 158.17	147.51
	14.957	16.084	1670604	1444153	25.7	23.2	81.06- 121.59	111.29
	Average of Peak Amounts =				26.3	25.5		
Decachlorobiphenyl	16.750	18.034	4711160	5227979	4.68	4.76		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\021518.b\0215F025.D

Date : 15-FEB-2018 20:39

Client ID:

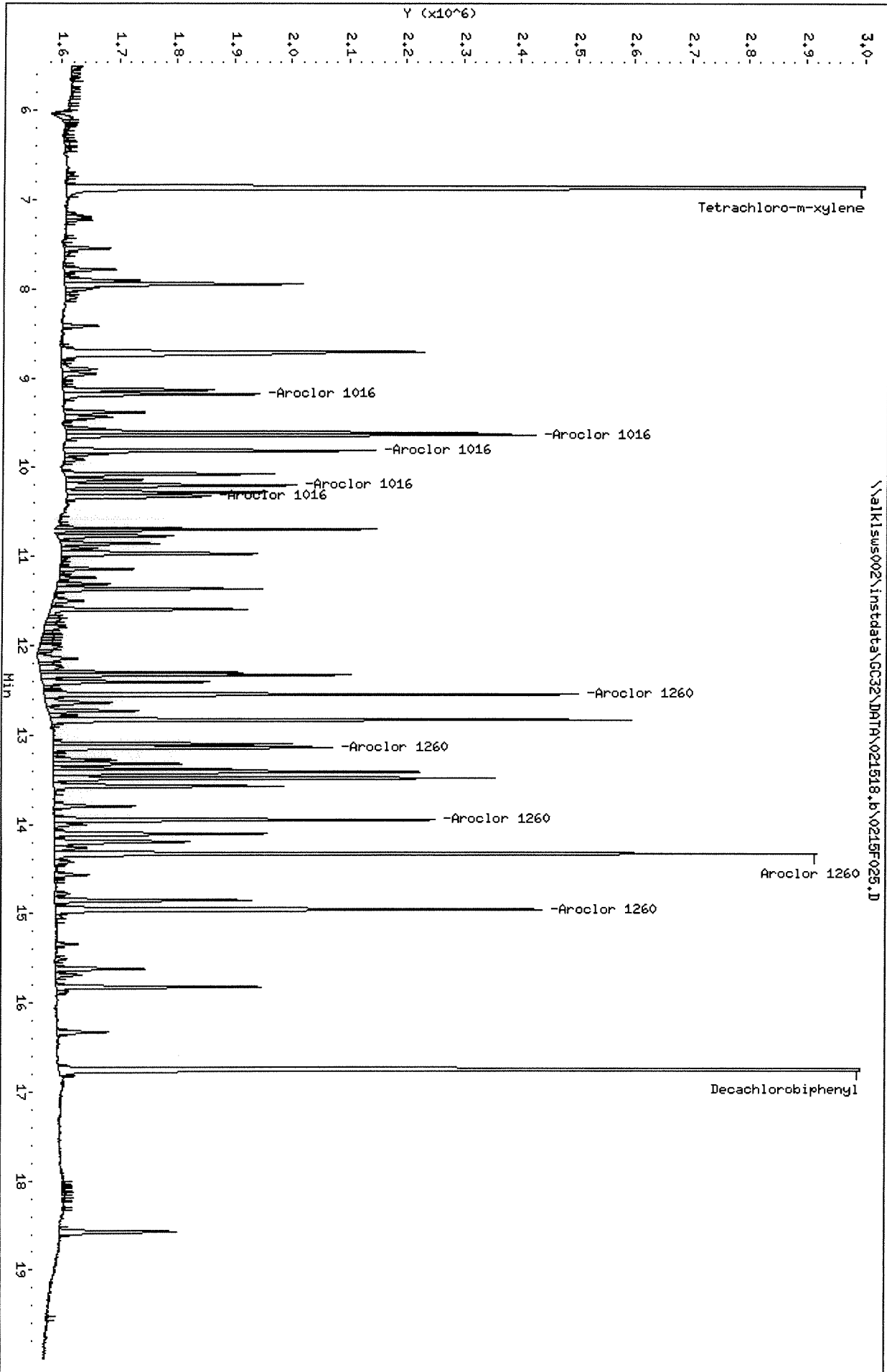
Sample Info: KMG1800552-IPR3

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\021518_r_b\0215F025.D

Date: 15-FEB-2018 20:39

Client ID:

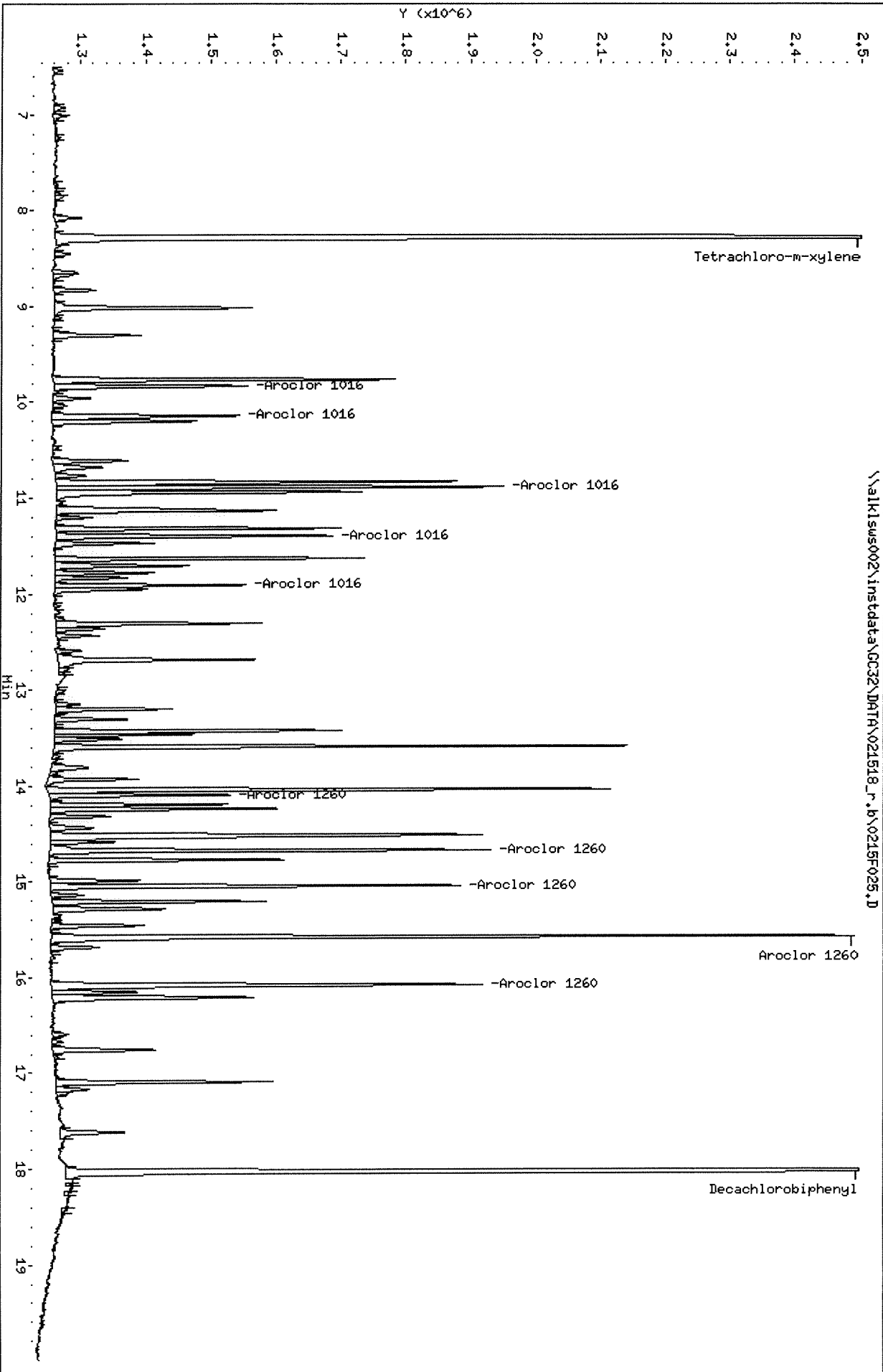
Sample Info: KMG18005E2-IPR3

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F026.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F026.D
 Inj Date : 15-FEB-2018 21:11
 Sample Info: KWG1800552-IPR4
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.861	8.281	7688557	7174427	4.71	5.29		100.00 (R)
Aroclor 1016	9.181	9.835	559526	523671	23.6	20.0	80.00- 120.00	100.00
	9.631	10.145	1392315	516267	24.0	25.7	202.22- 303.33	248.84
	9.808	10.888	898760	1129125	22.9	23.0	130.26- 195.39	160.63
	10.198	11.398	671684	729740	21.2	23.0	98.62- 147.93	120.05
	10.314	11.911	568821	448197	24.0	28.0	83.08- 124.62	101.66
	Average of Peak Amounts =				23.1	23.9		
Aroclor 1260	12.544	14.098	1367022	424430	23.3	19.8	80.00- 120.00	100.00
	13.141	14.678	818593	1146098	22.7	27.8	52.79- 79.18	59.88
	13.951	15.048	1051156	1042134	27.1	25.7	53.29- 79.94	76.89
	14.331	15.578	2043245	2126970	24.2	24.7	105.45- 158.17	149.47
	14.958	16.085	1534813	1342457	23.6	21.6	81.06- 121.59	112.27
	Average of Peak Amounts =				24.2	23.9		
Decachlorobiphenyl	16.751	18.031	4699240	5219693	4.67	4.75		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\021518.b\0215F026.D

Date: 15-FEB-2018 21:11

Client ID:

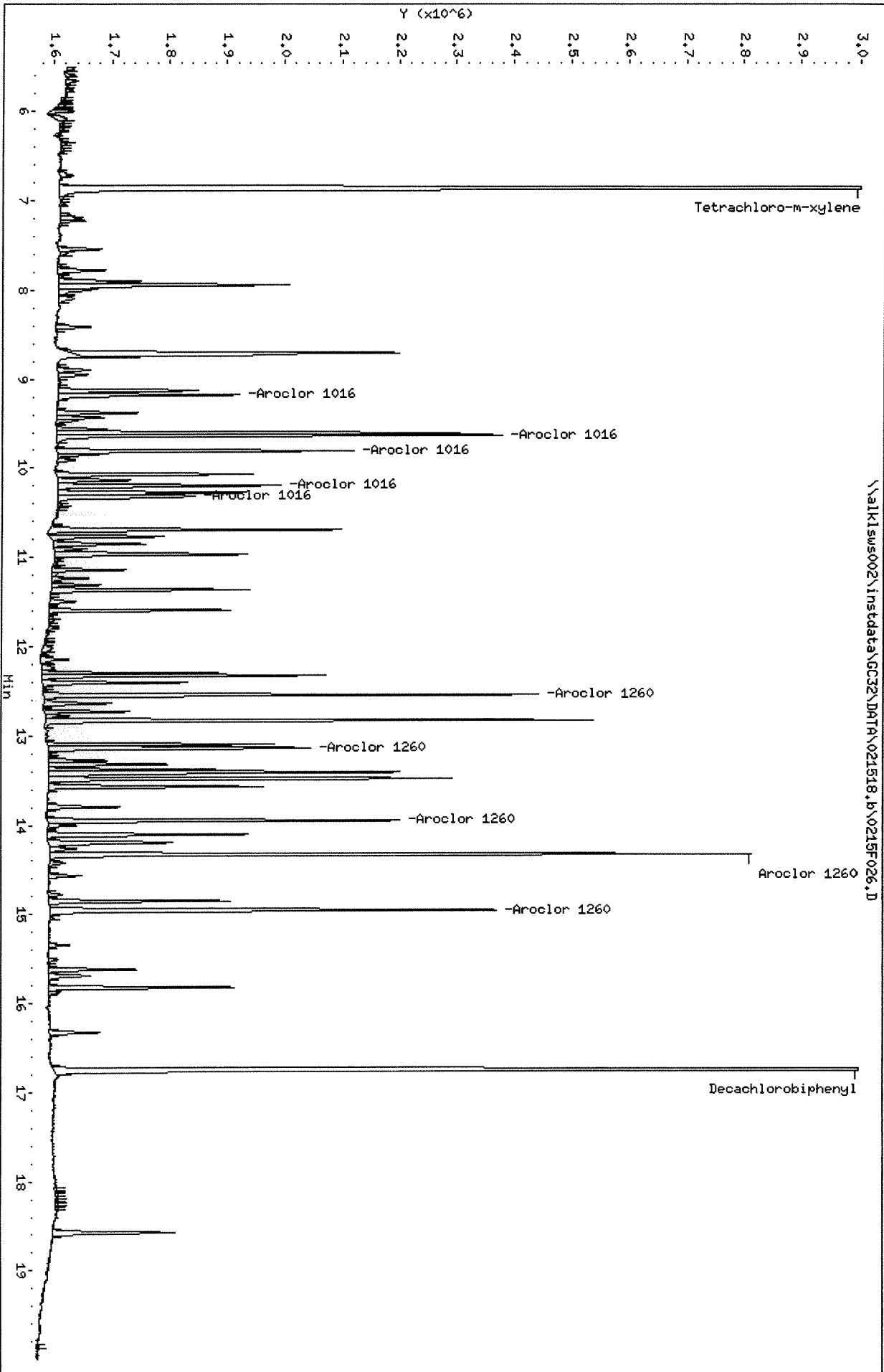
Sample Info: KMG1800552-IPR4

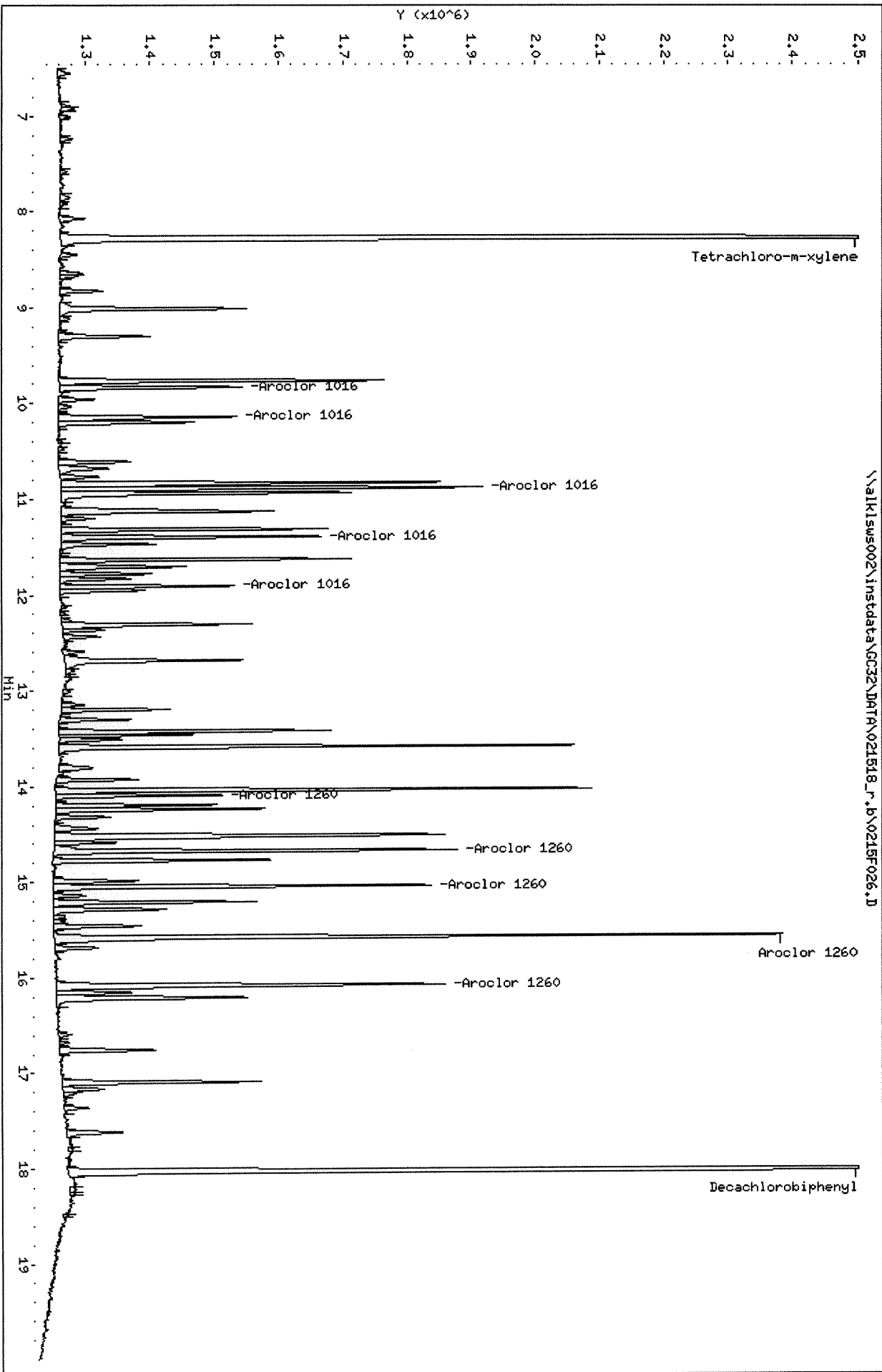
Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32





ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F027.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F027.D
 Inj Date : 15-FEB-2018 21:43
 Sample Info: KWG1800552-MB
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.860	8.280	7923444	7484081	4.85	5.52		100.00 (R)
Aroclor 1221	7.563	0.000	7368	0	0.454	0.000	80.00- 120.00	100.00
	7.800	0.000	5444	0	0.519	0.000	51.15- 76.72	73.89
	7.953	0.000	91248	0	2.42	0.000	180.51- 270.76	1238.37
	Average of Peak Amounts =				1.13	0.000		
Aroclor 1232	7.953	0.000	91248	0	2.78	0.000	80.00- 120.00	100.00 (T)
	8.673	0.000	36790	0	1.15	0.000	75.51- 113.27	40.32 (T)
	0.000	0.000	0	0	0.000	0.000	61.92- 92.88	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	29.43- 44.14	0.00 (T)
	11.376	0.000	7501	0	0.350	0.000	50.90- 76.34	8.22 (T)
	Average of Peak Amounts =				1.43	0.000		
Aroclor 1248	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	123.60- 185.40	0.00 (T)
	11.196	0.000	7921	0	0.312	0.000	74.96- 112.44	0.00 (T)
	11.376	0.000	7501	0	0.153	0.000	153.18- 229.78	0.00 (T)
	12.326	0.000	12221	0	0.489	0.000	76.00- 114.01	0.00 (T)
	Average of Peak Amounts =				0.318	0.000		
Aroclor 1254	11.376	0.000	7501	0	0.137	0.000	80.00- 120.00	100.00
	12.160	0.000	14670	0	0.355	0.000	64.52- 96.78	195.55
	12.326	0.000	12221	0	0.150	0.000	121.44- 182.17	162.92
	12.563	0.000	5471	0	0.136	0.000	61.81- 92.72	72.93
	12.843	0.000	5310	0	0.172	0.000	47.38- 71.07	70.79
	Average of Peak Amounts =				0.190	0.000		
Aroclor 1260	12.563	0.000	5471	0	0.0931	0.000	80.00- 120.00	100.00 (T)
	13.176	0.000	5609	0	0.156	0.000	52.79- 79.18	102.53 (T)
	0.000	0.000	0	0	0.000	0.000	53.29- 79.94	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	105.45- 158.17	0.00 (T)
	14.933	0.000	12092	0	0.186	0.000	81.06- 121.59	221.02 (T)

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Average of Peak Amounts =					0.145	0.000		
Aroclor 1262	12.563	0.000	5471	0	0.117	0.000	80.00- 120.00	100.00 (T)
	13.480	0.000	10593	0	0.153	0.000	113.91- 170.87	193.63 (T)
	0.000	0.000	0	0	0.000	0.000	97.79- 146.68	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	174.00- 261.01	0.00 (T)
	14.933	0.000	12092	0	0.150	0.000	136.43- 204.65	221.02 (T)
Average of Peak Amounts =					0.140	0.000		
Aroclor 1268	14.820	16.083	5259	15461	0.0389	0.103	80.00- 120.00	100.00
	14.933	0.000	12092		0.0983		73.17- 109.75	229.94
	15.340	16.597	18637	29712	0.166	0.253	67.31- 100.97	354.39
	16.330	17.620	37137	46965	0.119	0.140	191.78- 287.67	706.16
Average of Peak Amounts =					0.106	0.165		
Decachlorobiphenyl	16.750	18.033	4914129	5410651	4.88	4.92		100.00 (R)
Aroclors, Total	1.000	1.000	133505	30712	3.46	0.165		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alkl1sus002\instdata\GC32\DATA\021518_r_b\0215F027.D

Date: 15-FEB-2018 21:43

Client ID:

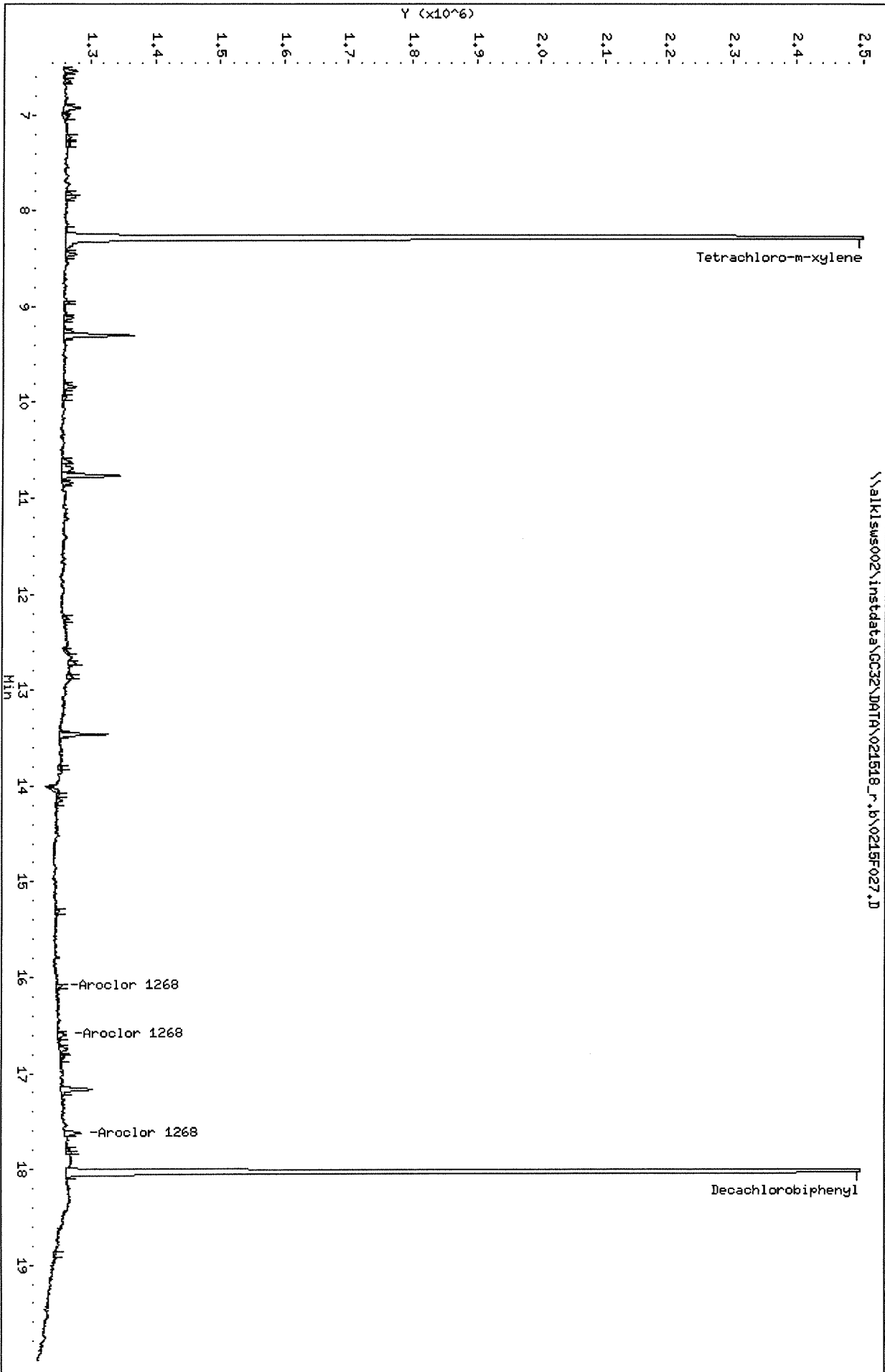
Sample Info: KMG1800552-HB

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\021518.b\0215F027.D

Date: 15-FEB-2018 21:43

Client ID:

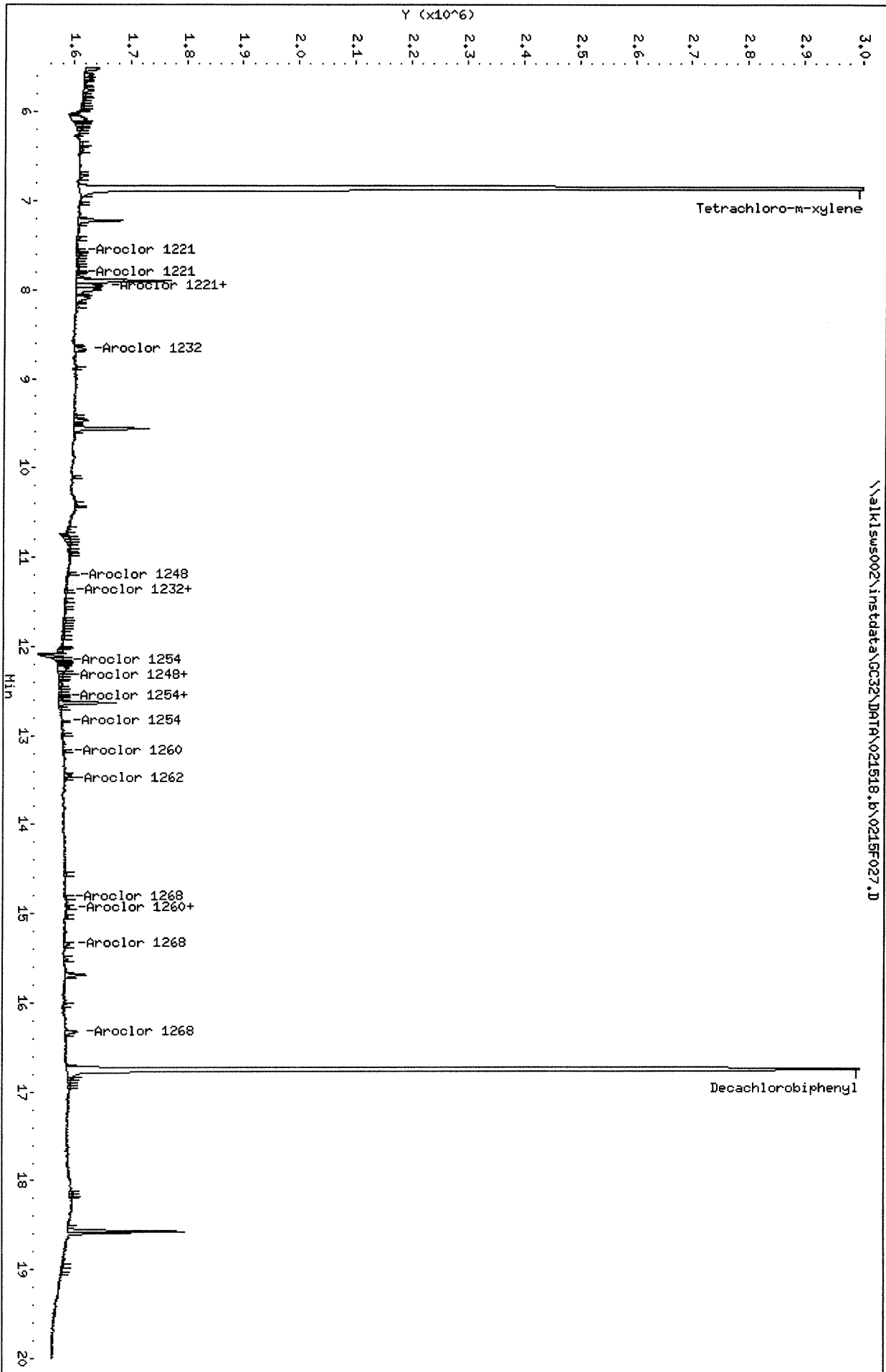
Sample Info: KMC18000552-HB

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F028.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F028.D
 Inj Date : 15-FEB-2018 22:14
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 16-FEB-2018 09:45
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.861	8.281	3789652	3404857	2.32	2.51		100.00
Aroclor 1016	9.181	9.835	649458	572199	27.4	21.9	80.00- 120.00	100.00
	9.634	10.145	1611665	581554	27.7	28.9	202.22- 303.33	248.16
	9.811	10.891	1058877	1391409	26.9	28.3	130.26- 195.39	163.04
	10.198	11.398	802097	852085	25.3	26.8	98.62- 147.93	123.50
	10.321	11.911	659212	445624	27.8	27.8	83.08- 124.62	101.50
	Average of Peak Amounts =				27.0	26.7		
Aroclor 1260	12.544	14.098	2683114	746809	45.7	34.8	80.00- 120.00	100.00
	13.141	14.678	2018492	1072508	56.1	26.0	52.79- 79.18	75.23
	13.951	15.048	1647089	1042454	42.4	25.7	53.29- 79.94	61.39
	14.331	15.581	2556319	2119591	30.3	24.7	105.45- 158.17	95.27
	14.958	16.081	1776596	1406285	27.3	22.6	81.06- 121.59	66.21
	Average of Peak Amounts =				40.4	26.8		
Decachlorobiphenyl	16.751	18.031	2331412	2581356	2.32	2.35		100.00

Data File: \\alk1s002\instdata\GC32\DATA\021518.B\0215F028.D
Date : 15-FEB-2018 22:14

Client ID:

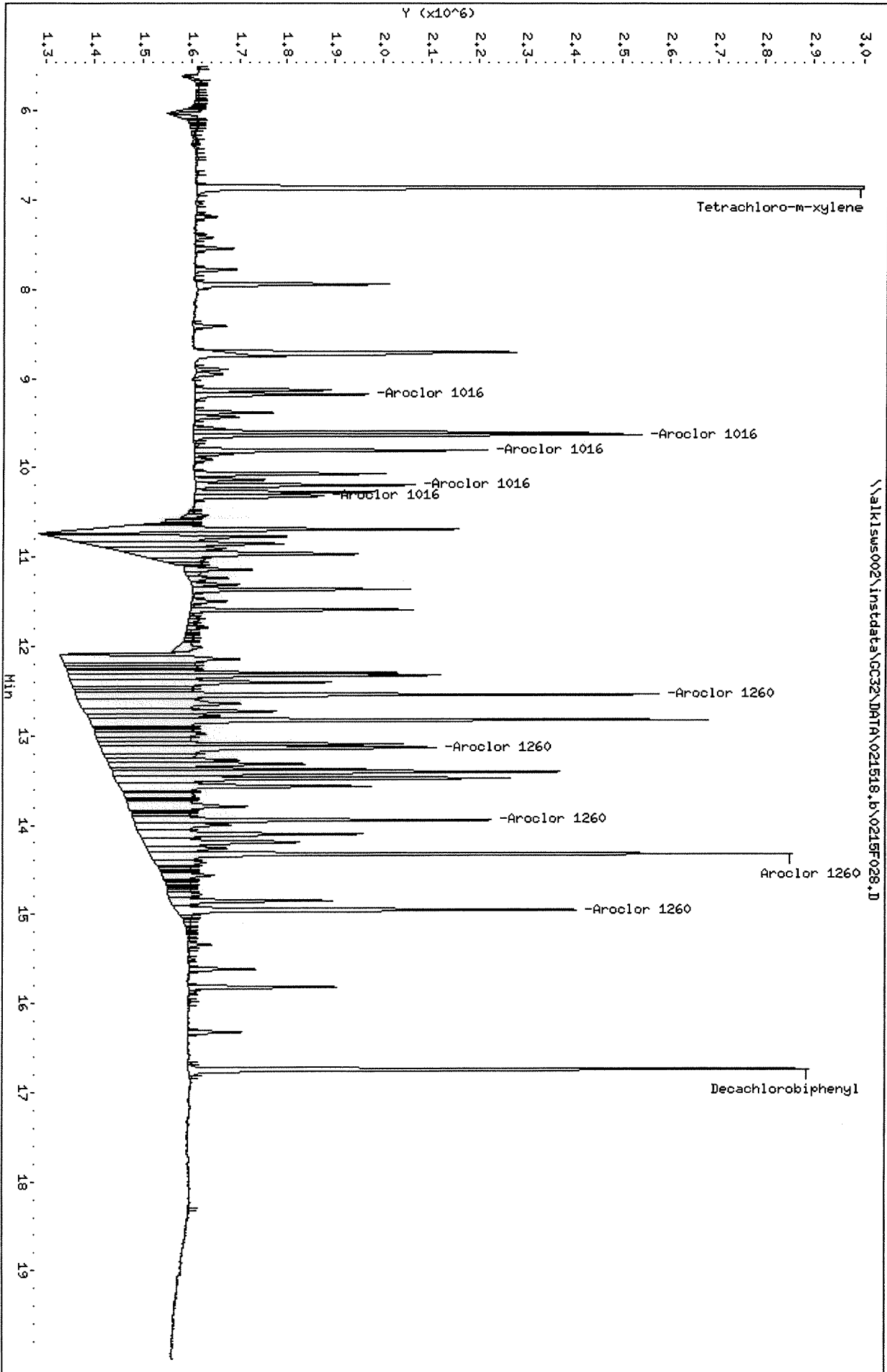
Sample Info: 1660 25PPB PCB7-22J

Column Phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\021518_r.b\021515F028.D

Date : 15-FEB-2018 22:14

Client ID:

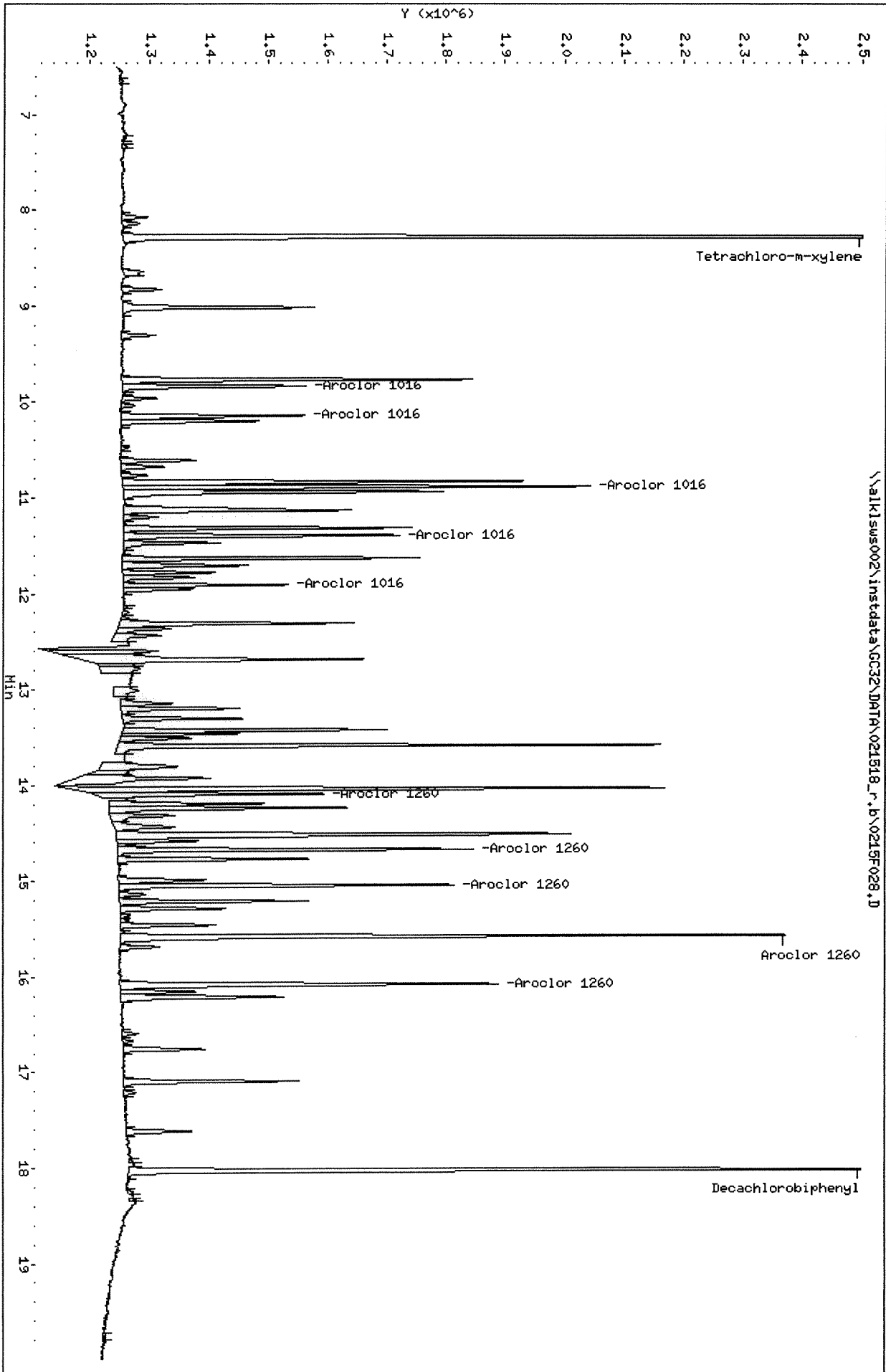
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\021518.b\0215F029.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\0215F029.D
Inj Date : 15-FEB-2018 22:46
Sample Info: IB
Misc Info :
Cal Date : 16-FEB-2018 09:45
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\021518.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\021518_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Decachlorobiphenyl	16.777	0.000	10023	0	0.00995	0.000		100.00 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sws002\instdata\GC32\DATA\021518.b\0215F029.D
Date : 15-FEB-2018 22:46

Client ID:
Sample Info: IB

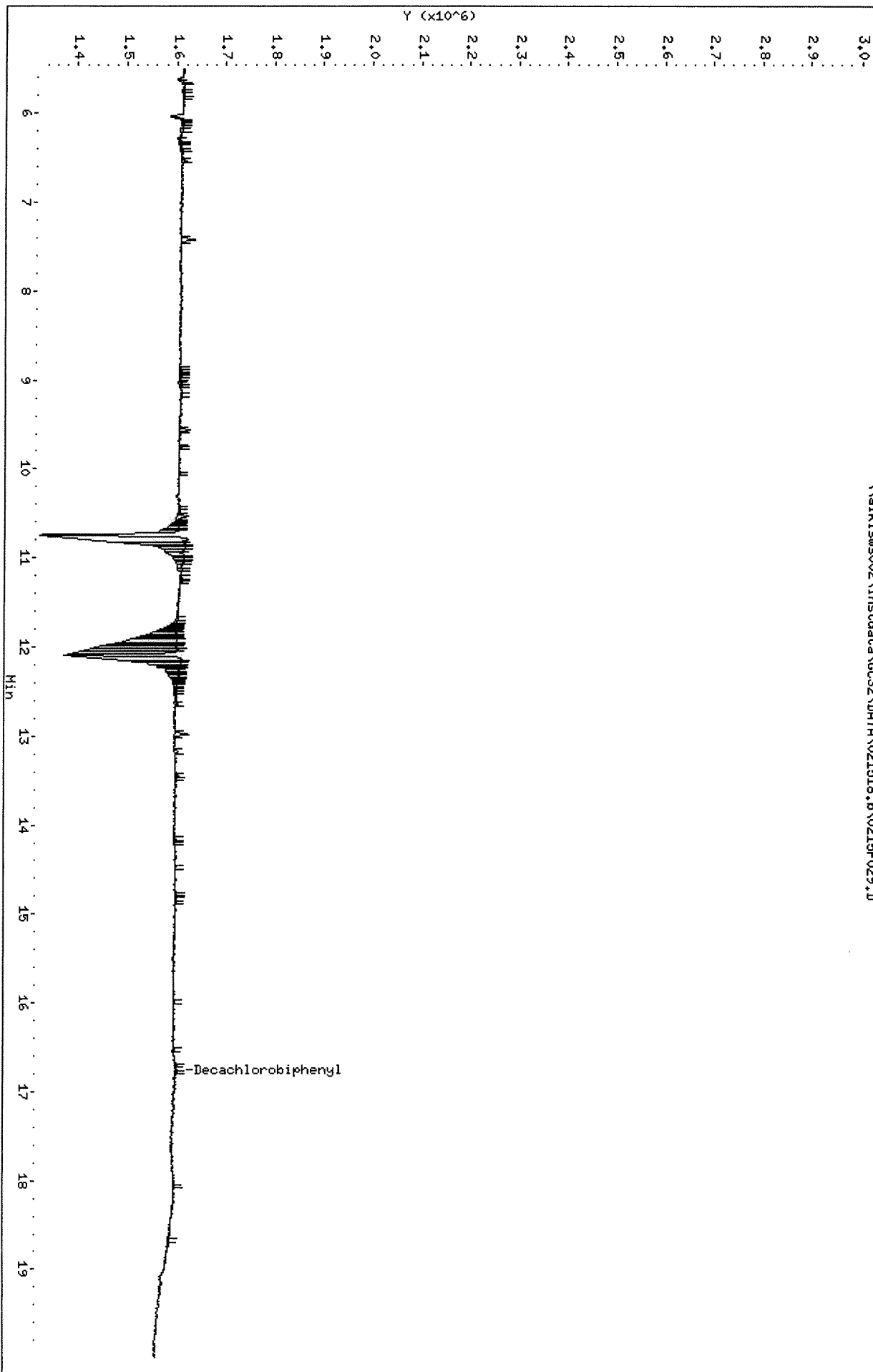
Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\021518.b\0215F029.D



Data File: \\alk1sus002\instdata\GC32\DATA\021518_r_b\0215F029.D
Date : 15-FEB-2018 22:46

Client ID:
Sample Info: IB

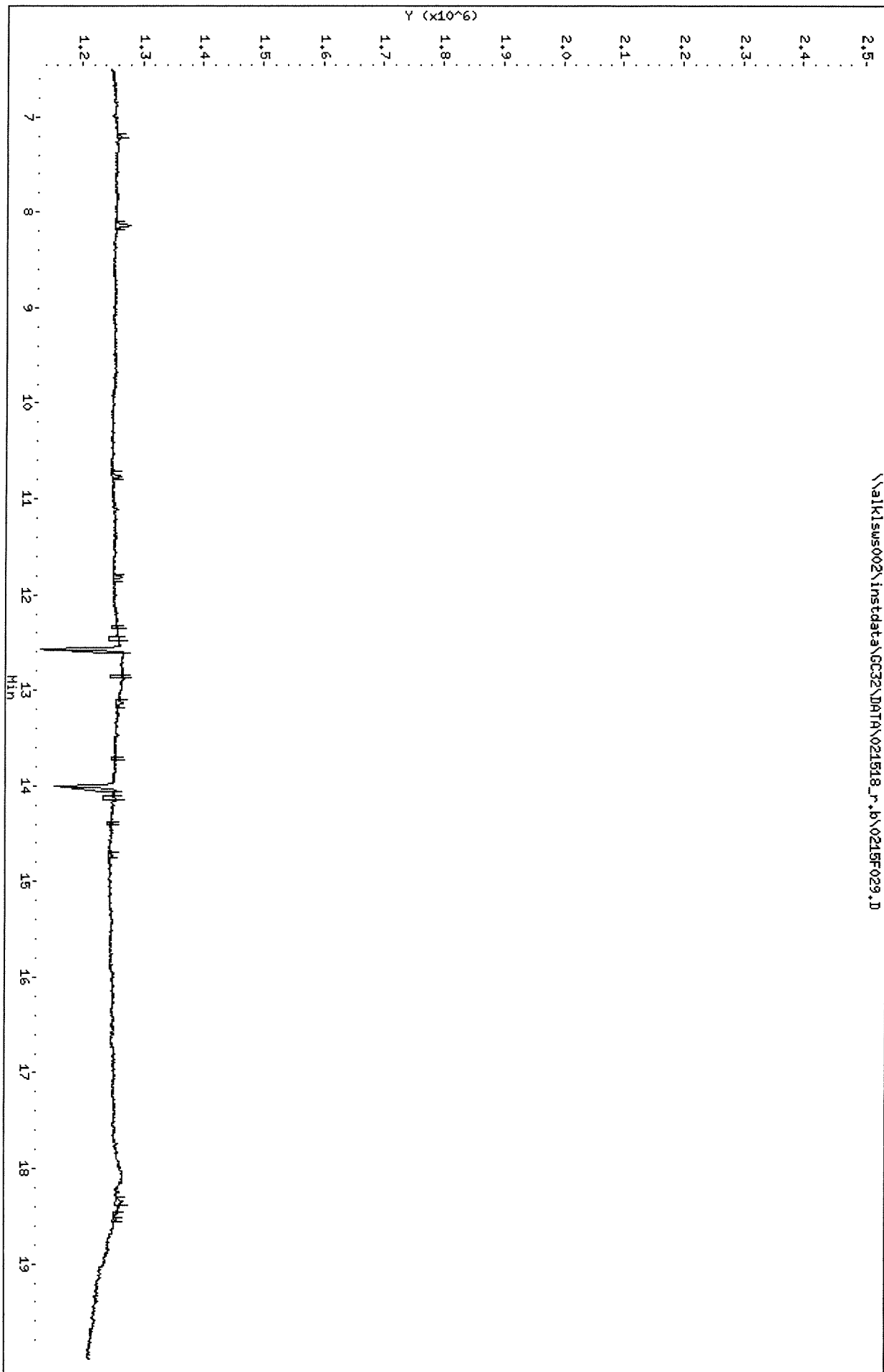
Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\021518_r_b\0215F029.D



Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0219f042.d	1.	1660 25PPB PCB7-22J		21 Feb 2018 06:20
2	2	0219f043.d	1.	IB		21 Feb 2018 06:52
3	36	0220f001.d	1.	K1801096-001	<i>NR CM</i>	21 Feb 2018 07:24
4	37	0220f002.d	1.	K1801096-002		21 Feb 2018 07:55
5	38	0220f003.d	1.	K1801096-004		21 Feb 2018 08:27
3	39	0220f004.d	1.	K1801096-005		21 Feb 2018 08:59
7	40	0220f005.d	1.	K1801096-006		21 Feb 2018 09:30
3	41	0220f006.d	1.	K1801096-007		21 Feb 2018 10:02
9	42	0220f007.d	1.	K1801096-008		21 Feb 2018 10:34
10	43	0220f008.d	1.	K1801096-009		21 Feb 2018 11:06
11	44	0220f009.d	1.	K1801096-010		21 Feb 2018 11:37
12	45	0220f010.d	1.	K1801096-011		21 Feb 2018 12:09
13	1	0220f011.d	1.	1660 25PPB PCB7-22J		21 Feb 2018 12:41
14	2	0220f012.d	1.	IB		21 Feb 2018 13:12
15	46	0220f013.d	1.	K1801096-012		21 Feb 2018 13:44
16	47	0220f014.d	1.	K1801096-014		21 Feb 2018 14:16
17	48	0220f015.d	1.	K1801096-015		21 Feb 2018 14:48
18	49	0220f016.d	1.	K1801096-016		21 Feb 2018 15:19
19	50	0220f017.d	1.	K1801096-017		21 Feb 2018 15:51
20	51	0220f018.d	1.	K1801096-018		21 Feb 2018 16:23
21	52	0220f019.d	1.	K1801096-019		21 Feb 2018 16:55
22	53	0220f020.d	1.	K1801096-020		21 Feb 2018 17:26
23	54	0220f021.d	1.	K1801096-021		21 Feb 2018 17:58
24	55	0220f022.d	1.	K1801096-010MS		21 Feb 2018 18:30
25	1	0220f023.d	1.	1660 25PPB PCB7-22J		21 Feb 2018 19:02
26	2	0220f024.d	1.	IB		21 Feb 2018 19:33
27	56	0220f025.d	1.	K1801096-010DMS		21 Feb 2018 20:05
28	57	0220f026.d	1.	KWG1800942-LCS		21 Feb 2018 20:37
29	58	0220f027.d	1.	KWG1800942-MB		21 Feb 2018 21:09
30	3	0220f028.d	1.	K17103305-071@20X		21 Feb 2018 21:40
31	1	0220f029.d	1.	1660 25PPB PCB7-22J		21 Feb 2018 22:12
32	2	0220f030.d	1.	IB		21 Feb 2018 22:44
33	3	0221f001.d	1.	K1801096-023	<i>NR K17103305-071@20X</i>	21 Feb 2018 23:16
34	4	0221f002.d	1.	K1801096-024	<i>23 * off by 1/19/</i>	21 Feb 2018 23:47
35	5	0221f003.d	1.	K1801096-025	<i>24</i>	22 Feb 2018 00:19
36	6	0221f004.d	1.	K1801096-026	<i>25</i>	22 Feb 2018 00:51
37	7	0221f005.d	1.	K1801096-027	<i>26</i>	22 Feb 2018 01:23
38	8	0221f006.d	1.	K1801096-028	<i>27</i>	22 Feb 2018 01:54
39	9	0221f007.d	1.	K1801096-029	<i>28</i>	22 Feb 2018 02:26
40	10	0221f008.d	1.	K1801096-030	<i>29</i>	22 Feb 2018 02:58
41	11	0221f009.d	1.	K1801096-031	<i>30</i>	22 Feb 2018 03:30
42	12	0221f010.d	1.	K1801096-032	<i>31</i>	22 Feb 2018 04:02
43	1	0221f011.d	1.	1660 25PPB PCB7-22J		22 Feb 2018 04:33
44	2	0221f012.d	1.	IB		22 Feb 2018 05:05
45	13	0221f013.d	1.	K1801096-033	<i>32</i>	22 Feb 2018 05:37
46	14	0221f014.d	1.	K1801096-034	<i>33</i>	22 Feb 2018 06:09
47	15	0221f015.d	1.	K1801096-035	<i>34</i>	22 Feb 2018 06:40
48	16	0221f016.d	1.	K1801096-036	<i>35</i>	22 Feb 2018 07:12
49	17	0221f017.d	1.	K1801096-037	<i>37</i>	22 Feb 2018 07:44
50	18	0221f018.d	1.	K1801267-001	<i>NR CM</i>	22 Feb 2018 08:16
51	19	0221f019.d	1.	K1801267-009	<i>↓</i>	22 Feb 2018 08:47
52	20	0221f020.d	1.	K1801267-013	<i>↓</i>	22 Feb 2018 09:19
53	21	0221f021.d	1.	K1801291-021		22 Feb 2018 09:51
54	22	0221f022.d	1.	K1801291-022		22 Feb 2018 10:23
55	1	0221f023.d	1.	1660 25PPB PCB7-22J		22 Feb 2018 10:54

OAL: 15/8/
RUN: 58/36/

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
56	2	0221f024.d	1.	IB		22 Feb 2018 11:26
57	23	0221f025.d	1.	K1801294-023 K1801322-023		22 Feb 2018 11:58
58	24	0221f026.d	1.	K1801096-23MS		22 Feb 2018 12:30
59	25	0221f027.d	1.	K1801096-23DMS		22 Feb 2018 13:02
60	26	0221f028.d	1.	KWG1800943-LCS		22 Feb 2018 13:33
61	27	0221f029.d	1.	KWG1800943-MB		22 Feb 2018 14:05
62	1	0221f030.d	1.	1660 25PPB PCB7-22J		22 Feb 2018 14:37
63	2	0221f031.d	1.	IB		22 Feb 2018 15:09

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0219F042.D
Lab ID: KWG1801092-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 06:20
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0219F042.D
Lab ID: KWG1801092-1
Run Type: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 06:20
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0219F042.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0219F042.D	Vial:	1
Acqu Date:	02/21/2018 06:20	Quant Date:	02/22/2018 16:40
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3608000	3212042	2.21	2.37			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.76	18.04	2131324	2425708	2.12	2.21			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.51	24.45			
Aroclor 1016 {1}	9.18	9.84	613540	530033	25.90	20.26			
Aroclor 1016 {2}	9.64	10.15	1531900	540266	26.36	26.84			
Aroclor 1016 {3}	9.81	10.89	976954	1248120	24.85	25.40			
Aroclor 1016 {4}	10.20	11.40	767051	781146	24.23	24.58			
Aroclor 1016 {5}	10.32	11.91	620618	402785	26.19	25.16			
Aroclor 1260			0	0	23.88	23.11			
Aroclor 1260 {1}	12.55	14.10	1435772	523460	24.43	24.41			
Aroclor 1260 {2}	13.14	14.68	879547	970871	24.43	23.55			
Aroclor 1260 {3}	13.95	15.05	981350	958800	25.28	23.67			
Aroclor 1260 {4}	14.33	15.58	1902179	1975975	22.54	22.99			
Aroclor 1260 {5}	14.96	16.09	1477456	1303323	22.72	20.93			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0219F042.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.51	25.00	2
Aroclor 1260		MS	NA	20					23.88	25.00	-4
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.4E+6	-12			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.5E+4	4			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.1E+4	5			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	-1			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.1E+4	-3			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	5			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.7E+4	-2			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.5E+4	-2			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.6E+4	-10			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.9E+4	-9			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.5E+5	-15			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0219F042.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					24.45	25.00	-2
Aroclor 1260		MS	NA	20					23.11	25.00	-8
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.3E+6	-5			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.1E+4	-19			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.2E+4	7			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.0E+4	2			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.1E+4	-2			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.6E+4	1			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.1E+4	-2			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	3.9E+4	-6			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	3.8E+4	-5			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	7.9E+4	-8			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.2E+4	-16			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.7E+5	-12			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0219F042.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0219F042.D
 Inj Date : 21-FEB-2018 06:20
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 21-FEB-2018 18:25
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.862	8.279	3608000	3212042	2.21	2.37		100.00
Aroclor 1016	9.182	9.835	613540	530033	25.9	20.3	80.00- 120.00	100.00
	9.635	10.145	1531900	540266	26.4	26.8	196.19- 294.28	249.68
	9.812	10.889	976954	1248120	24.9	25.4	131.48- 197.21	159.23
	10.198	11.395	767051	781146	24.2	24.6	99.08- 148.62	125.02
	10.315	11.912	620618	402785	26.2	25.2	79.53- 119.29	101.15
	Average of Peak Amounts =				25.5	24.5		
Aroclor 1260	12.545	14.095	1435772	523460	24.4	24.4	80.00- 120.00	100.00
	13.138	14.679	879547	970871	24.4	23.5	51.72- 77.58	61.26
	13.952	15.049	981350	958800	25.3	23.7	52.73- 79.10	68.35
	14.332	15.579	1902179	1975975	22.5	23.0	104.00- 156.00	132.48
	14.958	16.085	1477456	1303323	22.7	20.9	80.89- 121.33	102.90
	Average of Peak Amounts =				23.9	23.1		
Decachlorobiphenyl	16.755	18.035	2131324	2425708	2.12	2.21		100.00

Data File: \\alklsws002\instdata\GC32\DATA\022118.b\0219F042.D

Date : 21-FEB-2018 06:20

Client ID:

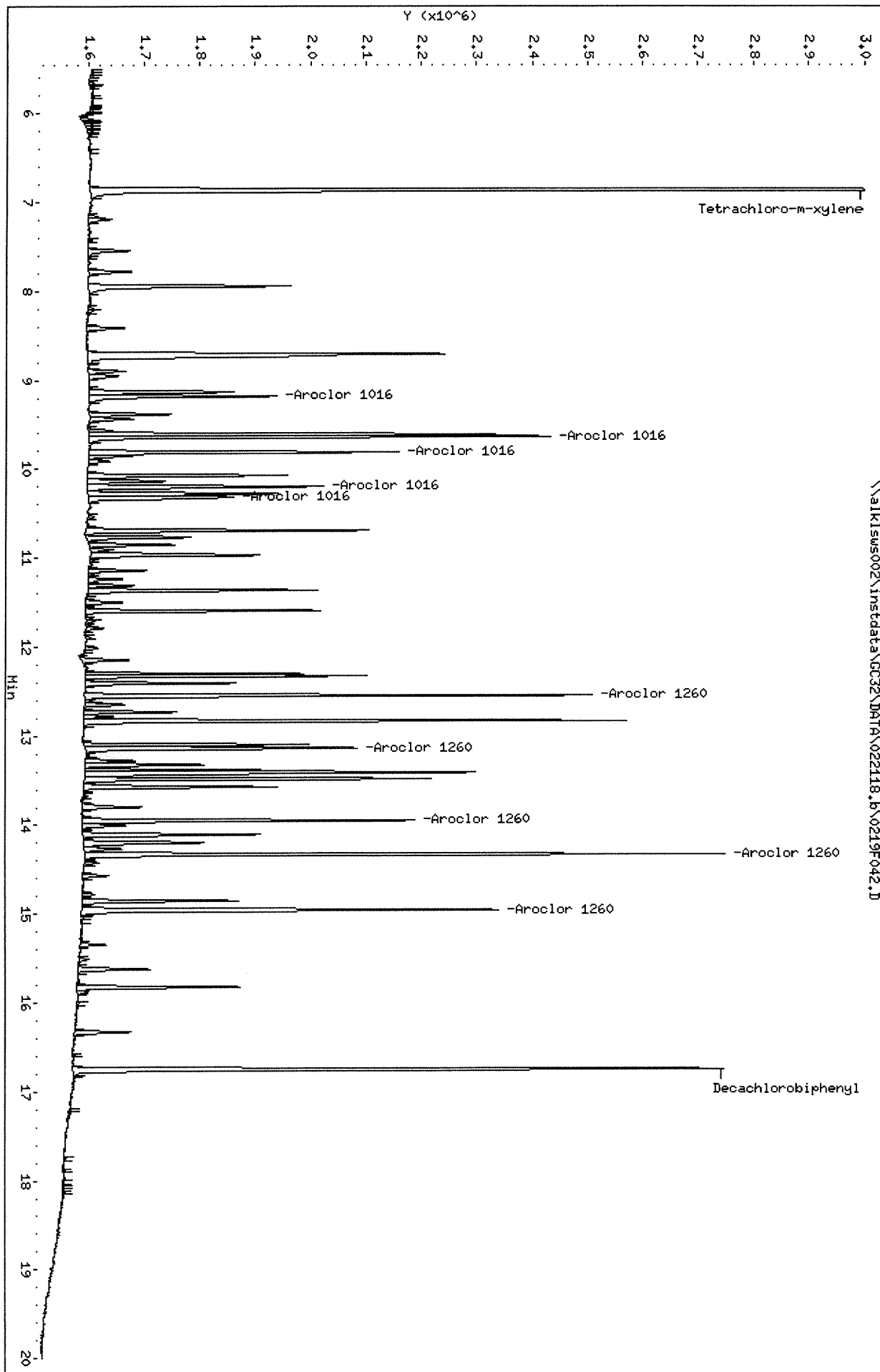
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1s002\instdata\GC32\DATA\022118_r.b\0219F042.D

Date: 21-FEB-2018 06:20

Client ID:

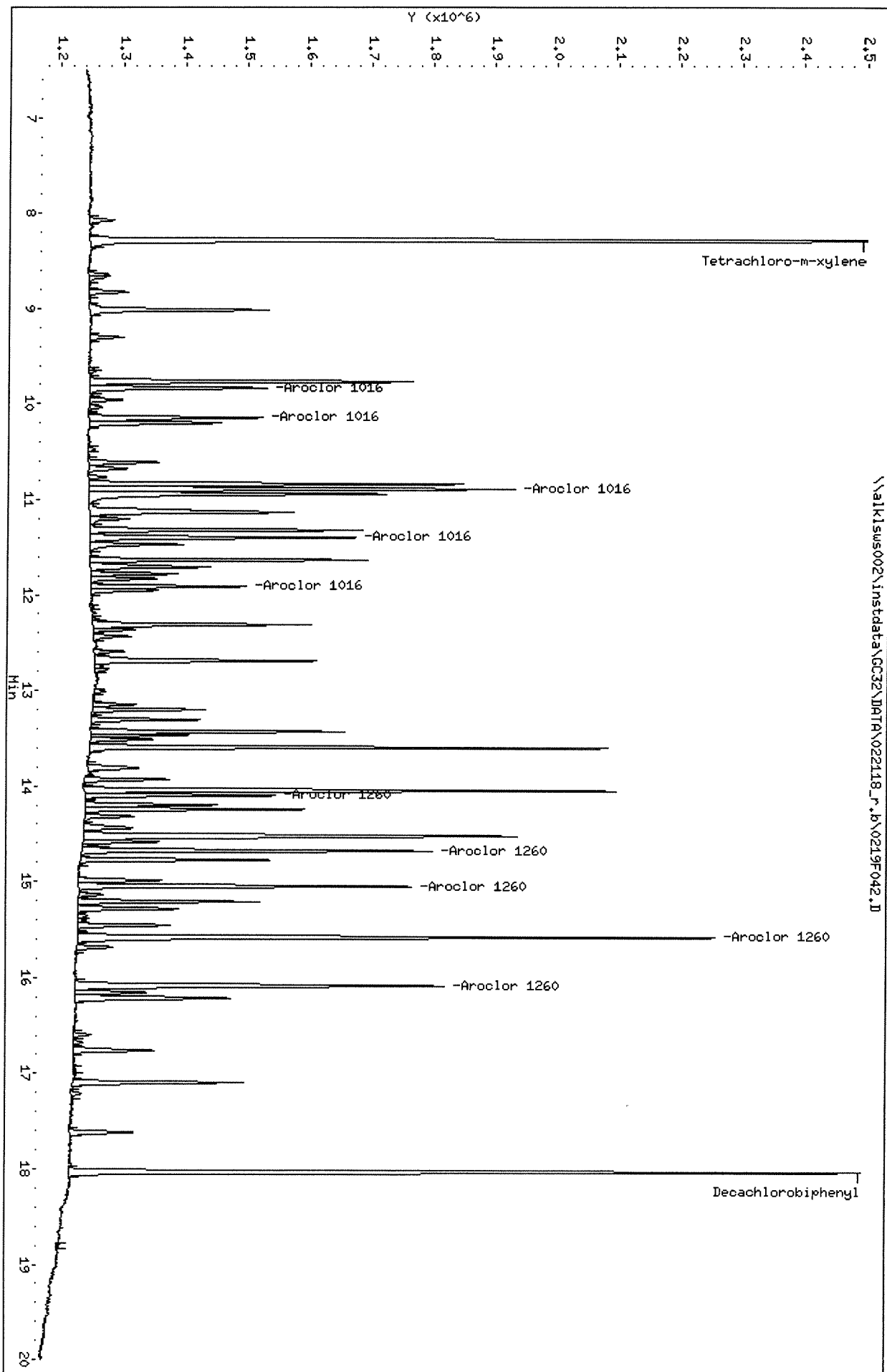
Sample Info: 1660 25PPB PCB7-223

Column phase: DB-XLB

Instrument: GC32.1

Operator: SHURRAY

Column diameter: 0.32




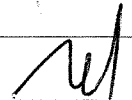
Exception Report

ata File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0219F043.D
ab ID: KWG1801092-2
unType: IB
atrix: NOT APPLICABLE

Date Acquired: 02/21/2018 06:52
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

ample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Microquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0219F043.D
Lab ID: KWG1801092-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 06:52
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0219F043.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0219F043.D	Vial:	2
Acqu Date:	02/21/2018 06:52	Quant Date:	02/22/2018 16:40
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg		Rpt
Tetrachloro-m-xylene	6.86		20013	0	0.0120	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.77		9877	0	0.0100	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1: J:\GC32\DATA\022118.B\0219F043.D
 Data File #2: \\alklsws002\instdata\GC32\DATA\022118_r.b\0219F043.D
 Acqu Date: 02/21/2018 06:52
 Run Type: IB
 Lab ID: KWG1801092-2
 Signal #1: DB-35MS

Instrument: GC32.i
 Vial: 2
 Dilution: 1.0
 Soln Conc. Units: ng/mL

Quant Date: 02/22/2018 16:40
 MethodJoinID: MJ1697
 Signal #2: DB-XLB

Target Compounds

Final Conc. Units: ug/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	1.55			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}		12.39	0	44481	0.0000	1.95			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}		13.02	0	25457	0.0000	1.16			
Aroclor 1254 {5}		14.26	0	48271	0.0000	1.54			
Aroclors, Total		1.00	0	39403	0.0000	1.55	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0219F043.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0219F043.D
 Inj Date : 21-FEB-2018 06:52
 Sample Info: IB
 Misc Info :
 Cal Date : 21-FEB-2018 18:25
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.857	0.000	20013	0	0.0123	0.000		100.00 (R)
Aroclor 1254	0.000	0.000	0	0	0.000	0.000		
	0.000	12.390	0	44481	0.000	1.95		
	0.000	0.000	0	0	0.000	0.000		
	0.000	13.024	0	25457	0.000	1.16		
	0.000	14.257	0	48271	0.000	1.54		
	Average of Peak Amounts =				0.000	1.55		
Decachlorobiphenyl	16.770	0.000	9877	0	0.00981	0.000		100.00 (R)
Aroclors, Total	0.000	1.000	0	39403	0.000	1.55		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisw002\instdata\GC32\DATA\022118.b\0219F043.D

Date: 21-FEB-2018 06:52

Client ID:

Sample Info: 1B

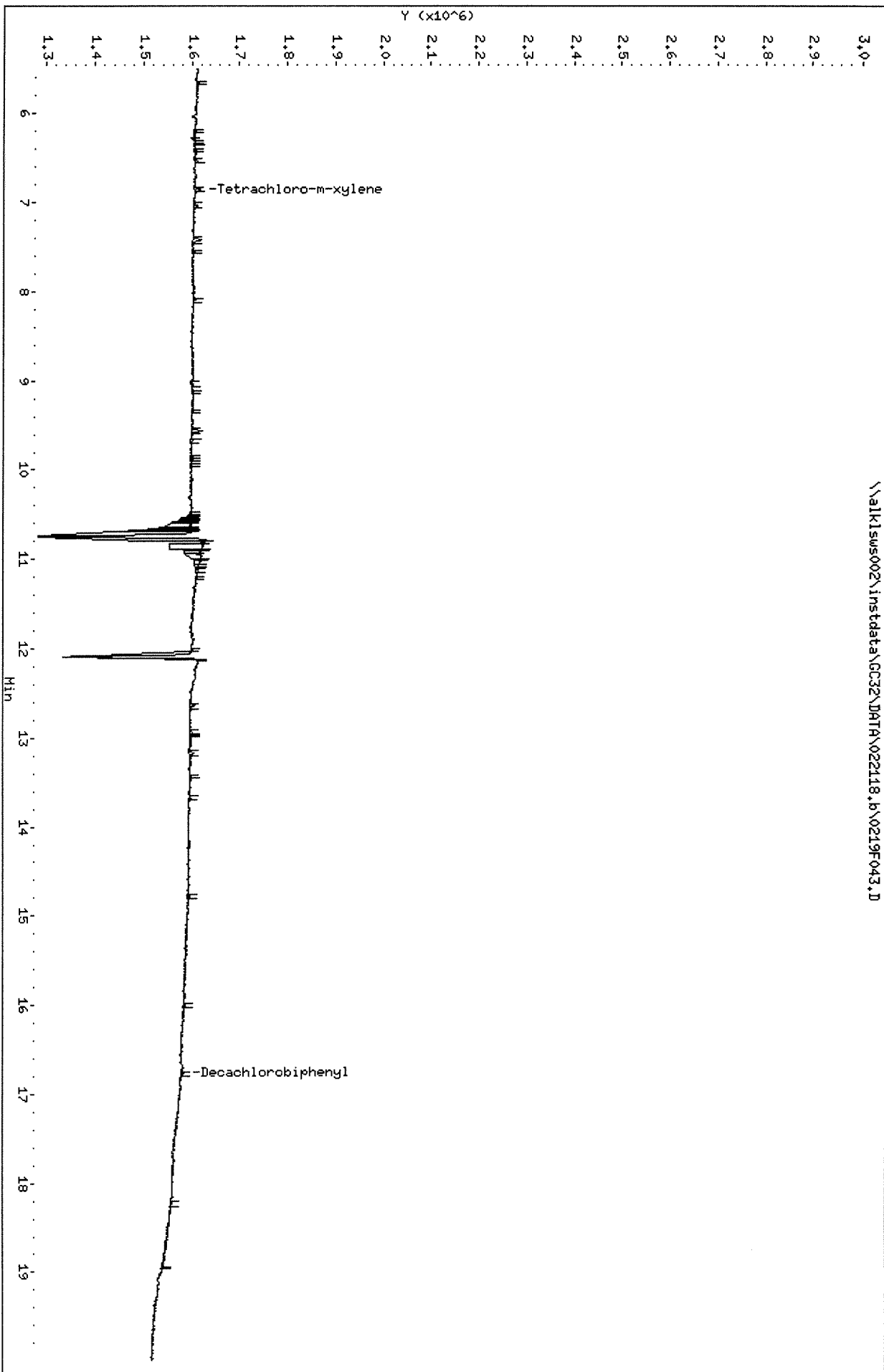
Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32

\\alkisw002\instdata\GC32\DATA\022118.b\0219F043.D

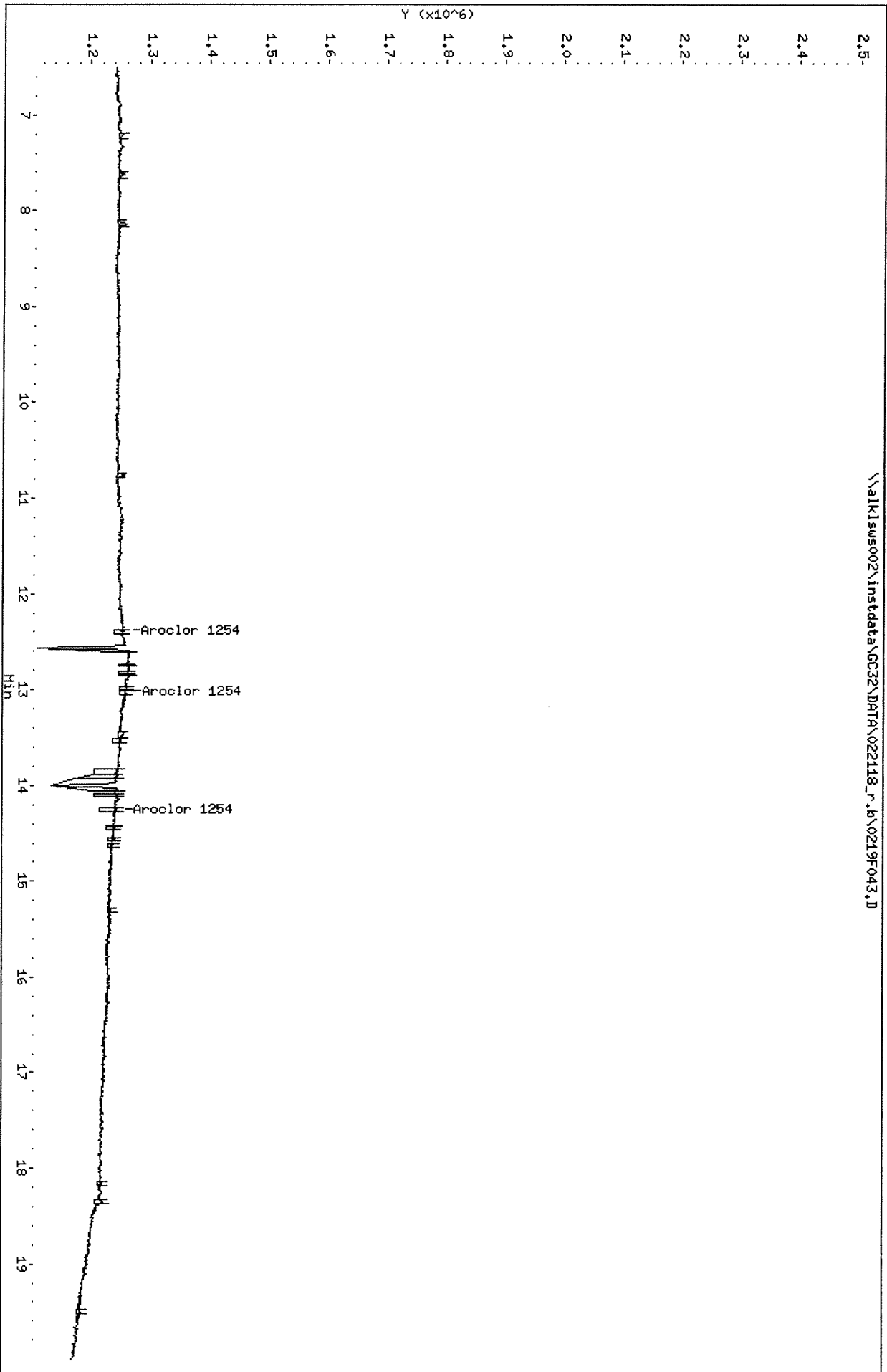


Data File: \\alklsws002\instdata\GC32\DATA\022118_r.b\0219F043.D
Date: 21-FEB-2018 06:52

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.1
Operator: SHURRAY
Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F011.D
Lab ID: KWG1801092-3
Run Type: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 12:41
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F011.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F011.D	Vial:	1
Acqu Date:	02/21/2018 12:41	Quant Date:	02/22/2018 16:40
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
Lab Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.86	8.28	3751981	3327036	2.30	2.45			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2226687	2500296	2.21	2.28			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units:				Rpt
					ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	26.56	25.37			
Aroclor 1016 {1}	9.18	9.83	635236	545848	26.82	20.86			
Aroclor 1016 {2}	9.63	10.14	1602448	553889	27.57	27.52			
Aroclor 1016 {3}	9.81	10.89	1043531	1316769	26.54	26.80			
Aroclor 1016 {4}	10.20	11.40	797560	797055	25.19	25.08			
Aroclor 1016 {5}	10.32	11.91	632253	425466	26.68	26.58			
Aroclor 1260			0	0	24.69	24.15			
Aroclor 1260 {1}	12.55	14.10	1484453	544381	25.26	25.38			
Aroclor 1260 {2}	13.14	14.68	912451	1011610	25.34	24.54			
Aroclor 1260 {3}	13.95	15.05	1010308	1021320	26.02	25.22			
Aroclor 1260 {4}	14.33	15.58	1980534	2048817	23.46	23.84			
Aroclor 1260 {5}	14.96	16.08	1520423	1355795	23.39	21.77			

ndetected at or above MDL
 nalyte detected above MDL, but below MRL
 it above MRL also found in Method Blank
 nalyte concentration above high point of ICAL
 esumptive evidence of compound

D: Result from dilution
 n: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F011.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.56	25.00	6
Aroclor 1260		MS	NA	20					24.69	25.00	-1
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-8			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.5E+4	7			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.4E+4	10			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.2E+4	6			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.2E+4	1			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	7			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.9E+4	1			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.6E+4	1			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	4.0E+4	4			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.9E+4	-6			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	6.1E+4	-6			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.9E+5	-12			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F011.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.37	25.00	1
Aroclor 1260		MS	NA	20					24.15	25.00	-3
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.3E+6	-2			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.2E+4	-17			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.2E+4	10			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.3E+4	7			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.2E+4	0			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.7E+4	6			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.2E+4	2			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.0E+4	-2			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.1E+4	1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.2E+4	-5			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.4E+4	-13			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	1.0E+6	-9			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F011.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F011.D
 Inj Date : 21-FEB-2018 12:41
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 21-FEB-2018 18:25
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.863	8.280	3751981	3327036	2.30	2.45		100.00
Aroclor 1016	9.179	9.833	635236	545848	26.8	20.9	80.00- 120.00	100.00
	9.633	10.143	1602448	553889	27.6	27.5	196.19- 294.28	252.26
	9.809	10.886	1043531	1316769	26.5	26.8	131.48- 197.21	164.27
	10.199	11.396	797560	797055	25.2	25.1	99.08- 148.62	125.55
	10.316	11.910	632253	425466	26.7	26.6	79.53- 119.29	99.53
	Average of Peak Amounts =				26.6	25.4		
Aroclor 1260	12.546	14.100	1484453	544381	25.3	25.4	80.00- 120.00	100.00
	13.139	14.676	912451	1011610	25.3	24.5	51.72- 77.58	61.47
	13.949	15.046	1010308	1021320	26.0	25.2	52.73- 79.10	68.06
	14.333	15.580	1980534	2048817	23.5	23.8	104.00- 156.00	133.42
	14.959	16.083	1520423	1355795	23.4	21.8	80.89- 121.33	102.42
	Average of Peak Amounts =				24.7	24.1		
Decachlorobiphenyl	16.753	18.033	2226687	2500296	2.21	2.28		100.00

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F011.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F011.D
 Inj Date : 21-FEB-2018 12:41
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 21-FEB-2018 18:25
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

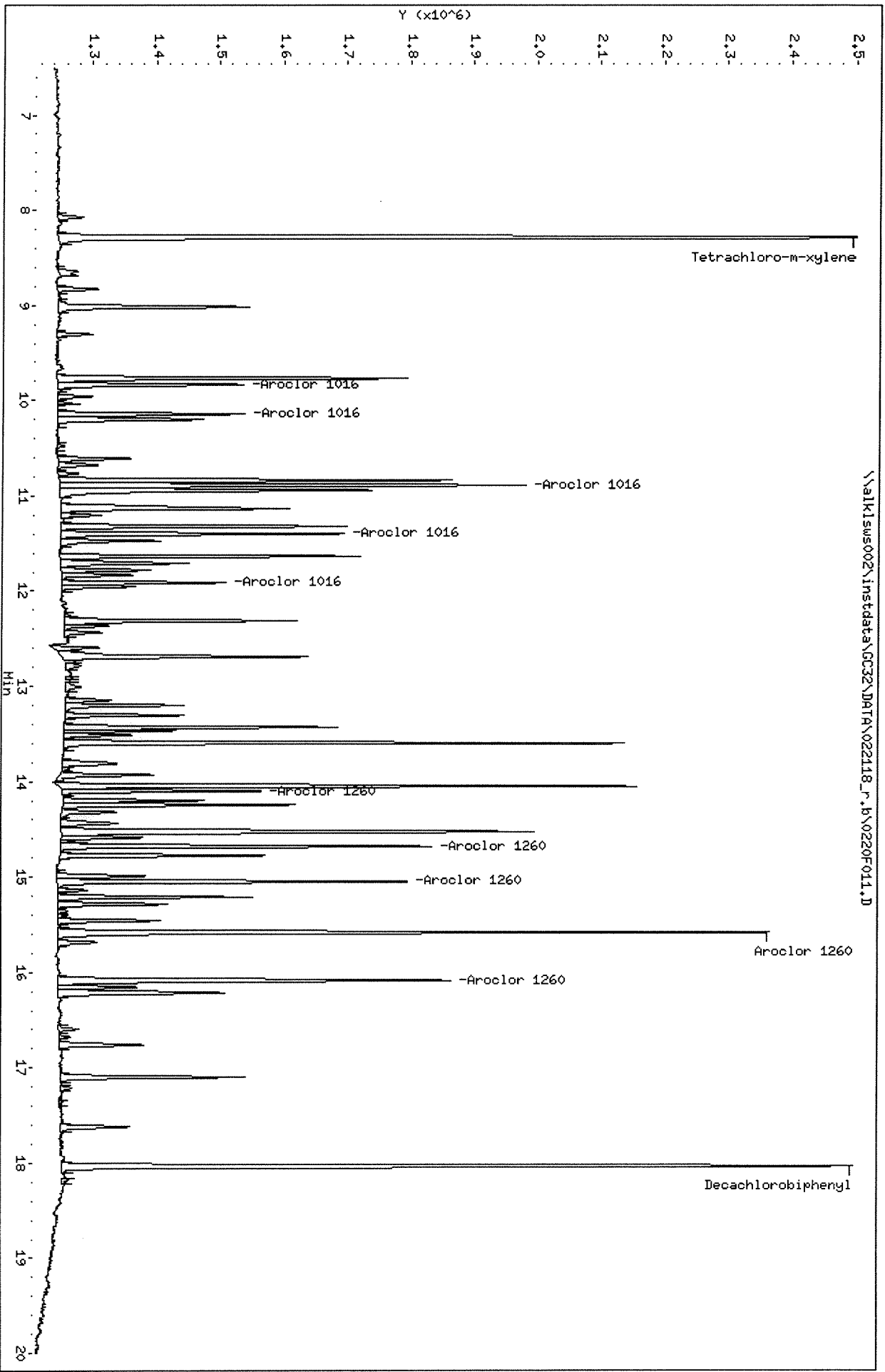
Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.863	8.280	3751981	3327036	2.30	2.45		100.00
Aroclor 1016	9.179	9.833	635236	545848	26.8	20.9	80.00- 120.00	100.00
	9.633	10.143	1602448	553889	27.6	27.5	196.19- 294.28	252.26
	9.809	10.886	1043531	1316769	26.5	26.8	131.48- 197.21	164.27
	10.199	11.396	797560	797055	25.2	25.1	99.08- 148.62	125.55
	10.316	11.910	632253	425466	26.7	26.6	79.53- 119.29	99.53
	Average of Peak Amounts =				26.6	25.4		
Aroclor 1260	12.546	14.100	1484453	544381	25.3	25.4	80.00- 120.00	100.00
	13.139	14.676	912451	1011610	25.3	24.5	51.72- 77.58	61.47
	13.949	15.046	1010308	1021320	26.0	25.2	52.73- 79.10	68.06
	14.333	15.580	1980534	2048817	23.5	23.8	104.00- 156.00	133.42
	14.959	16.083	1520423	1355795	23.4	21.8	80.89- 121.33	102.42
	Average of Peak Amounts =				24.7	24.1		
Decachlorobiphenyl	16.753	18.033	2226687	2500296	2.21	2.28		100.00

Data File: \\alk1s002\instdata\GC32\DATA\022118_r_b\0220F011.D
Date: 21-FEB-2018 12:41

Client ID:
Sample Info: 1660 28PPB PCB7-22J

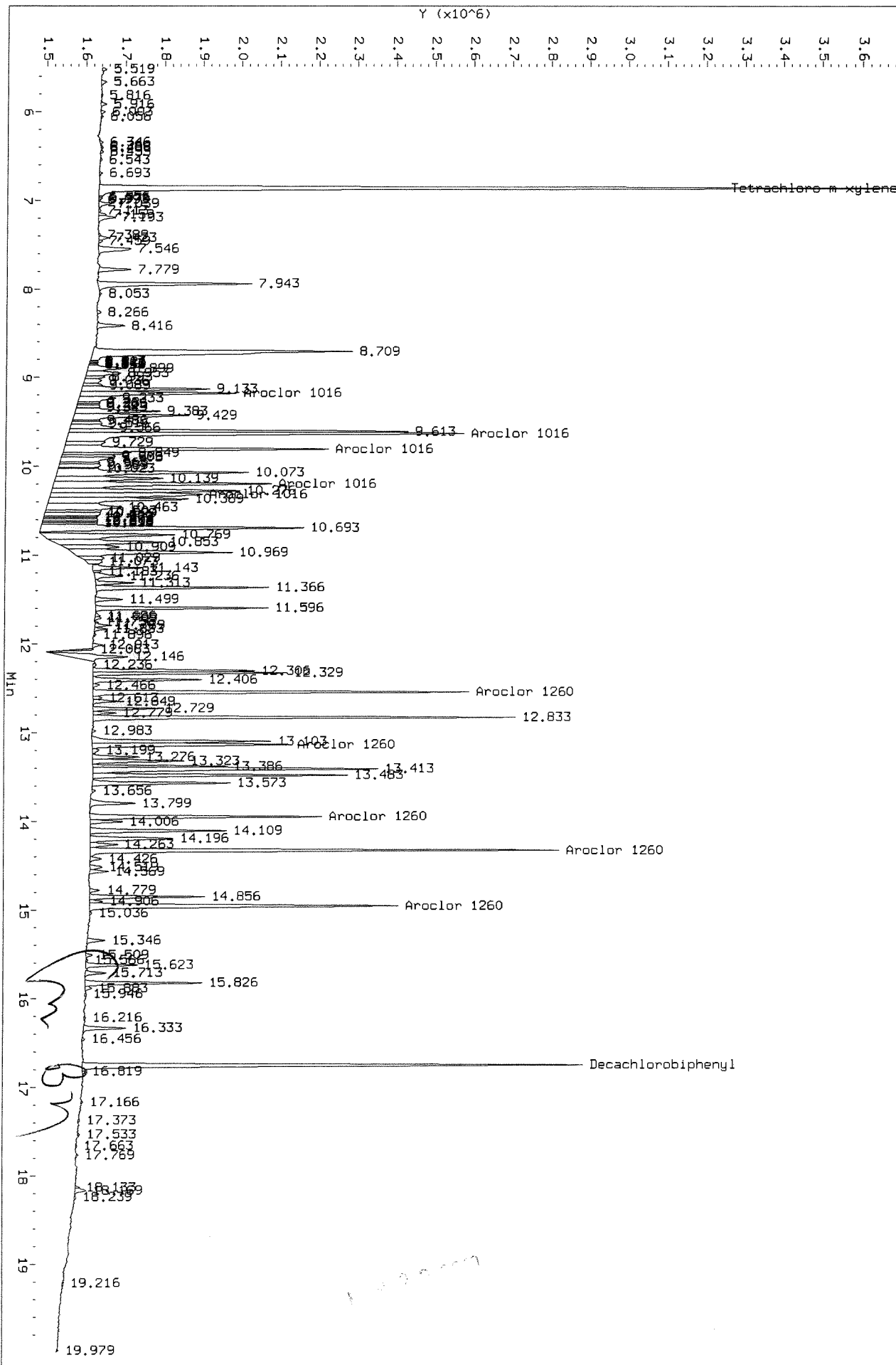
Column phase: DB-XLB

Instrument: GC32.1
Operator: SHURRAY
Column diameter: 0.32



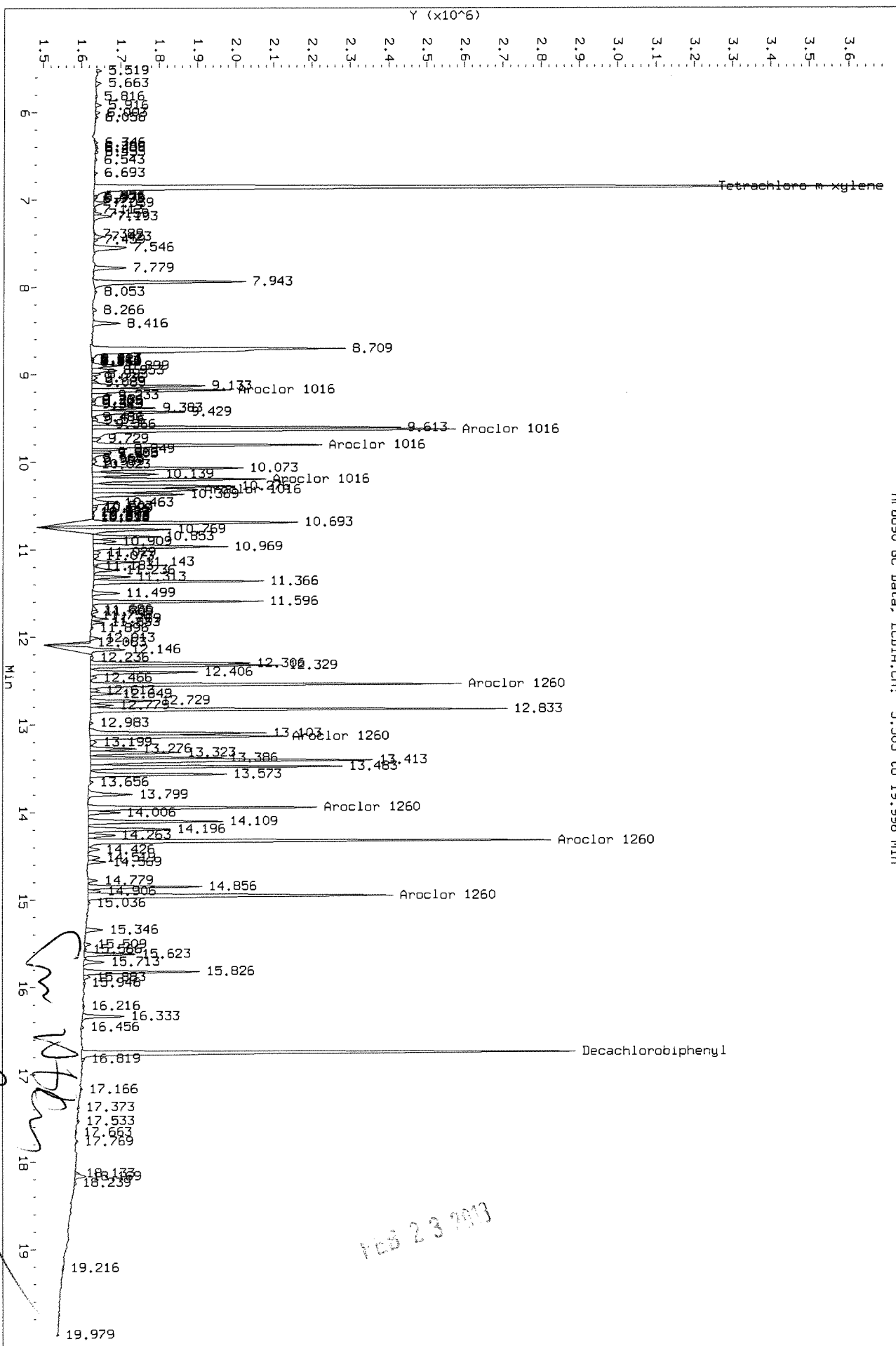
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Injection Date: 22-FEB-2018 04:33
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 5.503 to 19.996 MIN



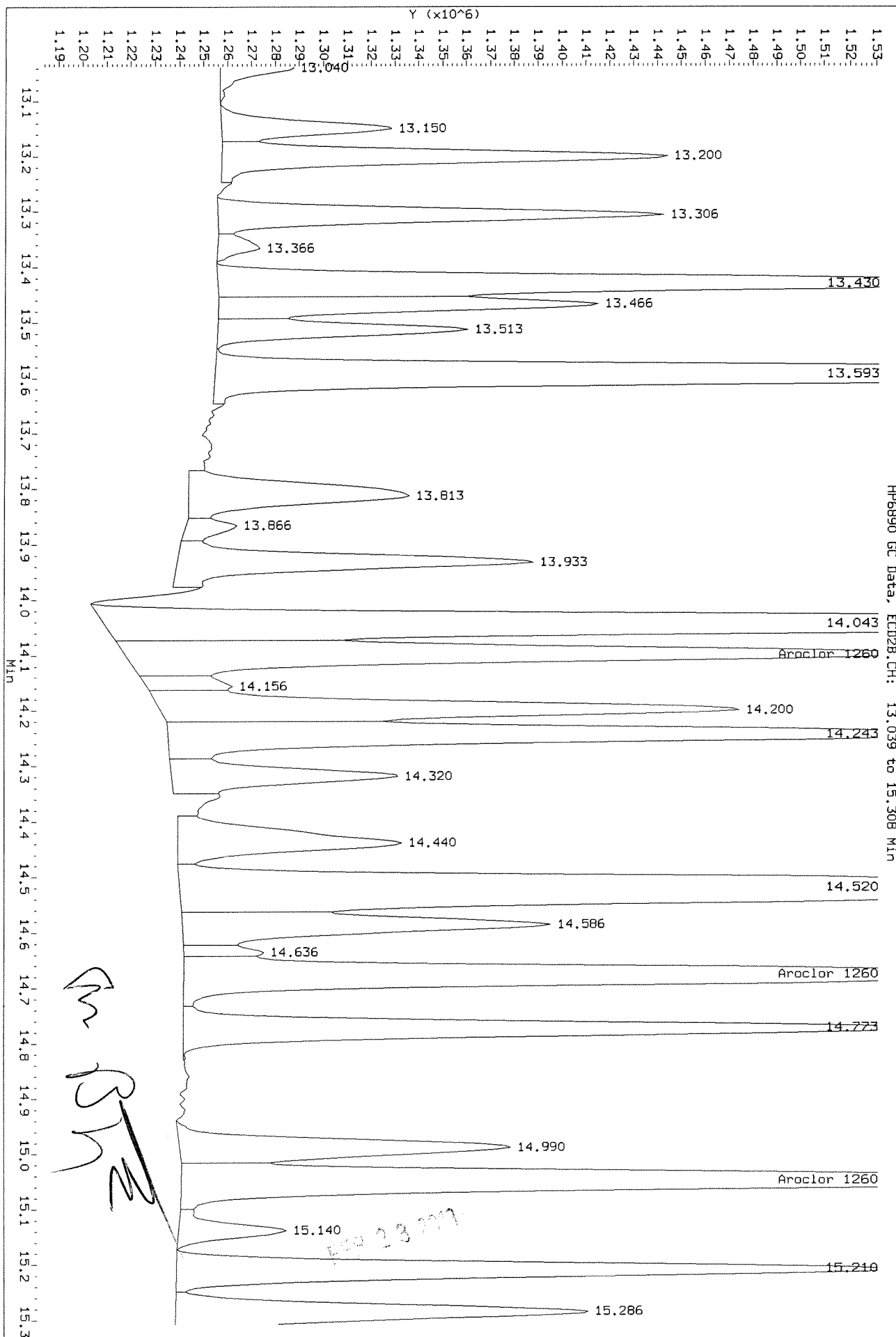
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Injection Date: 22-FEB-2018 04:33
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 5.503 to 19.996 Min

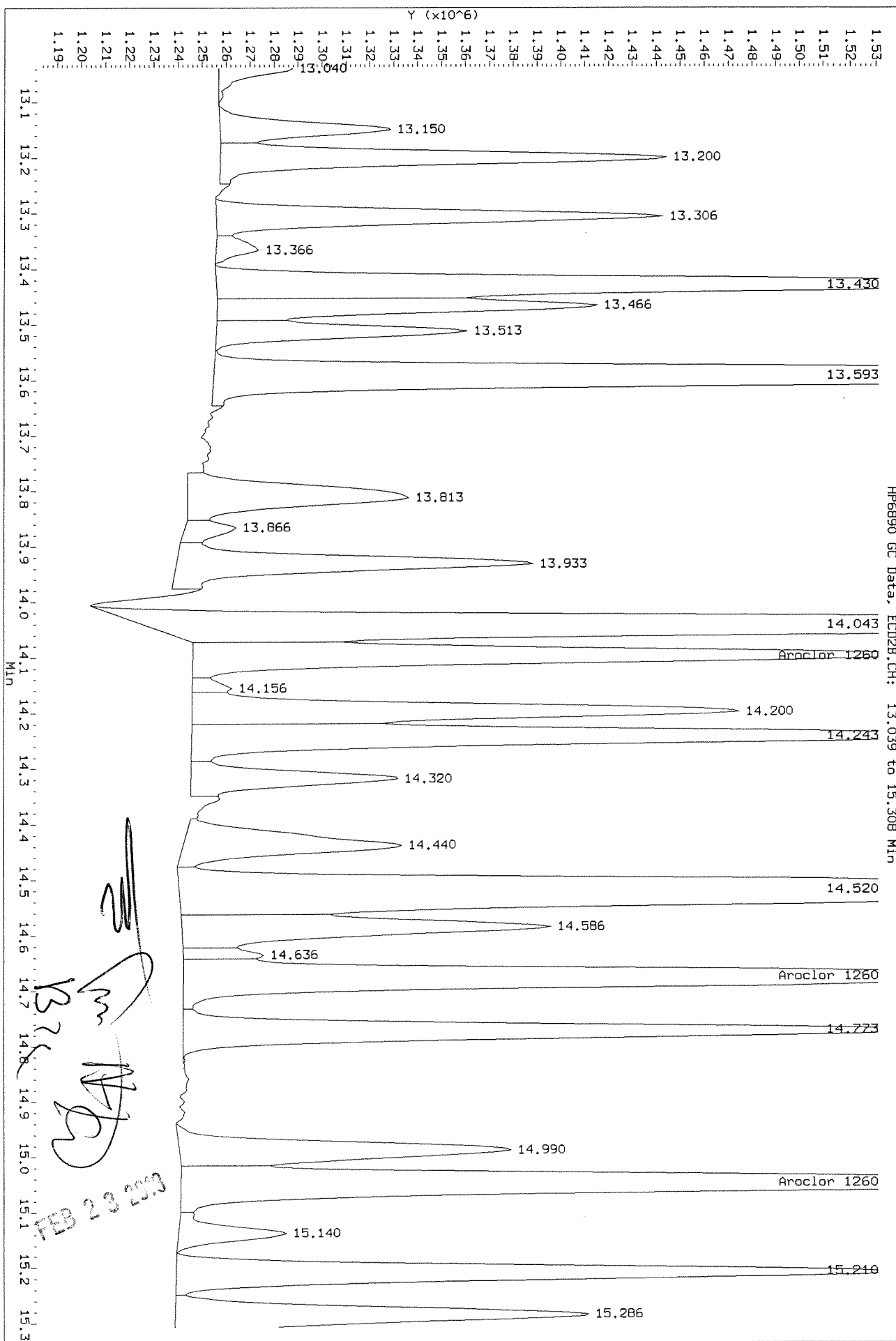


FEB 23 2018

Data File: \\alkisus002\Instdata\GC32\DATA\022118_r.b\0221F011.D
Injection Date: 22-FEB-2018 04:33
Instrument: GC32.1
Client Sample ID:



Data File: \\alklsws002\instdata\GC32\DATA\022118_r.p\0221F011.D
Injection Date: 22-FEB-2018 04:33
Instrument: GC32.1
Client Sample ID:



Data File: \\alkisus002\instdata\GC32\DATA\022118.b\0220F011.D
Date : 21-FEB-2018 12:41

Client ID:

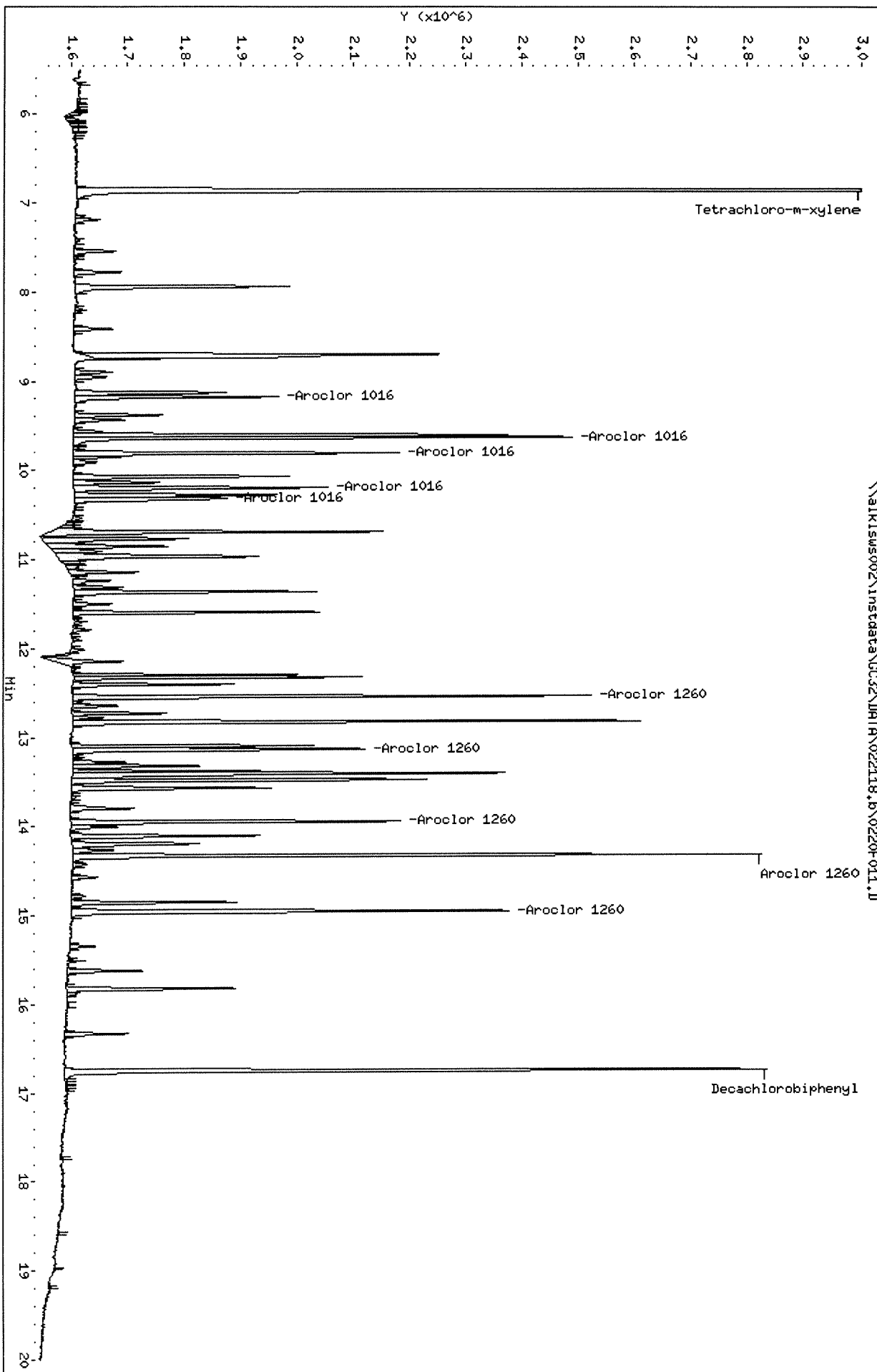
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F012.D
Lab ID: KWG1801092-4
Run Type: IB
Matrix: NOT APPLICABLE

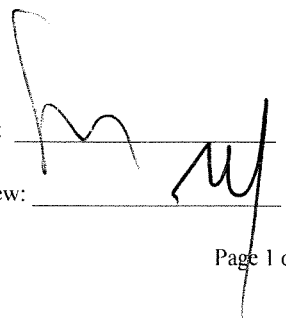
Date Acquired: 02/21/2018 13:12
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F012.D
Lab ID: KWG1801092-4
RunType: IB
Matrix: NOT APPLICABLE

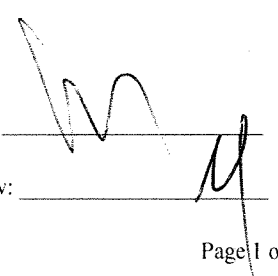
Date Acquired: 02/21/2018 13:12
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F012.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F012.D	Vial:	2
Acqu Date:	02/21/2018 13:12	Quant Date:	02/22/2018 16:40
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg		Rpt
Tetrachloro-m-xylene	6.86		25856	0	0.0160	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.77		15979	0	0.0160	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.4960	0.0000			
Aroclor 1016 {1}	9.17		8903	0	0.3760	0.0000			
Aroclor 1016 {2}	9.66		5967	0	0.1030	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}	10.21		8780	0	0.2770	0.0000			
Aroclor 1016 {5}	10.30		29110	0	1.23	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.3893	0.0000			
Aroclor 1232 {1}	7.96		5233	0	0.1600	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}	9.66		5967	0	0.2510	0.0000			
Aroclor 1232 {4}	10.21		8780	0	0.7570	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.8680	0.0000			
Aroclor 1242 {1}	9.20		12070	0	0.6410	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0220F012.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F012.D	Vial:	2
Acqu Date:	02/21/2018 13:12	Quant Date:	02/22/2018 16:40
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}	9.66		5967	0	0.1340	0.0000			
Aroclor 1242 {3}	10.30		29110	0	1.53	0.0000			
Aroclor 1242 {4}	10.98		27924	0	1.17	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.4730	0.0000			
Aroclor 1248 {1}	9.66		5967	0	0.2430	0.0000			
Aroclor 1248 {2}	10.21		8780	0	0.2220	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}	12.32		23834	0	0.9540	0.0000			
Aroclor 1254			0	0	0.0000	0.6333			
Aroclor 1254 {1}		12.29	0	21909	0.0000	0.4280			
Aroclor 1254 {2}		12.40	0	20712	0.0000	0.9090			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}		13.04	0	12359	0.0000	0.5630			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00	1.00	51478	40389	2.23	1.41	J	J	
Aroclor 1260			0	0	0.0000	0.7787			
Aroclor 1260 {1}		14.12	0	37871	0.0000	1.77			
Aroclor 1260 {2}		14.72	0	14016	0.0000	0.3400			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}		16.09	0	14301	0.0000	0.2300			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F012.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F012.D
 Inj Date : 21-FEB-2018 13:12
 Sample Info: IB
 Misc Info :
 Cal Date : 21-FEB-2018 18:25
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.856	0.000	25856	0	0.0158	0.000		100.00 (R)
Aroclor 1016	9.166	0.000	8903	0	0.376	0.000	80.00- 120.00	100.00 (T)
	9.663	0.000	5967	0	0.103	0.000	196.19- 294.28	67.03 (T)
	0.000	0.000	0	0	0.000	0.000	131.48- 197.21	0.00 (T)
	10.206	0.000	8780	0	0.277	0.000	99.08- 148.62	98.62 (T)
	10.296	0.000	29110	0	1.23	0.000	79.53- 119.29	326.97 (T)
	Average of Peak Amounts =				0.497	0.000		
Aroclor 1232	7.956	0.000	5233	0	0.160	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	75.51- 113.27	0.00 (T)
	9.663	0.000	5967	0	0.251	0.000	61.92- 92.88	114.04 (T)
	10.206	0.000	8780	0	0.757	0.000	29.43- 44.14	167.78 (T)
	0.000	0.000	0	0	0.000	0.000	50.90- 76.34	0.00 (T)
	Average of Peak Amounts =				0.389	0.000		
Aroclor 1242	9.196	0.000	12070	0	0.641	0.000	80.00- 120.00	100.00 (T)
	9.663	0.000	5967	0	0.134	0.000	188.17- 282.25	49.44 (T)
	10.296	0.000	29110	0	1.53	0.000	75.98- 113.97	241.16 (T)
	10.983	0.000	27924	0	1.17	0.000	97.61- 146.41	231.34 (T)
	0.000	0.000	0	0	0.000	0.000	98.63- 147.94	0.00 (T)
	Average of Peak Amounts =				0.869	0.000		
Aroclor 1248	9.663	0.000	5967	0	0.243	0.000	80.00- 120.00	100.00 (T)
	10.206	0.000	8780	0	0.222	0.000	123.60- 185.40	147.13 (T)
	0.000	0.000	0	0	0.000	0.000	74.96- 112.44	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	153.18- 229.78	0.00 (T)
	12.320	0.000	23834	0	0.954	0.000	76.00- 114.01	399.39 (T)
	Average of Peak Amounts =				0.473	0.000		
Aroclor 1254	0.000	12.290	0	21909	0.000	0.428		
	0.000	12.400	0	20712	0.000	0.909		
	0.000	0.000	0	0	0.000	0.000		
	0.000	13.037	0	12359	0.000	0.563		
	0.000	0.000	0	0	0.000	0.000		

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Average of Peak Amounts =					0.000	0.633		
Aroclor 1260	0.000	14.117	0	37871	0.000	1.77		
	0.000	14.720	0	14016	0.000	0.340		
	0.000	0.000	0	0	0.000	0.000		
	0.000	0.000	0	0	0.000	0.000		
	0.000	16.093	0	14301	0.000	0.230		
Average of Peak Amounts =					0.000	0.780		
Decachlorobiphenyl	16.773	0.000	15979	0	0.0159	0.000		100.00 (R)
Aroclors, Total	1.000	1.000	51478	40389	2.23	1.41		0.00

QC Flag Legend

- T - Target compound detected outside RT window.
- R - Spike/Surrogate failed recovery limits.

Data File: \\alk1sws002\instdata\GC32\DATA\022118.b\0220F012.D

Date: 21-FEB-2018 13:12

Client ID:

Sample Info: 18

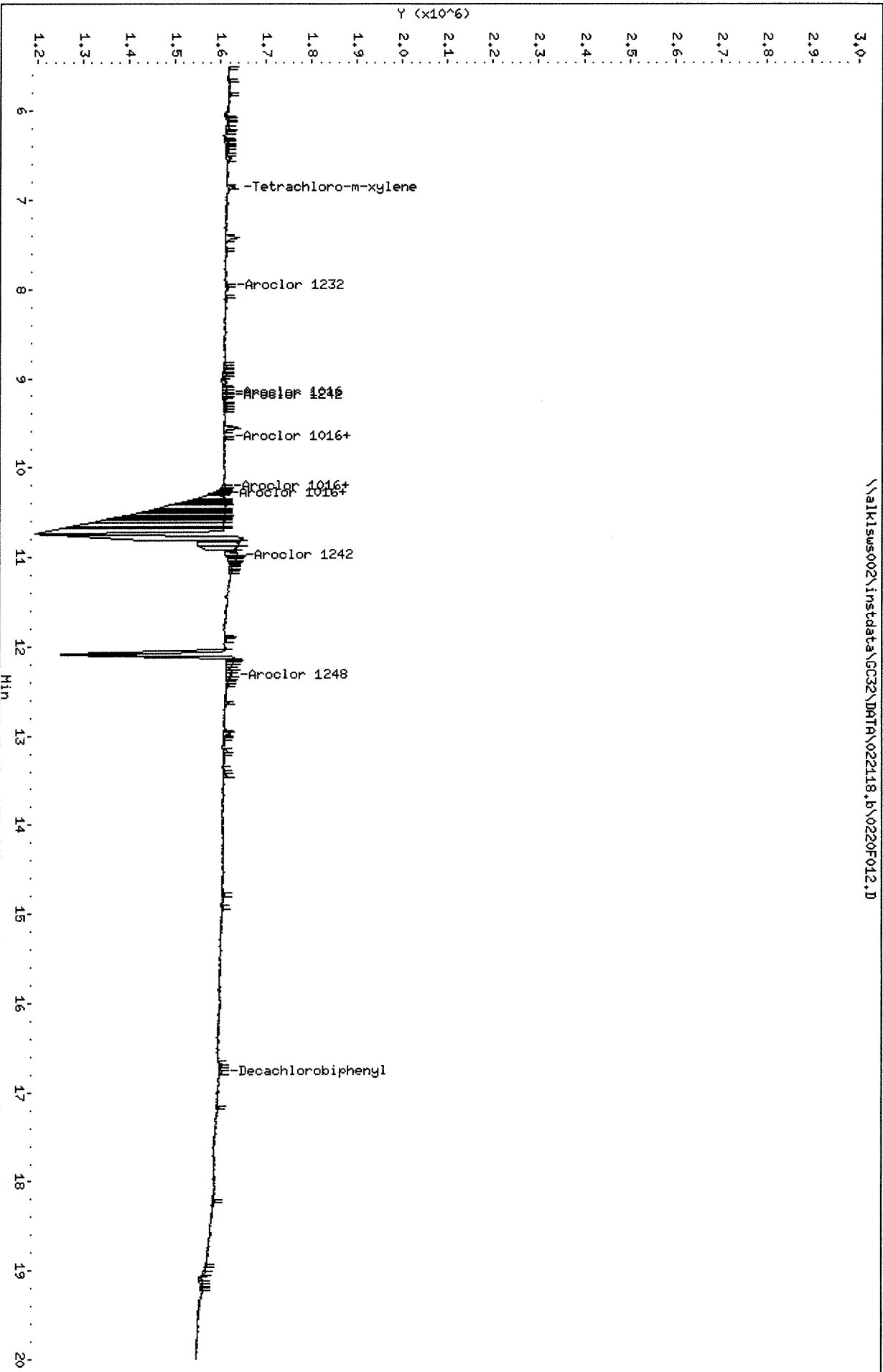
Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\022118.b\0220F012.D

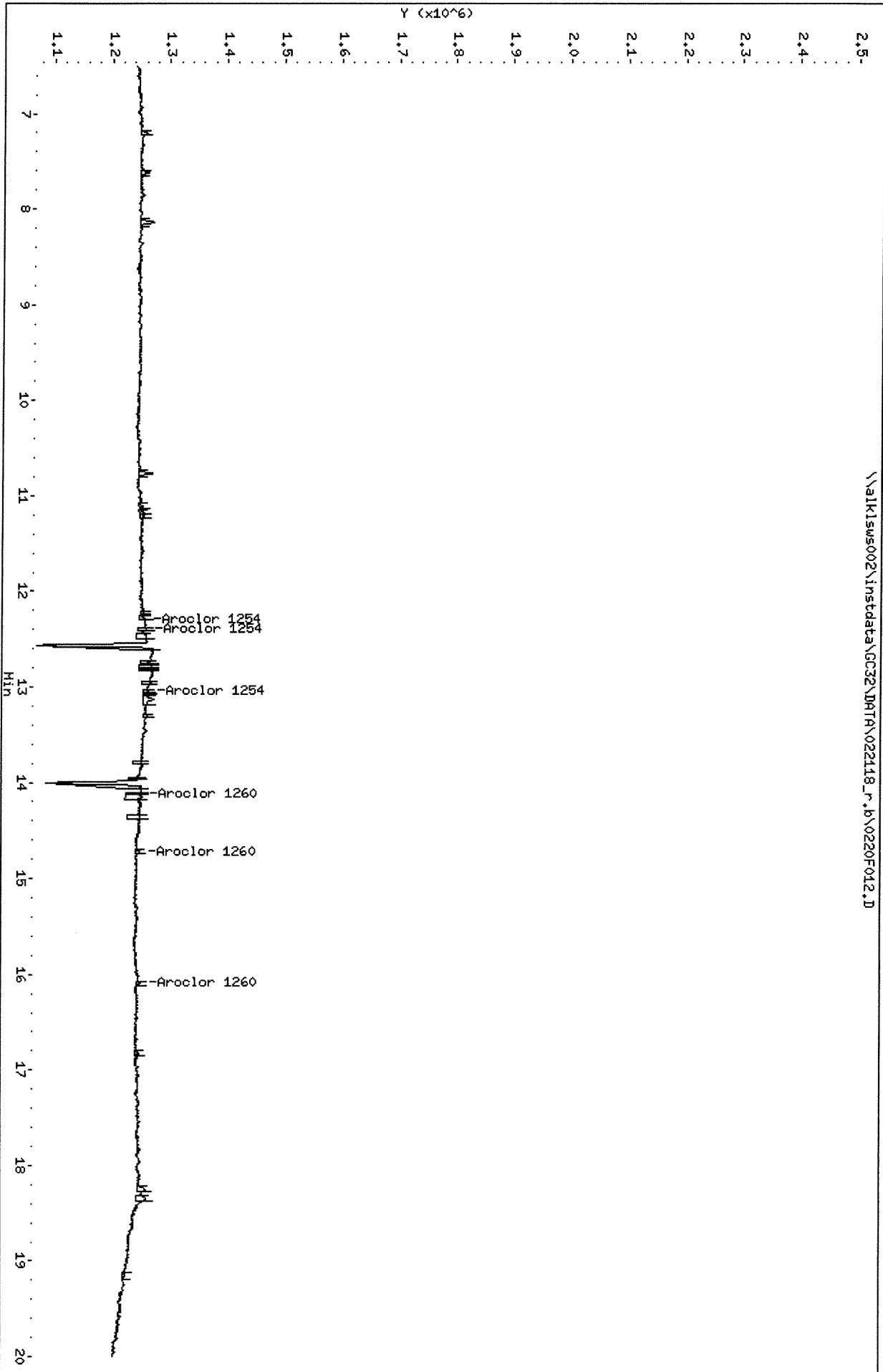


Data File: \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F012.D
Date : 21-FEB-2018 13:12

Client ID:
Sample Info: IB
Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F012.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F023.D
Lab ID: KWG1801092-5
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 19:02
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

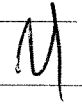
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F023.D
Lab ID: KWG1801092-5
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 19:02
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F023.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F023.D	Vial:	1
Acqu Date:	02/21/2018 19:02	Quant Date:	02/22/2018 16:40
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-5	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3638061	3191903	2.23	2.35			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2141312	2415096	2.13	2.20			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.23	25.45			
Aroclor 1016 {1}	9.18	9.84	593994	517946	25.08	19.80			
Aroclor 1016 {2}	9.64	10.15	1566451	535122	26.95	26.59			
Aroclor 1016 {3}	9.81	10.89	964480	1224334	24.53	24.92			
Aroclor 1016 {4}	10.20	11.40	758670	997239	23.96	31.38			
Aroclor 1016 {5}	10.32	11.91	607689	392906	25.64	24.55			
Aroclor 1260			0	0	23.91	23.16			
Aroclor 1260 {1}	12.55	14.10	1445301	529220	24.59	24.68			
Aroclor 1260 {2}	13.14	14.68	913416	960879	25.37	23.31			
Aroclor 1260 {3}	13.95	15.05	973405	984302	25.07	24.30			
Aroclor 1260 {4}	14.33	15.58	1870281	1967949	22.16	22.90			
Aroclor 1260 {5}	14.96	16.09	1454155	1282699	22.37	20.60			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F023.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.23	25.00	1
Aroclor 1260		MS	NA	20					23.91	25.00	-4
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-11			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.4E+4	0			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.3E+4	8			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	-2			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.0E+4	-4			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.4E+4	3			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.8E+4	-2			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.7E+4	1			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	0			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.5E+4	-11			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.8E+4	-11			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.6E+5	-15			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F023.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.45	25.00	2
Aroclor 1260		MS	NA	20					23.16	25.00	-7
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.3E+6	-6			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.1E+4	-21			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.1E+4	6			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	4.9E+4	0			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	4.0E+4	26			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.6E+4	-2			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.1E+4	-1			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	3.8E+4	-7			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	3.9E+4	-3			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	7.9E+4	-8			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.1E+4	-18			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.7E+5	-12			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F023.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F023.D
 Inj Date : 21-FEB-2018 19:02
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

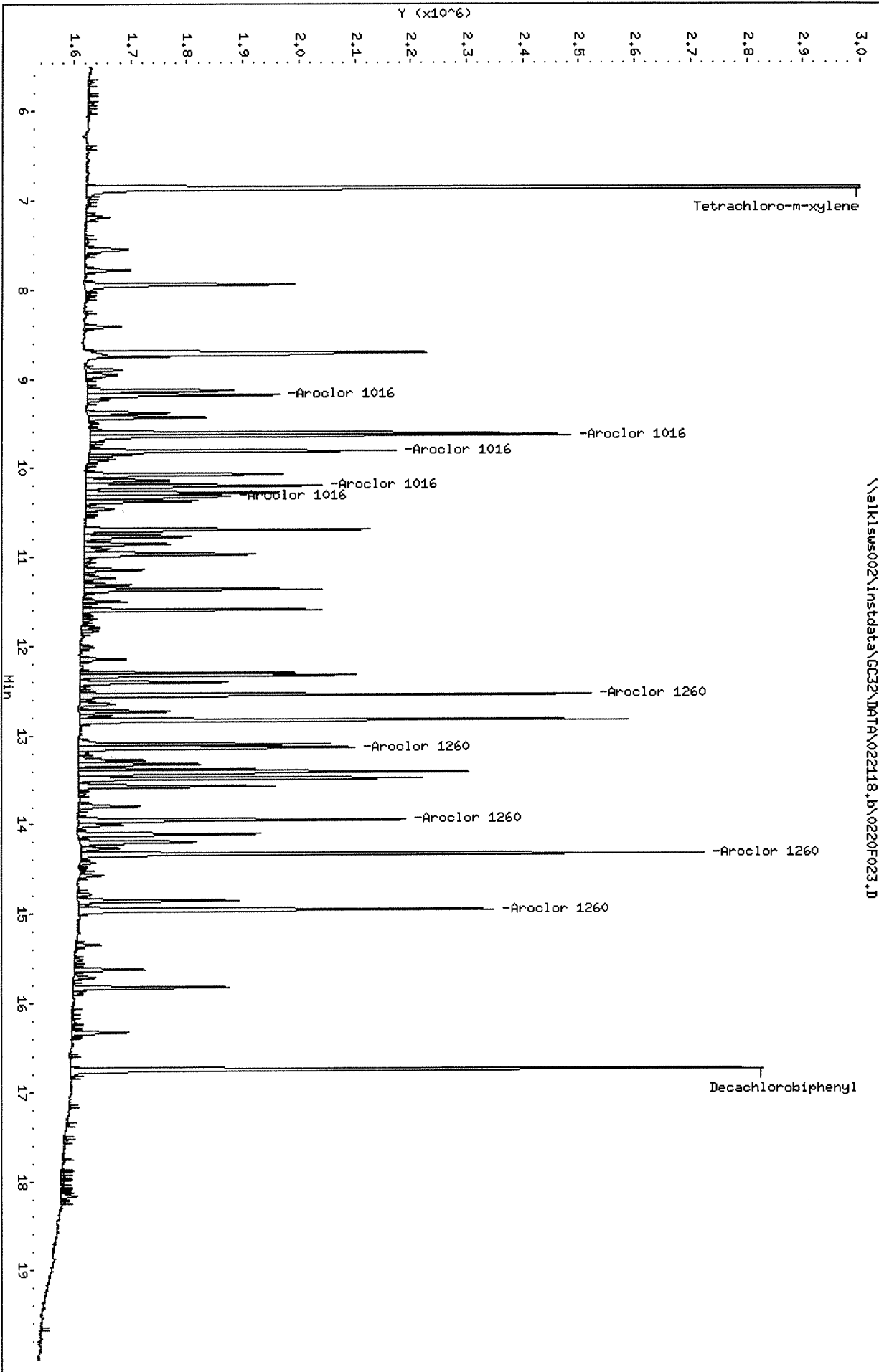
Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.861	8.282	3638061	3191903	2.23	2.35		100.00
Aroclor 1016	9.181	9.835	593994	517946	25.1	19.8	80.00- 120.00	100.00
	9.635	10.145	1566451	535122	27.0	26.6	196.19- 294.28	263.71
	9.808	10.888	964480	1224334	24.5	24.9	131.48- 197.21	162.37
	10.198	11.398	758670	997239	24.0	31.4	99.08- 148.62	127.72
	10.315	11.912	607689	392906	25.6	24.5	79.53- 119.29	102.31
	Average of Peak Amounts =				25.2	25.4		
Aroclor 1260	12.545	14.098	1445301	529220	24.6	24.7	80.00- 120.00	100.00
	13.138	14.678	913416	960879	25.4	23.3	51.72- 77.58	63.20
	13.951	15.048	973405	984302	25.1	24.3	52.73- 79.10	67.35
	14.331	15.578	1870281	1967949	22.2	22.9	104.00- 156.00	129.40
	14.958	16.085	1454155	1282699	22.4	20.6	80.89- 121.33	100.61
	Average of Peak Amounts =				23.9	23.2		
Decachlorobiphenyl	16.751	18.032	2141312	2415096	2.13	2.20		100.00

Data File: \\alkl1s02\instdata\GC32\DATA\022118.b\0220F023.D
Date : 21-FEB-2018 19:02
Client ID:
Sample Info: 1660 26PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.1
Operator: SMURRAY
Column diameter: 0.32



Data File: \\alkl1sus002\instdata\GC32\DATA\022118_r.b\0220F023.D

Date: 21-FEB-2018 19:02

Client ID:

Sample Info: 1660 25PPB PCB7-22J

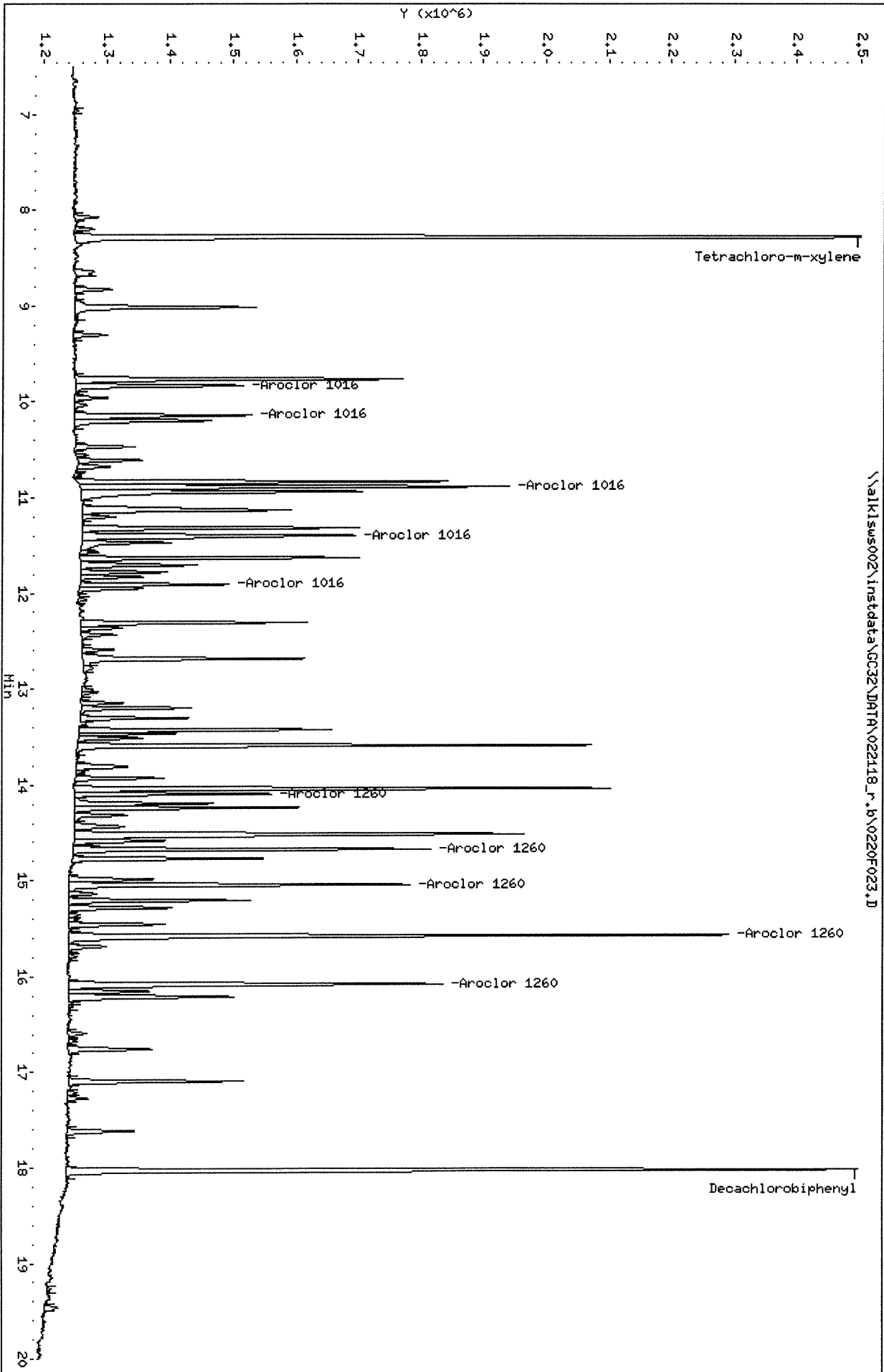
Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

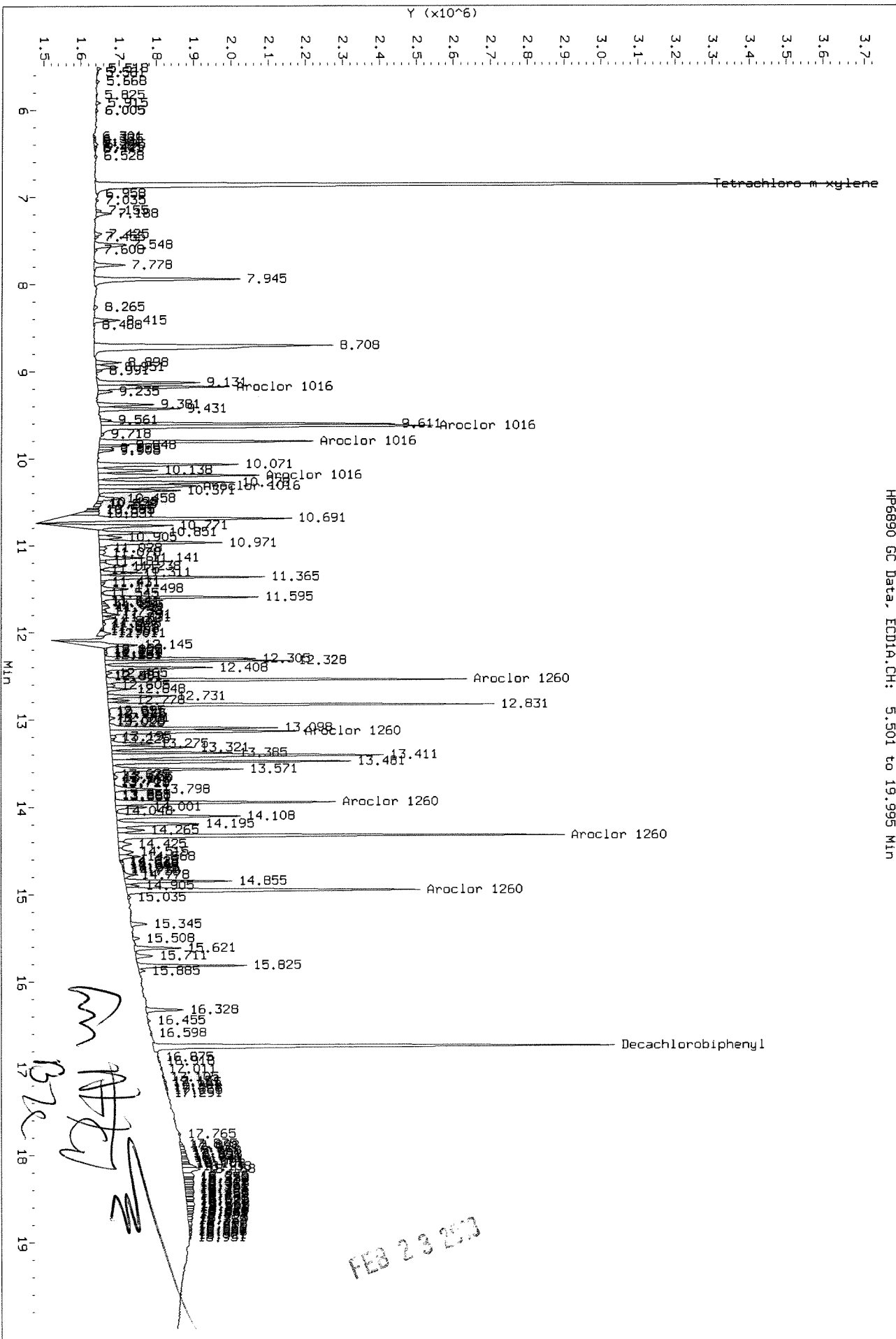
Column diameter: 0.32

\\alkl1sus002\instdata\GC32\DATA\022118_r.b\0220F023.D



Data File: \\alklms002\Instdata\GC32\DATA\022118.D
Injection Date: 22-FEB-2018 10:54
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 5.501 to 19.995 Min



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F024.D
Lab ID: KWG1801092-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 19:33
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F024.D
Lab ID: KWG1801092-6
Run Type: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 19:33
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

ample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Microquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F024.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F024.D	Vial:	2
Acqu Date:	02/21/2018 19:33	Quant Date:	02/22/2018 16:40
Run Type:	1B	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg		Rpt
							ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0220F024.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F024.D	Vial:	2
Acqu Date:	02/21/2018 19:33	Quant Date:	02/22/2018 16:40
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total			0	0	0.0000	0.0000	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F024.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F024.D
Inj Date : 21-FEB-2018 19:33
Sample Info: IB
Misc Info :
Cal Date : 22-FEB-2018 16:12
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
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=====

Data File: \\alk1swe002\instdata\GCC32\DATA\022118.b\0220F024.D
Date: 21-FEB-2018 19:33

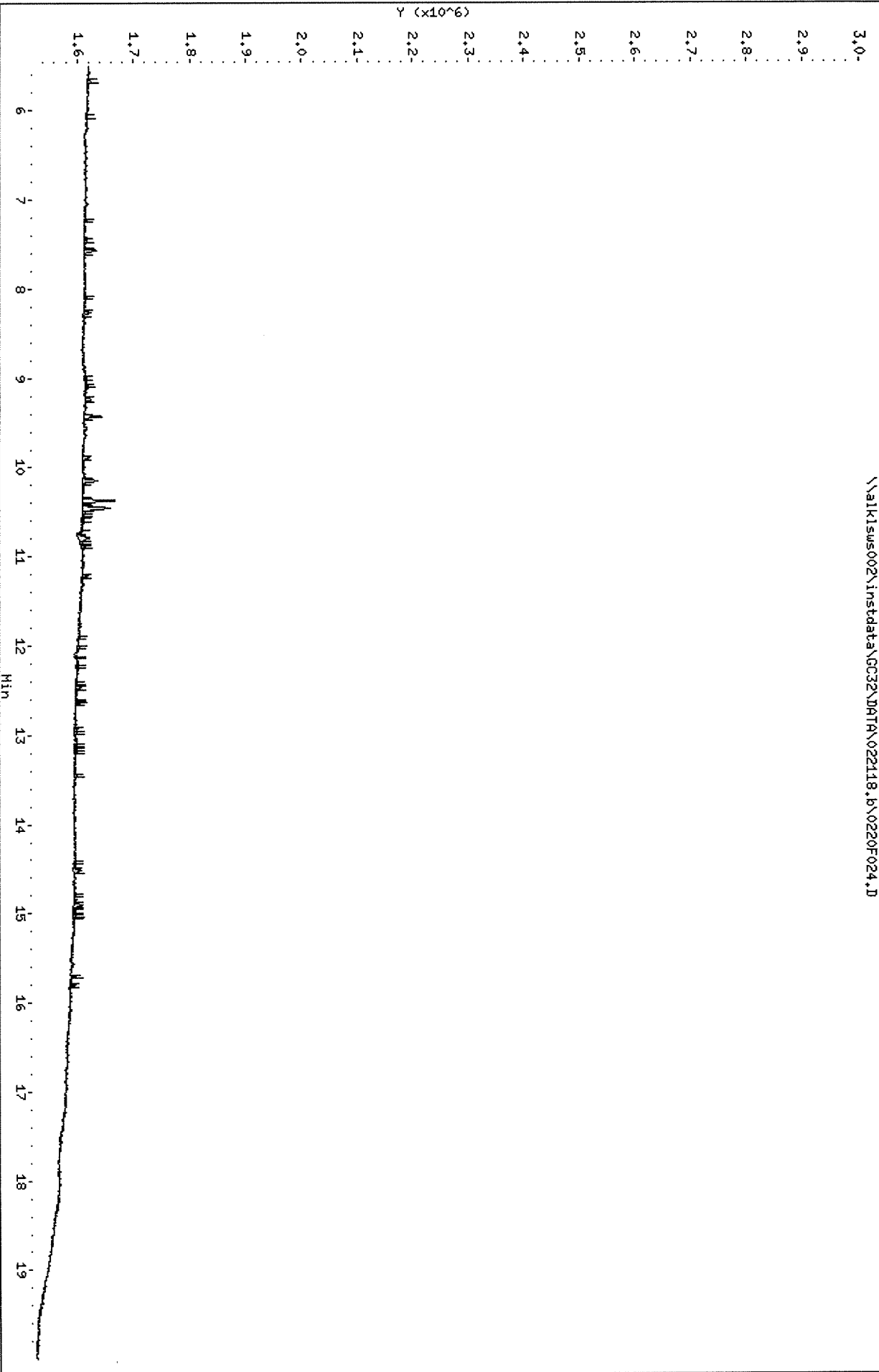
Client ID:
Sample Info: 1B

Column phase: DB-35MS

Instrument: GC32.1

Operator: SHURRAY
Column diameter: 0.32

\\alk1swe002\instdata\GCC32\DATA\022118.b\0220F024.D



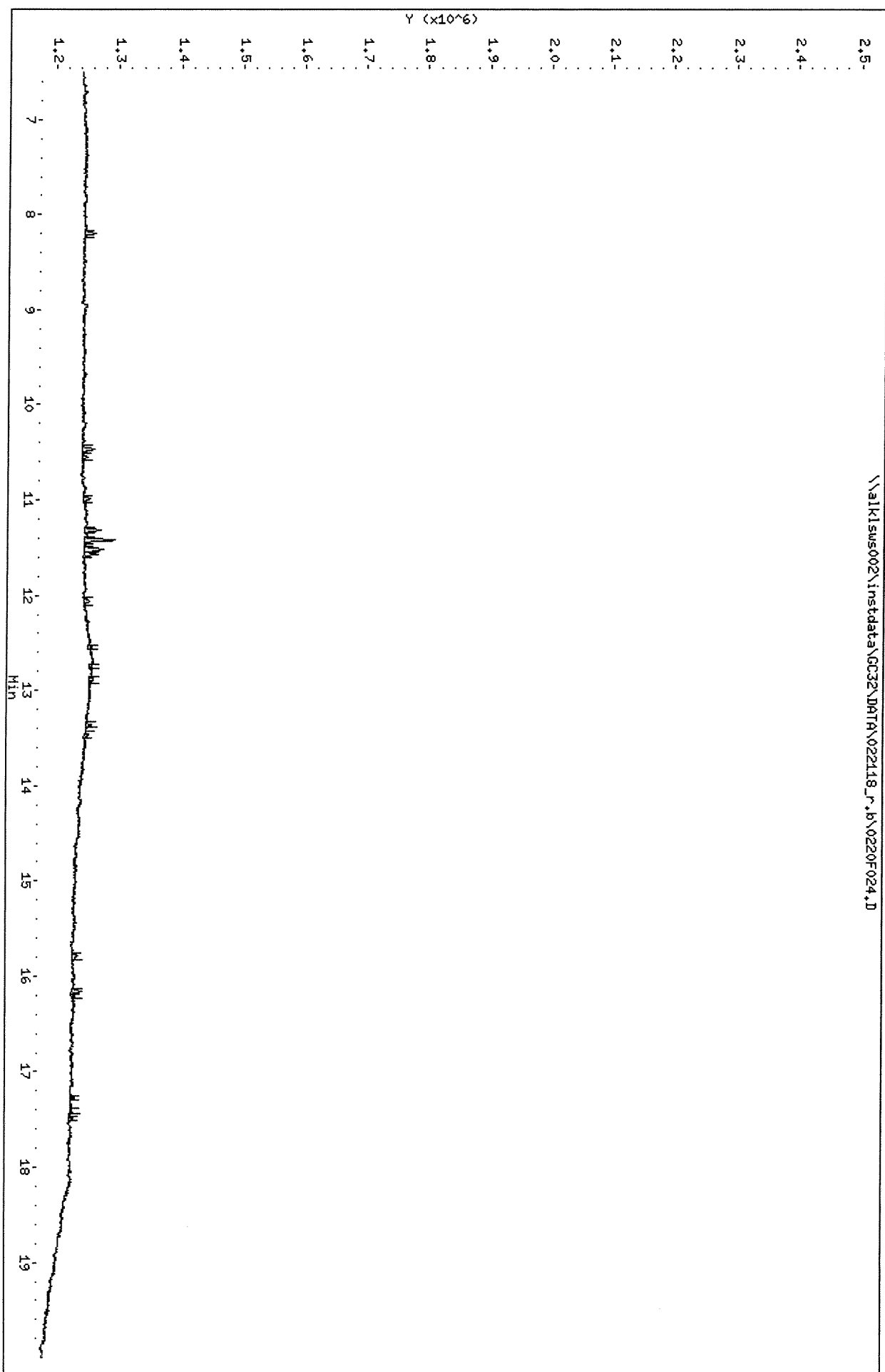
Data File: \\alkisws002\instdata\GC32\DATA\022118_r.b\0220F024.D
Date : 21-FEB-2018 19:33

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

\\alkisws002\instdata\GC32\DATA\022118_r.b\0220F024.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F029.D
Lab ID: KWG1801092-7
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 22:12
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F029.D
Lab ID: KWG1801092-7
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/21/2018 22:12
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F029.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F029.D	Vial:	1
Acqu Date:	02/21/2018 22:12	Quant Date:	02/22/2018 16:40
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-7	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:			Rpt
Tetrachloro-m-xylene	6.86	8.28	3610195	3187314	2.21	2.35				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	16.75	18.04	2173436	2456633	2.16	2.24				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.59	22.62			
Aroclor 1016 {1}	9.18	9.83	606546	533147	25.61	20.38			
Aroclor 1016 {2}	9.63	10.14	1551933	249000	26.71	12.37			
Aroclor 1016 {3}	9.81	10.89	982432	1245873	24.99	25.35			
Aroclor 1016 {4}	10.20	11.40	768090	990759	24.26	31.18			
Aroclor 1016 {5}	10.32	11.91	625099	381338	26.38	23.83			
Aroclor 1260			0	0	23.75	23.77			
Aroclor 1260 {1}	12.55	14.10	1448138	576183	24.64	26.86			
Aroclor 1260 {2}	13.14	14.68	880464	989758	24.45	24.01			
Aroclor 1260 {3}	13.95	15.05	956619	992226	24.64	24.50			
Aroclor 1260 {4}	14.33	15.58	1871422	1954619	22.17	22.74			
Aroclor 1260 {5}	14.96	16.08	1486119	1290601	22.86	20.72			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F029.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.59	25.00	2
Aroclor 1260		MS	NA	20					23.75	25.00	-5
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.4E+6	-12			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.4E+4	2			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.2E+4	7			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	0			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.1E+4	-3			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	6			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.8E+4	-1			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.5E+4	-2			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.8E+4	-1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.5E+4	-11			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.9E+4	-9			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.7E+5	-14			

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F029.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F029.D	Vial:	1
Acqu Date:	02/21/2018 22:12	Quant Date:	02/22/2018 16:40
Run Type:	CCV	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-7	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg		Rpt
Tetrachloro-m-xylene	6.86	8.28	3610195	3187314	2.21	2.35			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.04	2173436	2456633	2.16	2.24			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.59	22.62			
Aroclor 1016 {1}	9.18	9.83	606546	533147	25.61	20.38			
Aroclor 1016 {2}	9.63	10.14	1551933	249000	26.71	12.37			
Aroclor 1016 {3}	9.81	10.89	982432	1245873	24.99	25.35			
Aroclor 1016 {4}	10.20	11.40	768090	990759	24.26	31.18			
Aroclor 1016 {5}	10.32	11.91	625099	381338	26.38	23.83			
Aroclor 1260			0	0	23.75	23.77			
Aroclor 1260 {1}	12.55	14.10	1448138	576183	24.64	26.86			
Aroclor 1260 {2}	13.14	14.68	880464	989758	24.45	24.01			
Aroclor 1260 {3}	13.95	15.05	956619	992226	24.64	24.50			
Aroclor 1260 {4}	14.33	15.58	1871422	1954619	22.17	22.74			
Aroclor 1260 {5}	14.96	16.08	1486119	1290601	22.86	20.72			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL, also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 D: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1697

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F029.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.59	25.00	2
Aroclor 1260		MS	NA	20					23.75	25.00	-5
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.4E+6	-12			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.4E+4	2			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.2E+4	7			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	0			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.1E+4	-3			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	6			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.8E+4	-1			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.5E+4	-2			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.8E+4	-1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.5E+4	-11			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.9E+4	-9			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.7E+5	-14			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F029.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F029.D
 Inj Date : 21-FEB-2018 22:12
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 22-FEB-2018 16:15
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.863	8.280	3610195	3187314	2.21	2.35		100.00
Aroclor 1016	9.179	9.833	606546	533147	25.6	20.4	80.00- 120.00	100.00
	9.633	10.143	1551933	249000	26.7	12.4	196.19- 294.28	255.86
	9.809	10.886	982432	1245873	25.0	25.4	131.48- 197.21	161.97
	10.199	11.400	768090	990759	24.3	31.2	99.08- 148.62	126.63
	10.319	11.910	625099	381338	26.4	23.8	79.53- 119.29	103.06
	Average of Peak Amounts =				25.6	22.6		
Aroclor 1260	12.546	14.096	1448138	576183	24.6	26.9	80.00- 120.00	100.00
	13.139	14.680	880464	989758	24.5	24.0	51.72- 77.58	60.80
	13.953	15.050	956619	992226	24.6	24.5	52.73- 79.10	66.06
	14.333	15.580	1871422	1954619	22.2	22.7	104.00- 156.00	129.23
	14.959	16.083	1486119	1290601	22.9	20.7	80.89- 121.33	102.62
	Average of Peak Amounts =				23.8	23.8		
Decachlorobiphenyl	16.753	18.036	2173436	2456633	2.16	2.24		100.00
Aroclors, Total	1.000	1.000	1840700	2235372	46.4	49.3		0.00

Data File: \\alk1s02\instdata\GC32\DATA\022118.b\0220F029.D
Date: 21-FEB-2018 22:12

Client ID:

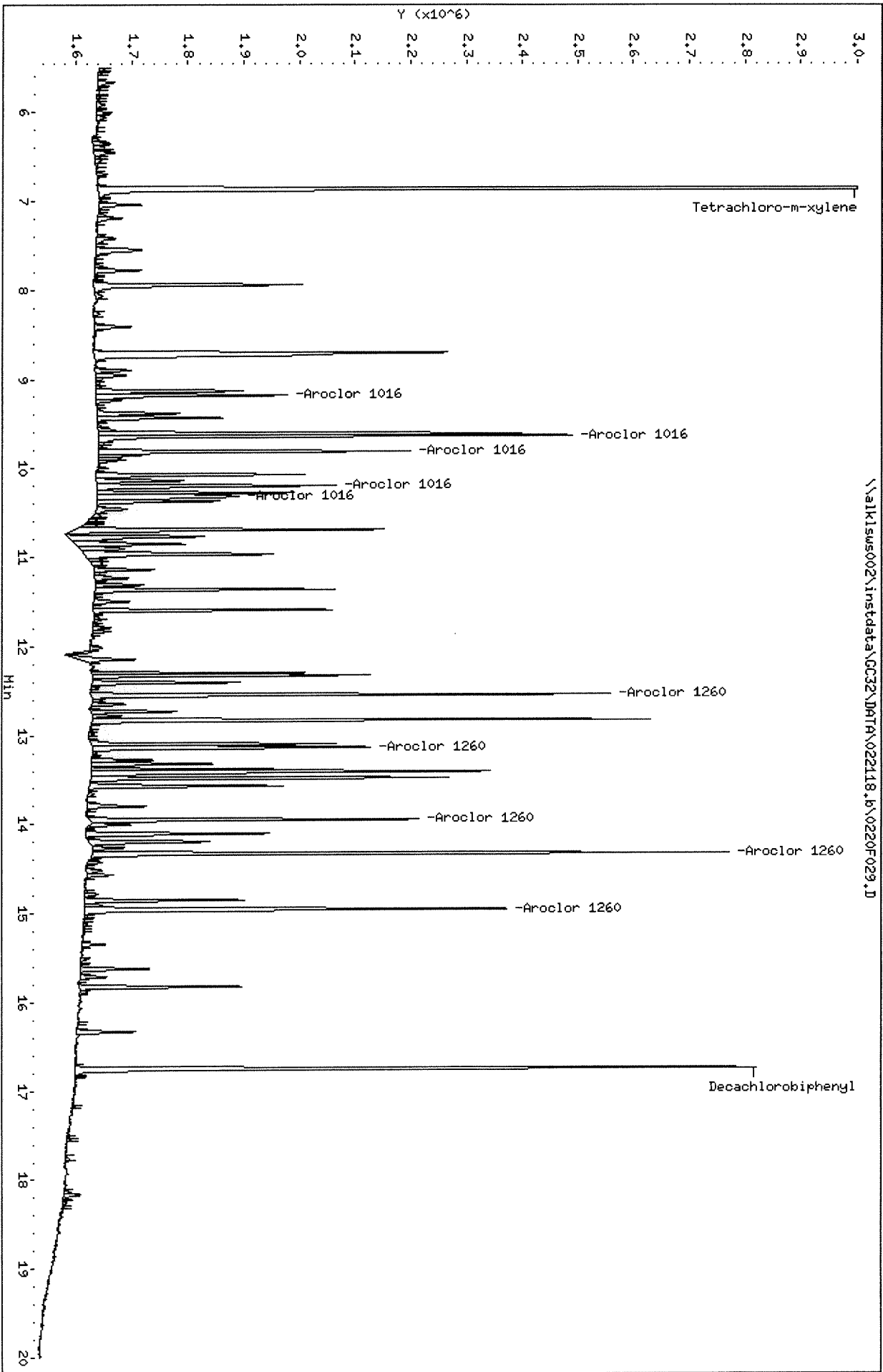
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\022118_r.b\0220F029.D
Date: 21-FEB-2018 22:12

Client ID:

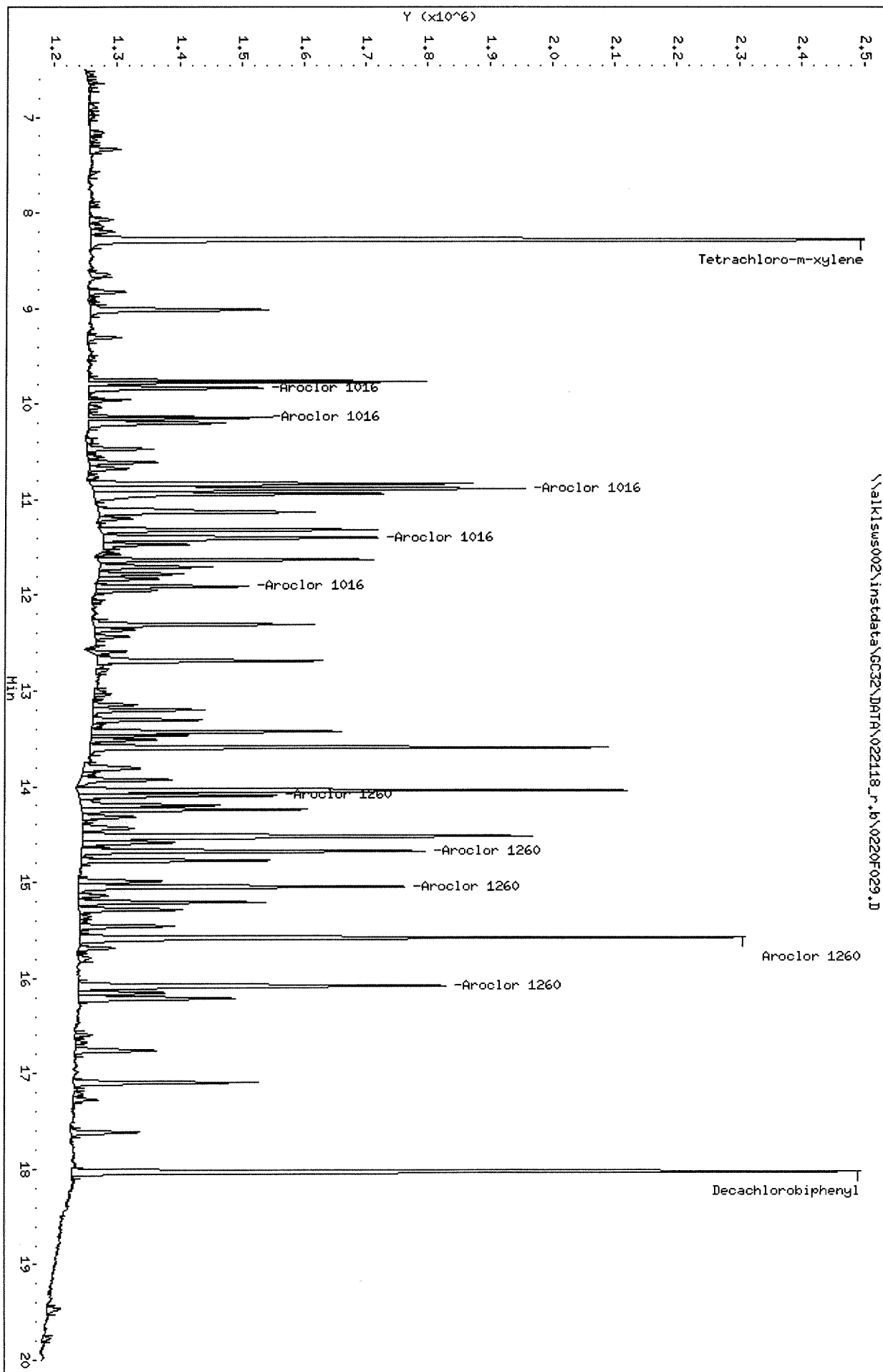
Sample Info: 1660 26PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0220F030.D
Lab ID: KWG1801092-8
RunType: IB
Matrix: NOT APPLICABLE

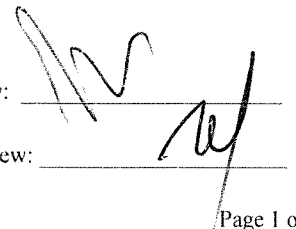
Date Acquired: 02/21/2018 22:44
Date Quantitated: 02/22/2018 16:40
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____





Exception Report

ata File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0220F030.D
ib ID: KWG1801092-8
anType: IB
atrix: NOT APPLICABLE

Date Acquired: 02/21/2018 22:44
Date Quantitated: 02/22/2018 16:42
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

imple Exceptions

ception Categories	Result	Low Limit	High Limit	Pass	Fail
AL Analyte Recovery	NA	NA	NA	x	
cond Source ICAL Verification	NA	NA	NA	x	
alyte Co-elution	NA	NA	NA	x	
low Lowest ICAL Level	NA	NA	NA	x	
bove Highest ICAL Level	NA	NA	NA	x	
viroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0220F030.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F030.D	Vial:	2
Acqu Date:	02/21/2018 22:44	Quant Date:	02/22/2018 16:40
Run Type:	IB	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-8	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.88		5180	0	0.0030	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units:				Rpt
					ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	1.17	0.0000			
Aroclor 1242 {1}	9.24		20280	0	1.08	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0220F030.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0220F030.D	Vial:	2
Acqu Date:	02/21/2018 22:44	Quant Date:	02/22/2018 16:40
Run Type:	IB	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-8	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units:

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}	9.64		11406	0	0.2550	0.0000			
Aroclor 1242 {3}	10.25		7883	0	0.4130	0.0000			
Aroclor 1242 {4}	10.97		82295	0	3.45	0.0000			
Aroclor 1242 {5}	11.33		16219	0	0.6720	0.0000			
Aroclor 1248			0	0	0.4190	0.8503			
Aroclor 1248 {1}	9.64	10.99	11406	22376	0.4640	1.51			
Aroclor 1248 {2}	10.25		7883	0	0.1990	0.0000			
Aroclor 1248 {3}	11.26	12.39	15068	19211	0.5940	0.5060			
Aroclor 1248 {4}		12.67	0	15486	0.0000	0.5320			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.4863			
Aroclor 1254 {1}		12.35	0	12548	0.0000	0.2450			
Aroclor 1254 {2}		12.39	0	19211	0.0000	0.8430			
Aroclor 1254 {3}		12.67	0	15486	0.0000	0.2590			
Aroclor 1254 {4}		12.97	0	13132	0.0000	0.5980			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00	1.00	39068	34118	1.59	1.34	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL, also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0220F030.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0220F030.D
 Inj Date : 21-FEB-2018 22:44
 Sample Info: IB
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.879	0.000	5180	0	0.00317	0.000		100.00 (R)
Aroclor 1242	9.239	0.000	20280	0	1.08	0.000	80.00- 120.00	100.00
	9.642	0.000	11406	0	0.255	0.000	188.17- 282.25	56.25
	10.249	0.000	7883	0	0.413	0.000	75.98- 113.97	38.87
	10.972	0.000	82295	0	3.45	0.000	97.61- 146.41	405.79
	11.325	0.000	16219	0	0.672	0.000	98.63- 147.94	79.98
	Average of Peak Amounts =				1.17	0.000		
Aroclor 1248	9.642	10.989	11406	22376	0.464	1.51	80.00- 120.00	100.00 (T)
	10.249	0.000	7883		0.199		123.60- 185.40	69.11 (T)
	11.255	12.392	15068	19211	0.594	0.506	74.96- 112.44	132.10 (T)
	0.000	12.669		15486		0.532	183.57- 275.35	69.21 (T)
	0.000	0.000					97.68- 146.53	0.00 (T)
	Average of Peak Amounts =				0.419	0.849		
Aroclor 1254	0.000	12.346	0	12548	0.000	0.245		
	0.000	12.392	0	19211	0.000	0.843		
	0.000	12.669	0	15486	0.000	0.259		
	0.000	12.972	0	13132	0.000	0.598		
	0.000	0.000	0	0	0.000	0.000		
	Average of Peak Amounts =				0.000	0.486		
Aroclors, Total	1.000	1.000	39068	34118	1.59	1.34		0.00

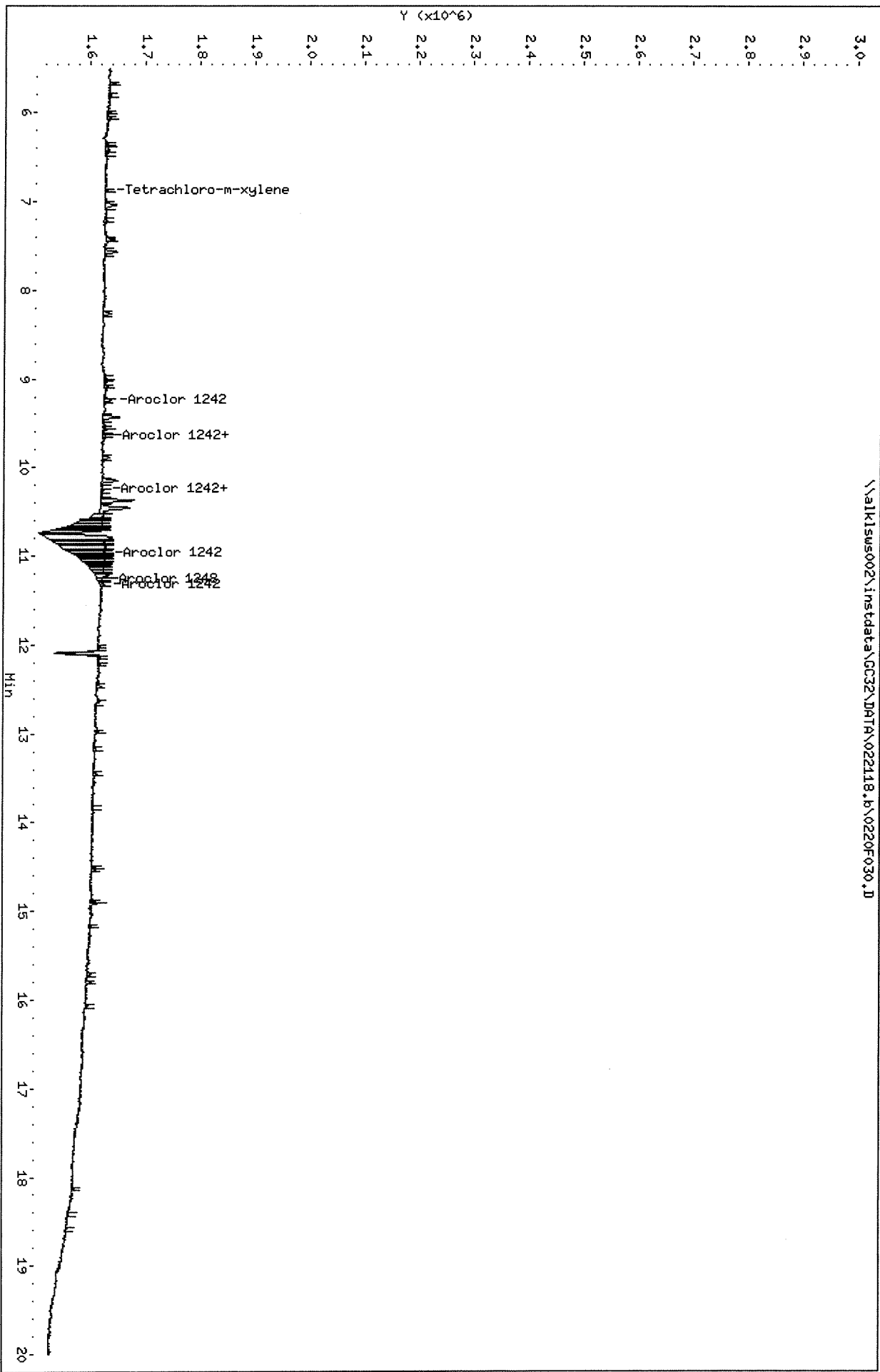
QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\022118.b\0220F030.D
Date: 21-FEB-2018 22:44
Client ID:
Sample Info: 1B
Column phase: DB-35MS

Instrument: GC32.1
Operator: SMURRAY
Column diameter: 0.32

\\alkisus002\instdata\GC32\DATA\022118.b\0220F030.D



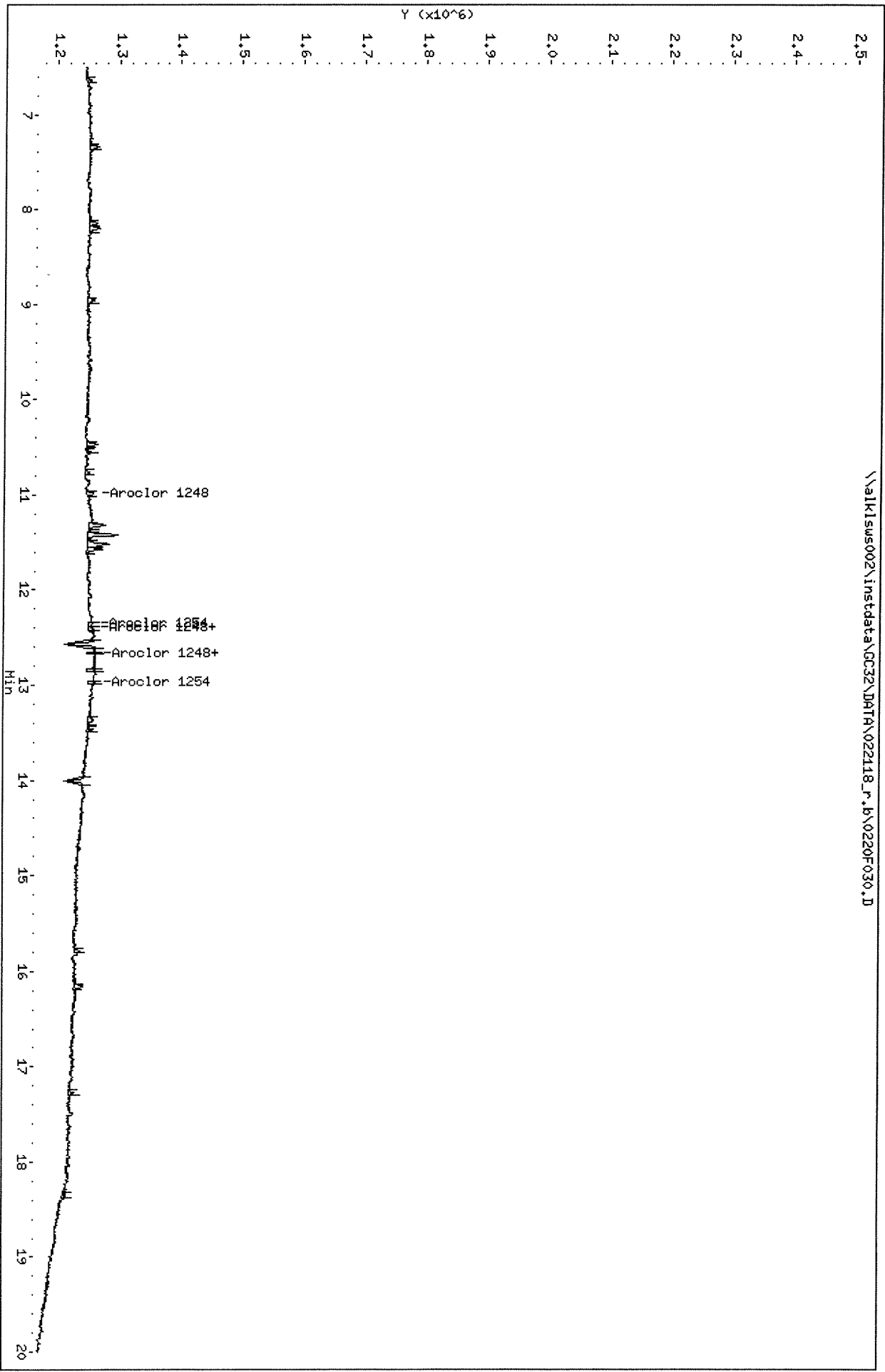
Data File: \\alkisws002\instdata\GC32\DATA\022118_r.b\0220F030.D
Date: 21-FEB-2018 22:44

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

\\alkisws002\instdata\GC32\DATA\022118_r.b\0220F030.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F011.D
Lab ID: KWG1801092-9
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 04:33
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F011.D
Lab ID: KWG1801092-9
RunType: CCV
Matrix: NOT APPLICABLE

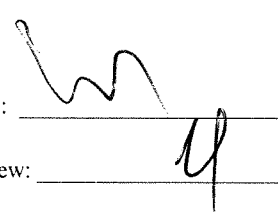
Date Acquired: 02/22/2018 04:33
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F011.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F011.D	Vial:	1
Acqu Date:	02/22/2018 04:33	Quant Date:	02/22/2018 16:41
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-9	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.86	8.28	3831937	3330781	2.35	2.46			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2248578	2538479	2.23	2.31			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units:				Rpt
					ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	28.65	27.27			
Aroclor 1016 {1}	9.18	9.83	664829m	562795	28.07	21.51			
Aroclor 1016 {2}	9.63	10.14	1813546m	562726	31.21	27.96			
Aroclor 1016 {3}	9.81	10.89	1107153m	1317173	28.16	26.81			
Aroclor 1016 {4}	10.20	11.40	839267m	1072750	26.51	33.76			
Aroclor 1016 {5}	10.32	11.91	694464m	421012	29.31	26.30			
Aroclor 1260			0	0	25.19	24.59			
Aroclor 1260 {1}	12.55	14.10	1521979	572678m	25.90	26.70			
Aroclor 1260 {2}	13.14	14.68	938690	1033840m	26.07	25.08			
Aroclor 1260 {3}	13.95	15.05	1022665	1026546m	26.34	25.34			
Aroclor 1260 {4}	14.33	15.58	2020550	2065984m	23.94	24.04			
Aroclor 1260 {5}	14.96	16.08	1542263	1358253m	23.72	21.81			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F011.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					28.65	25.00	15
Aroclor 1260		MS	NA	20					25.19	25.00	1
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-6			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.7E+4	12			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	7.3E+4	25			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.4E+4	13			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.4E+4	6			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.8E+4	17			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	6.1E+4	4			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.8E+4	4			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	5			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	8.1E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	6.2E+4	-5			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	9.0E+5	-11			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F011.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					27.27	25.00	9
Aroclor 1260		MS	NA	20					24.59	25.00	-2
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.3E+6	-2			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.3E+4	-14			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.3E+4	12			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.3E+4	7			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	4.3E+4	35			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.7E+4	5			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.3E+4	7			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.1E+4	0			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.1E+4	1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.3E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.4E+4	-13			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	1.0E+6	-8			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F011.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F011.D
 Inj Date : 22-FEB-2018 04:33
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.863	8.280	3831937	3330781	2.35	2.46		100.00
Aroclor 1016	9.179	9.833	664829	562795	28.1	21.5	80.00- 120.00	100.00 (M)
	9.633	10.143	1813546	562726	31.2	28.0	196.19- 294.28	272.78 (M)
	9.809	10.890	1107153	1317173	28.2	26.8	131.48- 197.21	166.53 (M)
	10.199	11.400	839267	1072750	26.5	33.8	99.08- 148.62	126.24 (M)
	10.316	11.910	694464	421012	29.3	26.3	79.53- 119.29	104.46 (M)
	Average of Peak Amounts =				28.7	27.3		
Aroclor 1260	12.546	14.100	1521979	572678	25.9	26.7	80.00- 120.00	100.00
	13.139	14.676	938690	1033840	26.1	25.1	51.72- 77.58	61.68
	13.953	15.050	1022665	1026546	26.3	25.3	52.73- 79.10	67.19
	14.333	15.580	2020550	2065984	23.9	24.0	104.00- 156.00	132.76
	14.959	16.083	1542263	1358253	23.7	21.8	80.89- 121.33	101.33
	Average of Peak Amounts =				25.2	24.6		
Decachlorobiphenyl	16.753	18.033	2248578	2538479	2.23	2.31		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alklsws002\instdata\GC32\DATA\022118.b\0221F011.D

Date : 22-FEB-2018 04:33

Client ID:

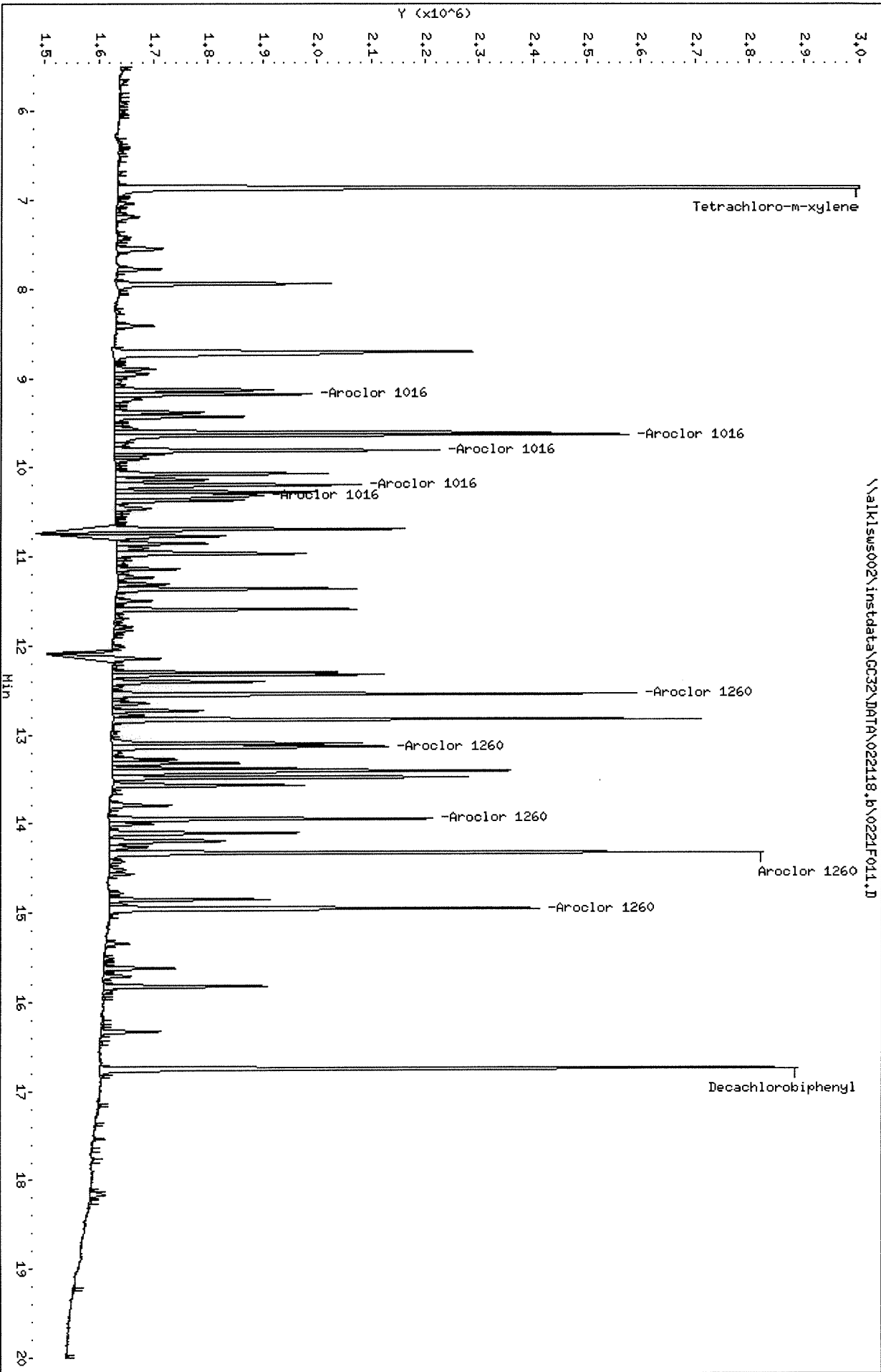
Sample Info: 1660 26PP8 PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1s\sws002\instdata\GC32\DATA\022118_r.b\0221F011.D

Date : 22-FEB-2018 04:33

Client ID:

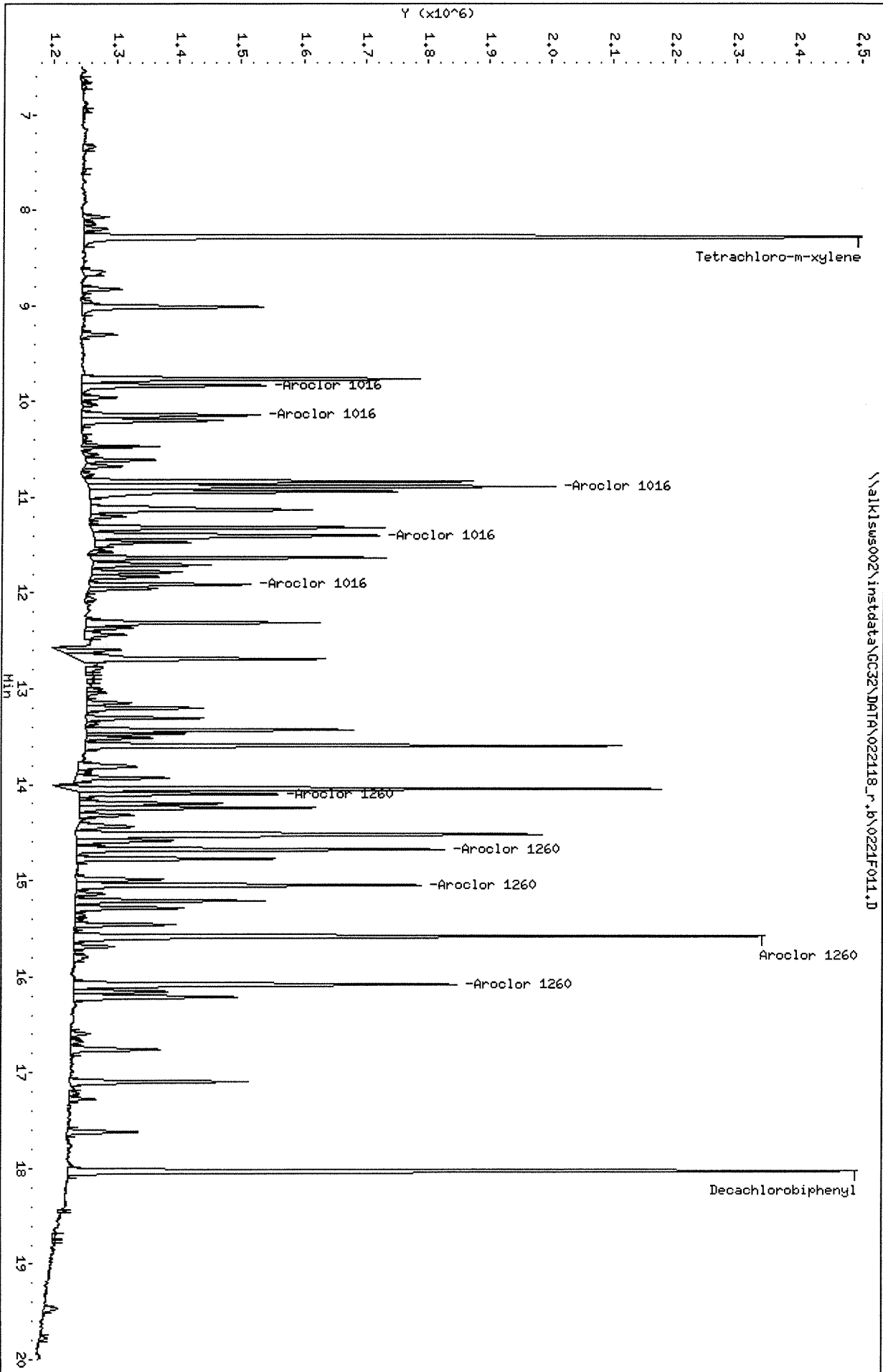
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F012.D
Lab ID: KWG1801092-10
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 05:05
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F012.D
Lab ID: K WG1801092-10
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 05:05
Date Quantitated: 02/22/2018 16:43
Batch ID: K WG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F012.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F012.D	Vial:	2
Acqu Date:	02/22/2018 05:05	Quant Date:	02/22/2018 16:41
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-10	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Tetrachloro-m-xylene	6.88		5262	0	0.0030	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL		ug/Kg		Rpt
					#1	#2	#1	#2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.5660	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F012.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F012.D	Vial:	2
Acqu Date:	02/22/2018 05:05	Quant Date:	02/22/2018 16:41
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-10	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}	9.65		5485	0	0.1230	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}	10.97		29237	0	1.23	0.0000			
Aroclor 1242 {5}	11.32		8457	0	0.3500	0.0000			
Aroclor 1248			0	0	0.7097	0.0000			
Aroclor 1248 {1}	9.65		5485	0	0.2230	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}	11.22		21714	0	0.8550	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}	12.32		26259	0	1.05	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00		32212	0	1.28	0.0000	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F012.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F012.D
 Inj Date : 22-FEB-2018 05:05
 Sample Info: IB
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.879	0.000	5262	0	0.00322	0.000		100.00 (R)
Aroclor 1242	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	9.649	0.000	5485	0	0.123	0.000	188.17- 282.25	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	75.98- 113.97	0.00 (T)
	10.973	0.000	29237	0	1.22	0.000	97.61- 146.41	0.00 (T)
	11.319	0.000	8457	0	0.350	0.000	98.63- 147.94	0.00 (T)
	Average of Peak Amounts =				0.564	0.000		
Aroclor 1248	9.649	0.000	5485	0	0.223	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	123.60- 185.40	0.00 (T)
	11.216	0.000	21714	0	0.855	0.000	74.96- 112.44	395.83 (T)
	0.000	0.000	0	0	0.000	0.000	153.18- 229.78	0.00 (T)
	12.316	0.000	26259	0	1.05	0.000	76.00- 114.01	478.70 (T)
	Average of Peak Amounts =				0.709	0.000		
Aroclors, Total	1.000	0.000	32212	0	1.28	0.000		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/surrogate failed recovery limits.

Data File: \\alklsws002\instdata\GC32\DATA\022118.b\0221F012.D

Date : 22-FEB-2018 05:05

Client ID:

Sample Info: IB

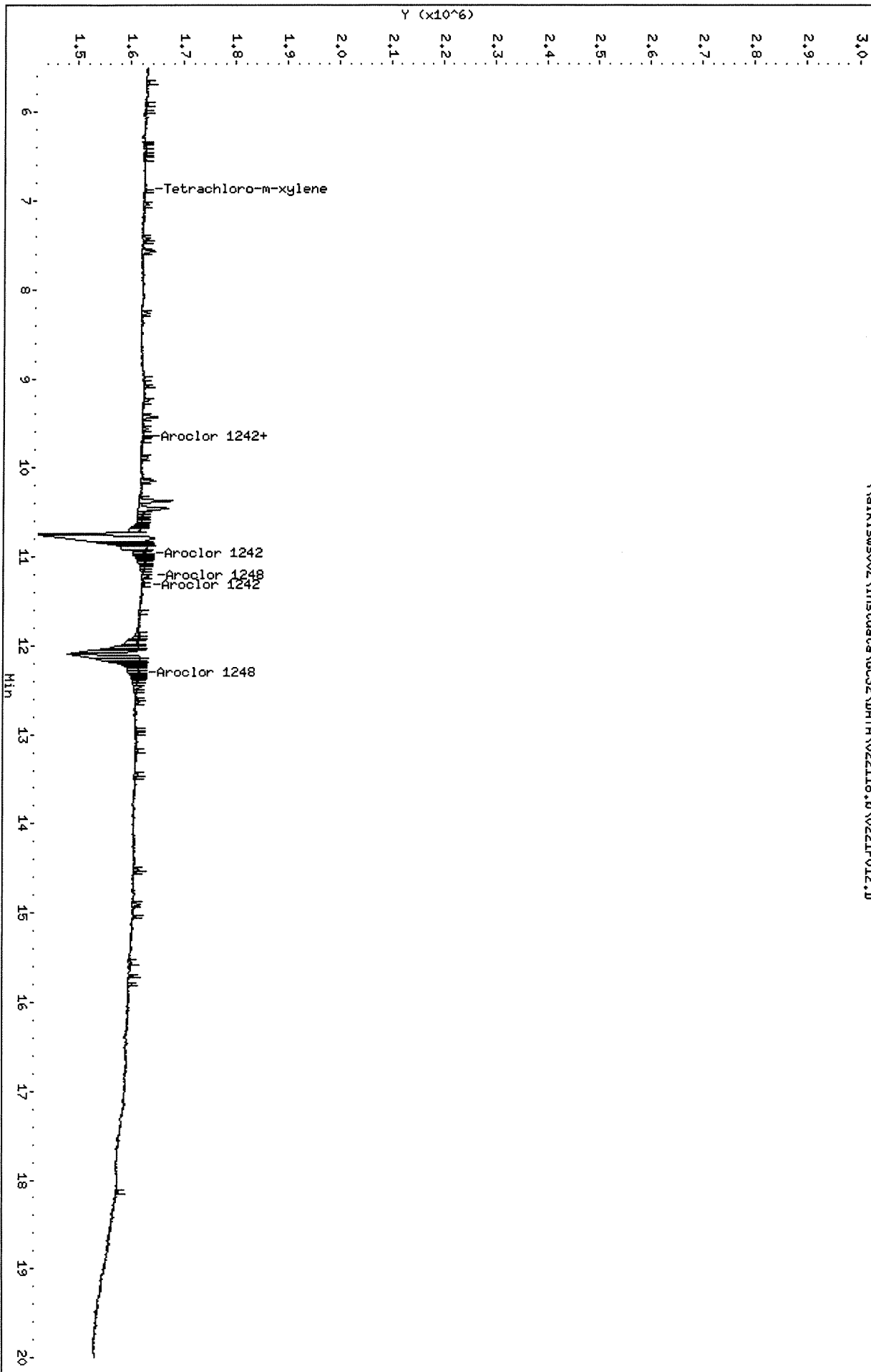
Column phase: DB-35MS

Instrument: GC32.1

Operator: SHURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022118.b\0221F012.D



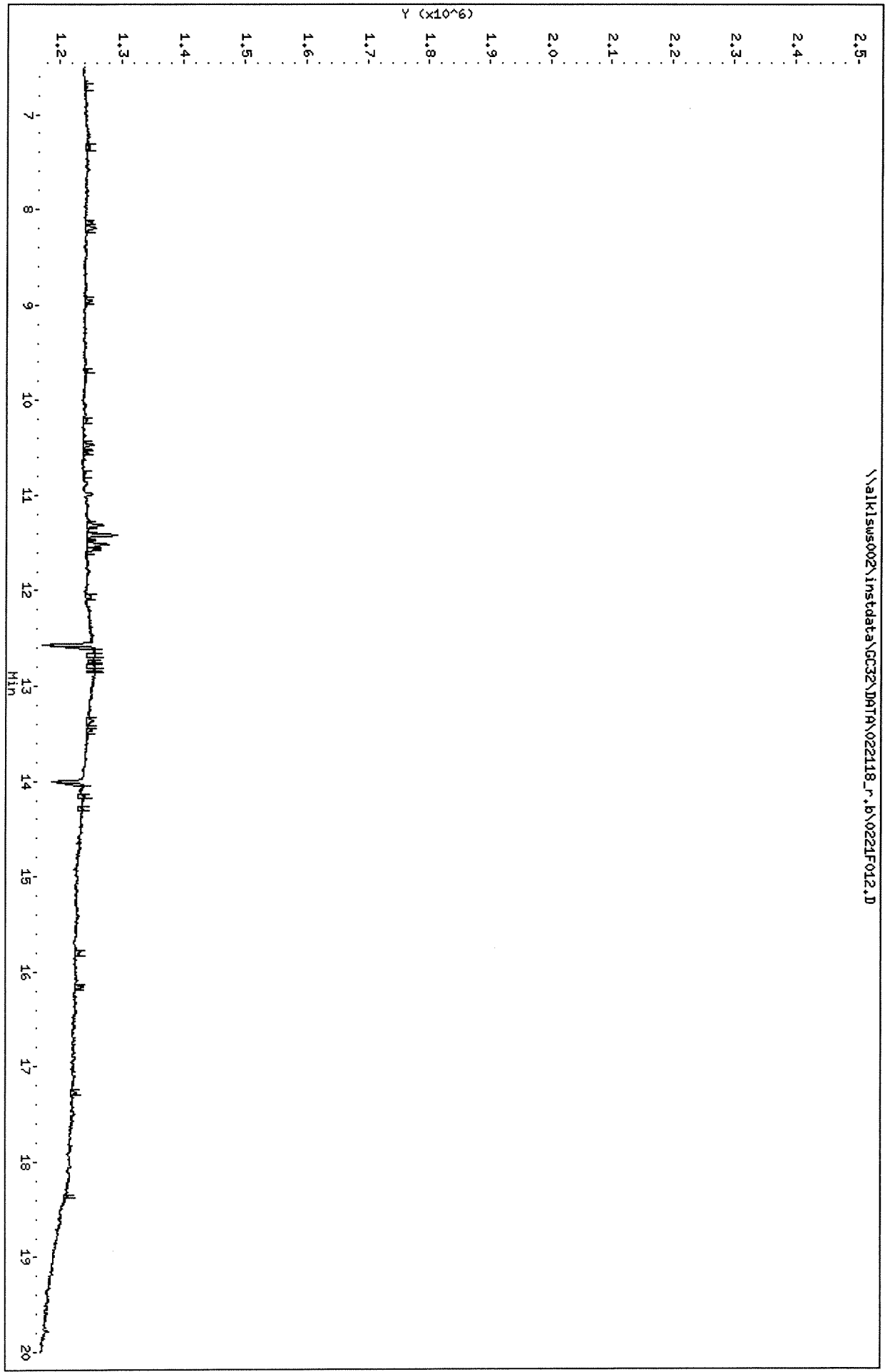
Data File: \\alk1sus002\instdata\GC32\DATA\022118_r.b\0221F012.D
Date: 22-FEB-2018 06:05

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32

\\alk1sus002\instdata\GC32\DATA\022118_r.b\0221F012.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F023.D
Lab ID: KWG1801092-11
Run Type: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 10:54
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F023.D
Lab ID: KWG1801092-11
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 10:54
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F023.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F023.D	Vial:	1
Acqu Date:	02/22/2018 10:54	Quant Date:	02/22/2018 16:41
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-11	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3793740	3391136	2.32	2.50			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2156508	2361583	2.14	2.15			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	26.04	26.80			
Aroclor 1016 {1}	9.18	9.83	602492	545845	25.44	20.86			
Aroclor 1016 {2}	9.64	10.14	1648202	557079	28.36	27.68			
Aroclor 1016 {3}	9.81	10.89	1017587	1333497	25.88	27.14			
Aroclor 1016 {4}	10.20	11.40	789756	1058681	24.94	33.32			
Aroclor 1016 {5}	10.32	11.91	605992	400468	25.57	25.02			
Aroclor 1260			0	0	24.72	23.55			
Aroclor 1260 {1}	12.55	14.10	1475458m	536457	25.11	25.01			
Aroclor 1260 {2}	13.14	14.68	936971m	993744	26.02	24.10			
Aroclor 1260 {3}	13.95	15.05	995950m	980630	25.65	24.21			
Aroclor 1260 {4}	14.33	15.58	2020063m	2004570	23.93	23.32			
Aroclor 1260 {5}	14.96	16.08	1486622m	1314662	22.87	21.11			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F023.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.04	25.00	4
Aroclor 1260		MS	NA	20					24.72	25.00	-1
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-7			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.4E+4	2			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.6E+4	13			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	4			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.2E+4	0			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.4E+4	2			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.9E+4	0			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.7E+4	4			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	4.0E+4	3			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	8.1E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.9E+4	-9			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.6E+5	-14			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F023.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.80	25.00	7
Aroclor 1260		MS	NA	20					23.55	25.00	-6
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.4E+6	0			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.2E+4	-17			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.2E+4	11			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.3E+4	9			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	4.2E+4	33			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.6E+4	0			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.1E+4	0			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.0E+4	-4			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	3.9E+4	-3			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.0E+4	-7			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.3E+4	-16			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.4E+5	-14			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F023.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F023.D
 Inj Date : 22-FEB-2018 10:54
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.861	8.282	3793740	3391136	2.32	2.50		100.00
Aroclor 1016	9.181	9.832	602492	545845	25.4	20.9	80.00- 120.00	100.00
	9.635	10.142	1648202	557079	28.4	27.7	196.19- 294.28	273.56
	9.808	10.888	1017587	1333497	25.9	27.1	131.48- 197.21	168.90
	10.198	11.398	789756	1058681	24.9	33.3	99.08- 148.62	131.08
	10.318	11.912	605992	400468	25.6	25.0	79.53- 119.29	100.58
	Average of Peak Amounts =				26.0	26.8		
Aroclor 1260	12.545	14.098	1475458	536457	25.1	25.0	80.00- 120.00	100.00 (M)
	13.138	14.678	936971	993744	26.0	24.1	51.72- 77.58	63.50 (M)
	13.951	15.048	995950	980630	25.7	24.2	52.73- 79.10	67.50 (M)
	14.331	15.578	2020063	2004570	23.9	23.3	104.00- 156.00	136.91 (M)
	14.958	16.082	1486622	1314662	22.9	21.1	80.89- 121.33	100.76 (M)
	Average of Peak Amounts =				24.7	23.5		
Decachlorobiphenyl	16.751	18.032	2156508	2361583	2.14	2.15		100.00

QC Flag Legend

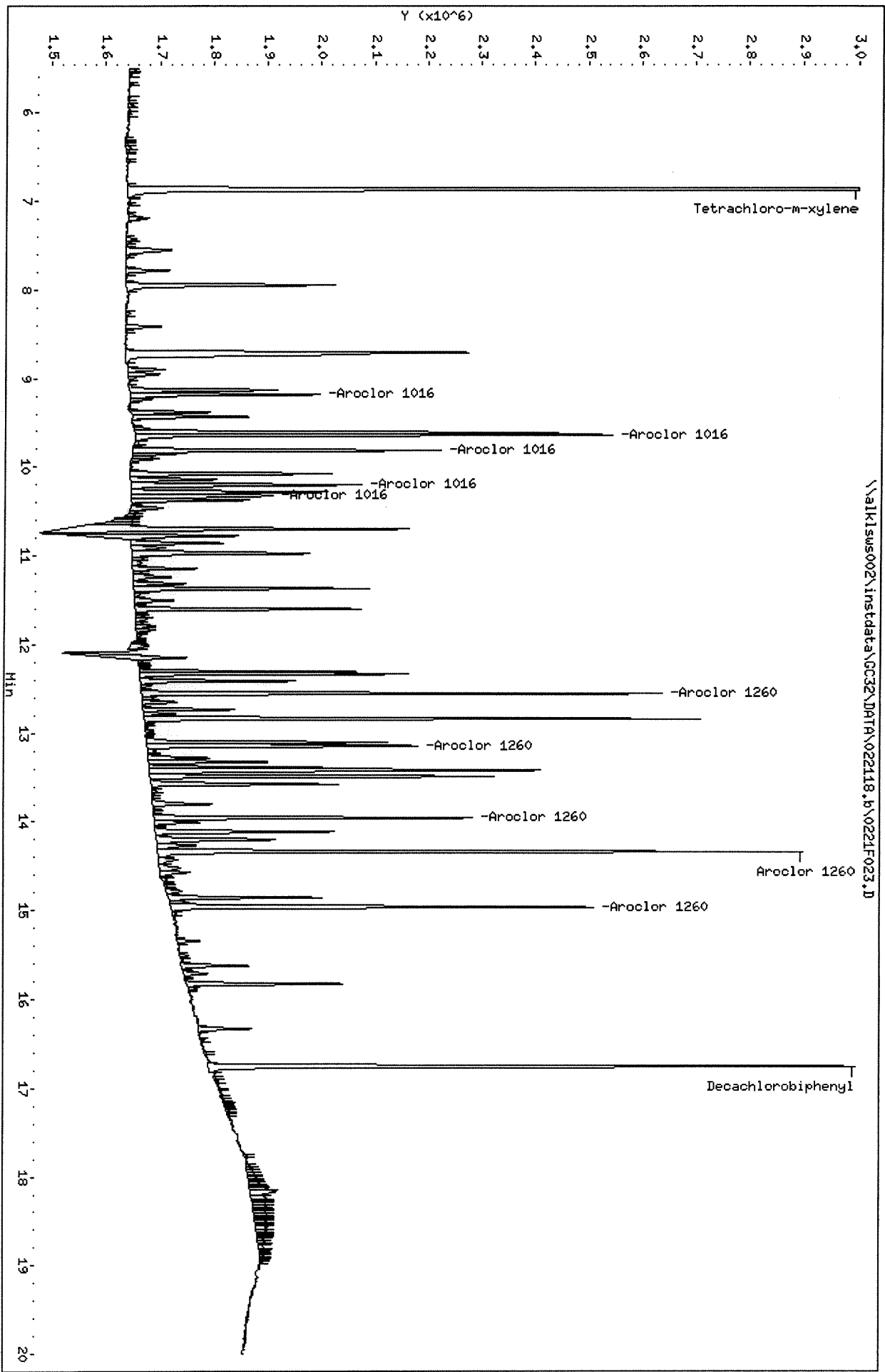
M - Compound response manually integrated.

Data File: \\alkl1sus002\instdata\GC32\DATA\022118_16\0221F023.D
Date: 22-FEB-2018 10:54

Client ID:
Sample Inlet: 1660 25PPB PCB7-223

Column phase: DB-35MS

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32



Data File: \\alk1sus002\instdata\GC32\DATA\022118_r.b\0221F023.D
Date: 22-FEB-2018 10:54

Client ID:

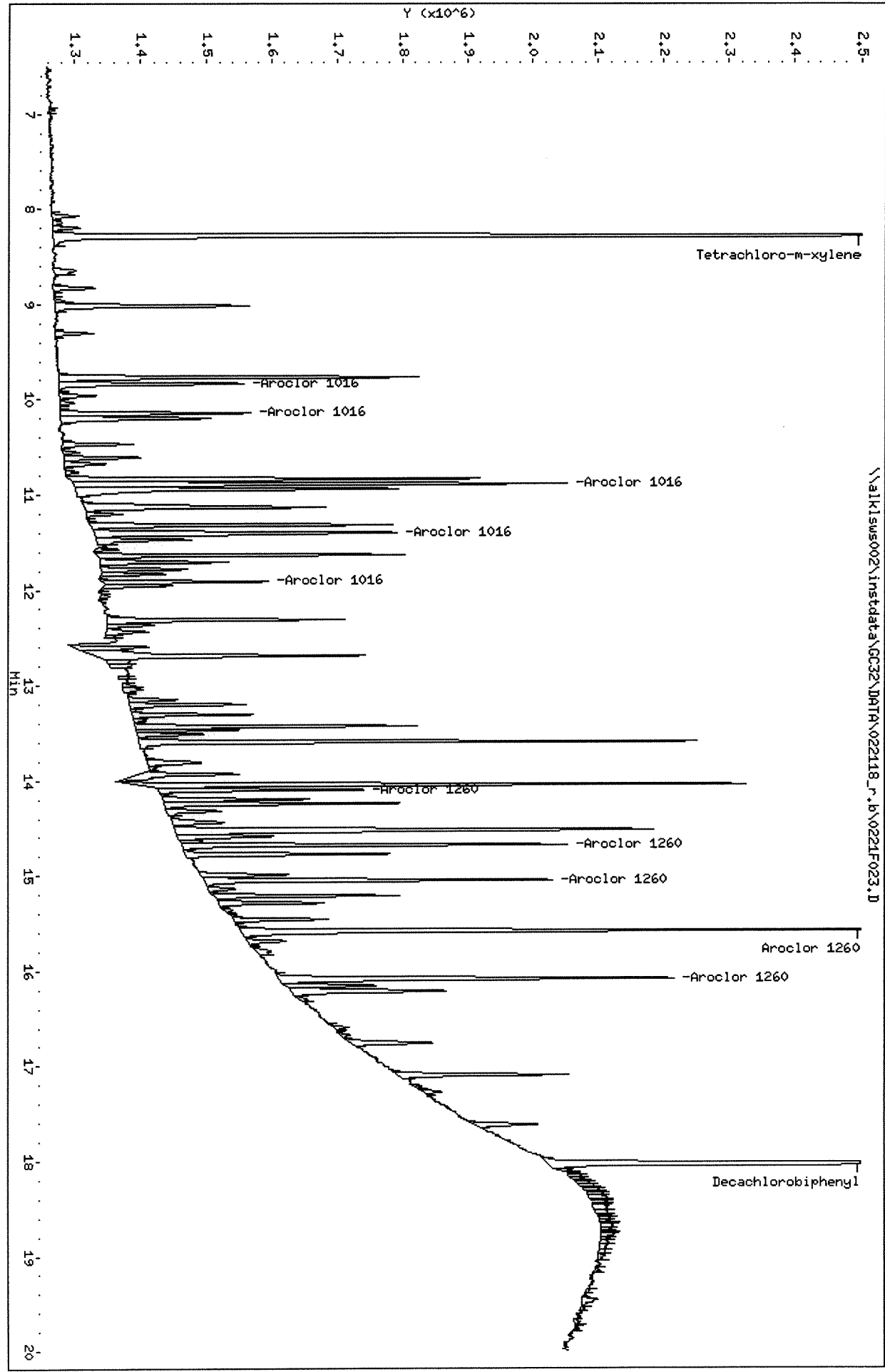
Sample Info: 1660 29PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F024.D
Lab ID: KWG1801092-12
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 11:26
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F024.D
Lab ID: KWG1801092-12
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 11:26
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F024.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F024.D	Vial:	2
Acqu Date:	02/22/2018 11:26	Quant Date:	02/22/2018 16:41
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-12	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg		Rpt	
Tetrachloro-m-xylene	6.88		6280	0	0.0040	0.0000	NA	NA	Limits = 70-130	NA
			%Recovery =		NA	NA				
Decachlorobiphenyl	0.00	18.03	0	18318		0.0170	NA	NA	Limits = 70-130	NA
			%Recovery =		NA	NA				

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F024.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F024.D	Vial:	2
Acqu Date:	02/22/2018 11:26	Quant Date:	02/22/2018 16:41
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-12	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	1.71	0.0000			
Aroclor 1248 {1}	9.65		5592	0	0.2270	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}	11.22		14759	0	0.5810	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}	12.31		107994	0	4.32	0.0000			
Aroclor 1254			0	0	1.31	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}	12.15		101045	0	2.44	0.0000			
Aroclor 1254 {3}	12.31		107994	0	1.33	0.0000			
Aroclor 1254 {4}	12.51		6812	0	0.1690	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00		114732	0	3.02	0.0000	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F024.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F024.D
 Inj Date : 22-FEB-2018 11:26
 Sample Info: IB
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.883	0.000	6280	0	0.00385	0.000		100.00 (R)
Aroclor 1248	9.653	0.000	5592	0	0.227	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	123.60- 185.40	0.00 (T)
	11.216	0.000	14759	0	0.581	0.000	74.96- 112.44	263.93 (T)
	0.000	0.000	0	0	0.000	0.000	153.18- 229.78	0.00 (T)
	12.306	0.000	107994	0	4.32	0.000	76.00- 114.01	1931.12 (T)
	Average of Peak Amounts =				1.71	0.000		
Aroclor 1254	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	12.146	0.000	101045	0	2.44	0.000	64.52- 96.78	0.00 (T)
	12.306	0.000	107994	0	1.32	0.000	121.44- 182.17	0.00 (T)
	12.510	0.000	6812	0	0.169	0.000	61.81- 92.72	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	47.38- 71.07	0.00 (T)
	Average of Peak Amounts =				1.31	0.000		
Decachlorobiphenyl	0.000	18.030	0	18318	0.000	0.0167		
Aroclors, Total	1.000	0.000	114732	0	3.02	0.000		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alklsws002\instdata\GC32\DATA\022118.b\0221F024.D

Date: 22-FEB-2018 11:26

Client ID:

Sample Info: IB

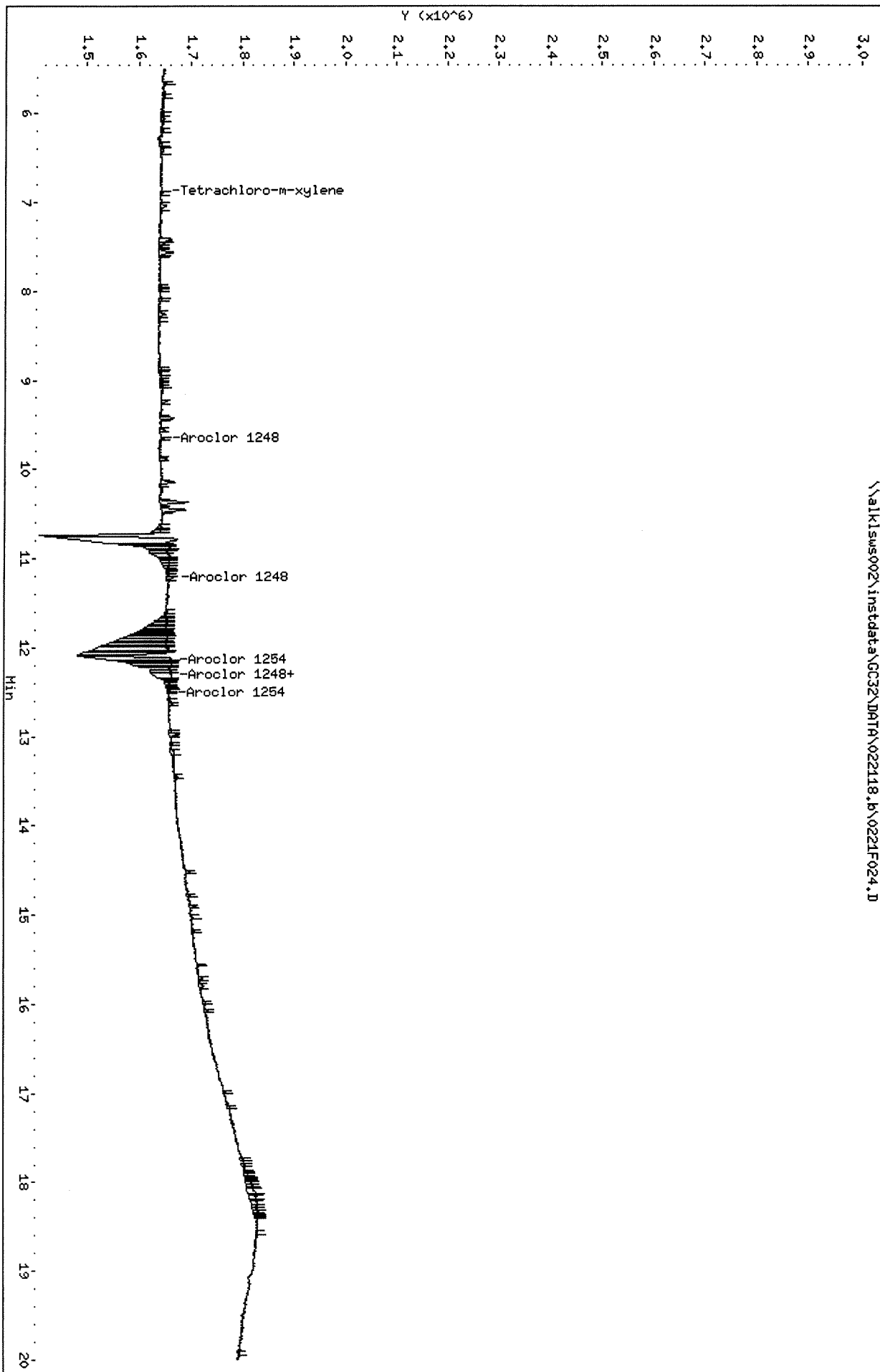
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022118.b\0221F024.D



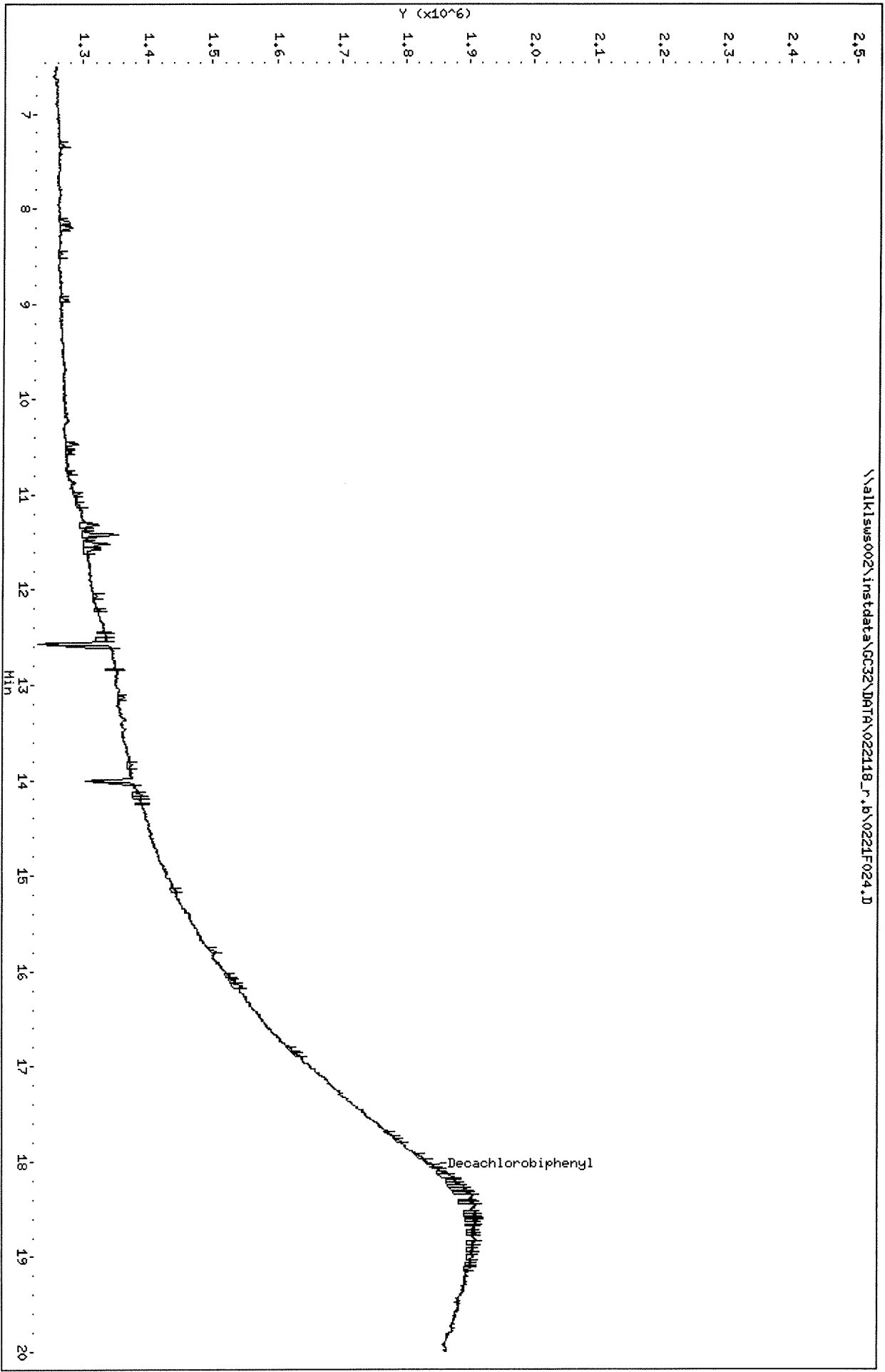
Data File: \\alk1s002\instdata\GC32\DATA\022118_r_16\0221F024.D
Date: 22-FEB-2018 11:26

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

\\alk1s002\instdata\GC32\DATA\022118_r_16\0221F024.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F030.D
Lab ID: KWG1801092-13
Run Type: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 14:37
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____

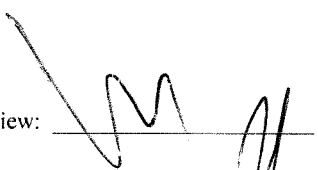
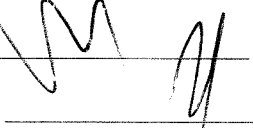
Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F030.D
Lab ID: KWG1801092-13
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 14:37
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F030.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F030.D	Vial:	1
Acqu Date:	02/22/2018 14:37	Quant Date:	02/22/2018 16:41
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801092-13	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.28	3796883	3316313	2.33	2.45			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	2230999	2511232	2.22	2.29			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.94	27.13			
Aroclor 1016 {1}	9.18	9.83	625700	552503	26.42	21.12			
Aroclor 1016 {2}	9.63	10.14	1534442	577014	26.40	28.67			
Aroclor 1016 {3}	9.81	10.89	1028305	1300369	26.16	26.46			
Aroclor 1016 {4}	10.20	11.40	774917	1067635	24.47	33.60			
Aroclor 1016 {5}	10.32	11.91	622005	413362	26.25	25.83			
Aroclor 1260			0	0	25.35	25.12			
Aroclor 1260 {1}	12.55	14.10	1528942m	612201m	26.02	28.54			
Aroclor 1260 {2}	13.14	14.68	988482m	1069023m	27.45	25.93			
Aroclor 1260 {3}	13.95	15.05	1007839m	1036222m	25.96	25.58			
Aroclor 1260 {4}	14.33	15.58	1987576m	2059130m	23.55	23.96			
Aroclor 1260 {5}	14.96	16.08	1545938m	1343114m	23.78	21.57			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F030.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.94	25.00	4
Aroclor 1260		MS	NA	20					25.35	25.00	1
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-7			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.5E+4	6			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.1E+4	6			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	5			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.1E+4	-2			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	5			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	6.1E+4	4			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	4.0E+4	10			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	4.0E+4	4			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	8.0E+4	-6			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	6.2E+4	-5			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.9E+5	-11			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F030.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					27.13	25.00	9
Aroclor 1260		MS	NA	20					25.12	25.00	0
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.3E+6	-2			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.2E+4	-16			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.3E+4	15			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.2E+4	6			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	4.3E+4	34			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.7E+4	3			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.4E+4	14			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.3E+4	4			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.1E+4	2			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.2E+4	-4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.4E+4	-14			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	1.0E+6	-9			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F030.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F030.D
 Inj Date : 22-FEB-2018 14:37
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.859	8.279	3796883	3316313	2.33	2.45		100.00
Aroclor 1016	9.179	9.833	625700	552503	26.4	21.1	80.00- 120.00	100.00
	9.632	10.143	1534442	577014	26.4	28.7	196.19- 294.28	245.24
	9.809	10.886	1028305	1300369	26.2	26.5	131.48- 197.21	164.34
	10.196	11.396	774917	1067635	24.5	33.6	99.08- 148.62	123.85
	10.319	11.909	622005	413362	26.2	25.8	79.53- 119.29	99.41
	Average of Peak Amounts =				25.9	27.1		
Aroclor 1260	12.546	14.096	1528942	612201	26.0	28.5	80.00- 120.00	100.00 (M)
	13.139	14.676	988482	1069023	27.5	25.9	51.72- 77.58	64.65 (M)
	13.949	15.046	1007839	1036222	26.0	25.6	52.73- 79.10	65.92 (M)
	14.329	15.579	1987576	2059130	23.5	24.0	104.00- 156.00	130.00 (M)
	14.956	16.079	1545938	1343114	23.8	21.6	80.89- 121.33	101.11 (M)
	Average of Peak Amounts =				25.4	25.1		
Decachlorobiphenyl	16.752	18.033	2230999	2511232	2.22	2.29		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alkl1sus002\instdata\GC32\DATA\022118.b\0221F030.D

Date: 22-FEB-2018 14:37

Client ID:

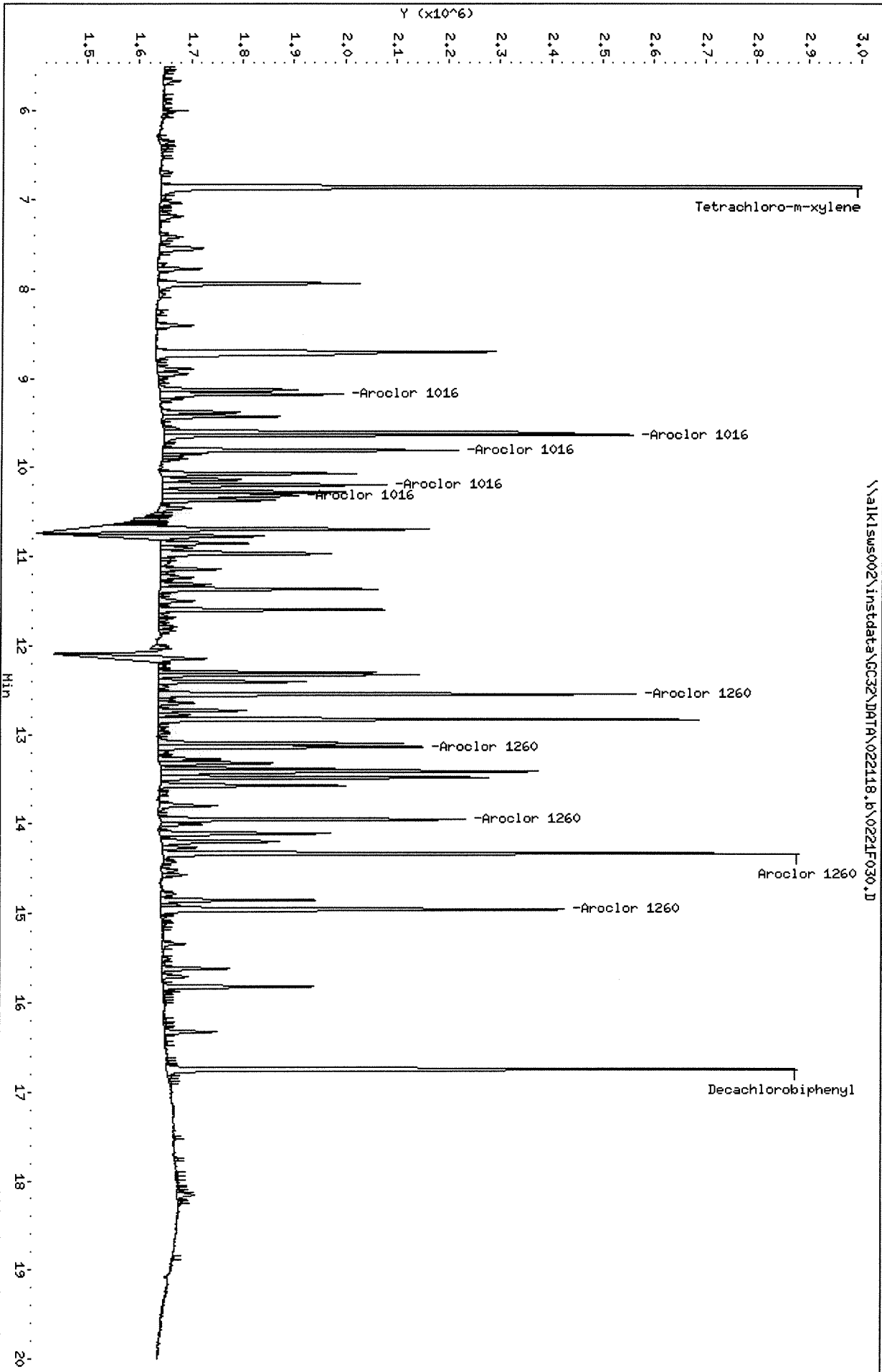
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

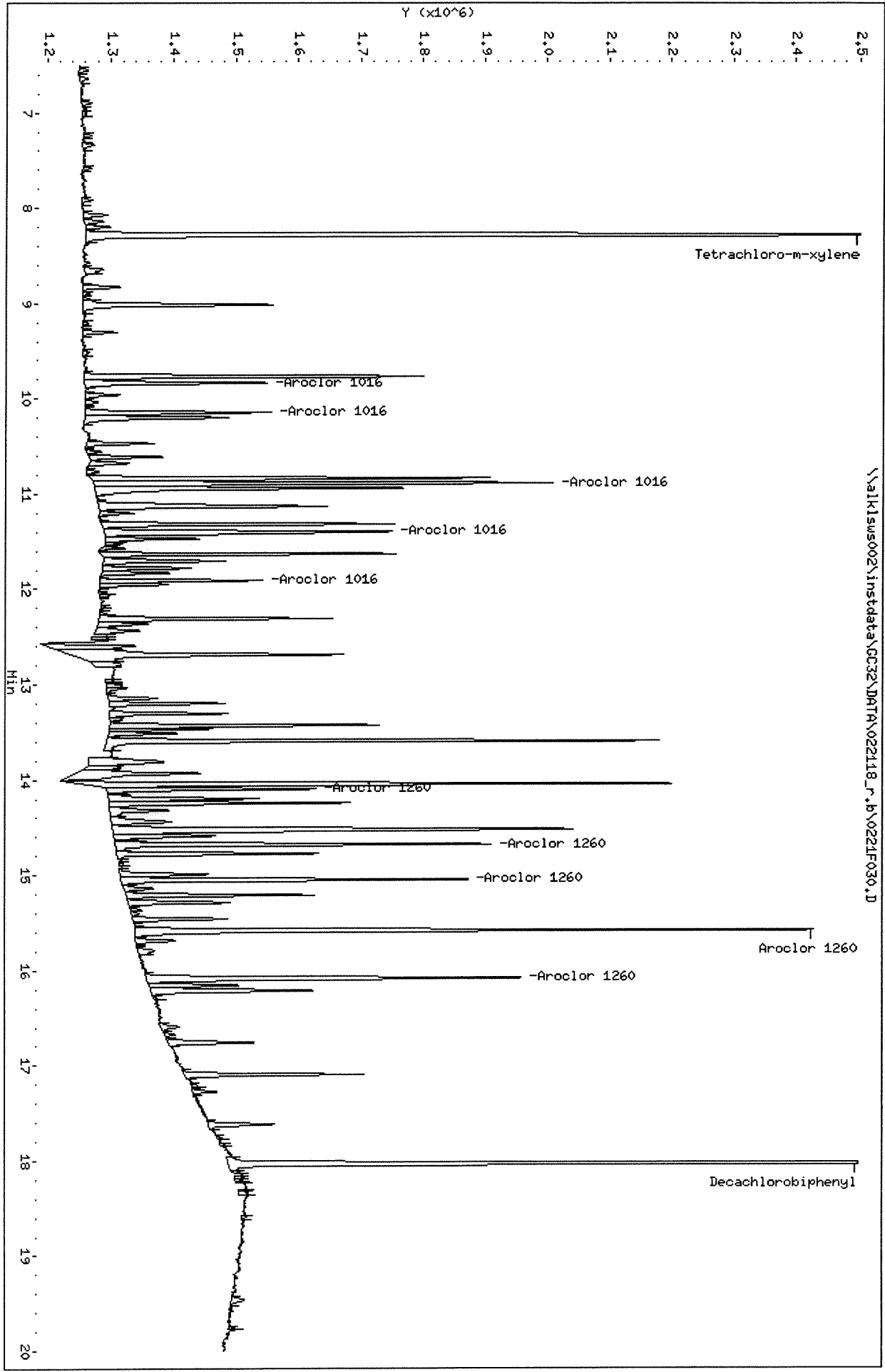


Data File: \\alkisus002\instdata\GC32\DATA\022118_r_b\0221F030.D
Date: 22-FEB-2018 14:37

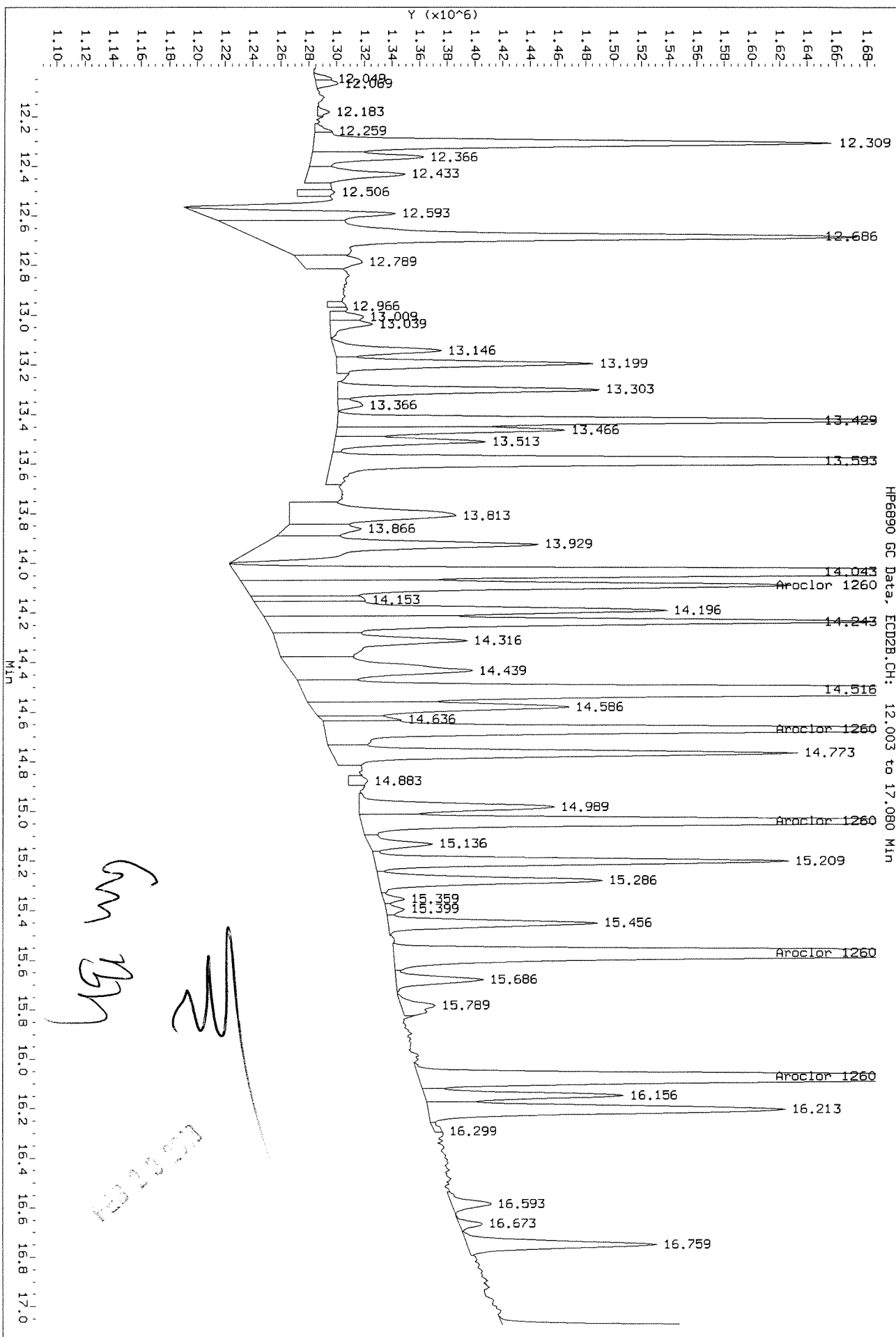
Client ID:
Sample Info: 1660 28PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32

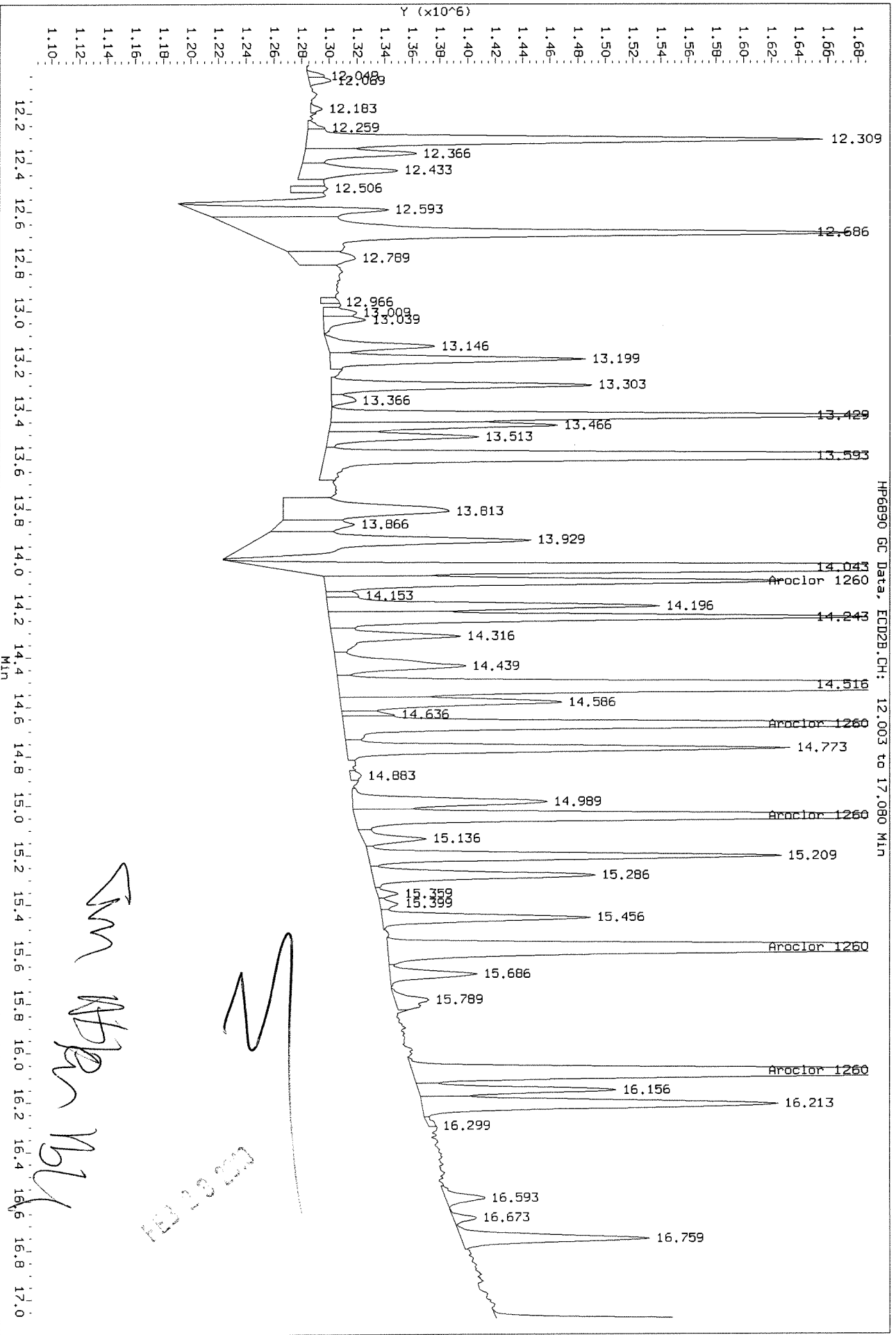


Data File: \\alk1sms002\instdata\GC32\DATA\022118_r.b\0221F030.D
Injection Date: 22-FEB-2018 14:37
Instrument: GC32.1
Client Sample ID:



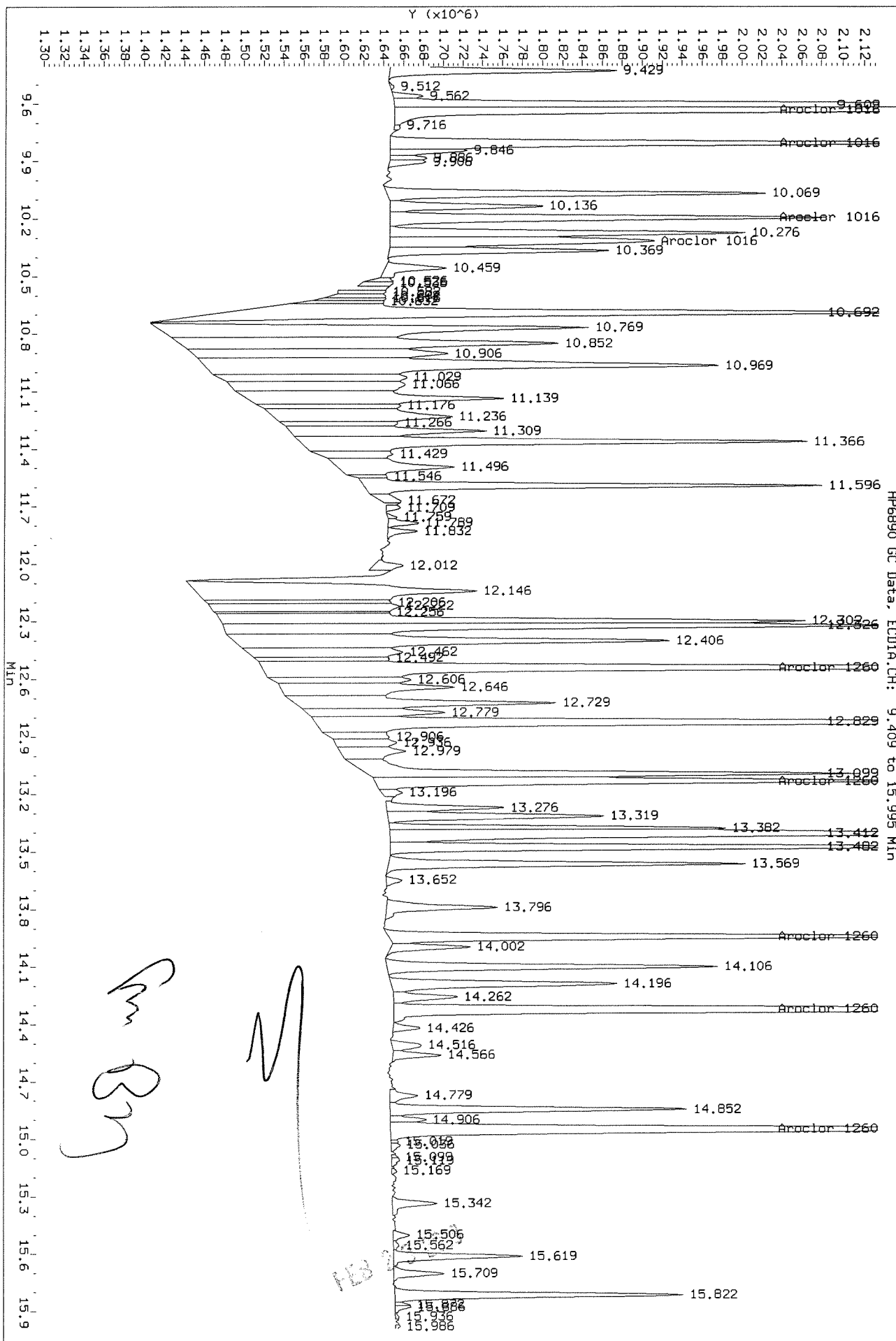
sm
157

FEB 20 2018



Handwritten notes:
SM Aroclor 1260
A large handwritten 'Z' or '2' is present in the lower right area of the plot.

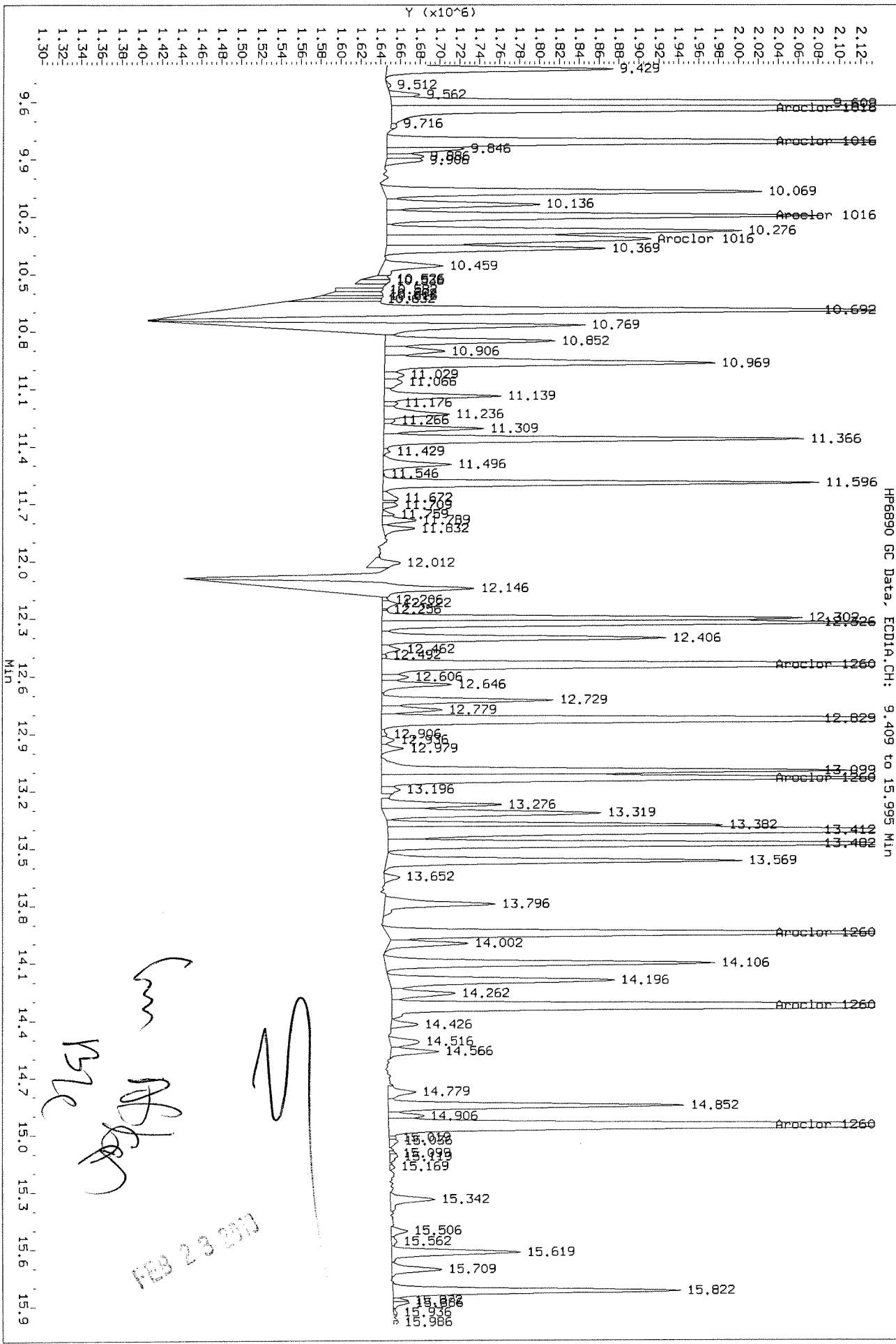
Stamp: FEB 28 2018



Sm Bm

15.3

Data File: \\alklsws002\instdata\GC32\DATA\022118.B\0221F030.D
 Injection Date: 22-FEB-2018 14:37
 Instrument: GC32.1
 Client Sample ID:



Handwritten notes:
 B2
 FEB 23 2018

Exception Report

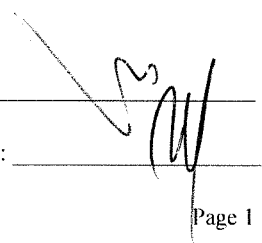
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\0221F031.D
Lab ID: KWG1801092-14
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 15:09
Date Quantitated: 02/22/2018 16:41
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____



Exception Report

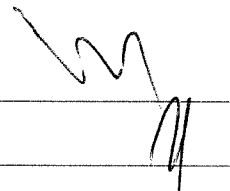
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\022118_R.B\0221F031.D
Lab ID: KWG1801092-14
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 02/22/2018 15:09
Date Quantitated: 02/22/2018 16:43
Batch ID: KWG1801092
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\022118.B\0221F031.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F031.D	Vial:	2
Acqu Date:	02/22/2018 15:09	Quant Date:	02/22/2018 16:41
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-14	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082A PCB	Collect Date:		Receive Date:	02/22/2018

Analysis Lot:	KWG1801092	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\022118.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1697
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2				Rpt
Tetrachloro-m-xylene	6.87	8.25	5648	14402	0.0030	0.0110				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	16.79	18.06	7026	22346	0.0070	0.0200				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/Kg		Rpt
							ug/Kg #1	ug/Kg #2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	1.58	0.0000			
Aroclor 1242 {1}	9.24		19809	0	1.05	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\022118.B\0221F031.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F031.D	Vial:	2
Acqu Date:	02/22/2018 15:09	Quant Date:	02/22/2018 16:41
Run Type:	IB	MethodJoinID:	MJ1697
Lab ID:	KWG1801092-14	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/Kg

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1242 {2}	9.65		7988	0	0.1790	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}	10.97		111972	0	4.69	0.0000			
Aroclor 1242 {5}	11.32		9586	0	0.3970	0.0000			
Aroclor 1248			0	0	1.15	1.33			
Aroclor 1248 {1}	9.65	10.99	7988	19828	0.3250	1.34			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}	11.21	12.45	21364	29114	0.8420	0.7670			
Aroclor 1248 {4}		12.69	0	36040	0.0000	1.24			
Aroclor 1248 {5}	12.32	12.76	56677	29257	2.27	1.98			
Aroclor 1254			0	0	1.05	0.5553			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}	12.17	12.37	87226	12293	2.11	0.5400			
Aroclor 1254 {3}	12.32	12.69	56677	36040	0.6950	0.6040			
Aroclor 1254 {4}	12.57	13.04	13598	11464	0.3370	0.5220			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00	1.00	118515	48492	3.77	1.89	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\022118.b\0221F031.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F031.D
 Inj Date : 22-FEB-2018 15:09
 Sample Info: IB
 Misc Info :
 Cal Date : 22-FEB-2018 16:12
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\022118.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\022118_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.868	8.245	5648	14402	0.00346	0.0106		100.00 (R)
Aroclor 1242	9.235	0.000	19809	0	1.05	0.000	80.00- 120.00	100.00 (T)
	9.645	0.000	7988	0	0.179	0.000	188.17- 282.25	40.33 (T)
	0.000	0.000	0	0	0.000	0.000	75.98- 113.97	0.00 (T)
	10.972	0.000	111972	0	4.69	0.000	97.61- 146.41	565.25 (T)
	11.315	0.000	9586	0	0.397	0.000	98.63- 147.94	48.40 (T)
	Average of Peak Amounts =				1.58	0.000		
Aroclor 1248	9.645	10.985	7988	19828	0.325	1.34	80.00- 120.00	100.00 (T)
	0.000	0.000					129.21- 193.81	0.00 (T)
	11.212	12.449	21364	29114	0.842	0.767	74.96- 112.44	267.45 (T)
	0.000	12.692		36040		1.24	183.57- 275.35	181.76 (T)
	12.322	12.755	56677	29257	2.27	1.98	76.00- 114.01	709.50 (T)
	Average of Peak Amounts =				1.15	1.33		
Aroclor 1254	0.000	0.000					80.00- 120.00	0.00 (T)
	12.168	12.369	87226	12293	2.11	0.540	64.52- 96.78	0.00 (T)
	12.322	12.692	56677	36040	0.695	0.604	121.44- 182.17	0.00 (T)
	12.565	13.039	13598	11464	0.337	0.522	61.81- 92.72	0.00 (T)
	0.000	0.000					49.74- 74.61	0.00 (T)
	Average of Peak Amounts =				1.05	0.555		
Decachlorobiphenyl	16.788	18.055	7026	22346	0.00698	0.0203		100.00 (R)
Aroclors, Total	1.000	1.000	118515	48492	3.77	1.89		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

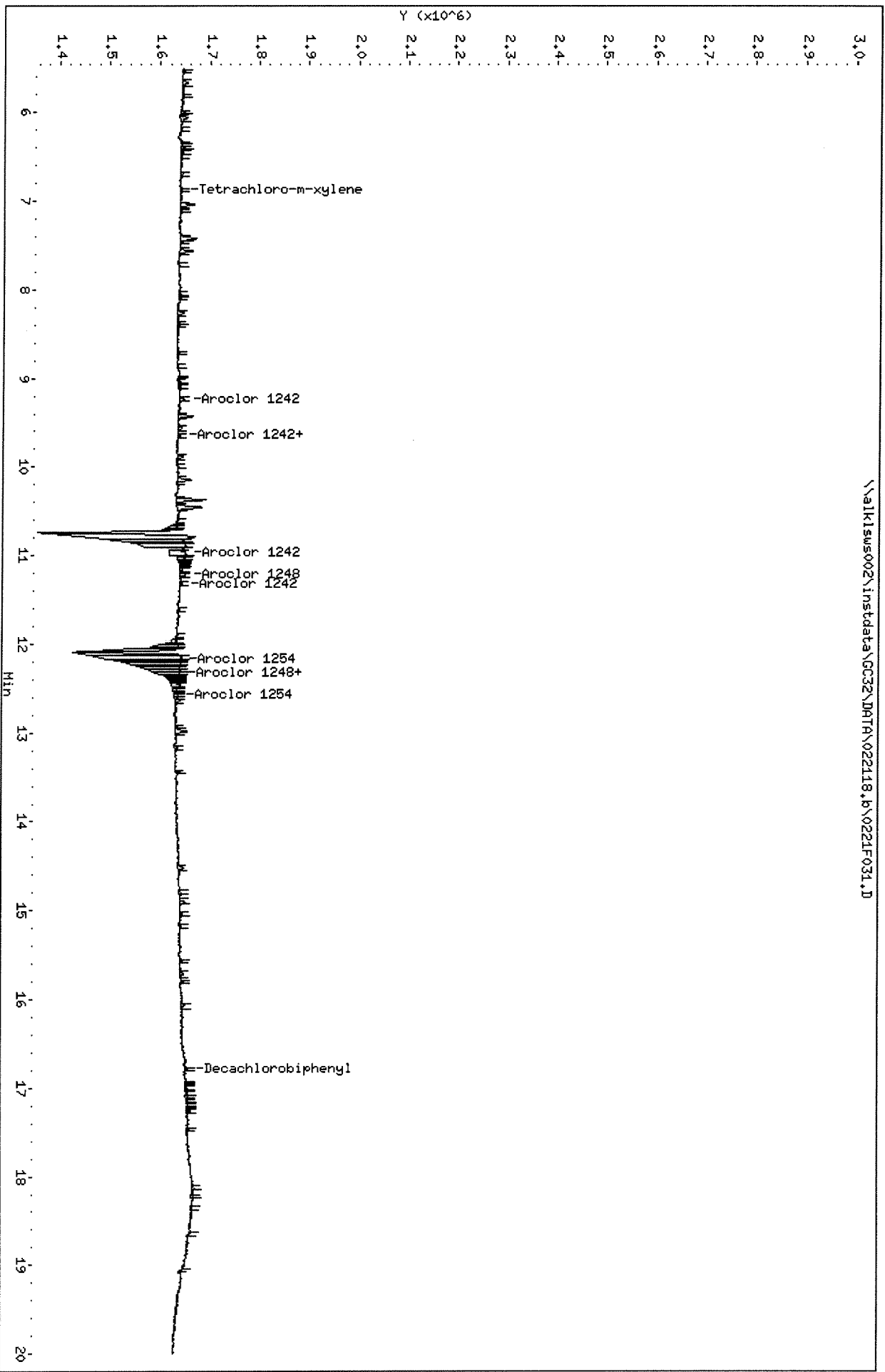
Data File: \\alk1sww002\instdata\GC32\DATA\022118_18\0221F031.D
Date : 22-FEB-2018 15:09

Client ID:
Sample Info: 1B

Column phase: DB-35MS

Instrument: GC32.1
Operator: SHURRAY
Column diameter: 0.32

\\alk1sww002\instdata\GC32\DATA\022118_18\0221F031.D



Data File: \\alklsws002\instdata\GC32\DATA\022118_r.b\0221F031.D
Date : 22-FEB-2018 15:09

Client ID:

Sample Info: IB

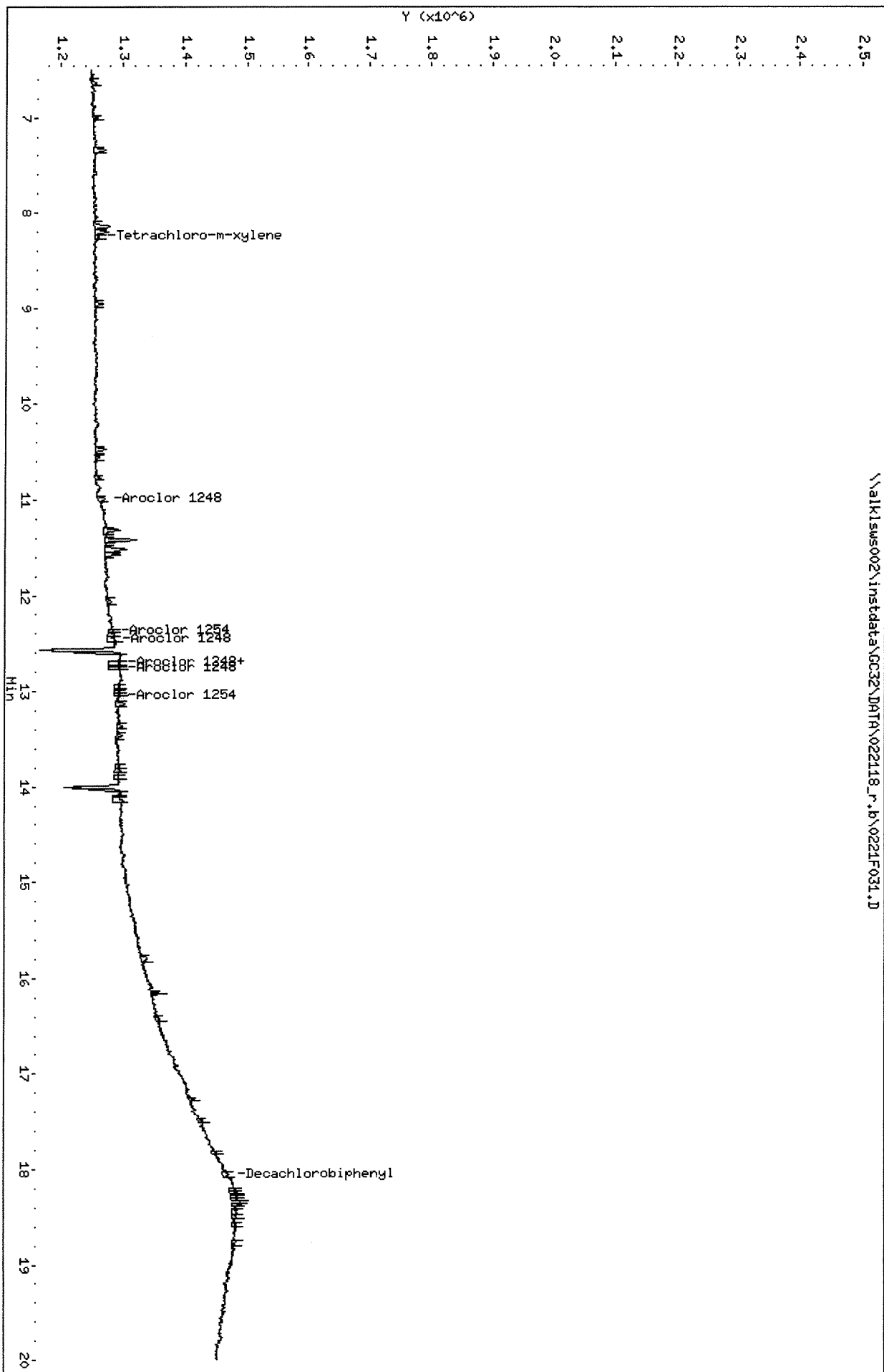
Column phase: DB-XLB

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\022118_r.b\0221F031.D



Injection Log

Directory: J:\GC32\DATA\031418

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	100	0314f001.d	1.	PRIMER		14 Mar 2018 09:57
2	100	0314f002.d	1.	PRIMER		14 Mar 2018 10:29
3	1	0314f003.d	1.	1660 25PPB PCB7-22J		14 Mar 2018 13:05
4	2	0314f004.d	1.	IB		14 Mar 2018 13:37
5	3	0314f005.d	1.	k1800699-006		14 Mar 2018 14:09
6	4	0314f006.d	1.	k1800802-001		14 Mar 2018 14:41
7	5	0314f007.d	1.	k1800802-002		14 Mar 2018 15:13
8	6	0314f008.d	1.	k1800802-003		14 Mar 2018 15:44
9	7	0314f009.d	1.	k1800802-004		14 Mar 2018 16:16
10	8	0314f010.d	1.	k1800877-008		14 Mar 2018 16:48
11	9	0314f011.d	1.	k1800965-003		14 Mar 2018 17:20
12	10	0314f012.d	1.	k1801355-008		14 Mar 2018 17:52
13	11	0314f013.d	1.	KWG1801278-LCS		14 Mar 2018 18:23
14	12	0314f014.d	1.	KWG1801278-DLCS		14 Mar 2018 18:55
15	13	0314f015.d	1.	KWG1801278-MB		14 Mar 2018 19:27
16	14	0314f016.d	1.	K1801917-001		14 Mar 2018 19:59
17	15	0314f017.d	1.	KWG1801286-LCS		14 Mar 2018 20:31
18	16	0314f018.d	1.	KWG1801286-DLCS		14 Mar 2018 21:03
19	17	0314f019.d	1.	KWG1801286-MB		14 Mar 2018 21:34
20	1	0314f020.d	1.	1660 25PPB PCB7-22J	-DEBB, OK	14 Mar 2018 22:06
21	2	0314f021.d	1.	IB		14 Mar 2018 22:38
22	18	0314f022.d	1.	K1801267-008	JR CCV 1016 Part	14 Mar 2018 23:10
23	19	0314f023.d	1.	K1801267-017		14 Mar 2018 23:42
24	20	0314f024.d	1.	KWG1801348-LCS		15 Mar 2018 00:13
25	21	0314f025.d	1.	KWG1801348-DLCS		15 Mar 2018 00:45
26	22	0314f026.d	1.	KWG1801348-MB		15 Mar 2018 01:17
27	27	0314f031.d	1.	K1801601-007		15 Mar 2018 01:49
28	29	0314f032.d	1.	K1801601-009		15 Mar 2018 02:21
29	30	0314f033.d	1.	K1801601-010		15 Mar 2018 02:52
30	31	0314f034.d	1.	K1801601-011		15 Mar 2018 03:24
31	32	0314f035.d	1.	K1801601-012		15 Mar 2018 03:56
32	34	0314f037.d	1.	K1801601-009MS		15 Mar 2018 04:28
33	36	0314f039.d	1.	KWG1801312-LCS		15 Mar 2018 05:00
34	37	0314f040.d	1.	KWG1801312-MB	-NR Seq 313 Seq	15 Mar 2018 05:32
35	1	0314f041.d	1.	1660 25PPB PCB7-22J		15 Mar 2018 06:03
36	2	0314f042.d	1.	IB	-OK, 10167	15 Mar 2018 06:35

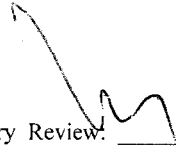
Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F003.D
Lab ID: KWG1801562-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/14/2018 13:05
Date Quantitated: 03/22/2018 13:32
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

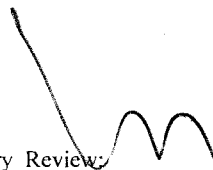
Exception Report

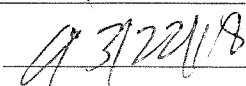
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Lab ID: KWG1801562-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/14/2018 13:05
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F003.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F003.D	Vial:	1
Acqu Date:	03/14/2018 13:05	Quant Date:	03/22/2018 13:32
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801562-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	03/22/2018

Analysis Lot:	KWG1801562	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.87	8.27	5773642	4011137	3.54	2.96			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.76	18.03	1924324	2641409	1.91	2.40			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	25.94	30.11			
Aroclor 1016 {1}	9.19	9.82	625062	666280	26.39	25.46			
Aroclor 1016 {2}	9.64	10.13	1600978	672535	27.55	33.42			
Aroclor 1016 {3}	9.81	10.88	1002623	1552367	25.50	31.59			
Aroclor 1016 {4}	10.20	11.39	755844	926428	23.87	29.16			
Aroclor 1016 {5}	10.32	11.90	624938	494794	26.37	30.91			
Aroclor 1260			0	0	22.87	26.58			
Aroclor 1260 {1}	12.55	14.09	1410747	615651	24.00	28.70			
Aroclor 1260 {2}	13.15	14.68	868533	1119879	24.12	27.16			
Aroclor 1260 {3}	13.96	15.05	919177	1108289	23.68	27.36			
Aroclor 1260 {4}	14.34	15.58	1797978	2250437	21.30	26.18			
Aroclor 1260 {5}	14.96	16.08	1380502	1461866	21.23	23.47			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F003.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					25.94	25.00	4
Aroclor 1260		MS	NA	20					22.87	25.00	-9
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	2.3E+6	41 *			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.5E+4	6			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.4E+4	10			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.0E+4	2			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.0E+4	-5			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	5			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.6E+4	-4			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.5E+4	-4			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.7E+4	-5			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.2E+4	-15			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.5E+4	-15			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	7.7E+5	-24 *			

2 Compounds Failed CCV Criteria (16.67 Percent)

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F003.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					30.11	25.00	20 *
Aroclor 1260		MS	NA	20					26.58	25.00	6
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.6E+6	18			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.7E+4	2			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.7E+4	34			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	6.2E+4	26			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.7E+4	17			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	2.0E+4	24			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.5E+4	15			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.5E+4	9			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.4E+4	9			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	9.0E+4	5			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.8E+4	-6			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	1.1E+6	-4			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F003.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F003.D
 Inj Date : 14-MAR-2018 13:05
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

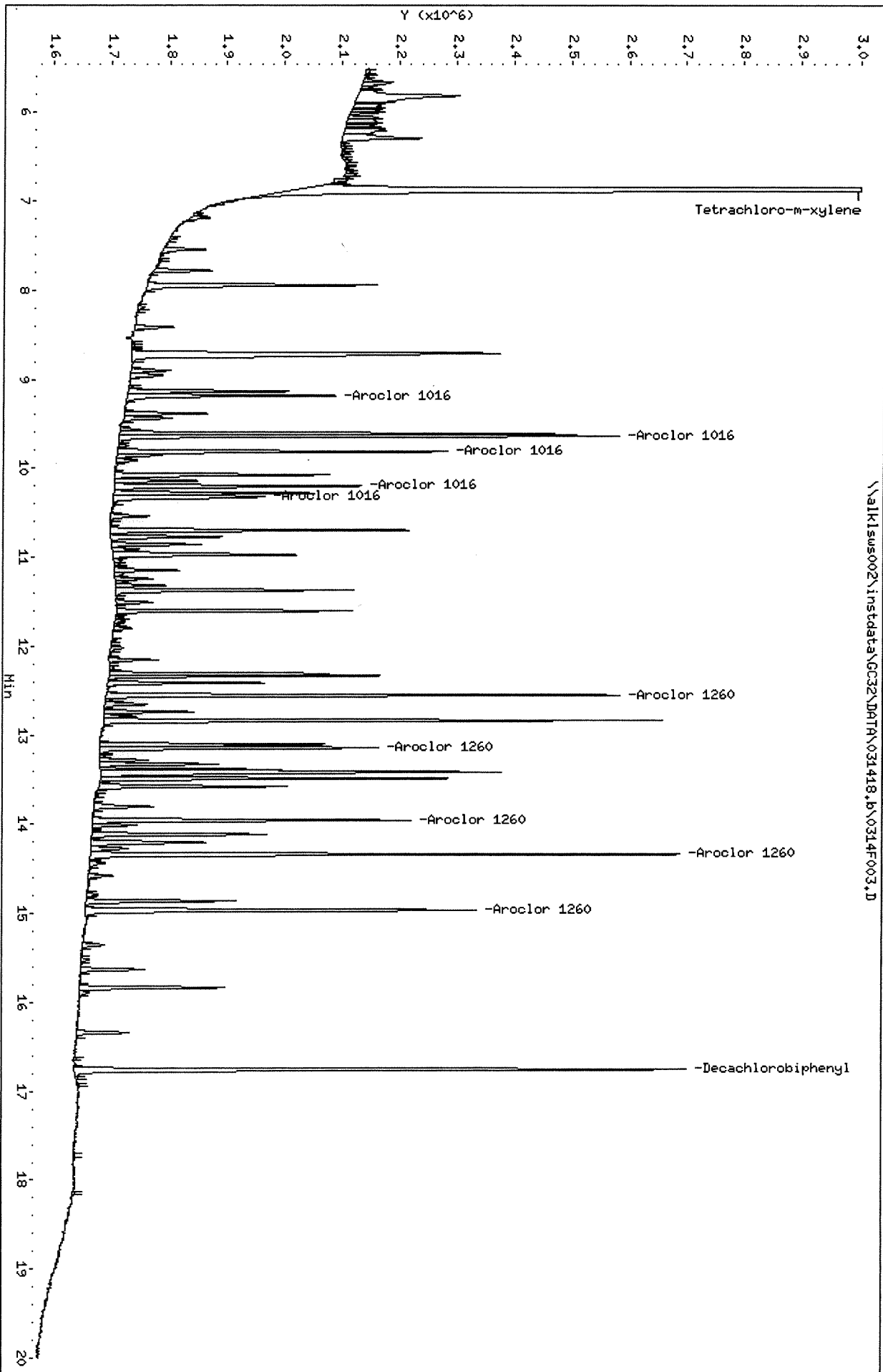
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 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.870	8.270	5773642	4011137	3.54	2.96		100.00
Aroclor 1016	9.186	9.824	625062	666280	26.4	25.5	80.00- 120.00	100.00
	9.640	10.134	1600978	672535	27.5	33.4	214.79- 322.18	256.13
	9.813	10.880	1002623	1552367	25.5	31.6	129.79- 194.69	160.40
	10.203	11.390	755844	926428	23.9	29.2	102.46- 153.69	120.92
	10.323	11.904	624938	494794	26.4	30.9	86.76- 130.14	99.98
	Average of Peak Amounts =				25.9	30.1		
Aroclor 1260	12.553	14.094	1410747	615651	24.0	28.7	80.00- 120.00	100.00
	13.146	14.677	868533	1119879	24.1	27.2	49.80- 74.70	61.57
	13.960	15.047	919177	1108289	23.7	27.4	53.43- 80.14	65.16
	14.340	15.577	1797978	2250437	21.3	26.2	101.63- 152.44	127.45
	14.963	16.084	1380502	1461866	21.2	23.5	79.27- 118.91	97.86
	Average of Peak Amounts =				22.9	26.6		
Decachlorobiphenyl	16.760	18.034	1924324	2641409	1.91	2.40		100.00

Data File: \\alkl1sus002\instdata\GC32\DATA\031418 JB\0314F003.D
Date : 14-MAR-2018 13:05

Client ID:
Sample Info: 1660 25PPB PCB7-22J
Column phase: DB-35MS

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32



Data File: \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F003.D

Date : 14-MAR-2018 13:05

Client ID:

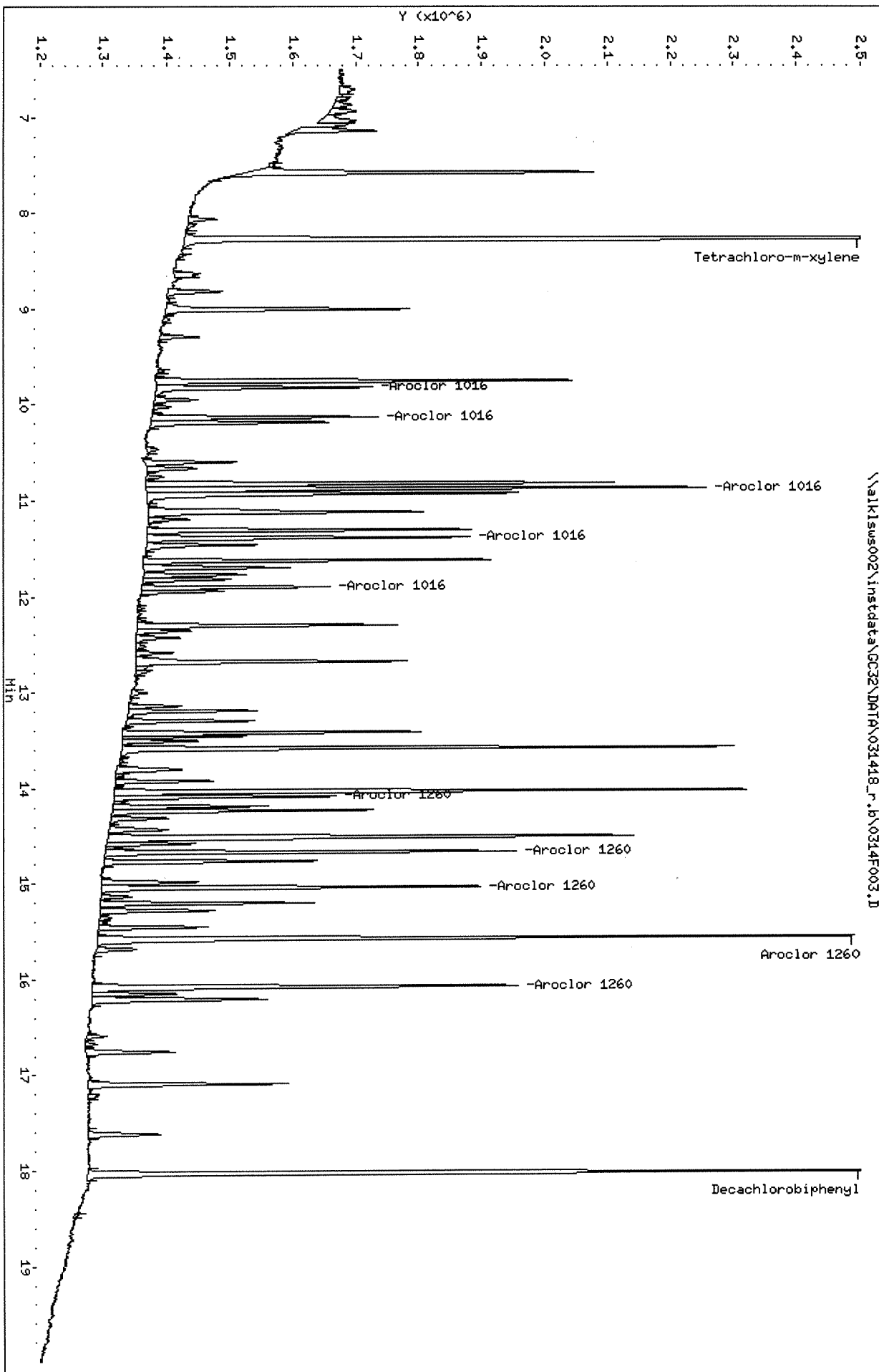
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



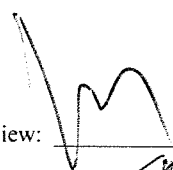
Exception Report

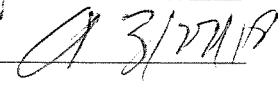
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Lab ID: KWG1801562-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/14/2018 13:37
Date Quantitated: 03/22/2018 13:32
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F004.D
Lab ID: KWG1801562-2
RunType: IB
Matrix: NOT APPLICABLE

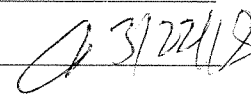
Date Acquired: 03/14/2018 13:37
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F004.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F004.D	Vial:	2
Acqu Date:	03/14/2018 13:37	Quant Date:	03/22/2018 13:32
Run Type:	IB	MethodJoinID:	MJ1684
Lab ID:	KWG1801562-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	03/22/2018

Analysis Lot:	KWG1801562	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1684
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2				Rpt
Decachlorobiphenyl	16.79		6237	0	0.0060	0.0000				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL		mg/Kg		Rpt
					#1	#2	#1	#2	
Aroclor 1016			0	0	0.2597	0.0000			
Aroclor 1016 {1}	9.21		7738	0	0.3270	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}	10.23		6377	0	0.2010	0.0000			
Aroclor 1016 {5}	10.37		5943	0	0.2510	0.0000			
Aroclor 1221			0	0	1.19	0.0000			
Aroclor 1221 {1}	7.55		6495	0	0.4010	0.0000			
Aroclor 1221 {2}	7.78		29377	0	2.80	0.0000			
Aroclor 1221 {3}	7.95		13395	0	0.3550	0.0000			
Aroclor 1232			0	0	0.3910	0.0000			
Aroclor 1232 {1}	7.95		13395	0	0.4090	0.0000			
Aroclor 1232 {2}	8.71		6844	0	0.2140	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}	10.23		6377	0	0.5500	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	1.11	0.6433			
Aroclor 1242 {1}	9.21	10.19	7738	12692	0.4110	1.04			
Aroclor 1242 {2}		10.83	0	10029	0.0000	0.2890			
Aroclor 1242 {3}	10.26	11.34	7512	13201	0.3940	0.6050			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 c: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\031418.B\0314F004.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F004.D	Vial:	2
Acqu Date:	03/14/2018 13:37	Quant Date:	03/22/2018 13:32
Run Type:	1B	MethodJoinID:	MJ1684
Lab ID:	KWG1801562-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units:

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1242 {4}	10.97		60508	0	2.53	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.4530	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}	10.23		6377	0	0.1610	0.0000			
Aroclor 1248 {3}	11.27		5698	0	0.2240	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}	12.32		24336	0	0.9740	0.0000			
Aroclor 1254			0	0	1.75	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}	12.15		199297	0	4.82	0.0000			
Aroclor 1254 {3}	12.32		24336	0	0.2990	0.0000			
Aroclor 1254 {4}	12.55		5720	0	0.1420	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00	1.00	163748	11974	5.46	0.6430	J	J	
Aroclor 1260			0	0	0.1403	0.0000			
Aroclor 1260 {1}	12.55		5720	0	0.0970	0.0000			
Aroclor 1260 {2}	13.18		6315	0	0.1750	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}	14.97		9689	0	0.1490	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F004.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F004.D
 Inj Date : 14-MAR-2018 13:37
 Sample Info: IB
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.879	0.000	2066650	0	1.27	0.000		100.00 (R)
Aroclor 1016	9.206	0.000	7738	0	0.327	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	214.79- 322.18	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	129.79- 194.69	0.00 (T)
	10.229	0.000	6377	0	0.201	0.000	102.46- 153.69	82.42 (T)
	10.373	0.000	5943	0	0.251	0.000	86.76- 130.14	76.80 (T)
	Average of Peak Amounts =				0.260	0.000		
Aroclor 1221	7.549	0.000	6495	0	0.401	0.000	80.00- 120.00	100.00
	7.779	0.000	29377	0	2.80	0.000	51.15- 76.72	452.30
	7.953	0.000	13395	0	0.355	0.000	180.51- 270.76	206.25
	Average of Peak Amounts =				1.19	0.000		
Aroclor 1232	7.953	0.000	13395	0	0.409	0.000	80.00- 120.00	100.00 (T)
	8.713	0.000	6844	0	0.214	0.000	75.51- 113.27	51.10 (T)
	0.000	0.000	0	0	0.000	0.000	61.92- 92.88	0.00 (T)
	10.229	0.000	6377	0	0.550	0.000	29.43- 44.14	47.61 (T)
	0.000	0.000	0	0	0.000	0.000	50.90- 76.34	0.00 (T)
	Average of Peak Amounts =				0.391	0.000		
Aroclor 1242	9.206	10.187	7738	12692	0.411	1.04	80.00- 120.00	100.00 (T)
	0.000	10.833		10029		0.289	227.01- 340.52	79.02 (T)
	10.256	11.337	7512	13201	0.394	0.605	75.98- 113.97	97.07 (T)
	10.973	0.000	60508		2.53		97.61- 146.41	781.92 (T)
	0.000	0.000					145.18- 217.78	0.00 (T)
	Average of Peak Amounts =				1.11	0.645		
Aroclor 1248	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	10.229	0.000	6377	0	0.161	0.000	123.60- 185.40	0.00 (T)
	11.266	0.000	5698	0	0.224	0.000	74.96- 112.44	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	153.18- 229.78	0.00 (T)
	12.319	0.000	24336	0	0.974	0.000	76.00- 114.01	0.00 (T)

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Average of Peak Amounts =					0.453	0.000		
Aroclor 1254	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00(T)
	12.149	0.000	199297	0	4.82	0.000	64.52- 96.78	0.00(T)
	12.319	0.000	24336	0	0.299	0.000	121.44- 182.17	0.00(T)
	12.553	0.000	5720	0	0.142	0.000	61.81- 92.72	0.00(T)
	0.000	0.000	0	0	0.000	0.000	47.38- 71.07	0.00(T)
Average of Peak Amounts =					1.75	0.000		
Aroclor 1260	12.553	0.000	5720	0	0.0973	0.000	80.00- 120.00	100.00(T)
	13.179	0.000	6315	0	0.175	0.000	49.80- 74.70	110.40(T)
	0.000	0.000	0	0	0.000	0.000	53.43- 80.14	0.00(T)
	0.000	0.000	0	0	0.000	0.000	101.63- 152.44	0.00(T)
	14.969	0.000	9689	0	0.149	0.000	79.27- 118.91	169.38(T)
Average of Peak Amounts =					0.140	0.000		
Aroclor 1262	12.553	0.000	5720	0	0.123	0.000	80.00- 120.00	100.00(T)
	13.449	0.000	16648	0	0.241	0.000	113.91- 170.87	291.03(T)
	0.000	0.000	0	0	0.000	0.000	97.79- 146.68	0.00(T)
	0.000	0.000	0	0	0.000	0.000	174.00- 261.01	0.00(T)
	14.969	0.000	9689	0	0.120	0.000	136.43- 204.65	169.38(T)
Average of Peak Amounts =					0.161	0.000		
Decachlorobiphenyl	16.786	0.000	6237	0	0.00619	0.000		100.00(R)
Aroclors, Total	1.000	1.000	163748	11974	5.46	0.643		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\031418.b\0314F004.D

Date : 14-MAR-2018 13:37

Client ID:

Sample Info: IB

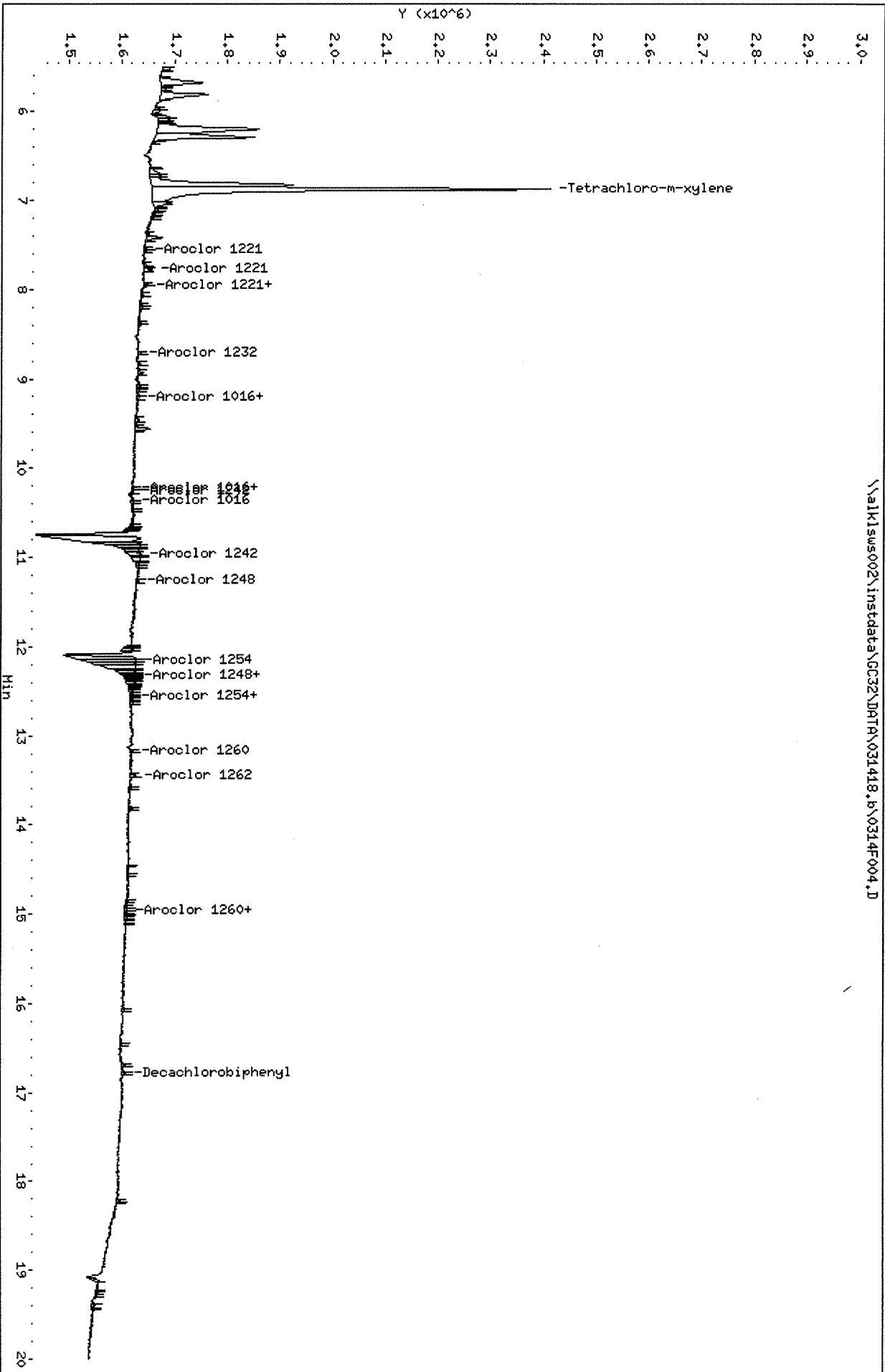
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

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Data File: \\alkisus002\instdata\GC32\DATA\031418_r_b\0314F004.D

Date : 14-Mar-2018 13:37

Client ID:

Sample Info: IB

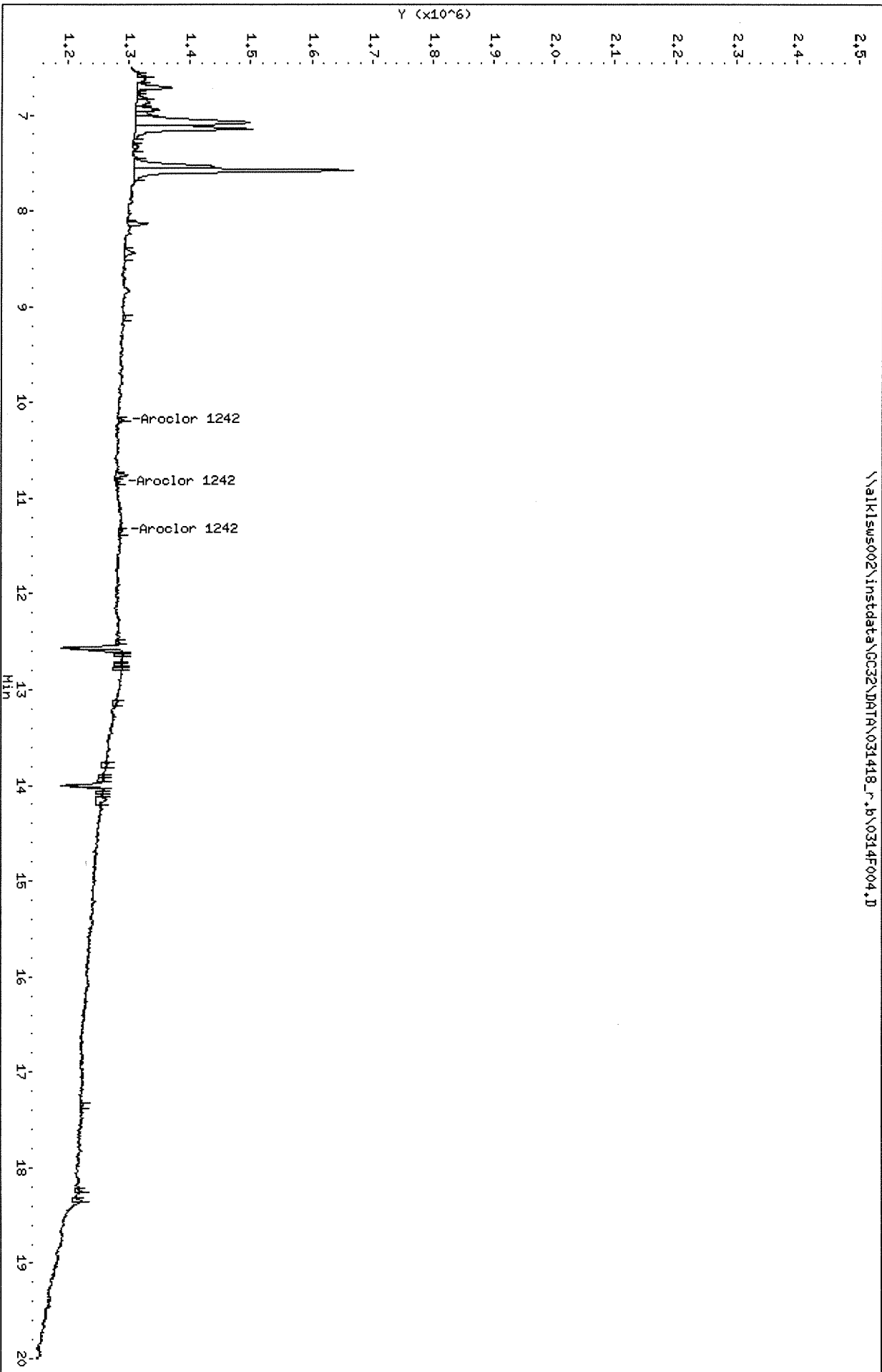
Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

\\alkisus002\instdata\GC32\DATA\031418_r_b\0314F004.D



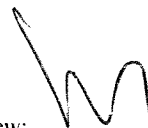
Exception Report

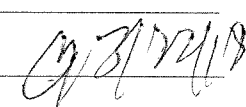
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Lab ID: KWG1801562-3
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/14/2018 22:06
Date Quantitated: 03/22/2018 13:32
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F020.D
Lab ID: KWG1801562-3
RunType: CCV
Matrix: NOT APPLICABLE

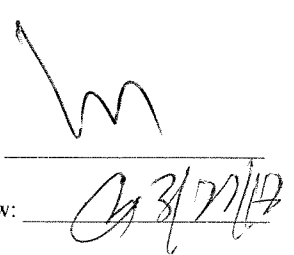
Date Acquired: 03/14/2018 22:06
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Handwritten signature and date 3/22/18

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F020.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F020.D	Vial:	1
Acqu Date:	03/14/2018 22:06	Quant Date:	03/22/2018 13:32
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801562-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	03/22/2018

Analysis Lot:	KWG1801562	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.86	8.27	3385754	3639888	2.07	2.68			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.75	18.03	1927808	2660764	1.92	2.42			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	24.88	26.98			
Aroclor 1016 {1}	9.18	9.83	576242m	595095	24.33	22.74			
Aroclor 1016 {2}	9.63	10.14	1547108m	591273	26.62	29.38			
Aroclor 1016 {3}	9.80	10.88	934900m	1401810	23.78	28.53			
Aroclor 1016 {4}	10.19	11.39	738036m	858358	23.31	27.01			
Aroclor 1016 {5}	10.31	11.90	624923m	436246	26.37	27.26			
Aroclor 1260			0	0	22.20	26.23			
Aroclor 1260 {1}	12.54	14.09	1356844	589793	23.09	27.50			
Aroclor 1260 {2}	13.13	14.67	844654	1138717	23.46	27.62			
Aroclor 1260 {3}	13.95	15.04	906178	1082346	23.34	26.72			
Aroclor 1260 {4}	14.33	15.57	1723649	2224968	20.42	25.89			
Aroclor 1260 {5}	14.95	16.08	1344487	1460131	20.68	23.44			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F020.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					24.88	25.00	0
Aroclor 1260		MS	NA	20					22.20	25.00	-11
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.4E+6	-17			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.3E+4	-3			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.2E+4	6			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.7E+4	-5			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.0E+4	-7			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.5E+4	5			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.4E+4	-8			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.4E+4	-6			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.6E+4	-7			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	6.9E+4	-18			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.4E+4	-17			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	7.7E+5	-23 *			

1 Compounds Failed CCV Criteria (8.33 Percent)

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F020.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.98	25.00	8
Aroclor 1260		MS	NA	20					26.23	25.00	5
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.5E+6	7			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.4E+4	-9			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.4E+4	18			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.6E+4	14			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.4E+4	8			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.7E+4	9			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.4E+4	10			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.6E+4	10			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.3E+4	7			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.9E+4	4			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.8E+4	-6			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	1.1E+6	-3			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F020.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F020.D
 Inj Date : 14-MAR-2018 22:06
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.857	8.274	3385754	3639888	2.07	2.68		100.00
Aroclor 1016	9.177	9.828	576242	595095	24.3	22.7	80.00- 120.00	100.00 (M)
	9.630	10.138	1547108	591273	26.6	29.4	214.79- 322.18	268.48 (M)
	9.804	10.884	934900	1401810	23.8	28.5	129.79- 194.69	162.24 (M)
	10.194	11.391	738036	858358	23.3	27.0	102.46- 153.69	128.08 (M)
	10.310	11.904	624923	436246	26.4	27.3	86.76- 130.14	108.45 (M)
	Average of Peak Amounts =				24.9	27.0		
Aroclor 1260	12.544	14.091	1356844	589793	23.1	27.5	80.00- 120.00	100.00
	13.134	14.674	844654	1138717	23.5	27.6	49.80- 74.70	62.25
	13.947	15.041	906178	1082346	23.3	26.7	53.43- 80.14	66.79
	14.327	15.574	1723649	2224968	20.4	25.9	101.63- 152.44	127.03
	14.954	16.078	1344487	1460131	20.7	23.4	79.27- 118.91	99.09
	Average of Peak Amounts =				22.2	26.2		
Decachlorobiphenyl	16.747	18.028	1927808	2660764	1.91	2.42		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alkisus002\instdata\GC32\DATA\031418.b\0314F020.D
Date : 14-MAR-2018 22:06

Client ID:

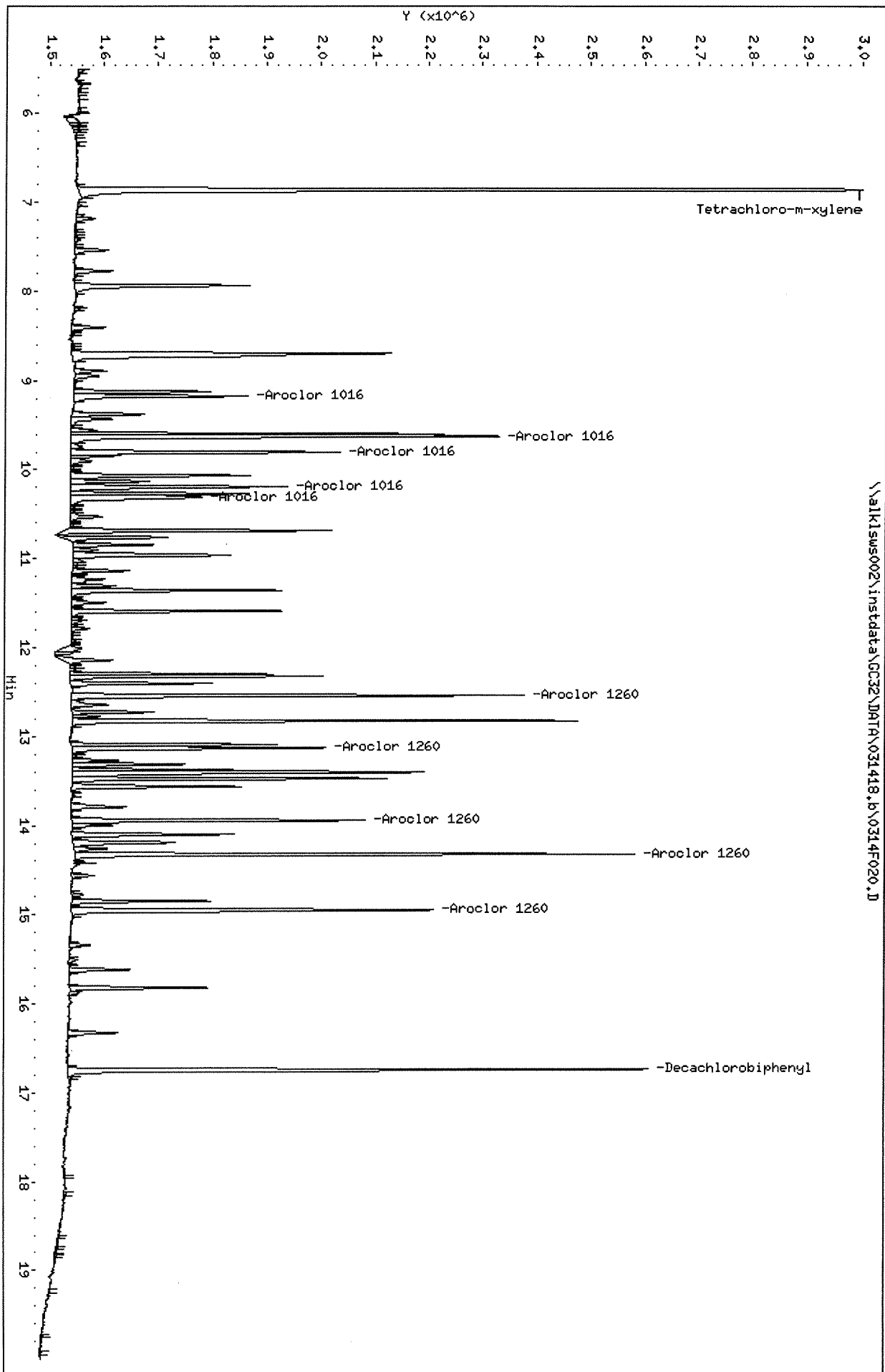
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\031418_r.b\0314F020.D
Date: 14-MAR-2018 22:06

Client ID:

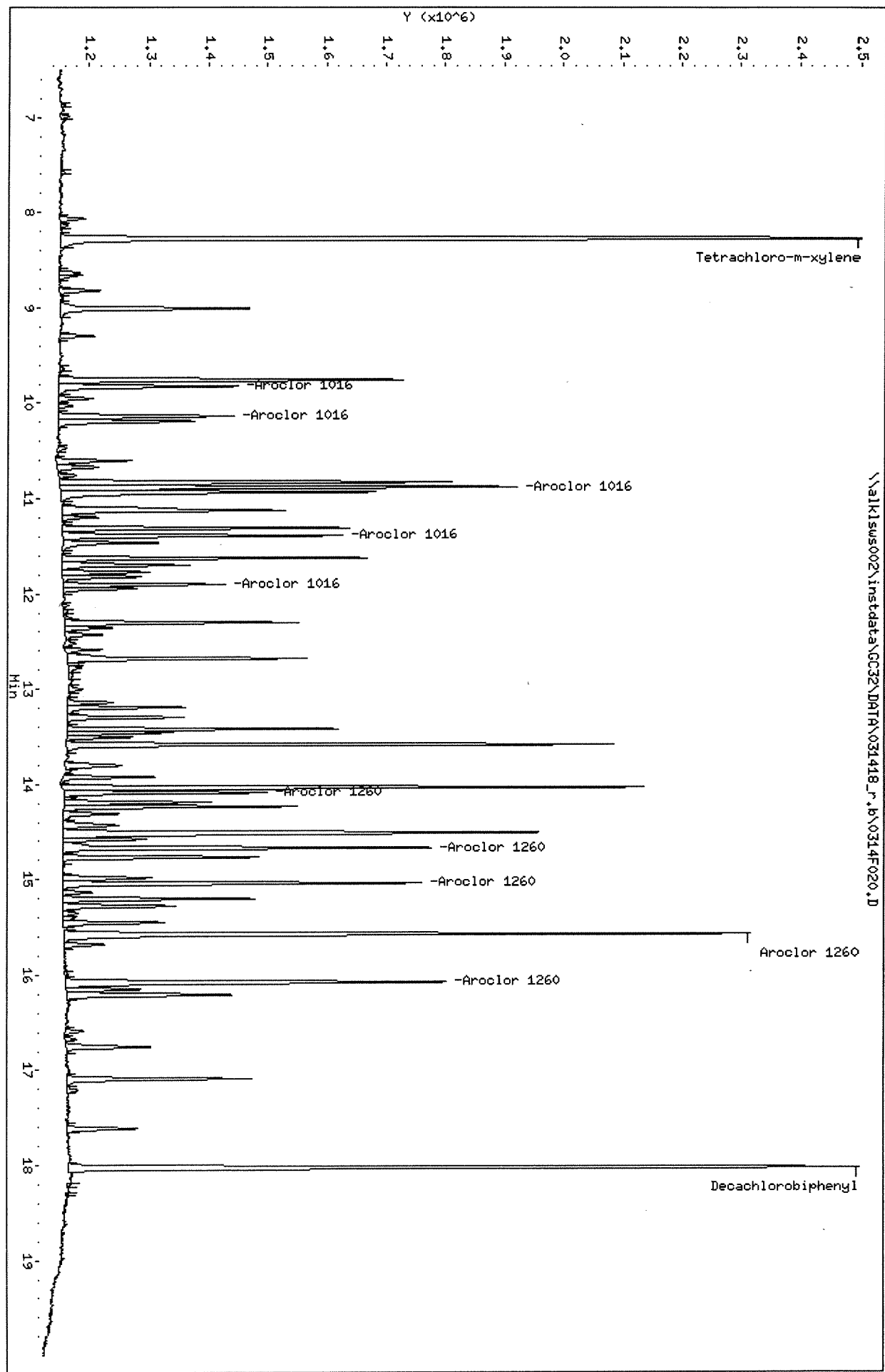
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

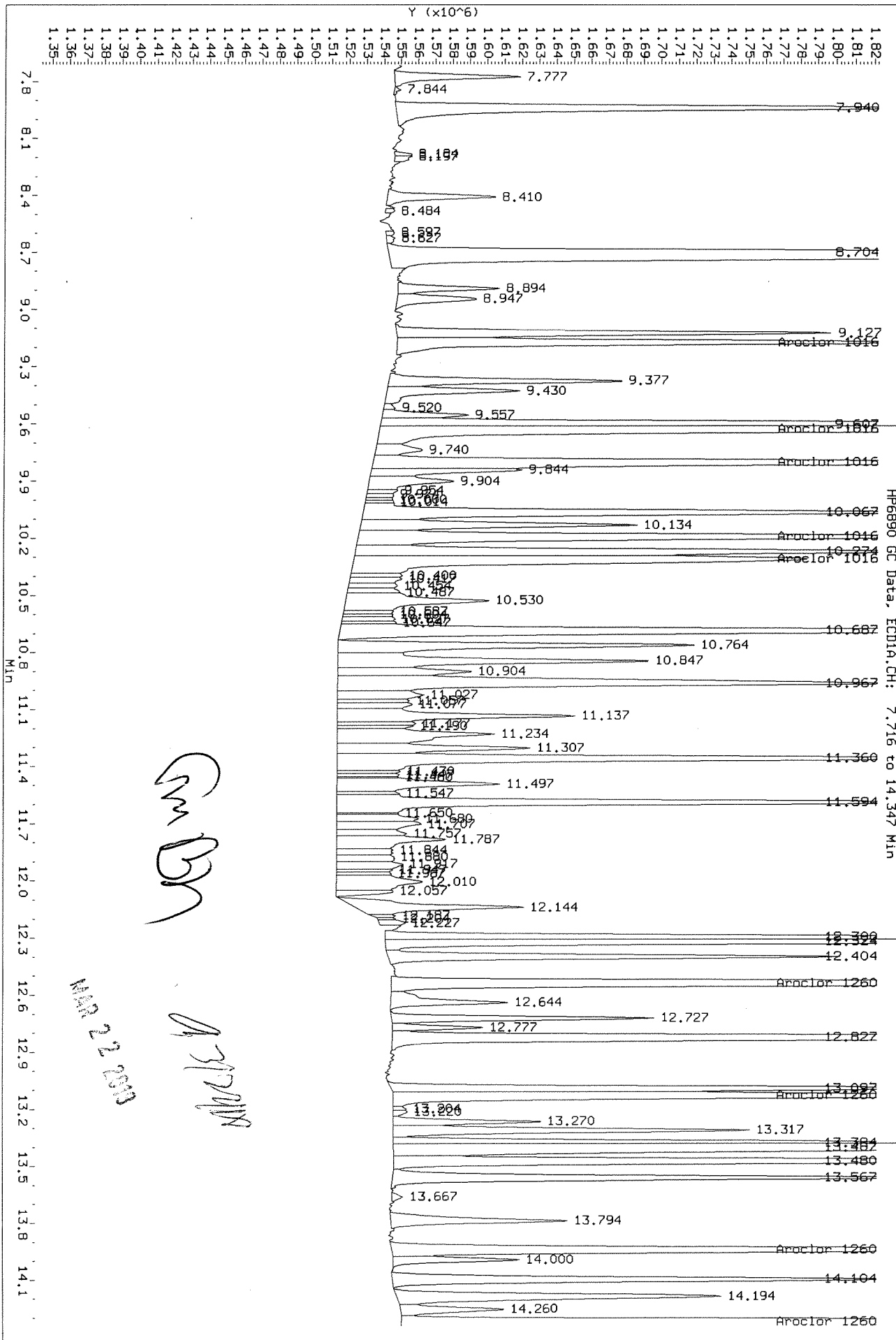
Instrument: GC32.i

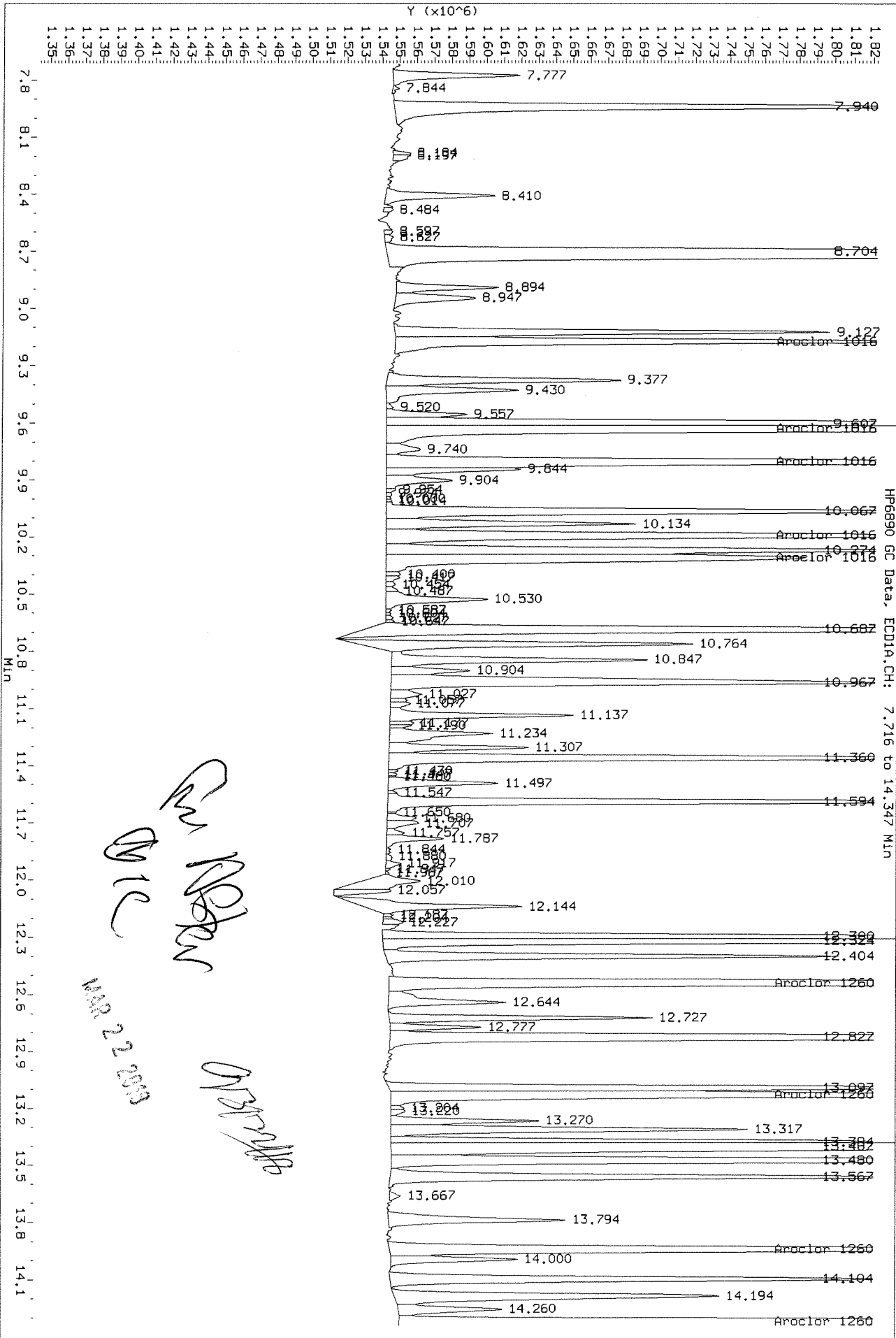
Operator: SMURRAY

Column diameter: 0.32



Data File: \\alklsws002\instdata\GC32\DATA\031418.b\0314F020.D
 Injection Date: 14-MAR-2018 22:06
 Instrument: GC32.1
 Client Sample ID:





Handwritten notes:
 W1C
 MAR 22 2018
 [Signature]

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F021.D
Lab ID: KWG1801562-4
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/14/2018 22:38
Date Quantitated: 03/22/2018 13:32
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F021.D
Lab ID: KWG1801562-4
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/14/2018 22:38
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F021.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F021.D	Vial:	2
Acqu Date:	03/14/2018 22:38	Quant Date:	03/22/2018 13:32
Run Type:	IB	MethodJoinID:	MJ1684
Lab ID:	KWG1801562-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	03/22/2018

Analysis Lot:	KWG1801562	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1684
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2			Rpt
Decachlorobiphenyl	16.77		11657	0	0.0120	0.0000			NA
%Recovery =					NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	Final Conc. Units:				Rpt
					ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\031418.B\0314F021.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F021.D	Vial:	2
Acqu Date:	03/14/2018 22:38	Quant Date:	03/22/2018 13:32
Run Type:	IB	MethodJoinID:	MJ1684
Lab ID:	KWG1801562-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units:

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	mg/Kg #1	mg/Kg #2	Rpt
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	1.13			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}		12.39	0	11210	0.0000	0.4920			
Aroclor 1254 {3}		12.73	0	87882	0.0000	1.47			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}		14.24	0	44392	0.0000	1.42			
Aroclors, Total		1.00	0	47828	0.0000	1.13	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F021.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F021.D
 Inj Date : 14-MAR-2018 22:38
 Sample Info: IB
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.868	8.235	21489	13728	0.0132	0.0101		100.00 (R)
Aroclor 1254	0.000	0.000	0	0	0.000	0.000		
	0.000	12.385	0	11210	0.000	0.492		
	0.000	12.732	0	87882	0.000	1.47		
	0.000	0.000	0	0	0.000	0.000		
	0.000	14.235	0	44392	0.000	1.42		
	Average of Peak Amounts =				0.000	1.13		
Decachlorobiphenyl	16.771	0.000	11657	0	0.0116	0.000		100.00 (R)
Aroclors, Total	0.000	1.000	0	47828	0.000	1.13		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\alkisus002\instdata\GC32\DATA\031418.b\0314F021.D

Date : 14-MAR-2018 22:38

Client ID:

Sample Info: 1B

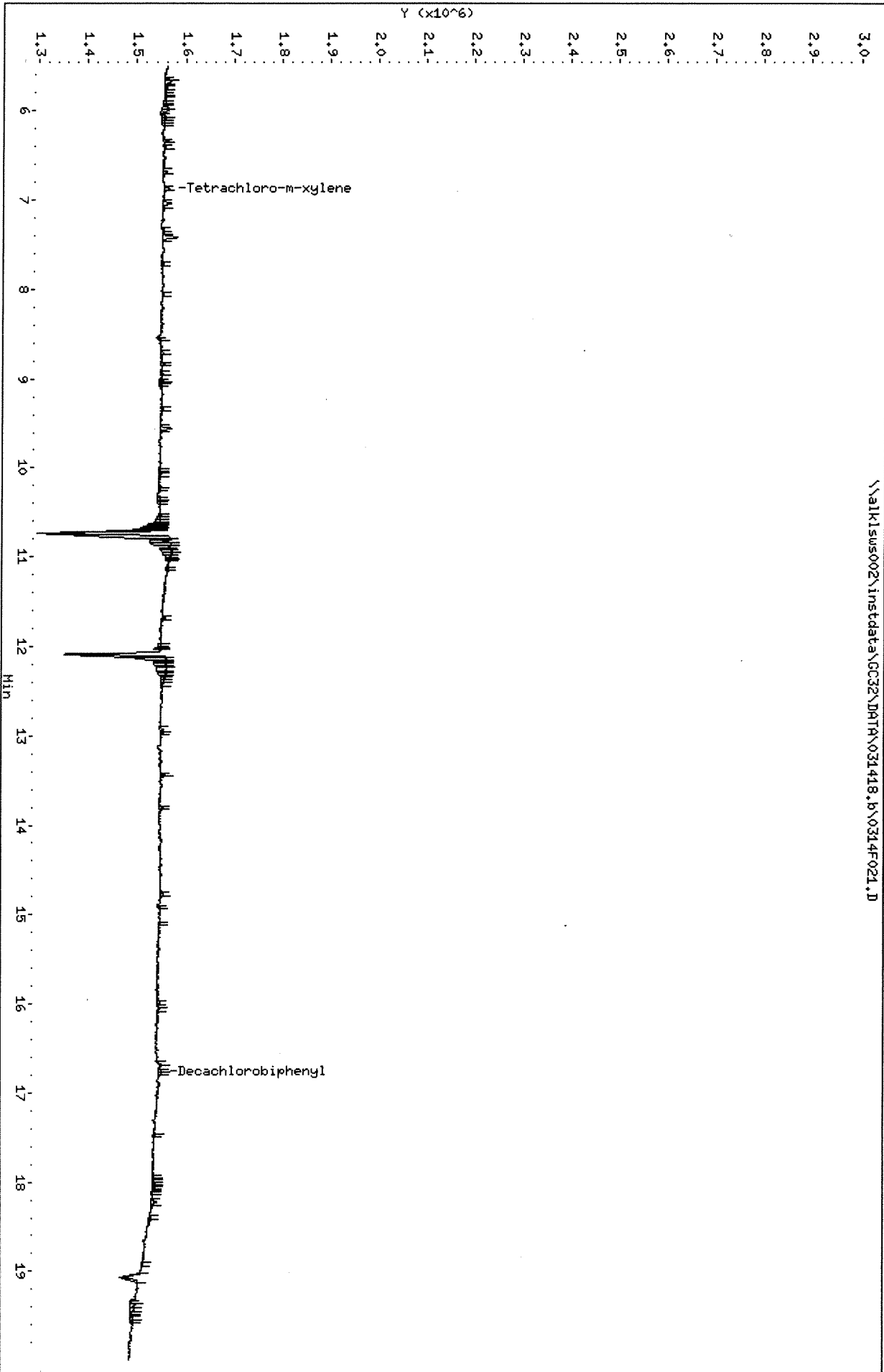
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

\\alkisus002\instdata\GC32\DATA\031418.b\0314F021.D

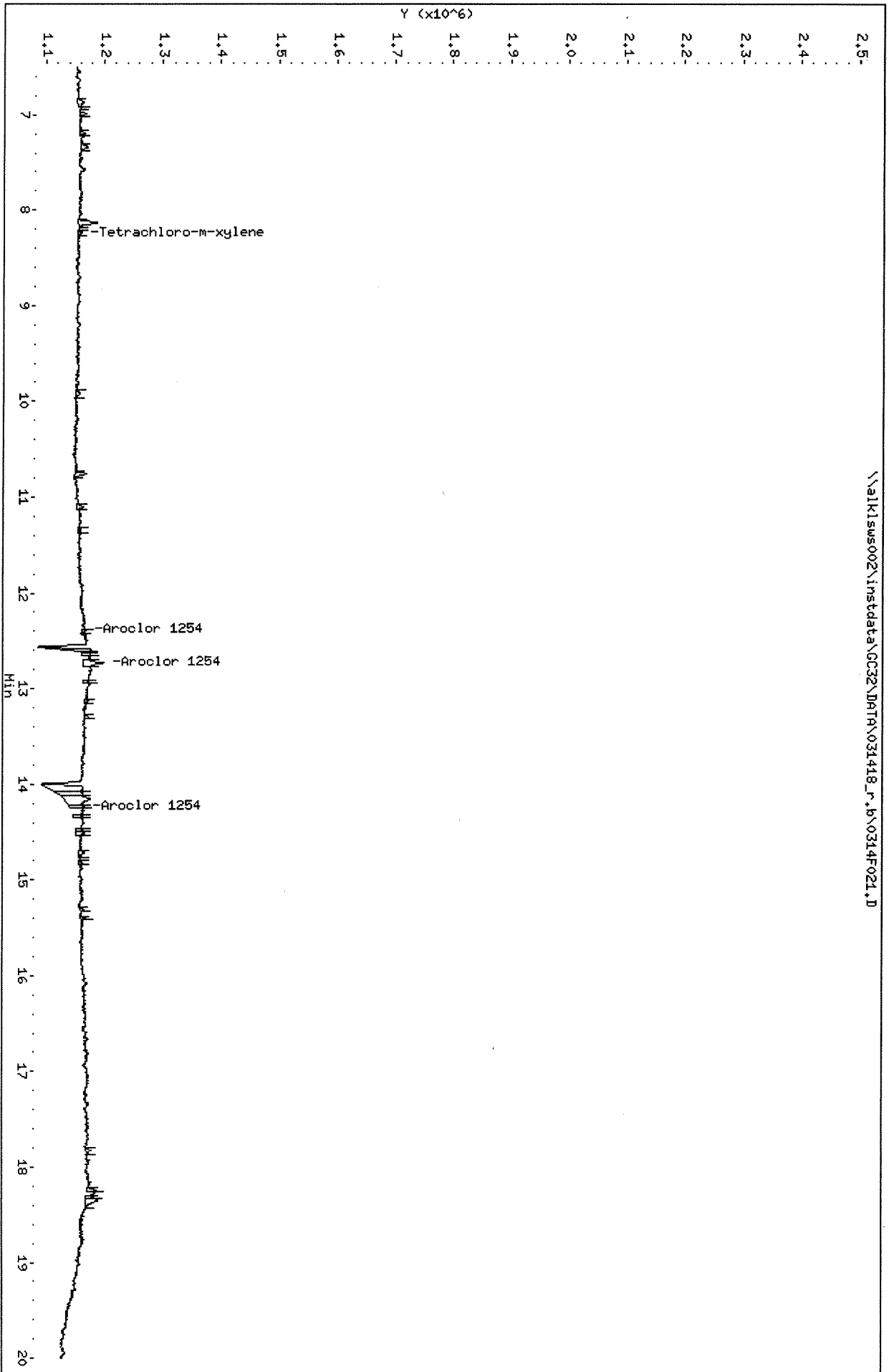


Data File: \\alk1sms002\instdata\GC32\DATA\031418_r_b\0314F021.D
Date: 14-MAR-2018 22:38

Client ID:
Sample Info: IB

Column phase: DB-XLB

Instrument: GC32.i
Operator: SMURRAY
Column diameter: 0.32



Exception Report

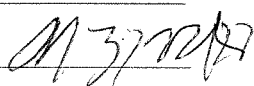
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F041.D
Lab ID: KWG1801562-5
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/15/2018 06:03
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F041.D
Lab ID: KWG1801562-5
RunType: CCV
Matrix: NOT APPLICABLE

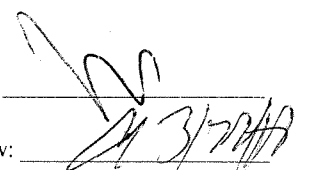
Date Acquired: 03/15/2018 06:03
Date Quantitated: 03/22/2018 13:34
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F041.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F041.D	Vial:	1
Acqu Date:	03/15/2018 06:03	Quant Date:	03/22/2018 13:33
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801562-5	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	03/22/2018

Analysis Lot:	KWG1801562	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt	
Tetrachloro-m-xylene	6.86	8.28	3721818	4025167	2.28	2.97	NA	NA	Limits = 70-130	NA
			%Recovery =				NA	NA		
Decachlorobiphenyl	16.75	18.03	2104845	2830910	2.09	2.58	NA	NA	Limits = 70-130	NA
			%Recovery =				NA	NA		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	26.66	30.39			
Aroclor 1016 {1}	9.18	9.83	621403	646023	26.23	24.69			
Aroclor 1016 {2}	9.63	10.14	1667916	660381	28.70	32.81			
Aroclor 1016 {3}	9.81	10.88	1025403	1602574	26.08	32.61			
Aroclor 1016 {4}	10.20	11.39	792380	955344	25.03	30.06			
Aroclor 1016 {5}	10.31	11.91	645808	508632	27.25	31.78			
Aroclor 1260			0	0	24.58	28.43			
Aroclor 1260 {1}	12.55	14.09	1536029	650786	26.14	30.34			
Aroclor 1260 {2}	13.14	14.68	923159	1193460	25.64	28.95			
Aroclor 1260 {3}	13.95	15.05	978222	1187440	25.20	29.32			
Aroclor 1260 {4}	14.33	15.58	1920850	2419880	22.76	28.16			
Aroclor 1260 {5}	14.96	16.08	1508197	1581009	23.20	25.39			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F041.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.66	25.00	7
Aroclor 1260		MS	NA	20					24.58	25.00	-2
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-9			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.5E+4	5			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.7E+4	15			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	4			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.2E+4	0			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.6E+4	9			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	6.1E+4	5			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.7E+4	3			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	1			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.7E+4	-9			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	6.0E+4	-7			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	8.4E+5	-16			

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F041.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					30.39	25.00	22 *
Aroclor 1260		MS	NA	20					28.43	25.00	14
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.6E+6	19			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.6E+4	-1			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.6E+4	31			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	6.4E+4	30			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.8E+4	20			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	2.0E+4	27			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.6E+4	21			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.8E+4	16			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.7E+4	17			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	9.7E+4	13			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	6.3E+4	2			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	1.1E+6	3			

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F041.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F041.D
 Inj Date : 15-MAR-2018 06:03
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.858	8.275	3721818	4025167	2.28	2.97		100.00
Aroclor 1016	9.178	9.829	621403	646023	26.2	24.7	80.00- 120.00	100.00
	9.632	10.135	1667916	660381	28.7	32.8	214.79- 322.18	268.41
	9.805	10.882	1025403	1602574	26.1	32.6	129.79- 194.69	165.01
	10.195	11.392	792380	955344	25.0	30.1	102.46- 153.69	127.51
	10.312	11.905	645808	508632	27.3	31.8	86.76- 130.14	103.93
	Average of Peak Amounts =				26.7	30.4		
Aroclor 1260	12.545	14.092	1536029	650786	26.1	30.3	80.00- 120.00	100.00
	13.138	14.675	923159	1193460	25.6	28.9	49.80- 74.70	60.10
	13.948	15.045	978222	1187440	25.2	29.3	53.43- 80.14	63.69
	14.332	15.575	1920850	2419880	22.8	28.2	101.63- 152.44	125.05
	14.955	16.082	1508197	1581009	23.2	25.4	79.27- 118.91	98.19
	Average of Peak Amounts =				24.6	28.4		
Decachlorobiphenyl	16.752	18.029	2104845	2830910	2.09	2.58		100.00

Data File: \\alkisus002\instdata\GC32\DATA\031418.b\0314F041.D

Date: 15-MAR-2018 06:03

Client ID:

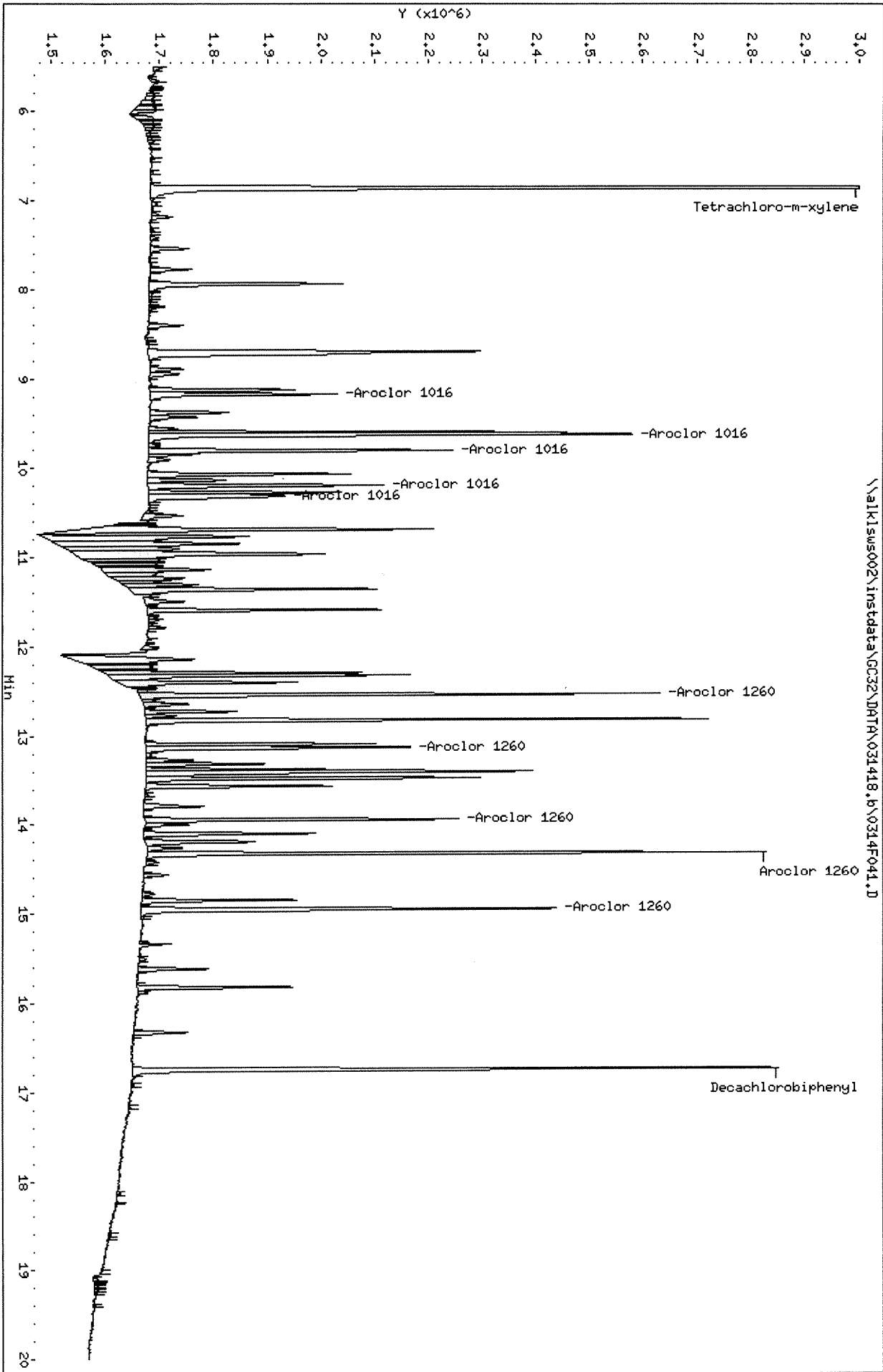
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-35MS

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alk1s002\instdata\GC32\DATA\031418_r.b\0314F041.D

Date: 15-MAR-2018 06:03

Client ID:

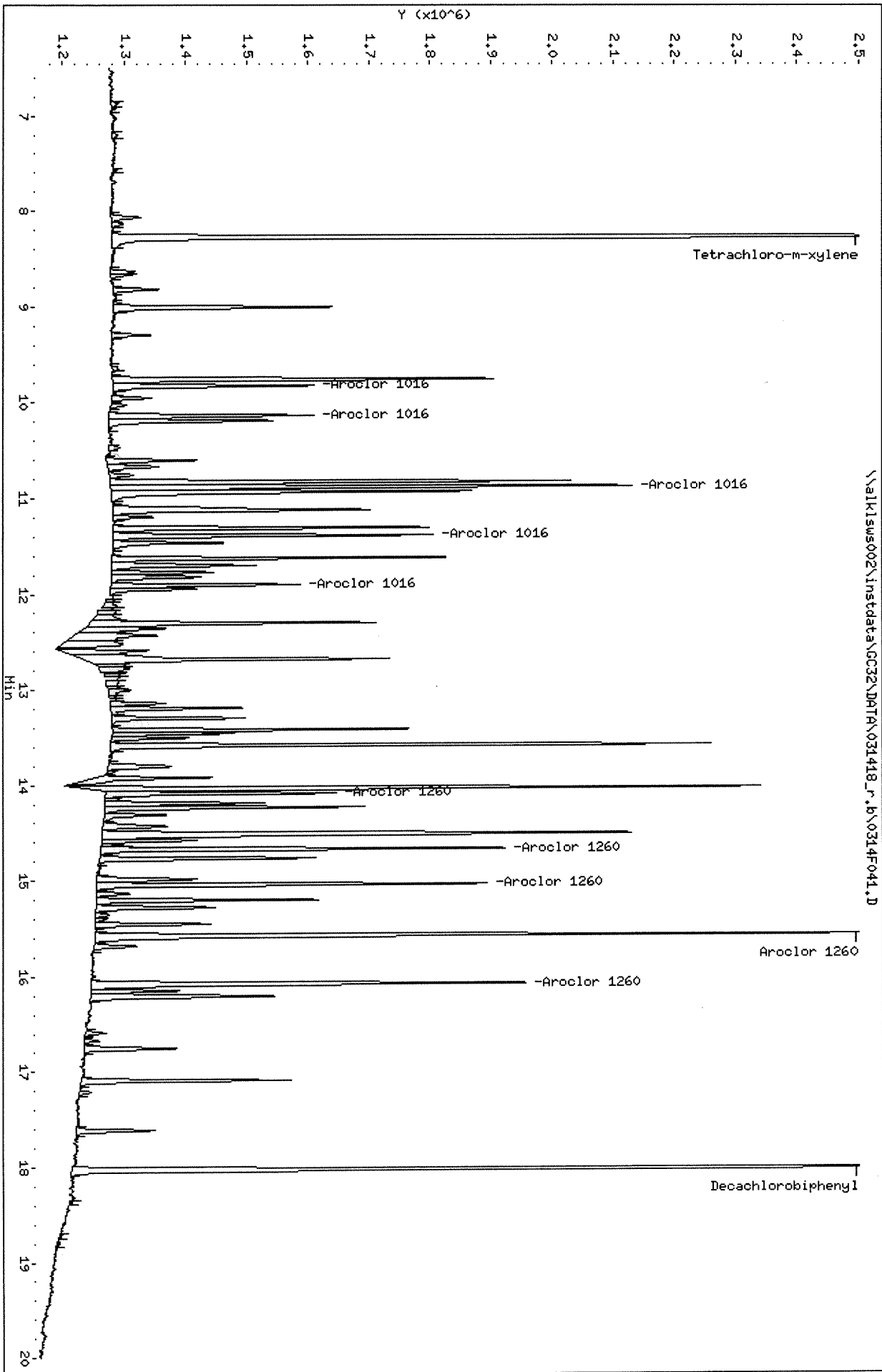
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\0314F042.D
Lab ID: KWG1801562-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/15/2018 06:35
Date Quantitated: 03/22/2018 13:33
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\031418_R.B\0314F042.D
Lab ID: KWG1801562-6
RunType: IB
Matrix: NOT APPLICABLE

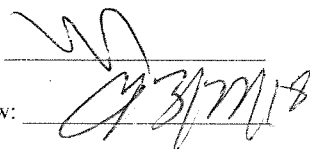
Date Acquired: 03/15/2018 06:35
Date Quantitated: 03/22/2018 13:34
Batch ID: KWG1801562
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



The Primary Review signature is a stylized 'W' or 'V' shape. The Secondary Review signature is a more complex scribble, possibly containing the date '3/22/18'.

Quantitation Report

Data File #1:	J:\GC32\DATA\031418.B\0314F042.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F042.D	Vial:	2
Acqu Date:	03/15/2018 06:35	Quant Date:	03/22/2018 13:33
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1801562-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	03/22/2018

Analysis Lot:	KWG1801562	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\031418.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	6.87		20578	0	0.0130	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.76		9684	0	0.0100	0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.4933	0.0000			
Aroclor 1016 {1}	9.17		8102	0	0.3420	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}	10.21		10989	0	0.3470	0.0000			
Aroclor 1016 {5}	10.34		18750	0	0.7910	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.4590	0.0000			
Aroclor 1232 {1}	7.95		5377	0	0.1640	0.0000			
Aroclor 1232 {2}	8.72		8511	0	0.2660	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}	10.21		10989	0	0.9470	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	1.85	0.0000			
Aroclor 1242 {1}	9.20		7120	0	0.3780	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\031418.B\0314F042.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\031418_r.b\0314F042.D	Vial:	2
Acqu Date:	03/15/2018 06:35	Quant Date:	03/22/2018 13:33
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1801562-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}	10.26		10089	0	0.5290	0.0000			
Aroclor 1242 {4}	10.97		111151	0	4.66	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	6.65			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}		12.47	0	257887	0.0000	6.79			
Aroclor 1248 {4}		12.64	0	139254	0.0000	4.79			
Aroclor 1248 {5}		12.75	0	123895	0.0000	8.37			
Aroclor 1254			0	0	10.41	2.70			
Aroclor 1254 {1}		12.32	0	45097	0.0000	0.8820			
Aroclor 1254 {2}	12.16	12.38	1200141	147016	29.01	6.45			
Aroclor 1254 {3}	12.31		156197	0	1.92	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}	12.82	14.26	9478	24358	0.3070	0.7770			
Aroclor 1260			0	0	0.4337	5.32			
Aroclor 1260 {1}	12.50	14.05	5911	319900	0.1010	14.92			
Aroclor 1260 {2}	13.18	14.72	39393	24792	1.09	0.6010			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}	14.94	16.08	6915	27108	0.1060	0.4350			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental - Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\031418.b\0314F042.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\0314F042.D
 Inj Date : 15-MAR-2018 06:35
 Sample Info: IB
 Misc Info :
 Cal Date : 15-MAR-2018 10:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\031418.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\031418_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.872	0.000	20578	0	0.0126	0.000		100.00 (R)
Aroclor 1016	9.172	0.000	8102	0	0.342	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	214.79- 322.18	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	129.79- 194.69	0.00 (T)
	10.208	0.000	10989	0	0.347	0.000	102.46- 153.69	135.63 (T)
	10.335	0.000	18750	0	0.791	0.000	86.76- 130.14	231.41 (T)
	Average of Peak Amounts =				0.493	0.000		
Aroclor 1232	7.952	0.000	5377	0	0.164	0.000	80.00- 120.00	100.00 (T)
	8.718	0.000	8511	0	0.266	0.000	75.51- 113.27	158.27 (T)
	0.000	0.000	0	0	0.000	0.000	61.92- 92.88	0.00 (T)
	10.208	0.000	10989	0	0.947	0.000	29.43- 44.14	204.36 (T)
	0.000	0.000	0	0	0.000	0.000	50.90- 76.34	0.00 (T)
	Average of Peak Amounts =				0.459	0.000		
Aroclor 1242	9.198	0.000	7120	0	0.378	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	188.17- 282.25	0.00 (T)
	10.258	0.000	10089	0	0.529	0.000	75.98- 113.97	141.69 (T)
	10.968	0.000	111151	0	4.66	0.000	97.61- 146.41	1560.98 (T)
	0.000	0.000	0	0	0.000	0.000	98.63- 147.94	0.00 (T)
	Average of Peak Amounts =				1.86	0.000		
Aroclor 1248	0.000	0.000	0	0	0.000	0.000		
	0.000	0.000	0	0	0.000	0.000		
	0.000	12.466	0	257887	0.000	6.79		
	0.000	12.636	0	139254	0.000	4.79		
	0.000	12.752	0	123895	0.000	8.36		
	Average of Peak Amounts =				0.000	6.65		
Aroclor 1254	0.000	12.316		45097		0.882	80.00- 120.00	100.00 (T)
	12.155	12.376	1200141	147016	29.0	6.45	64.52- 96.78	0.00 (T)
	12.308	0.000	156197		1.92		121.44- 182.17	0.00 (T)
	0.000	0.000					31.29- 46.94	0.00 (T)
	12.822	14.259	9478	24358	0.307	0.777	47.38- 71.07	0.00 (T)

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Average of Peak Amounts =					10.4	2.70		
Aroclor 1260	12.498	14.046	5911	319900	0.101	14.9	80.00- 120.00	100.00(T)
	13.175	14.719	39393	24792	1.09	0.601	49.80- 74.70	666.41(T)
	0.000	0.000					145.97- 218.95	0.00(T)
	0.000	0.000					297.47- 446.21	0.00(T)
	14.938	16.082	6915	27108	0.106	0.435	79.27- 118.91	116.99(T)
Average of Peak Amounts =					0.432	5.31		
Decachlorobiphenyl	16.762	0.000	9684	0	0.00962	0.000		100.00(R)
Aroclors, Total	1.000	1.000	536371	369769	13.7	14.7		0.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alklsws002\instdata\GC32\DATA\031418.b\0314F042.D

Date: 15-MAR-2018 06:35

Client ID:

Sample Info: IB

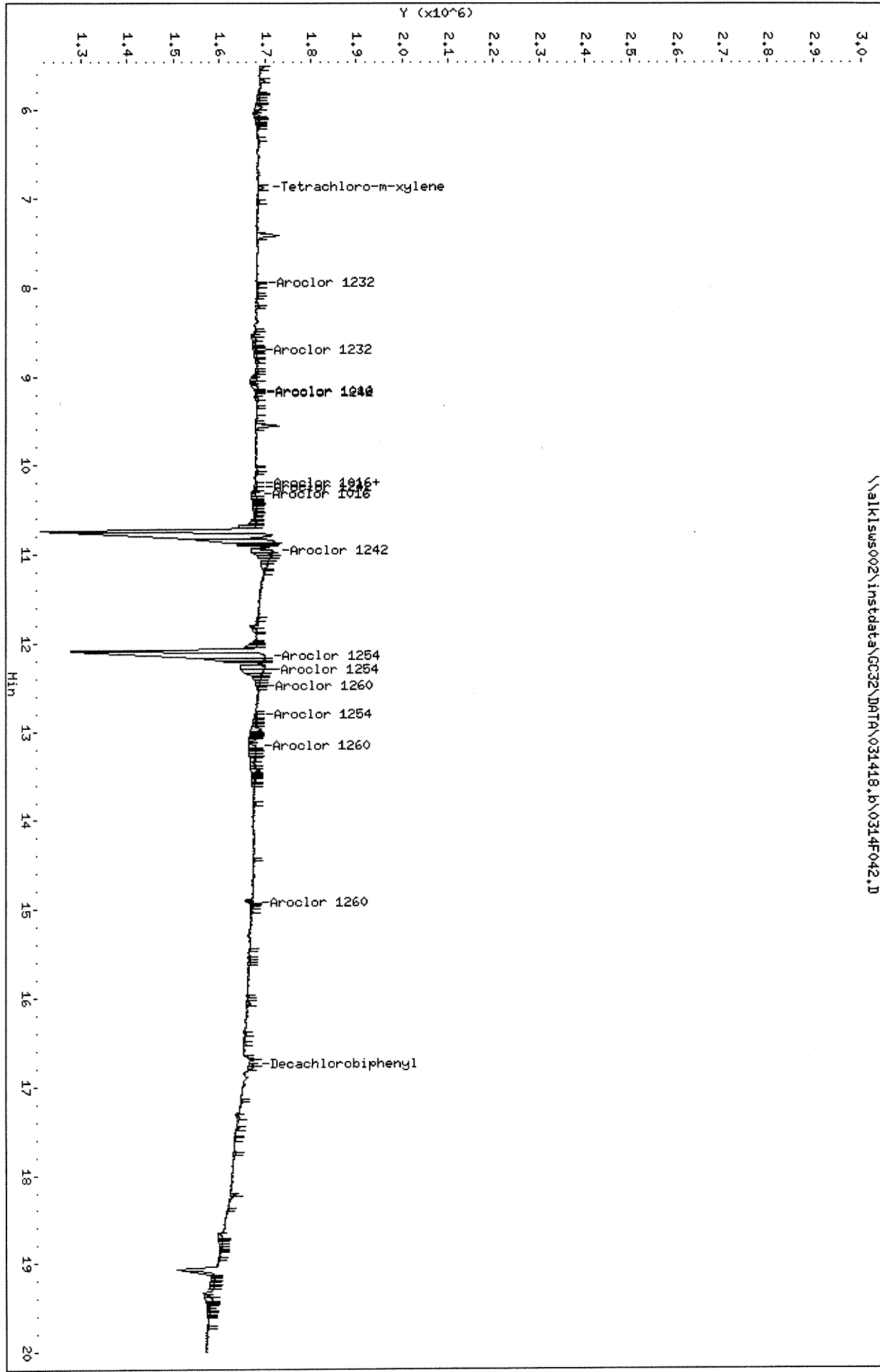
Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\031418.b\0314F042.D



Comment: Ultra Low Level PCB Aroclors by EPA 8082A
 Operator: SMURRAY
 Data Path: C:\GC32\DATA\032918\
 Pre-Seq Cmd:
 Post-Seq Cmd:

Method Sections To Run On A Barcode Mismatch
 (X) Full Method (X) Inject Anyway
 () Reprocessing Only () Don't Inject

AD: 15687
RUN: 585108

Line Type	Vial	DataFile	Method	Sample Name
1	CCV	95	0329F001	ULSPLT PRIMER
2	CCV	100	0329F002	ULSPLT PRIMER
3	CCV	100	0329F003	ULSPLT PRIMER
4	CCV	1	0329F004	ULSPLT 1660 25PPB PCB7-22J <i>OK</i>
5	IB	2	0329F005	ULSPLT IB
6	SMPL	3	0329F006	ULSPLT K1801267-008RR
7	SMPL	4	0329F007	ULSPLT K1801267-017RR
8	SMPL	11	0329F008	ULSPLT K1801917-002 RR
9	SMPL	12	0329F009	ULSPLT K1801917-003 RR
10	SMPL	13	0329F010	ULSPLT K1801917-004 RR
11	SMPL	14	0329F011	ULSPLT K1801917-005 RR
12	SMPL	15	0329F012	ULSPLT K1801917-006 RR
13	SMPL	16	0329F013	ULSPLT K1801917-007 RR
14	SMPL	17	0329F014	ULSPLT K1801988-001 RR
15	SMPL	18	0329F015	ULSPLT K1801988-002 RR
16	CCV	1	0329F016	ULSPLT 1660 25PPB PCB7-22J
17	IB	2	0329F017	ULSPLT IB
18	SMPL	19	0329F018	ULSPLT K1801988-003 RR
19	SMPL	20	0329F019	ULSPLT K1801988-004 RR
20	SMPL	5	0329F020	ULSPLT K1802251-001
21	SMPL	6	0329F021	ULSPLT K1802358-003
22	MS	7	0329F022	ULSPLT K1802358-003MS <i>soil for</i>
23	DMS	8	0329F023	ULSPLT K1802358-003DMS
24	LCS	9	0329F024	ULSPLT KWG1801589-LCS
25	MB	10	0329F025	ULSPLT KWG1801589-MB
26	CCV	1	0329F026	ULSPLT 1660 25PPB PCB7-22J <i>OK, OK</i>
27	IB	2	0329F027	ULSPLT IB

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	100	0314f001.d	1.	PRIMER		14 Mar 2018 09:57
2	100	0314f002.d	1.	PRIMER		14 Mar 2018 10:29
3	1	0314f003.d	1.	1660 25PPB PCB7-22J		14 Mar 2018 13:05
4	2	0314f004.d	1.	IB		14 Mar 2018 13:37
5	3	0314f005.d	1.	k1800699-006		14 Mar 2018 14:09
6	4	0314f006.d	1.	k1800802-001		14 Mar 2018 14:41
7	5	0314f007.d	1.	k1800802-002		14 Mar 2018 15:13
8	6	0314f008.d	1.	k1800802-003		14 Mar 2018 15:44
9	7	0314f009.d	1.	k1800802-004		14 Mar 2018 16:16
10	8	0314f010.d	1.	k1800877-008		14 Mar 2018 16:48
11	9	0314f011.d	1.	k1800965-003		14 Mar 2018 17:20
12	10	0314f012.d	1.	k1801355-008		14 Mar 2018 17:52
13	11	0314f013.d	1.	KWG1801278-LCS		14 Mar 2018 18:23
14	12	0314f014.d	1.	KWG1801278-DLCS		14 Mar 2018 18:55
15	13	0314f015.d	1.	KWG1801278-MB		14 Mar 2018 19:27
16	14	0314f016.d	1.	K1801917-001		14 Mar 2018 19:59
17	15	0314f017.d	1.	KWG1801286-LCS		14 Mar 2018 20:31
18	16	0314f018.d	1.	KWG1801286-DLCS		14 Mar 2018 21:03
19	17	0314f019.d	1.	KWG1801286-MB		14 Mar 2018 21:34
20	1	0314f020.d	1.	1660 25PPB PCB7-22J	-debb ok	14 Mar 2018 22:06
21	2	0314f021.d	1.	IB		14 Mar 2018 22:38
22	18	0314f022.d	1.	K1801267-008	CCV 1016 for 1	14 Mar 2018 23:10
23	19	0314f023.d	1.	K1801267-017		14 Mar 2018 23:42
24	20	0314f024.d	1.	KWG1801348-LCS		15 Mar 2018 00:13
25	21	0314f025.d	1.	KWG1801348-DLCS		15 Mar 2018 00:45
26	22	0314f026.d	1.	KWG1801348-MB		15 Mar 2018 01:17
27	27	0314f031.d	1.	K1801601-007		15 Mar 2018 01:49
28	29	0314f032.d	1.	K1801601-009		15 Mar 2018 02:21
29	30	0314f033.d	1.	K1801601-010		15 Mar 2018 02:52
30	31	0314f034.d	1.	K1801601-011		15 Mar 2018 03:24
31	32	0314f035.d	1.	K1801601-012		15 Mar 2018 03:56
32	34	0314f037.d	1.	K1801601-009MS		15 Mar 2018 04:28
33	36	0314f039.d	1.	KWG1801312-LCS		15 Mar 2018 05:00
34	37	0314f040.d	1.	KWG1801312-MB	-NR see BIS seq	15 Mar 2018 05:32
35	1	0314f041.d	1.	1660 25PPB PCB7-22J		15 Mar 2018 06:03
36	2	0314f042.d	1.	IB	-ok, 10167	15 Mar 2018 06:35

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F004.D
Lab ID: KWG1801852-1
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 13:28
Date Quantitated: 04/07/2018 10:32
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F004.D
Lab ID: KWG1801852-1
RunType: CCV
Matrix: NOT APPLICABLE

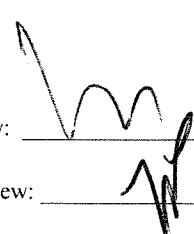
Date Acquired: 03/29/2018 13:28
Date Quantitated: 04/07/2018 10:33
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F004.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F004.D	Vial:	1
Acqu Date:	03/29/2018 13:28	Quant Date:	04/07/2018 10:32
Run Type:	CCV	MethodJoinID:	MJ1707
Lab ID:	KWG1801852-1	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	04/07/2018

Analysis Lot:	KWG1801852	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	6.86	8.27	3638329	3736602	2.23	2.76	NA	NA	NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.74	18.02	1746298	2255637	1.73	2.05	NA	NA	NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	24.19	26.68			
Aroclor 1016 {1}	9.17	9.82	596829m	611492	25.20	23.37			
Aroclor 1016 {2}	9.62	10.13	1448566m	589463	24.93	29.29			
Aroclor 1016 {3}	9.80	10.88	914452m	1367658	23.26	27.83			
Aroclor 1016 {4}	10.19	11.39	698566m	841000	22.06	26.47			
Aroclor 1016 {5}	10.31	11.90	604260m	423456	25.50	26.46			
Aroclor 1260			0	0	21.76	24.12			
Aroclor 1260 {1}	12.54	14.08	1362145	563130	23.18	26.26			
Aroclor 1260 {2}	13.13	14.66	858434	1016528	23.84	24.66			
Aroclor 1260 {3}	13.94	15.03	873752	1013499	22.51	25.02			
Aroclor 1260 {4}	14.32	15.57	1664130	2031501	19.71	23.64			
Aroclor 1260 {5}	14.95	16.07	1272272	1309431	19.57	21.03			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1707

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F004.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM</u> <u>Type</u>	<u>Curve Fit</u>	<u>Method</u> <u>Criteria</u>	<u>Min</u> <u>RF</u>	<u>ICAL</u> <u>RF</u>	<u>CCV</u> <u>RF</u>	<u>%Diff</u>	<u>Sol'n</u> <u>Conc.</u>	<u>True</u> <u>Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					24.19	25.00	-3
Aroclor 1260		MS	NA	20					21.76	25.00	-13
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-11			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.4E+4	1			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	5.8E+4	0			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.7E+4	-7			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	2.8E+4	-12			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.4E+4	2			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.4E+4	-7			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.4E+4	-5			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.5E+4	-10			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	6.7E+4	-21			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.1E+4	-22			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	7.0E+5	-31 *			

1 Compounds Failed CCV Criteria (8.33 Percent)

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1707

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F004.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.68	25.00	7
Aroclor 1260		MS	NA	20					24.12	25.00	-4
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.5E+6	10			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.4E+4	-7			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.4E+4	17			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	5.5E+4	11			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.4E+4	6			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.7E+4	6			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.3E+4	5			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.1E+4	-1			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.1E+4	0			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.1E+4	-5			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.2E+4	-16			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.0E+5	-18			

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F004.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F004.D
 Inj Date : 29-MAR-2018 13:28
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 30-MAR-2018 08:26
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.856	8.270	3638329	3736602	2.23	2.76		100.00
Aroclor 1016	9.173	9.820	596829	611492	25.2	23.4	80.00- 120.00	100.00 (M)
	9.623	10.130	1448566	589463	24.9	29.3	195.21- 292.82	242.71 (M)
	9.800	10.877	914452	1367658	23.3	27.8	113.59- 170.38	153.22 (M)
	10.190	11.387	698566	841000	22.1	26.5	88.40- 132.61	117.05 (M)
	10.306	11.900	604260	423456	25.5	26.5	83.10- 124.65	101.25 (M)
	Average of Peak Amounts =				24.2	26.7		
Aroclor 1260	12.536	14.083	1362145	563130	23.2	26.3	80.00- 120.00	100.00
	13.130	14.663	858434	1016528	23.8	24.7	49.39- 74.08	63.02
	13.943	15.033	873752	1013499	22.5	25.0	52.09- 78.13	64.15
	14.323	15.567	1664130	2031501	19.7	23.6	101.38- 152.06	122.17
	14.946	16.070	1272272	1309431	19.6	21.0	74.53- 111.80	93.40
	Average of Peak Amounts =				21.8	24.1		
Decachlorobiphenyl	16.740	18.017	1746298	2255637	1.73	2.05		100.00

QC Flag Legend

M - Compound response manually integrated.

APR 07 2018

Data File: \\alk1s002\instdata\GC32\DATA\032918.b\0329F004.D

Date: 29-MAR-2018 13:28

Client ID:

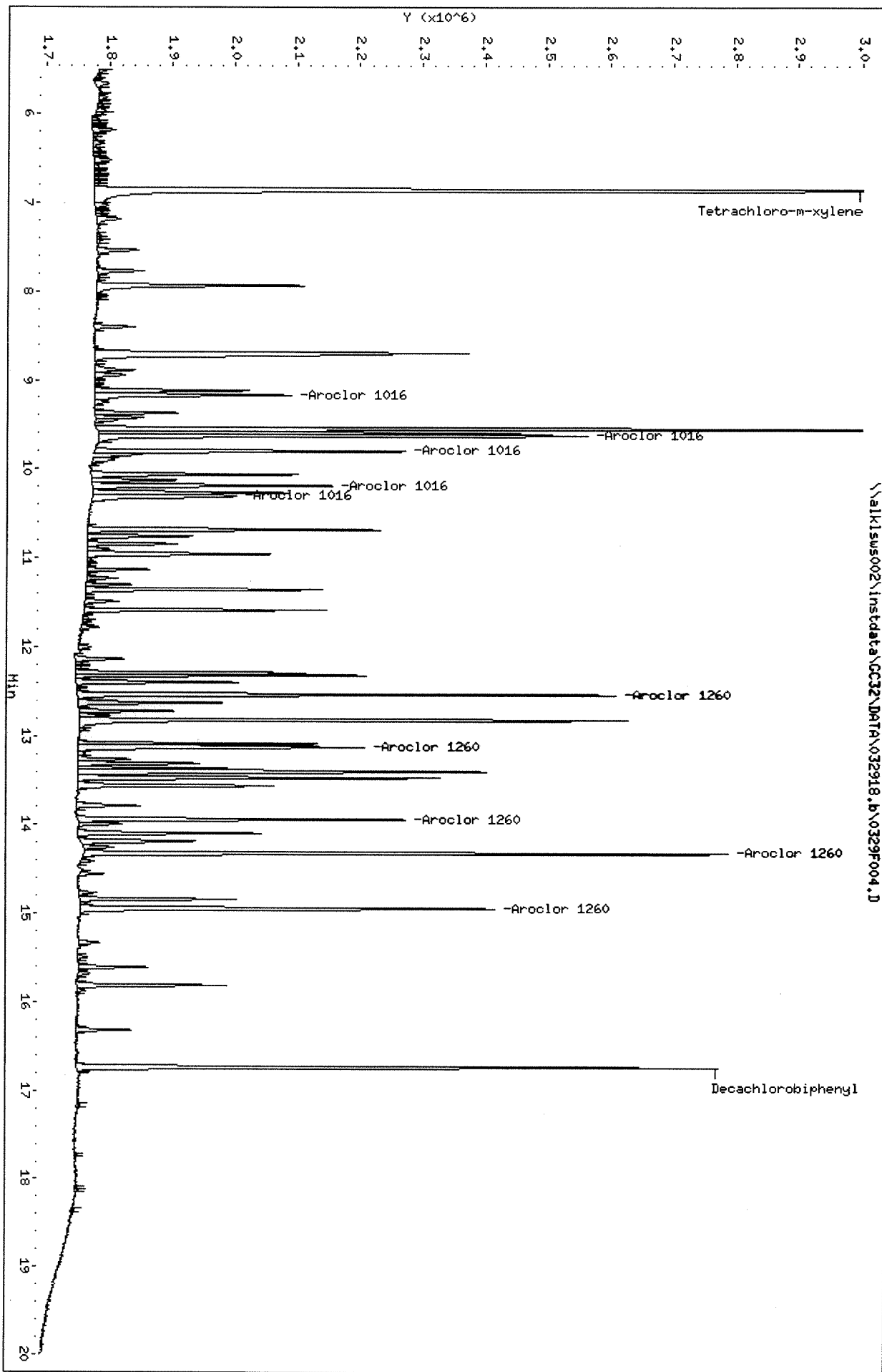
Sample Info: 1660 25PPB PCB7-223

Column phase: DB-35MS

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



Data File: \\alklsws002\instdata\CC32\DATA\032918_r_b\0329F004.D

Date : 29-MAR-2018 13:28

Client ID:

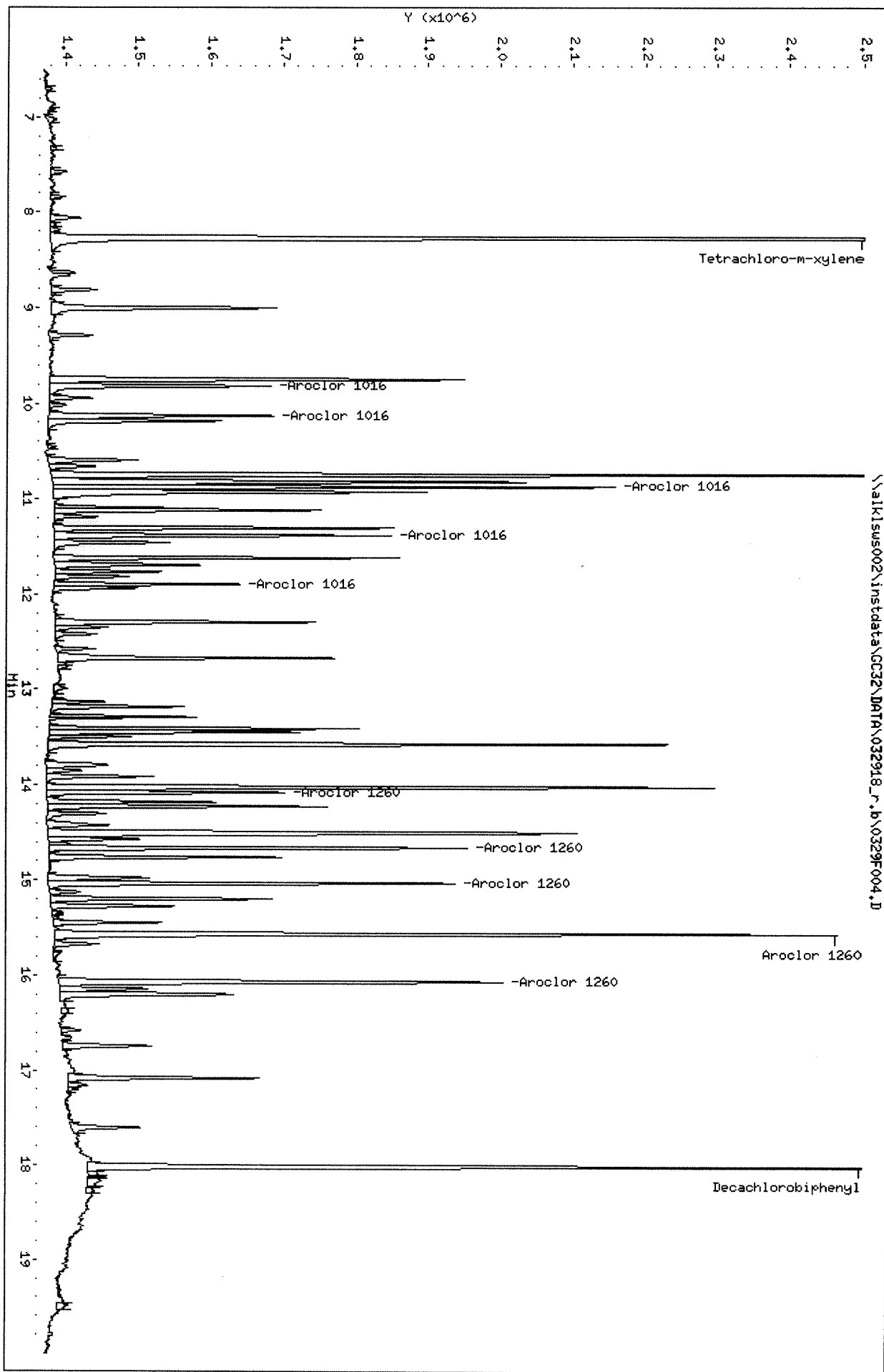
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-KLB

Instrument: CC32.1

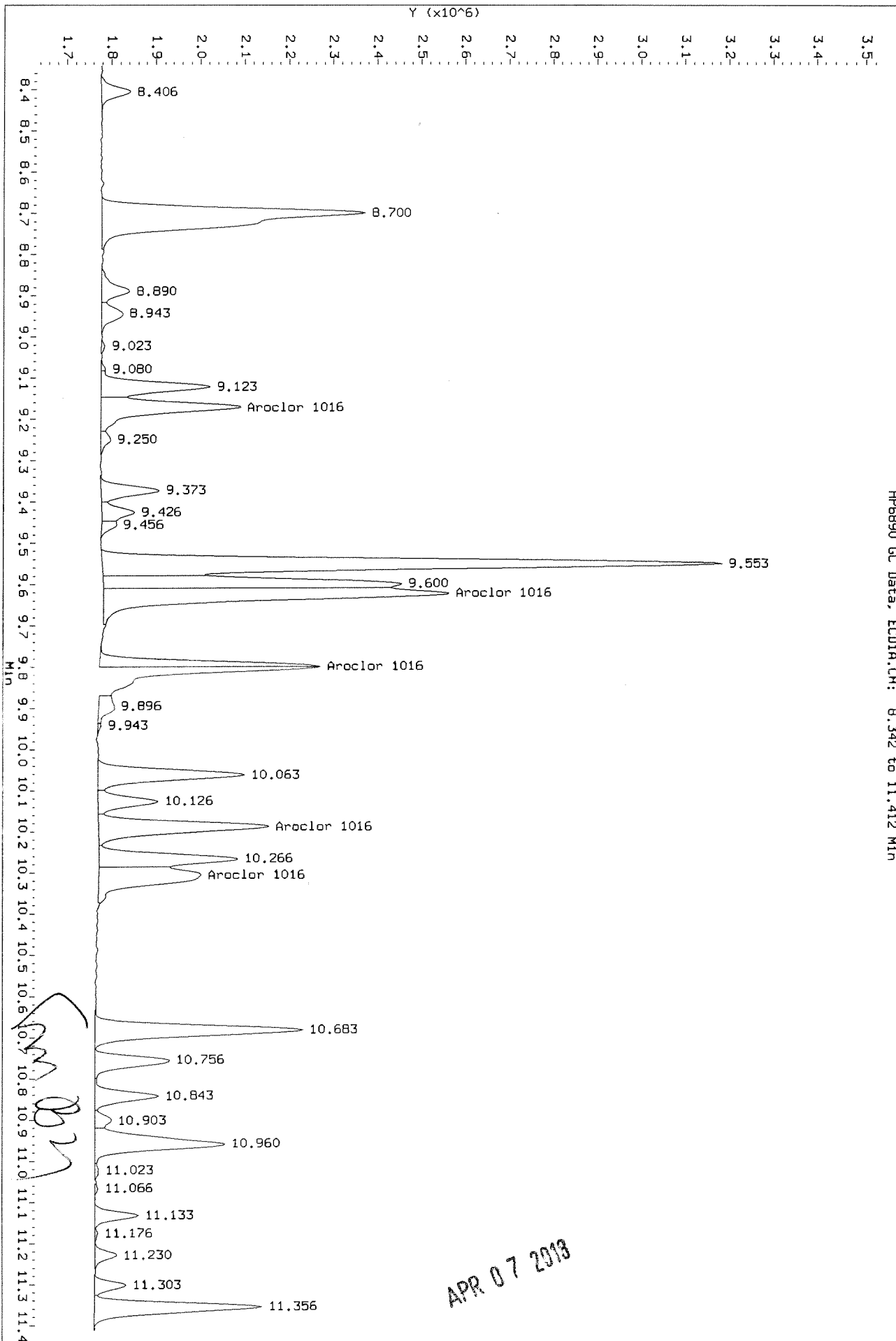
Operator: SHURRAY

Column diameter: 0.32



Data File: \\alkisus002\Instdata\GC32\DATA\032918.B\0329F004.D
Injection Date: 29-MAR-2018 13:28
Instrument: GC32.1
Client Sample ID:

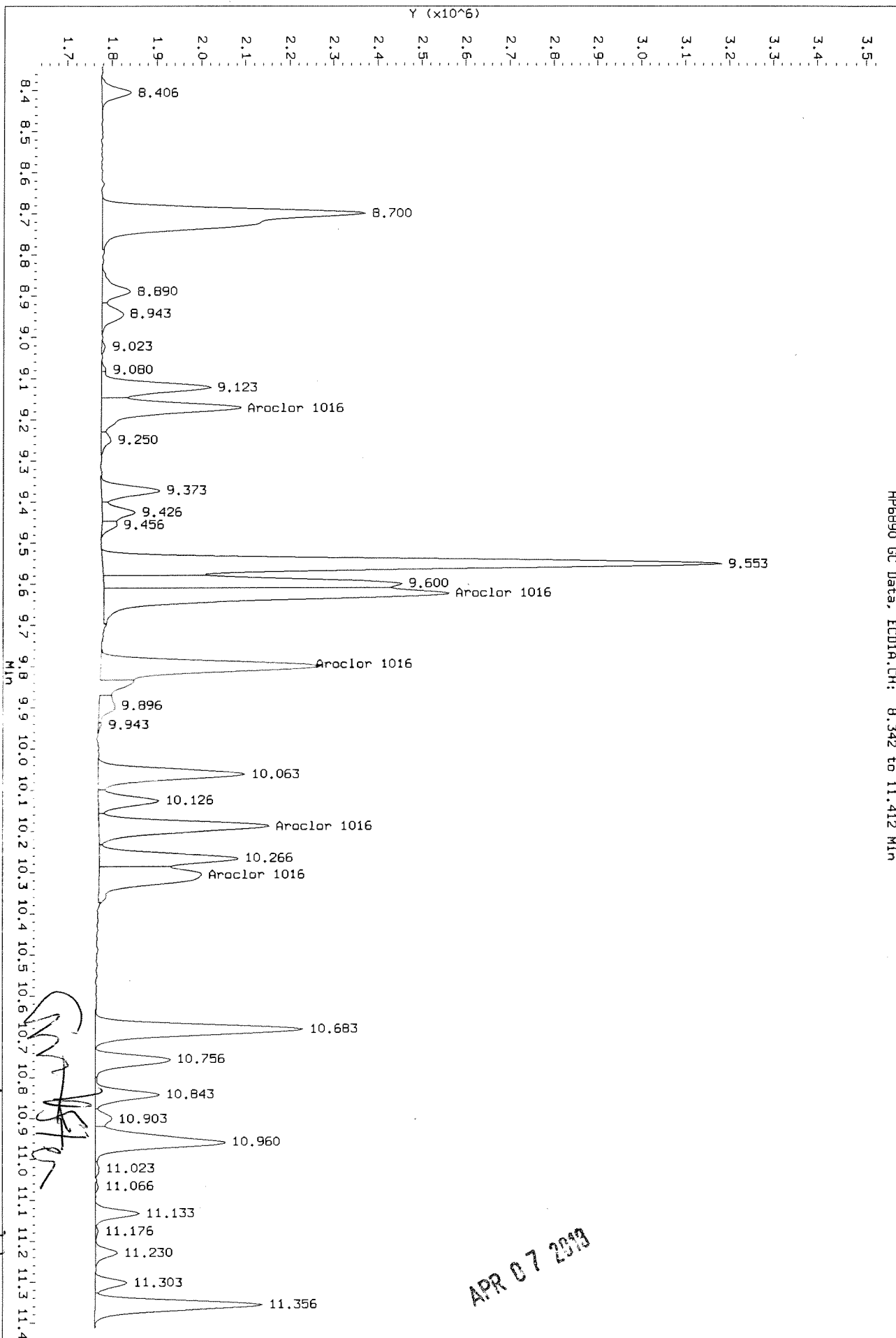
HP6890 GC Data, ECD1A.CH: 8.342 to 11.412 Min



APR 07 2018

Data File: \\alk1s002\instdata\GC32\DATA\032918.b\0329F004.D
Injection Date: 29-MAR-2018 13:28
Instrument: GC32.1
Client Sample ID:

HP6890 GC Data, ECD1A.CH: 8.342 to 11.412 Min



Signature
BIC SPK/Pol

APR 07 2018

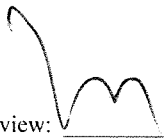

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F005.D
Lab ID: KWG1801852-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 14:00
Date Quantitated: 04/07/2018 10:32
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 
Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F005.D
Lab ID: KWG1801852-2
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 14:00
Date Quantitated: 04/07/2018 10:33
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F005.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F005.D	Vial:	2
Acqu Date:	03/29/2018 14:00	Quant Date:	04/07/2018 10:32
Run Type:	1B	MethodJoinID:	MJ1707
Lab ID:	KWG1801852-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	04/07/2018

Analysis Lot:	KWG1801852	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units: ug/L		Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	0.00		0	0		0.0000			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.0000	0.0000			
Aroclor 1242 {1}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\032918.B\0329F005.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F005.D	Vial:	2
Acqu Date:	03/29/2018 14:00	Quant Date:	04/07/2018 10:32
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWGI801852-2	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds

Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}			0	0	0.0000	0.0000			
Aroclor 1242 {4}			0	0	0.0000	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0	0.0000	0.0000			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}			0	0	0.0000	0.0000			
Aroclor 1254 {4}			0	0	0.0000	0.0000			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F005.D
Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F005.D
Inj Date : 29-MAR-2018 14:00
Sample Info: IB
Misc Info :
Cal Date : 30-MAR-2018 08:26
Operator : SMURRAY
Inst ID : GC32.i
Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
Sub List #1 : ALL.SUB
Sub List #2 : ALL.SUB
Col #1 Phase : DB-35MS
Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
----------	------	------	--------	--------	--------	--------	--------------	-------

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Data File: \\ajlk1s002\instdata\GC32\DATA\032918.b\0329F005.D

Date : 29-MAR-2018 14:00

Client ID:

Sample Info: IB

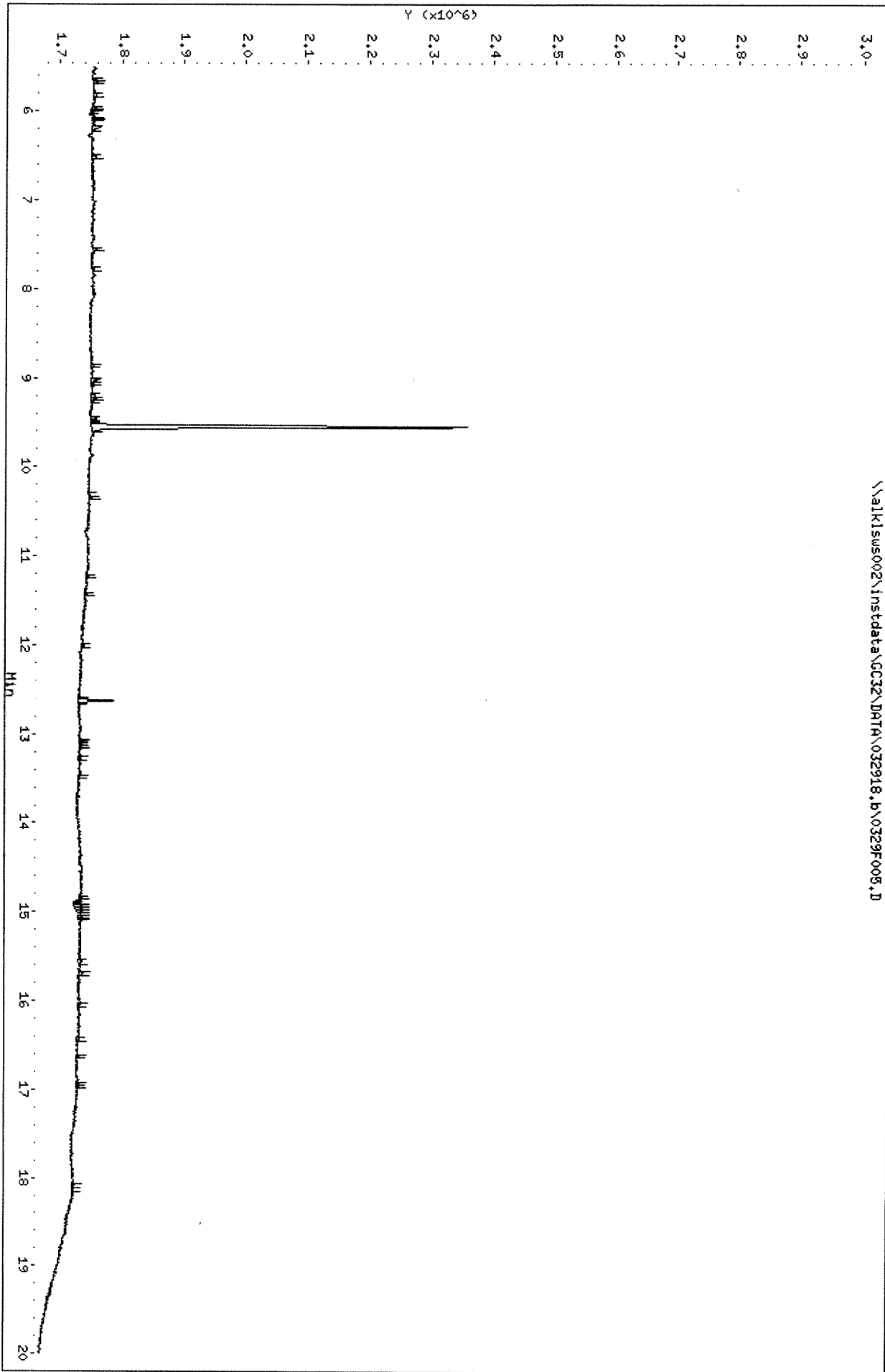
Column phase: DB-35MS

Instrument: GC32.1

Operator: SHURRAY

Column diameter: 0.32

\\ajlk1s002\instdata\GC32\DATA\032918.b\0329F005.D



Data File: \\alk1sws002\instdata\GC32\DATA\032918_r_b\0329F005.D

Date : 29-MAR-2018 14:00

Client ID:

Sample Info: IB

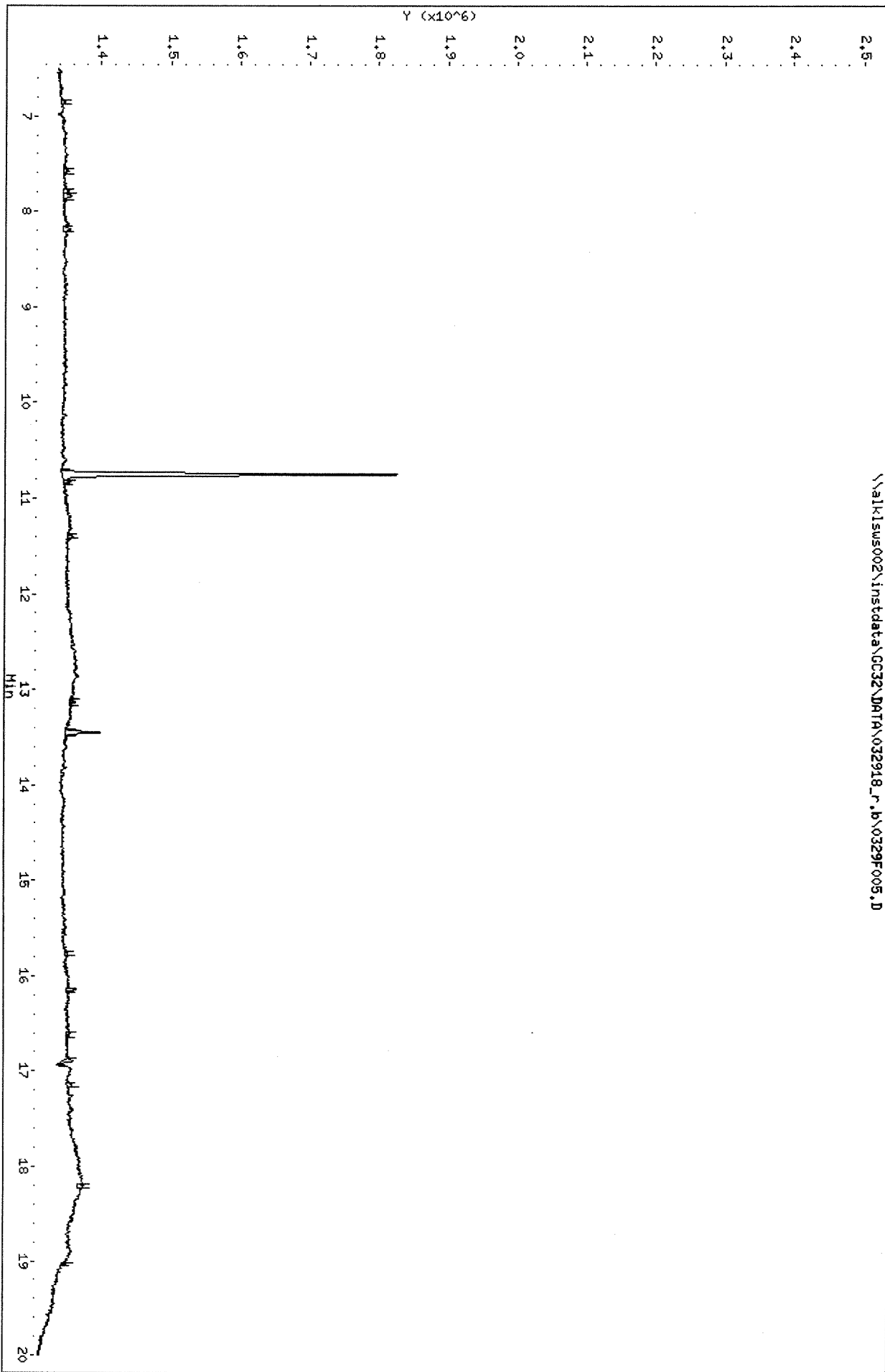
Column phase: DB-XLB

Instrument: GC32.i

Operator: SMURRAY

Column diameter: 0.32

\\alk1sws002\instdata\GC32\DATA\032918_r_b\0329F005.D



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F006.D
Lab ID: K1801267-008
RunType: SMPL
Matrix: WATER

Date Acquired: 03/29/2018 14:32
Date Quantitated: 04/07/2018 10:32
Batch ID: KWG1801852
Analysis Method: 8082A
ListJoinID: LJ18637

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA		x
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-30.6	NA	20	Re
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-25.4	NA	20	
Lab Control Spike	Aroclor 1260 {3}	131	70	130	OK
Surrogates	Decachlorobiphenyl	35	70	130	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F016.D
Lab ID: KWG1801852-3
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 19:50
Date Quantitated: 04/07/2018 10:42
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F016.D
Lab ID: KWG1801852-3
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 19:50
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F016.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F016.D	Vial:	1
Acqu Date:	03/29/2018 19:50	Quant Date:	04/07/2018 10:42
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801852-3	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	04/07/2018

Analysis Lot:	KWG1801852	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.85	8.27	3840433	4058424	2.35	2.99			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.74	18.02	1878467	2352363	1.87	2.14			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	26.25	28.82			
Aroclor 1016 {1}	9.17	9.82	655004	622417	27.65	23.79			
Aroclor 1016 {2}	9.62	10.13	1592007	632562	27.39	31.43			
Aroclor 1016 {3}	9.80	10.88	980763	1493229	24.95	30.39			
Aroclor 1016 {4}	10.19	11.39	757791	941189	23.93	29.62			
Aroclor 1016 {5}	10.30	11.90	647748	462424	27.34	28.89			
Aroclor 1260			0	0	23.22	26.27			
Aroclor 1260 {1}	12.53	14.08	1423138	642526	24.21	29.96			
Aroclor 1260 {2}	13.13	14.66	891321	1123693	24.75	27.26			
Aroclor 1260 {3}	13.94	15.03	938209	1073517	24.17	26.50			
Aroclor 1260 {4}	14.32	15.57	1835253	2157209	21.74	25.10			
Aroclor 1260 {5}	14.95	16.07	1380291	1404565	21.23	22.55			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F016.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					26.25	25.00	5
Aroclor 1260		MS	NA	20					23.22	25.00	-7
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-6			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.6E+4	11			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	6.4E+4	10			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	3.9E+4	0			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.0E+4	-4			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	2.6E+4	9			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.7E+4	-3			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.6E+4	-1			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.8E+4	-3			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.3E+4	-13			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.5E+4	-15			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	7.5E+5	-25 *			

1 Compounds Failed CCV Criteria (8.33 Percent)

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F016.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					28.82	25.00	15
Aroclor 1260		MS	NA	20					26.27	25.00	5
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.6E+6	20			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.5E+4	-5			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.5E+4	26			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	6.0E+4	22			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.8E+4	18			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.8E+4	16			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.6E+4	20			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.5E+4	9			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.3E+4	6			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.6E+4	0			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.6E+4	-10			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.4E+5	-14			

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F016.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F016.D
 Inj Date : 29-MAR-2018 19:50
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 07-APR-2018 10:33
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.853	8.267	3840433	4058424	2.35	2.99		100.00
Aroclor 1016	9.170	9.820	655004	622417	27.7	23.8	80.00- 120.00	100.00
	9.620	10.130	1592007	632562	27.4	31.4	195.21- 292.82	243.05
	9.797	10.877	980763	1493229	24.9	30.4	113.59- 170.38	149.73
	10.187	11.387	757791	941189	23.9	29.6	88.40- 132.61	115.69
	10.303	11.900	647748	462424	27.3	28.9	83.10- 124.65	98.89
	Average of Peak Amounts =				26.2	28.8		
Aroclor 1260	12.533	14.084	1423138	642526	24.2	30.0	80.00- 120.00	100.00
	13.127	14.664	891321	1123693	24.8	27.3	49.39- 74.08	62.63
	13.940	15.034	938209	1073517	24.2	26.5	52.09- 78.13	65.93
	14.320	15.567	1835253	2157209	21.7	25.1	101.38- 152.06	128.96
	14.947	16.070	1380291	1404565	21.2	22.6	74.53- 111.80	96.99
	Average of Peak Amounts =				23.2	26.3		
Decachlorobiphenyl	16.737	18.020	1878467	2352363	1.87	2.14		100.00

Data File: \\alk1s002\instdata\GC32\DATA\032918.b\0329F016.D
Date : 29-MAR-2018 19:50

Client ID:

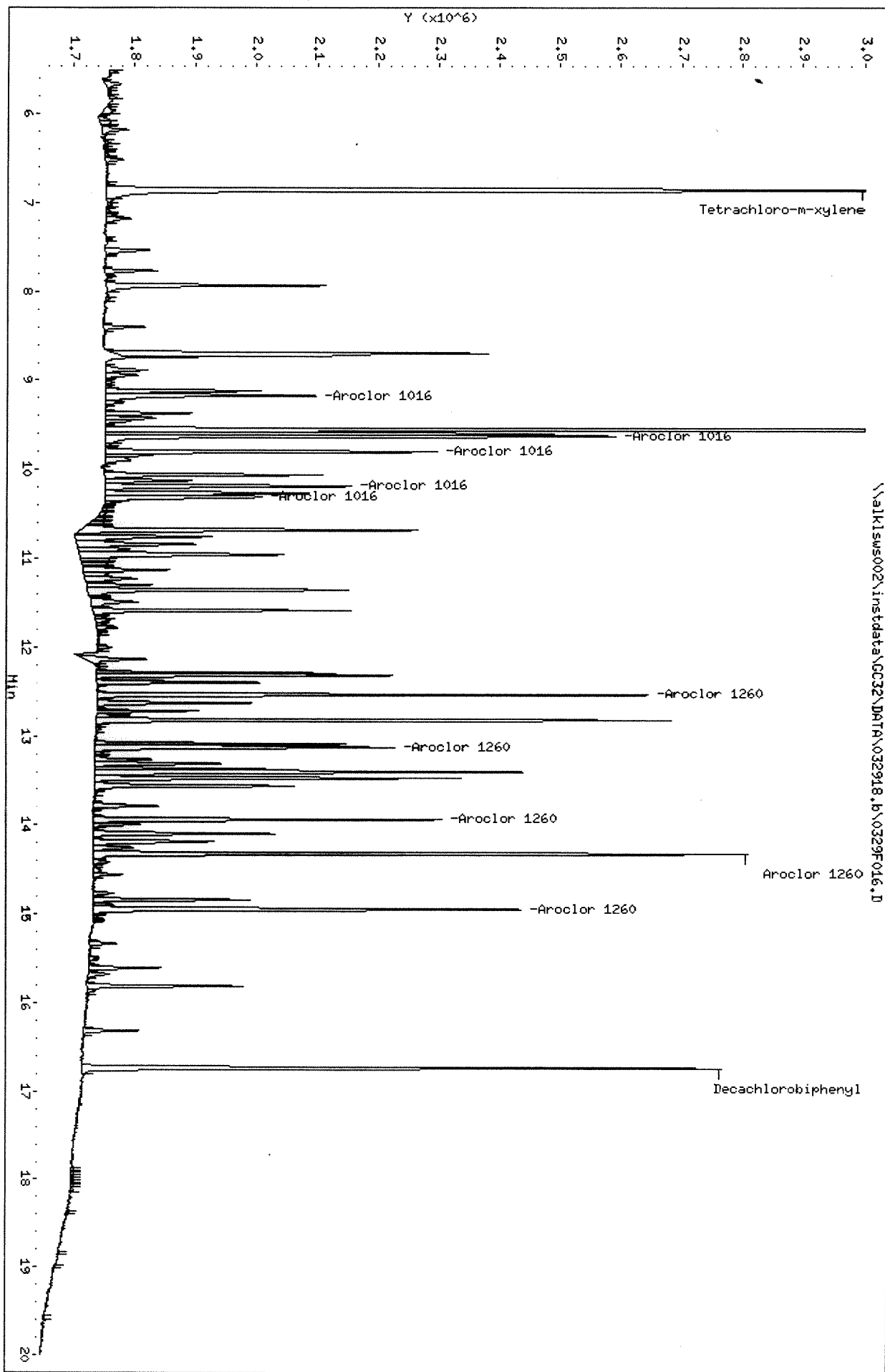
Sample Info: 1660 25PPB PCB7-223

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1s002\instdata\GC32\DATA\032918_r_b\0329F016.D

Date: 29-MAR-2018 19:50

Client ID:

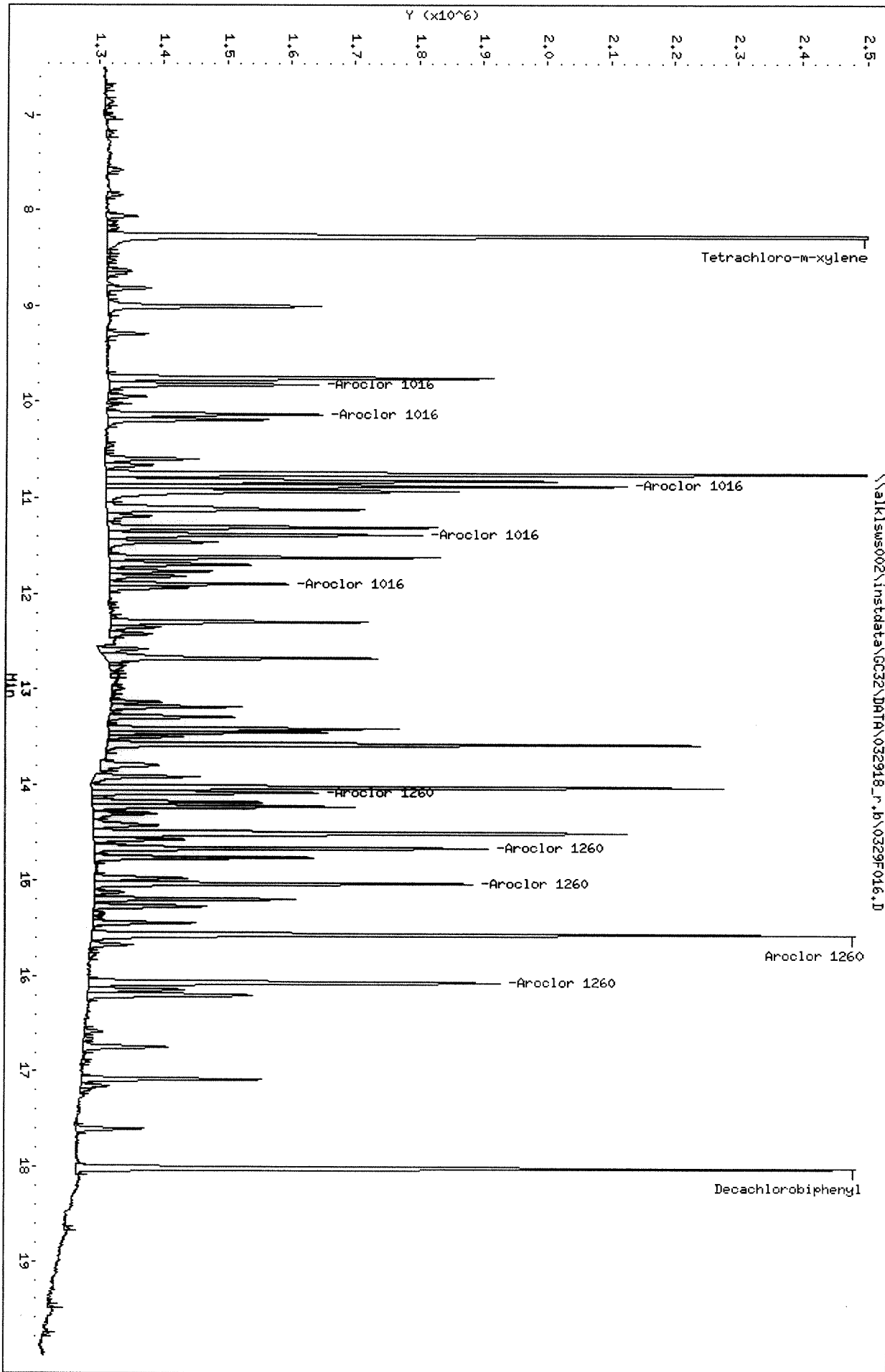
Sample Info: 1660 25PPB PCB7-22J

Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F017.D
Lab ID: KWG1801852-4
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 20:21
Date Quantitated: 04/07/2018 10:42
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F017.D
Lab ID: KWG1801852-4
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/29/2018 20:21
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F017.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F017.D	Vial:	2
Acqu Date:	03/29/2018 20:21	Quant Date:	04/07/2018 10:42
Run Type:	IB	MethodJoinID:	MJ1662
Lab ID:	KWG1801852-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	04/07/2018

Analysis Lot:	KWG1801852	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1662
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2				Rpt
Tetrachloro-m-xylene	0.00		0	0		0.0000				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	0.00		0	0		0.0000				NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL		Final Conc. Units: ug/L		Rpt
					#1	#2	#1	#2	
Aroclor 1016			0	0	0.0000	0.0000			
Aroclor 1016 {1}			0	0	0.0000	0.0000			
Aroclor 1016 {2}			0	0	0.0000	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}			0	0	0.0000	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.4800	0.0000			
Aroclor 1242 {1}	9.20		12868	0	0.6830	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\032918.B\0329F017.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F017.D	Vial:	2
Acqu Date:	03/29/2018 20:21	Quant Date:	04/07/2018 10:42
Run Type:	IB	MethodJoinID:	MJ1662
Lab ID:	KWG1801852-4	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}			0	0	0.0000	0.0000			
Aroclor 1242 {3}	10.32		9111	0	0.4780	0.0000			
Aroclor 1242 {4}	11.00		6672	0	0.2790	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0	0.0000	0.0000			
Aroclor 1248 {2}			0	0	0.0000	0.0000			
Aroclor 1248 {3}			0	0	0.0000	0.0000			
Aroclor 1248 {4}			0	0	0.0000	0.0000			
Aroclor 1248 {5}			0	0	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.4390			
Aroclor 1254 {1}		12.36	0	12000	0.0000	0.2350			
Aroclor 1254 {2}			0	0	0.0000	0.0000			
Aroclor 1254 {3}		12.69	0	33606	0.0000	0.5630			
Aroclor 1254 {4}		13.02	0	11404	0.0000	0.5190			
Aroclor 1254 {5}			0	0	0.0000	0.0000			
Aroclors, Total	1.00?	1.00?	24826	19003	0.6040	0.4390	J	J	
Aroclor 1260			0	0	0.0000	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}			0	0	0.0000	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}			0	0	0.0000	0.0000			
Aroclor 1260 {5}			0	0	0.0000	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0	0.0000	0.0000			
Aroclor 1262 {2}			0	0	0.0000	0.0000			
Aroclor 1262 {3}			0	0	0.0000	0.0000			
Aroclor 1262 {4}			0	0	0.0000	0.0000			
Aroclor 1262 {5}			0	0	0.0000	0.0000			
Aroclor 1268			0	0	0.1237	0.0000			
Aroclor 1268 {1}	14.85		8694	0	0.0640	0.0000			
Aroclor 1268 {2}	14.96		29802	0	0.2420	0.0000			
Aroclor 1268 {3}	15.35		7332	0	0.0650	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound
D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F017.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F017.D
 Inj Date : 29-MAR-2018 20:21
 Sample Info: IB
 Misc Info :
 Cal Date : 07-APR-2018 10:33
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Aroclor 1242	9.199	0.000	12868	0	0.683	0.000	80.00- 120.00	100.00 (T)
	0.000	0.000	0	0	0.000	0.000	188.17- 282.25	0.00 (T)
	10.323	0.000	9111	0	0.478	0.000	75.98- 113.97	70.80 (T)
	10.996	0.000	6672	0	0.279	0.000	97.61- 146.41	51.85 (T)
	0.000	0.000	0	0	0.000	0.000	98.63- 147.94	0.00 (T)
	Average of Peak Amounts =				0.480	0.000		
Aroclor 1254	0.000	12.360	0	12000	0.000	0.235		
	0.000	0.000	0	0	0.000	0.000		
	0.000	12.693	0	33606	0.000	0.563		
	0.000	13.023	0	11404	0.000	0.519		
	0.000	0.000	0	0	0.000	0.000		
	Average of Peak Amounts =				0.000	0.439		
Aroclor 1268	14.853	0.000	8694	0	0.0643	0.000	80.00- 120.00	100.00 (T)
	14.963	0.000	29802	0	0.242	0.000	73.17- 109.75	342.79 (T)
	15.349	0.000	7332	0	0.0655	0.000	67.31- 100.97	84.33 (T)
	0.000	0.000	0	0	0.000	0.000	191.78- 287.67	0.00 (T)
	Average of Peak Amounts =				0.124	0.000		
Aroclors, Total	1.000	1.000	24826	19003	0.604	0.439		100.00

QC Flag Legend

T - Target compound detected outside RT window.

Data File: \\alkl\sws002\instdata\GC32\DATA\032918.b\0329F017.D

Date : 29-MAR-2018 20:21

Client ID:

Sample Info: IB

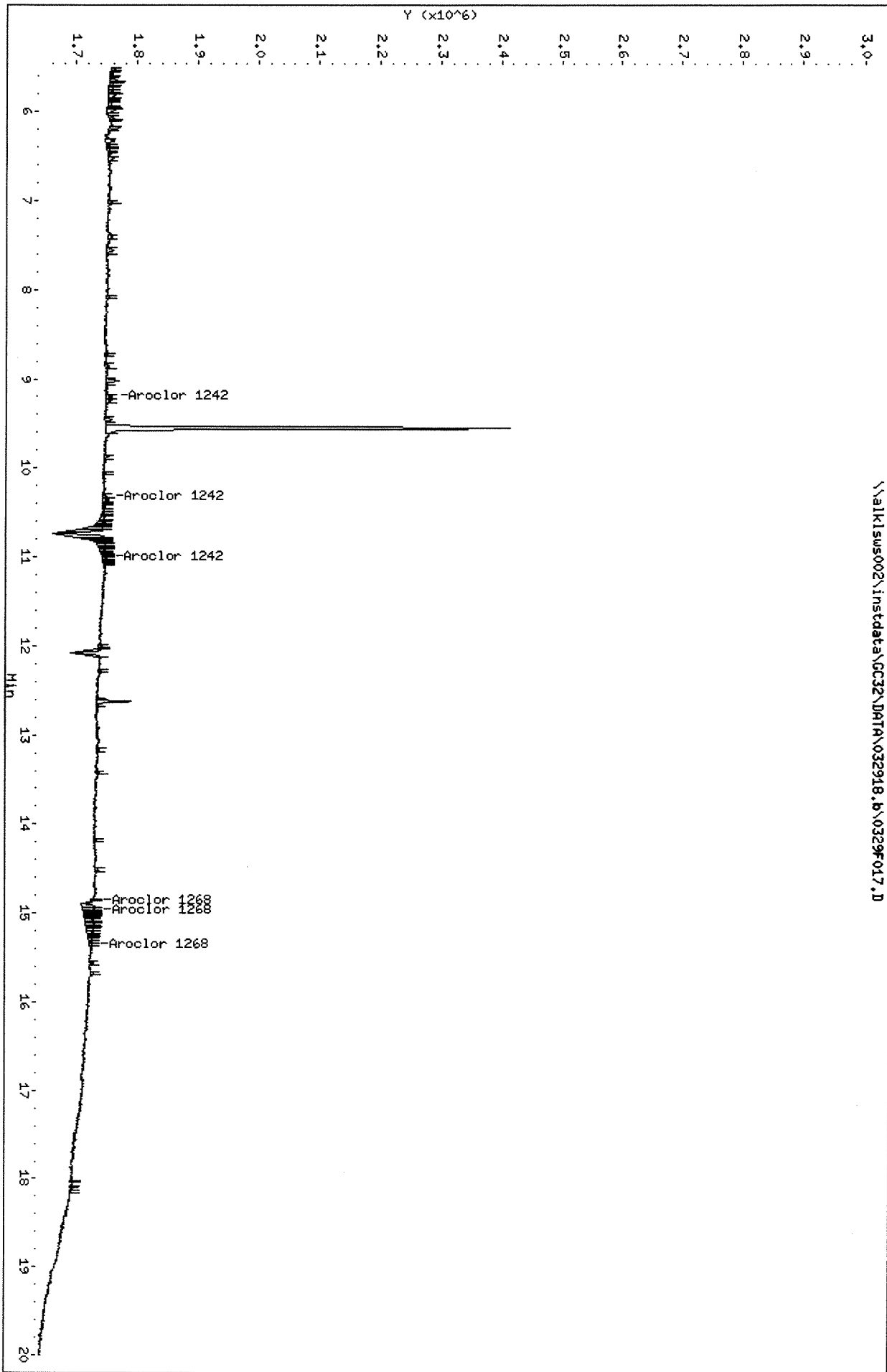
Column phase: DB-39MS

Instrument: GC32.1

Operator: SHURRAY

Column diameter: 0.32

\\alkl\sws002\instdata\GC32\DATA\032918.b\0329F017.D



Data File: \\alkisus002\instdata\GC32\DATA\032918_r.b\0329F017.D

Date : 29-MAR-2018 20:21

Client ID:

Sample Info: IB

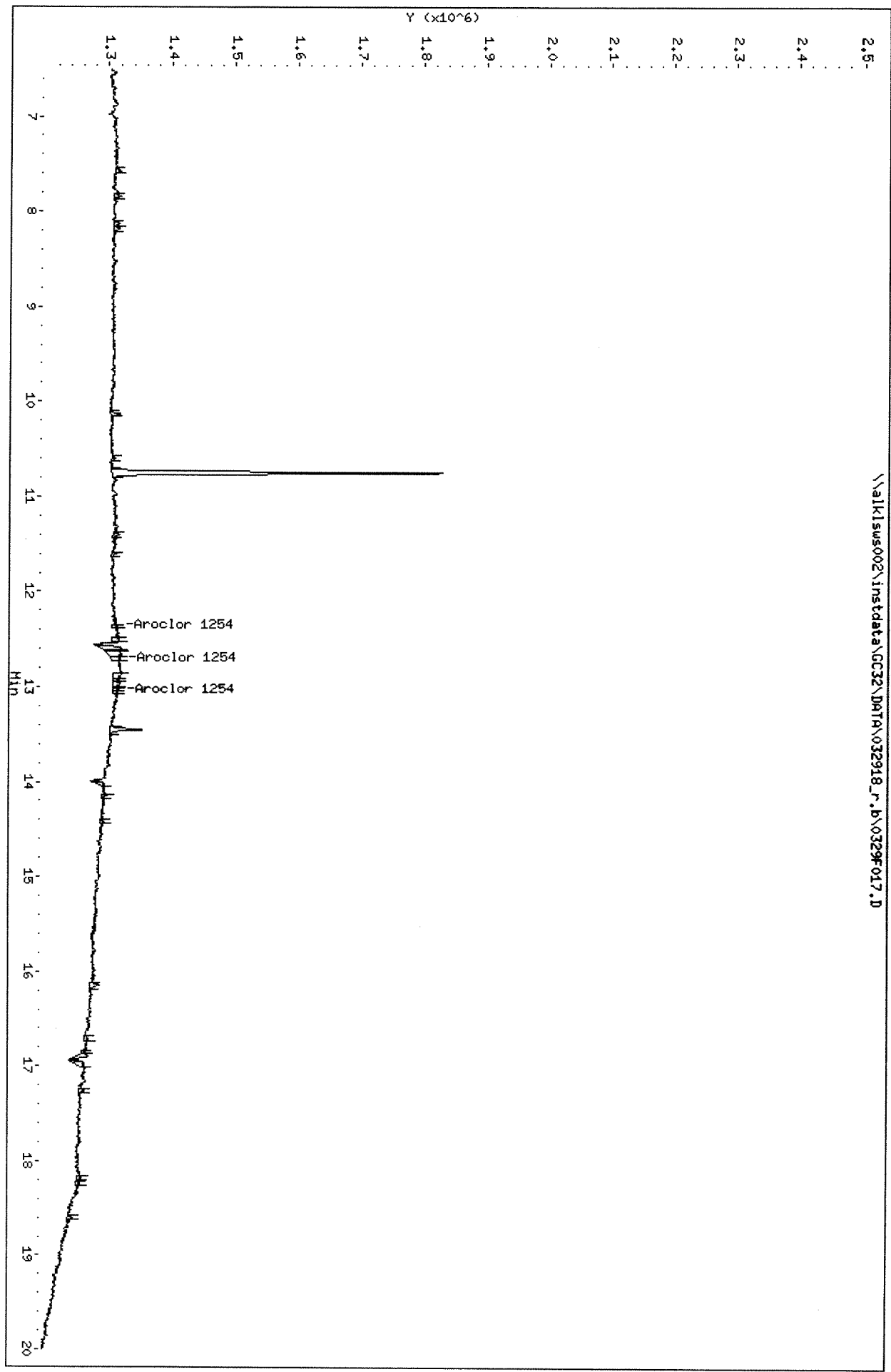
Column phase: DB-XLB

Instrument: GC32.1

Operator: SMURRAY

Column diameter: 0.32

\\alkisus002\instdata\GC32\DATA\032918_r.b\0329F017.D



Exception Report


Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F018.D
Lab ID: K1801988-003
RunType: SMPL
Matrix: STORM WATER

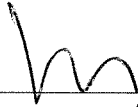

Date Acquired: 03/29/2018 20:53
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
ListJoinID: LJ19049

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Recovery (Closing)	NA	NA	NA		x
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	Decachlorobiphenyl	-25.4	NA	20	
Continuing Calibration Recovery (Closing)	Decachlorobiphenyl	-27.3	NA	20	
Surrogates	Decachlorobiphenyl	50	70	130	

Primary Review: 
 Secondary Review: 

Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F026.D
Lab ID: KWG1801852-5
RunType: CCV
Matrix: NOT APPLICABLE

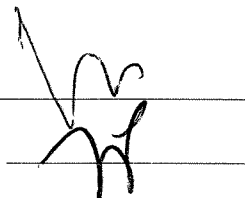
Date Acquired: 03/30/2018 01:07
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F026.D
Lab ID: KWG1801852-5
RunType: CCV
Matrix: NOT APPLICABLE

Date Acquired: 03/30/2018 01:07
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F026.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F026.D	Vial:	1
Acqu Date:	03/30/2018 01:07	Quant Date:	04/07/2018 10:43
Run Type:	CCV	MethodJoinID:	MJ1660
Lab ID:	KWG1801852-5	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	04/07/2018

Analysis Lot:	KWG1801852	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1660
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	Final Conc. Units:		Rpt
Tetrachloro-m-xylene	6.85	8.27	3870822	4062365	2.37	3.00			NA
			%Recovery =		NA	NA	Limits =	70-130	
Decachlorobiphenyl	16.74	18.02	1829948	2307695	1.82	2.10			NA
			%Recovery =		NA	NA	Limits =	70-130	

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/Kg #1	ug/Kg #2	Rpt
Aroclor 1016			0	0	28.75	29.64			
Aroclor 1016 {1}	9.17	9.82	722135m	675491	30.49	25.82			
Aroclor 1016 {2}	9.62	10.13	1762128m	653007	30.32	32.45			
Aroclor 1016 {3}	9.80	10.88	1025328m	1499580	26.08	30.52			
Aroclor 1016 {4}	10.19	11.39	797995m	952937	25.20	29.99			
Aroclor 1016 {5}	10.30	11.90	750098m	471255	31.65	29.44			
Aroclor 1260			0	0	22.92	25.00			
Aroclor 1260 {1}	12.54	14.08	1427716	571867	24.29	26.66			
Aroclor 1260 {2}	13.13	14.66	881350	1061072	24.48	25.74			
Aroclor 1260 {3}	13.94	15.03	929550	1063232	23.94	26.25			
Aroclor 1260 {4}	14.32	15.57	1809189	2130242	21.43	24.79			
Aroclor 1260 {5}	14.95	16.07	1330122	1343625	20.46	21.57			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F026.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					28.75	25.00	15
Aroclor 1260		MS	NA	20					22.92	25.00	-8
Tetrachloro-m-xylene		SURR	AverageRF	20		1.6E+6	1.5E+6	-5			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.4E+4	2.9E+4	22			
Aroclor 1016 {2}		MULTI	AverageRF	100		5.8E+4	7.0E+4	21			
Aroclor 1016 {3}		MULTI	AverageRF	100		3.9E+4	4.1E+4	4			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.2E+4	1			
Aroclor 1016 {5}		MULTI	AverageRF	100		2.4E+4	3.0E+4	27			
Aroclor 1260 {1}		MULTI	AverageRF	100		5.9E+4	5.7E+4	-3			
Aroclor 1260 {2}		MULTI	AverageRF	100		3.6E+4	3.5E+4	-2			
Aroclor 1260 {3}		MULTI	AverageRF	100		3.9E+4	3.7E+4	-4			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.4E+4	7.2E+4	-14			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.5E+4	5.3E+4	-18			
Decachlorobiphenyl		SURR	AverageRF	20		1.0E+6	7.3E+5	-27 *			

1 Compounds Failed CCV Criteria (8.33 Percent)

Calibration Verification Report

Calibration ID: CAL15681

Method ID: MJ1660

DataFile: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F026.D

<u>Parameter Name</u>	<u>Type</u>	<u>PARM Type</u>	<u>Curve Fit</u>	<u>Method Criteria</u>	<u>Min RF</u>	<u>ICAL RF</u>	<u>CCV RF</u>	<u>%Diff</u>	<u>Sol'n Conc.</u>	<u>True Value</u>	<u>% Drift</u>
Aroclor 1016		MS	NA	20					29.64	25.00	19
Aroclor 1260		MS	NA	20					25.00	25.00	0
Tetrachloro-m-xylene		SURR	AverageRF	20		1.4E+6	1.6E+6	20			
Aroclor 1016 {1}		MULTI	AverageRF	100		2.6E+4	2.7E+4	3			
Aroclor 1016 {2}		MULTI	AverageRF	100		2.0E+4	2.6E+4	30			
Aroclor 1016 {3}		MULTI	AverageRF	100		4.9E+4	6.0E+4	22			
Aroclor 1016 {4}		MULTI	AverageRF	100		3.2E+4	3.8E+4	20			
Aroclor 1016 {5}		MULTI	AverageRF	100		1.6E+4	1.9E+4	18			
Aroclor 1260 {1}		MULTI	AverageRF	100		2.1E+4	2.3E+4	7			
Aroclor 1260 {2}		MULTI	AverageRF	100		4.1E+4	4.2E+4	3			
Aroclor 1260 {3}		MULTI	AverageRF	100		4.1E+4	4.3E+4	5			
Aroclor 1260 {4}		MULTI	AverageRF	100		8.6E+4	8.5E+4	-1			
Aroclor 1260 {5}		MULTI	AverageRF	100		6.2E+4	5.4E+4	-14			
Decachlorobiphenyl		SURR	AverageRF	20		1.1E+6	9.2E+5	-16			

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F026.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F026.D
 Inj Date : 30-MAR-2018 01:07
 Sample Info: 1660 25PPB PCB7-22J
 Misc Info :
 Cal Date : 07-APR-2018 10:33
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : 1660.SUB
 Sub List #2 : 1660.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.853	8.270	3870822	4062365	2.37	3.00		100.00
Aroclor 1016	9.170	9.820	722135	675491	30.5	25.8	80.00- 120.00	100.00 (M)
	9.620	10.130	1762128	653007	30.3	32.4	195.21- 292.82	244.02 (M)
	9.796	10.877	1025328	1499580	26.1	30.5	113.59- 170.38	141.99 (M)
	10.186	11.387	797995	952937	25.2	30.0	88.40- 132.61	110.50 (M)
	10.303	11.900	750098	471255	31.7	29.4	83.10- 124.65	103.87 (M)
	Average of Peak Amounts =				28.8	29.6		
Aroclor 1260	12.536	14.084	1427716	571867	24.3	26.7	80.00- 120.00	100.00
	13.126	14.664	881350	1061072	24.5	25.7	49.39- 74.08	61.73
	13.940	15.034	929550	1063232	23.9	26.3	52.09- 78.13	65.11
	14.320	15.567	1809189	2130242	21.4	24.8	101.38- 152.06	126.72
	14.946	16.070	1330122	1343625	20.5	21.6	74.53- 111.80	93.16
	Average of Peak Amounts =				22.9	25.0		
Decachlorobiphenyl	16.736	18.017	1829948	2307695	1.82	2.10		100.00

QC Flag Legend

M - Compound response manually integrated.

Data File: \\alk1s002\instdata\GC32\DATA\032918.b\0329F026.D

Date : 30-MAR-2018 01:07

Client ID:

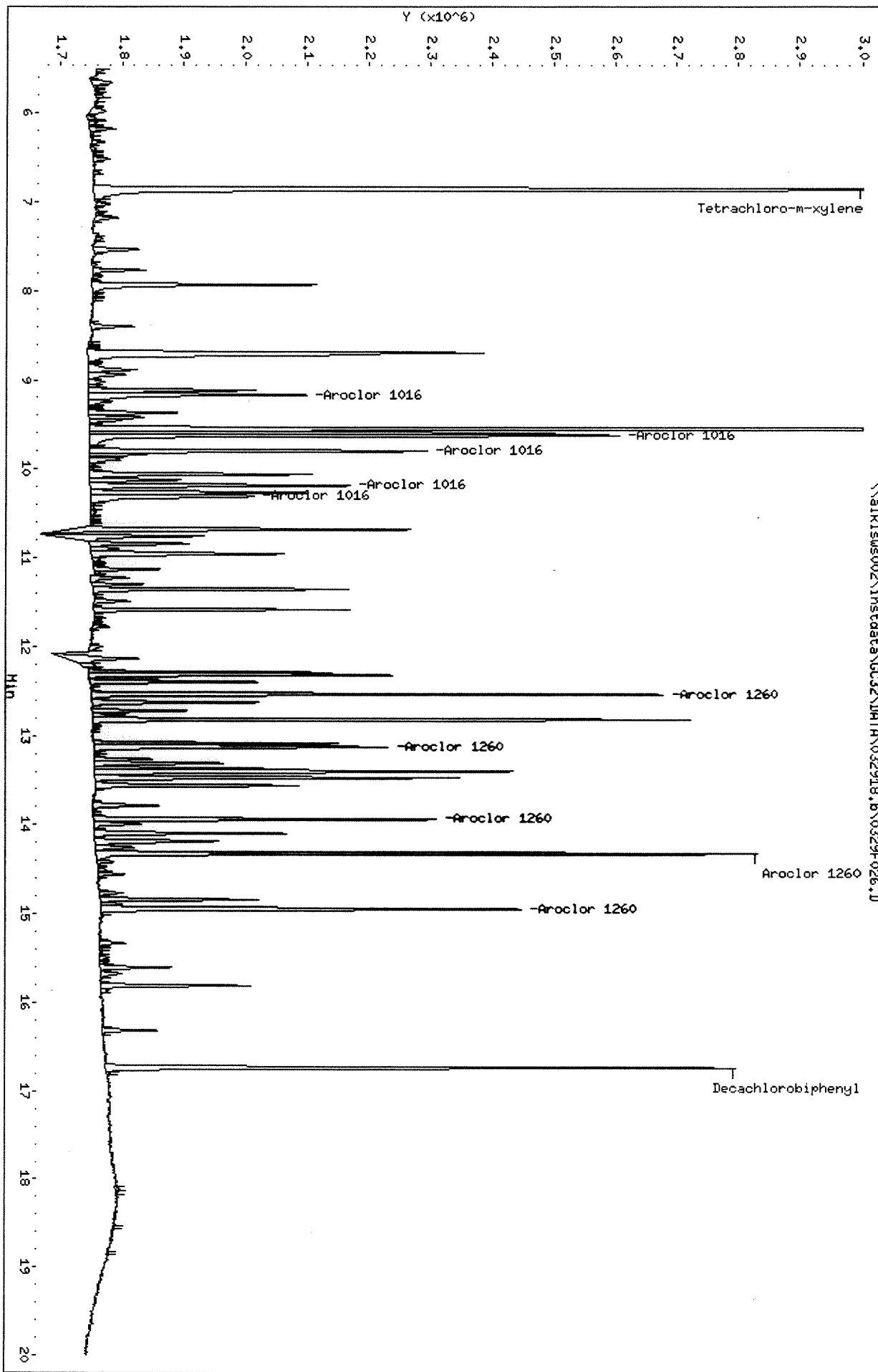
Sample Info: 1660 25PPB PCB7-223

Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32



Data File: \\alk1sws002\instdata\GC32\DATA\032918_r_b\0329F026.D

Date : 30-MAR-2018 04:07

Client ID:

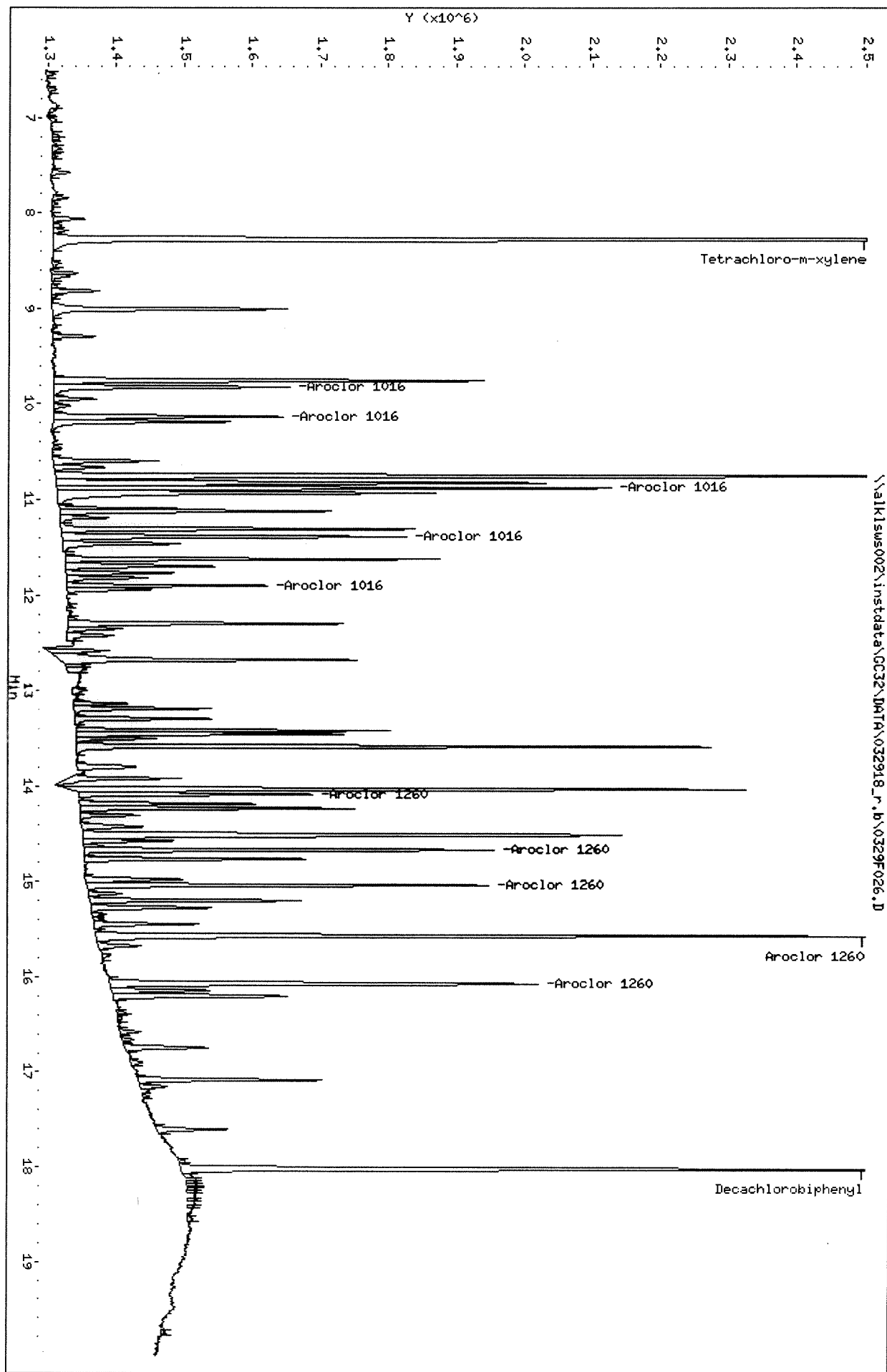
Sample Info: 1660 25PPB PCB7-223

Column phase: DB-XLB

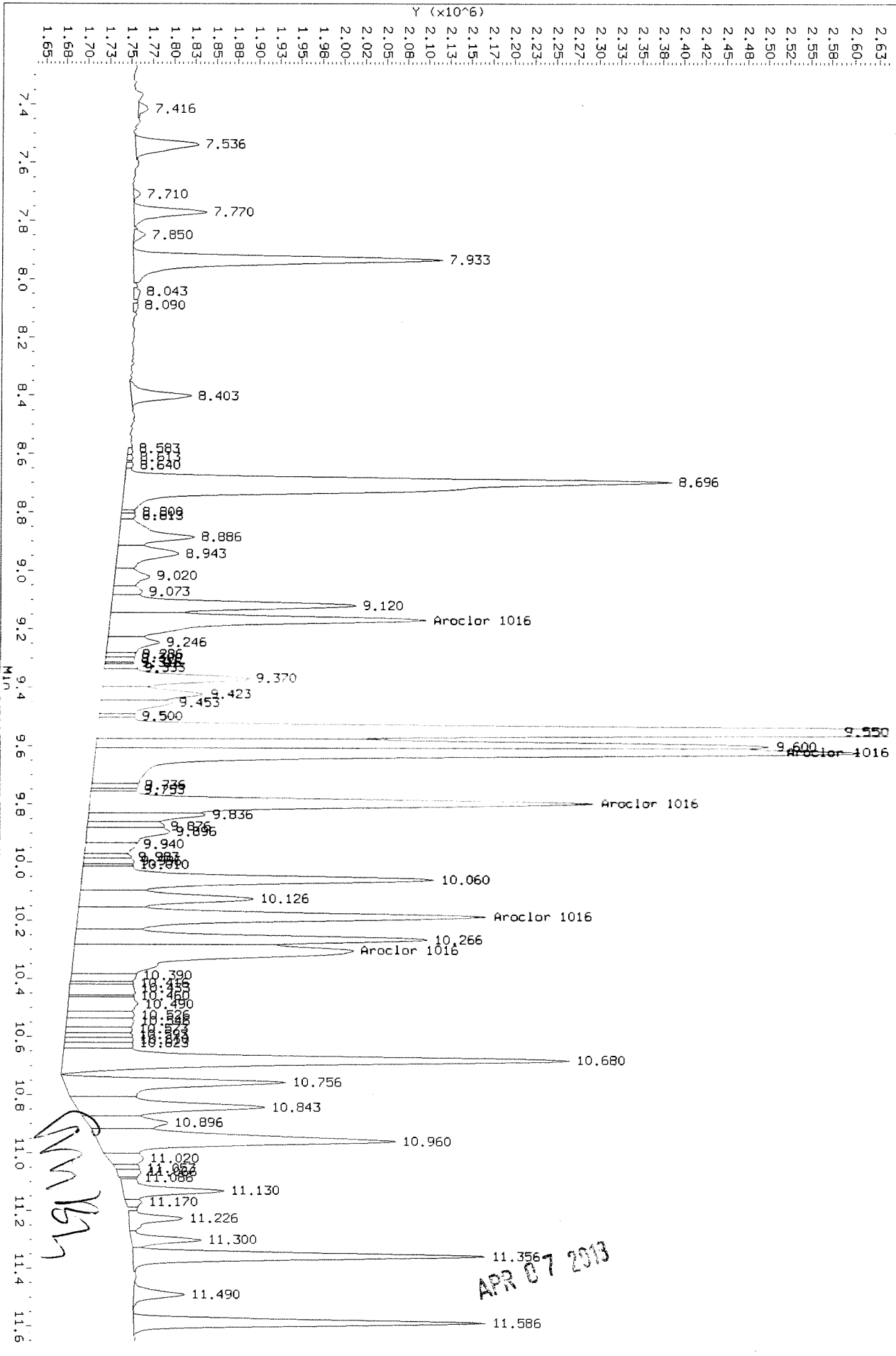
Instrument: GC32.i

Operator: SHURRAY

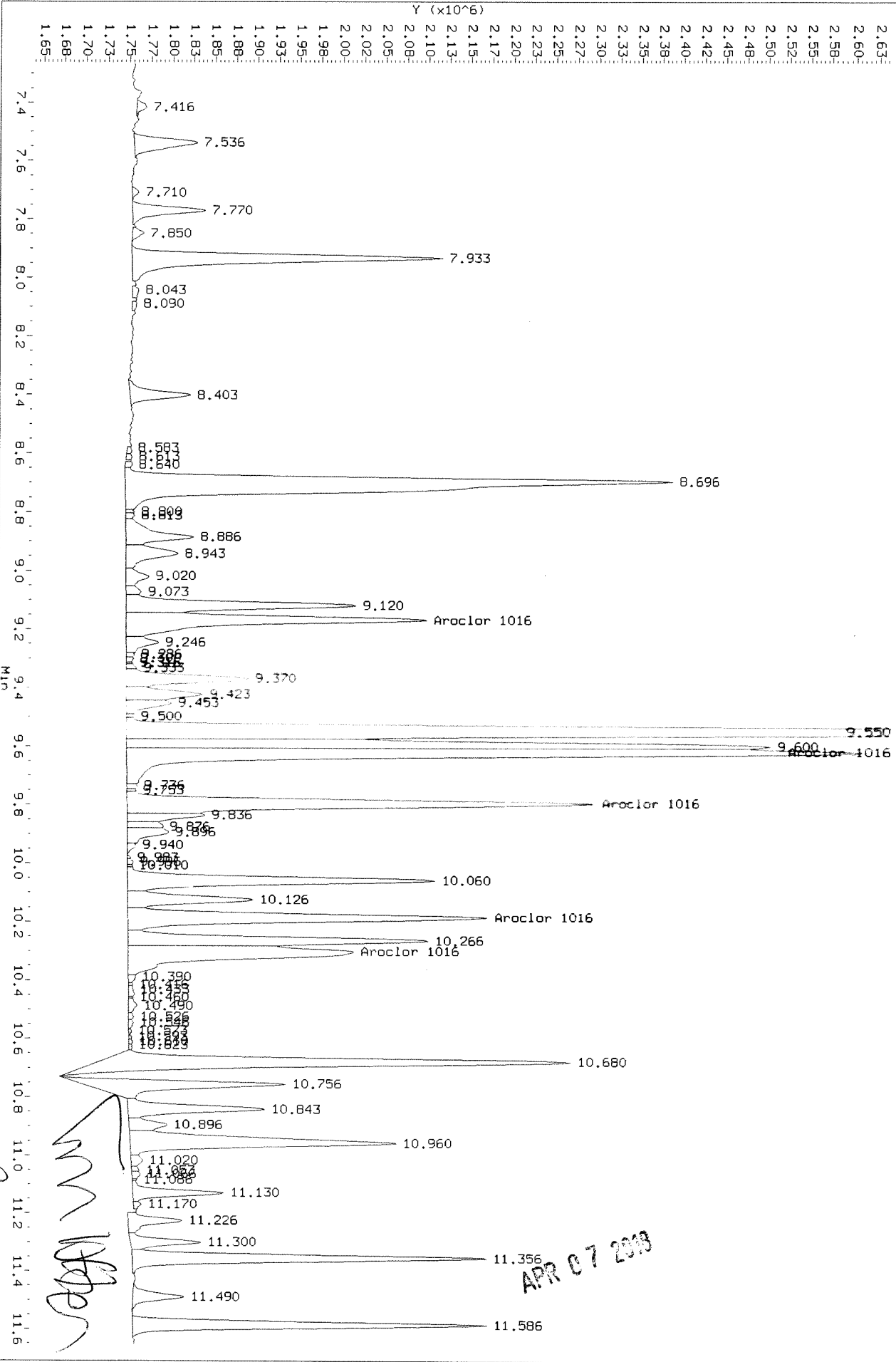
Column diameter: 0.32



HP6890 GC Data: ECD1A.CH: 7.265 to 11.653 Min



HP6890 GC Data: ECD1A.CH: 7.265 to 11.653 Min



Exception Report

Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\0329F027.D
Lab ID: KWG1801852-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/30/2018 01:39
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

Secondary Review: _____

Exception Report

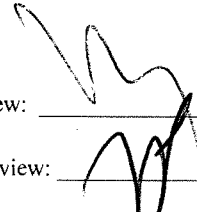
Data File: \\ALKLSWS002\INSTDATA\GC32\DATA\032918_R.B\0329F027.D
Lab ID: KWG1801852-6
RunType: IB
Matrix: NOT APPLICABLE

Date Acquired: 03/30/2018 01:39
Date Quantitated: 04/07/2018 10:43
Batch ID: KWG1801852
Analysis Method: 8082A
MethodJoinID: MJ1660

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Analyte Recovery	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____
Secondary Review: _____



Quantitation Report

Data File #1:	J:\GC32\DATA\032918.B\0329F027.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F027.D	Vial:	2
Acqu Date:	03/30/2018 01:39	Quant Date:	04/07/2018 10:43
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1801852-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Bottle ID:		Tier:		Matrix:	NOT APPLICABLE
Prod Code:	8082 PCB	Collect Date:		Receive Date:	04/07/2018

Analysis Lot:	KWG1801852	Prep Lot:		Report Group:	
Analysis Method:	8082A	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	\\ALKLSWS002\INSTDATA\GC32\DATA\032918.B\012418UL_F.M	Calibration ID:	CAL15681
Title:		Method ID:	MJ1707
MB Ref:		Quant based on Method	

Surrogate Compounds

Parameter Name	RT #1	RT #2	Resp #1	Respe #2	ng/mL #1	ng/mL #2				Rpt
Tetrachloro-m-xylene	6.87	8.23	9167	12339	0.0060	0.0090				NA
			%Recovery =		NA	NA	Limits =	70-130		
Decachlorobiphenyl	0.00		0	0	0.0000					NA
			%Recovery =		NA	NA	Limits =	70-130		

Target Compounds

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL		ug/L		Rpt
					#1	#2	#1	#2	
Aroclor 1016			0	0	0.3353	0.0000			
Aroclor 1016 {1}	9.20		16590	0	0.7000	0.0000			
Aroclor 1016 {2}	9.61		5044	0	0.0870	0.0000			
Aroclor 1016 {3}			0	0	0.0000	0.0000			
Aroclor 1016 {4}			0	0	0.0000	0.0000			
Aroclor 1016 {5}	10.32		5197	0	0.2190	0.0000			
Aroclor 1221			0	0	0.0000	0.0000			
Aroclor 1221 {1}			0	0	0.0000	0.0000			
Aroclor 1221 {2}			0	0	0.0000	0.0000			
Aroclor 1221 {3}			0	0	0.0000	0.0000			
Aroclor 1232			0	0	0.0000	0.0000			
Aroclor 1232 {1}			0	0	0.0000	0.0000			
Aroclor 1232 {2}			0	0	0.0000	0.0000			
Aroclor 1232 {3}			0	0	0.0000	0.0000			
Aroclor 1232 {4}			0	0	0.0000	0.0000			
Aroclor 1232 {5}			0	0	0.0000	0.0000			
Aroclor 1242			0	0	0.4877	0.0000			
Aroclor 1242 {1}	9.20		16590	0	0.8810	0.0000			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File #1:	J:\GC32\DATA\032918.B\0329F027.D	Instrument:	GC32.i
Data File #2:	\\alklsws002\instdata\GC32\DATA\032918_r.b\0329F027.D	Vial:	2
Acqu Date:	03/30/2018 01:39	Quant Date:	04/07/2018 10:43
Run Type:	IB	MethodJoinID:	MJ1707
Lab ID:	KWG1801852-6	Soln Conc. Units:	ng/mL
Signal #1:	DB-35MS	Signal #2:	DB-XLB

Target Compounds Final Conc. Units: ug/L

Parameter Name	RT #1	RT #2	Resp #1	Resp #2	ng/mL #1	ng/mL #2	ug/L #1	ug/L #2	Rpt
Aroclor 1242 {2}	9.63		11275	0	0.2520	0.0000			
Aroclor 1242 {3}	10.32		5197	0	0.2730	0.0000			
Aroclor 1242 {4}	10.98		13010	0	0.5450	0.0000			
Aroclor 1242 {5}			0	0	0.0000	0.0000			
Aroclor 1248			0	0	0.0000	0.0000			
Aroclor 1248 {1}			0	0d	0.0000	0.0000			
Aroclor 1248 {2}			0	0d	0.0000	0.0000			
Aroclor 1248 {3}			0	0d	0.0000	0.0000			
Aroclor 1248 {4}			0	0d	0.0000	0.0000			
Aroclor 1248 {5}			0	0d	0.0000	0.0000			
Aroclor 1254			0	0	0.0000	0.0000			
Aroclor 1254 {1}			0	0d	0.0000	0.0000			
Aroclor 1254 {2}			0	0d	0.0000	0.0000			
Aroclor 1254 {3}			0	0d	0.0000	0.0000			
Aroclor 1254 {4}			0	0d	0.0000	0.0000			
Aroclor 1254 {5}			0	0d	0.0000	0.0000			
Aroclor 1260			0	0	0.1407	0.0000			
Aroclor 1260 {1}			0	0	0.0000	0.0000			
Aroclor 1260 {2}	13.16		6958	0	0.1930	0.0000			
Aroclor 1260 {3}			0	0	0.0000	0.0000			
Aroclor 1260 {4}	14.36		7539	0	0.0890	0.0000			
Aroclor 1260 {5}	14.95		9076	0	0.1400	0.0000			
Aroclor 1262			0	0	0.0000	0.0000			
Aroclor 1262 {1}			0	0d	0.0000	0.0000			
Aroclor 1262 {2}			0	0d	0.0000	0.0000			
Aroclor 1262 {3}			0	0d	0.0000	0.0000			
Aroclor 1262 {4}			0	0d	0.0000	0.0000			
Aroclor 1262 {5}			0	0d	0.0000	0.0000			
Aroclor 1268			0	0	0.0000	0.0000			
Aroclor 1268 {1}			0	0	0.0000	0.0000			
Aroclor 1268 {2}			0	0	0.0000	0.0000			
Aroclor 1268 {3}			0	0	0.0000	0.0000			
Aroclor 1268 {4}			0	0	0.0000	0.0000			

U: Undetected at or above MDL
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B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
C: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

ALS Environmental-Kelso

Sample #1 : \\alklsws002\instdata\GC32\DATA\032918.b\0329F027.D
 Sample #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\0329F027.D
 Inj Date : 30-MAR-2018 01:39
 Sample Info: IB
 Misc Info :
 Cal Date : 07-APR-2018 10:33
 Operator : SMURRAY
 Inst ID : GC32.i
 Dil Factor : 1.000000

Method #1 : \\alklsws002\instdata\GC32\DATA\032918.b\012418ul_f.m
 Method #2 : \\alklsws002\instdata\GC32\DATA\032918_r.b\012418ul_r.m
 Sub List #1 : ALL.SUB
 Sub List #2 : ALL.SUB
 Col #1 Phase : DB-35MS
 Col #2 Phase : DB-XLB

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1	Conc#2	Target Range	Ratio
Tetrachloro-m-xylene	6.874	8.228	9167	12339	0.00561	0.00910		100.00 (R)
Aroclor 1016	9.201	0.000	16590	0	0.700	0.000	80.00- 120.00	100.00 (T)
	9.614	0.000	5044	0	0.0868	0.000	195.21- 292.82	30.40 (T)
	0.000	0.000	0	0	0.000	0.000	113.59- 170.38	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	88.40- 132.61	0.00 (T)
	10.324	0.000	5197	0	0.219	0.000	83.10- 124.65	31.33 (T)
	Average of Peak Amounts =				0.335	0.000		
Aroclor 1242	9.201	0.000	16590	0	0.881	0.000	80.00- 120.00	100.00 (T)
	9.634	0.000	11275	0	0.252	0.000	188.17- 282.25	67.96 (T)
	10.324	0.000	5197	0	0.273	0.000	75.98- 113.97	31.33 (T)
	10.984	0.000	13010	0	0.545	0.000	97.61- 146.41	78.42 (T)
	0.000	0.000	0	0	0.000	0.000	98.63- 147.94	0.00 (T)
	Average of Peak Amounts =				0.488	0.000		
Aroclor 1260	0.000	0.000	0	0	0.000	0.000	80.00- 120.00	0.00 (T)
	13.164	0.000	6958	0	0.193	0.000	49.39- 74.08	0.00 (T)
	0.000	0.000	0	0	0.000	0.000	52.09- 78.13	0.00 (T)
	14.357	0.000	7539	0	0.0893	0.000	101.38- 152.06	0.00 (T)
	14.954	0.000	9076	0	0.140	0.000	74.53- 111.80	0.00 (T)
	Average of Peak Amounts =				0.141	0.000		
Aroclors, Total	1.000	0.000	28319	0	0.964	0.000		100.00

QC Flag Legend

T - Target compound detected outside RT window.
 R - Spike/Surrogate failed recovery limits.

Data File: \\alk1s\sws002\instdata\GC32\DATA\032918.b\0329F027.D

Date : 30-MAR-2018 04:39

Client ID:

Sample Info: IB

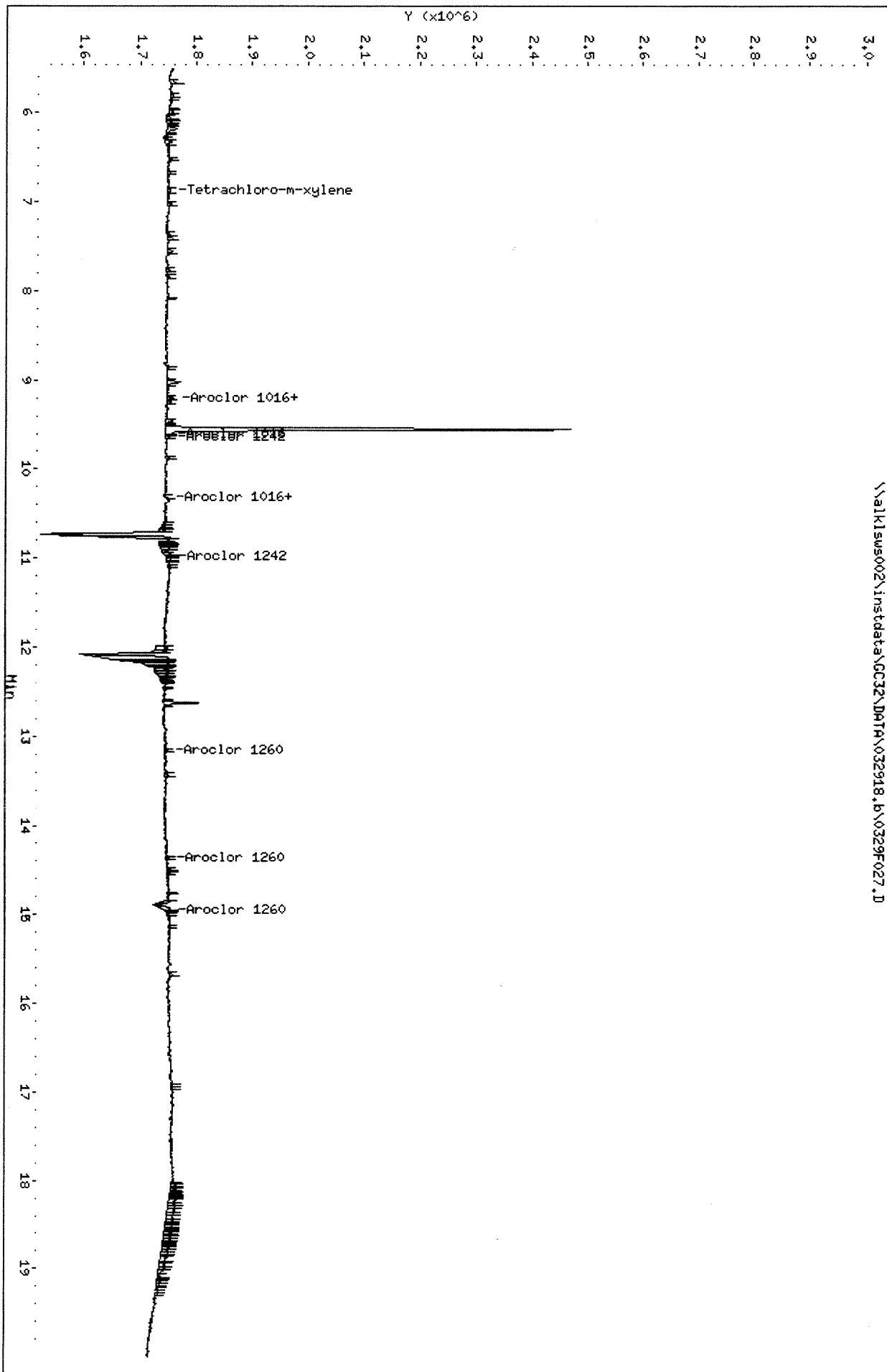
Column phase: DB-35MS

Instrument: GC32.i

Operator: SHURRAY

Column diameter: 0.32

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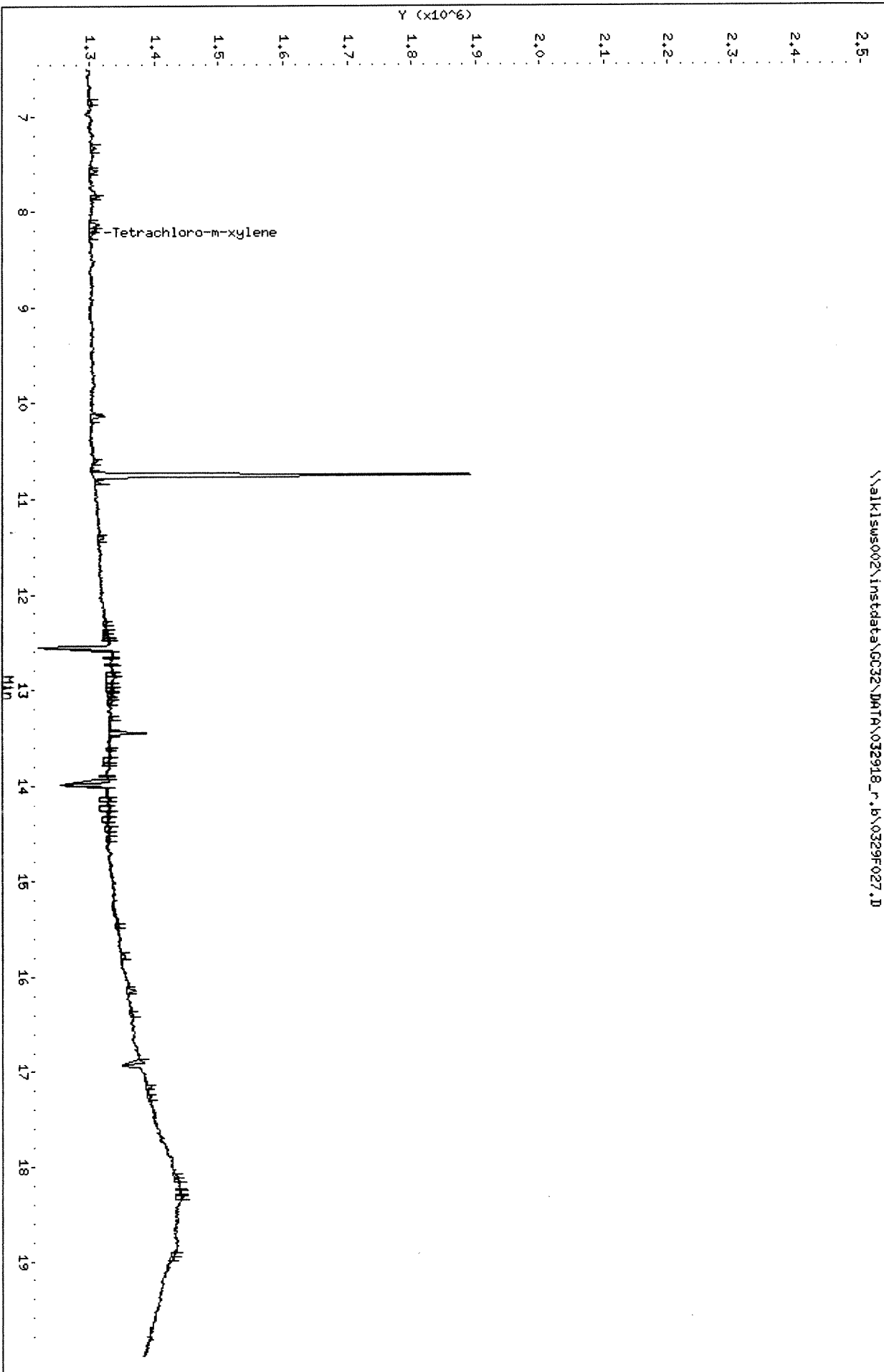


Data File: \\alklsws002\instdata\GC32\DATA\032918_r.b\0329f027.D
Date : 30-MAR-2018 01:39

Client ID:
Sample Info: 1B
Column phase: DB-XLB

Instrument: GC32.i
Operator: SHURRAY
Column diameter: 0.32

\\alklsws002\instdata\GC32\DATA\032918_r.b\0329f027.D





Polynuclear Aromatic Hydrocarbons

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Exception Report

Data File: J:\MS14\DATA\021418\0214F017.D
Lab ID: K1801267-004
Run Type: SMPL
Matrix: WATER

Date Acquired: 02/14/2018 11:55
Date Quantitated: 02/14/2018 13:42
Batch ID: KWG1800938
Analysis Method: 8270D SIM
ListJoinID: LJ18861

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:  **FEB 15 2018**

Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\021418\0214F017.D	Instrument: MS14
Acqu Date: 02/14/2018 11:55	Quant Date: 02/14/2018 13:42
Run Type: SMPL	ListJoinID: LJ18861
Lab ID: K1801267-004	Vial: 17
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date: 02/07/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1800938	Prep Lot: KWG1800892	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3511	
Prep Ref: 1663641	Prep Date: 02/13/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18861
Tune Ref: J:\MS14\DATA\021418\0214F001.D	Method ID: MJ1638
MB Ref: J:\MS14\DATA\021418\0214F006.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.73	0.01	136	47613m	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	23181	200.00	OK
3	Phenanthrene-d10	7.51	0.00	188	46638	200.00	OK
4	Chrysene-d12	10.01	-0.01	240	46661	200.00	OK
5	Perylene-d12	13.01	-0.02	264	47124	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	151521	955.51	96	42-131	OK
3	Fluoranthene-d10	8.49	0.00	0.00	212	280278	956.44	96	42-133	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	133312	677.60	68	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.75	0.01	0.00	128	710m	2.62	0.012	J	
1	2-Methylnaphthalene	5.39	0.01	0.00	142	157	0.8300	0.0036	J	
2	Acenaphthylene				152	0d		0.0011	U	
2	Acenaphthene				154	0d		0.0012	U	
2	Dibenzofuran	6.45		0.00	168	90	0.3600	0.0016	J	
2	Fluorene				166	0d		0.0011	U	
3	Phenanthrene	7.53		0.00	178	78	0.2700	0.0012	J	
3	Anthracene				178	0d		0.00082	U	
3	Fluoranthene	8.51		0.00	202	63m	0.1800	0.00082	U	
4	Pyrene	8.70		0.00	202	174	0.6200	0.0027	J	
4	Benz(a)anthracene	10.01	0.01	0.00	228	149	0.5300	0.0023	J	
4	Chrysene				228	0d		0.00076	U	
5	Benzo(b)fluoranthene				252	0		0.00083	U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
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 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\021418\0214F017.D	Instrument:	MS14
Acqu Date:	02/14/2018 11:55	Quant Date:	02/14/2018 13:42
Run Type:	SMPL	ListJoinID:	LJ18861
Lab ID:	K1801267-004	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene				252	0		0.00094	U	
5	Benzo(a)pyrene				252	0		0.0011	U	
5	Indeno(1,2,3-cd)pyrene				276	0		0.00089	U	
5	Dibenz(a,h)anthracene				278	0		0.0013	U	
5	Benzo(g,h,i)perylene				276	0		0.00086	U	

Prep Amount: 455 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\021418\0214F017.D
 Acq On : 14 Feb 2018 11:55 am
 Sample : K1801267-004
 Misc :

Vial: 17
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 14 12:54:25 2018

Quant Results File: 101317PAH.RES

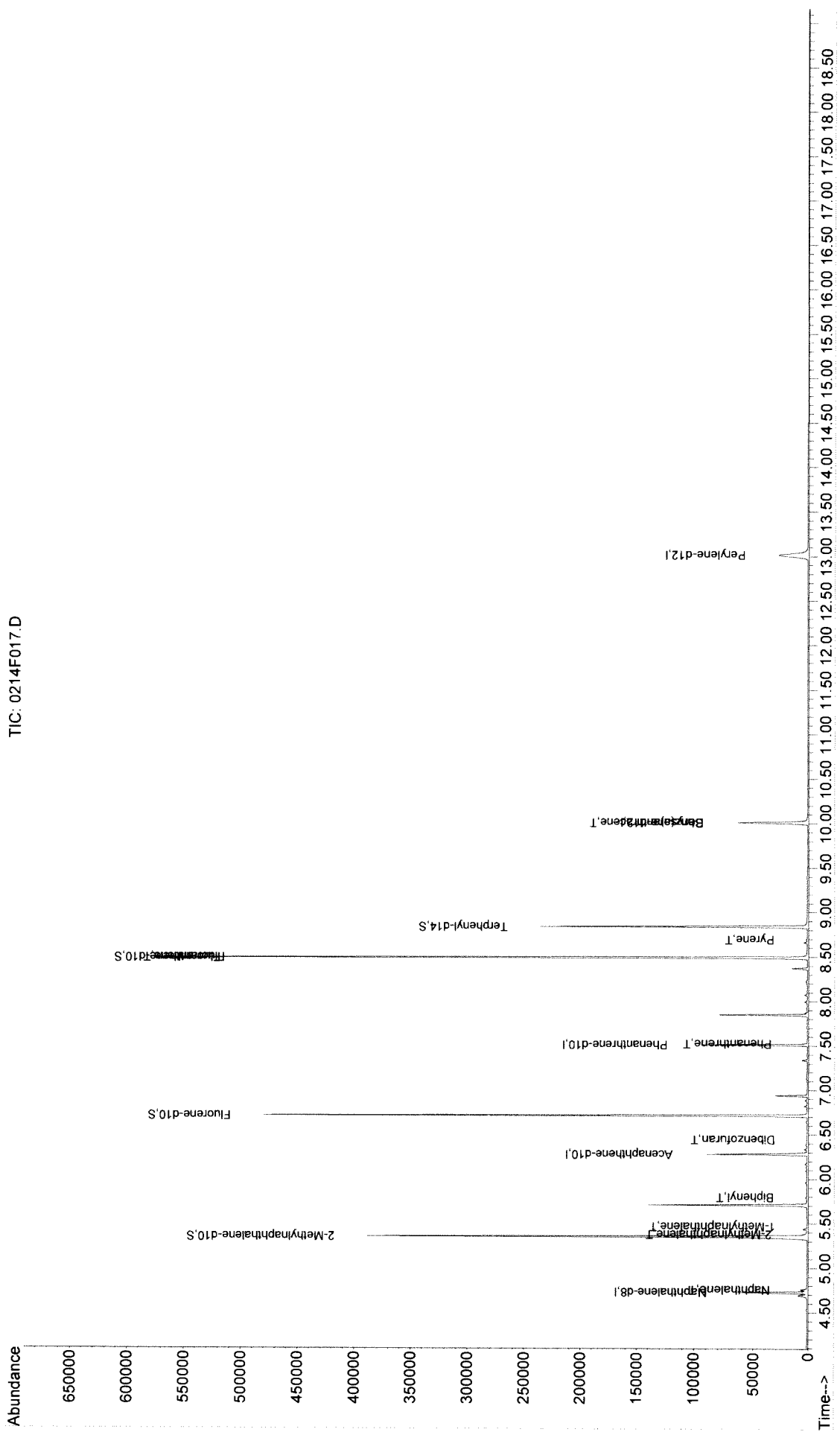
Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

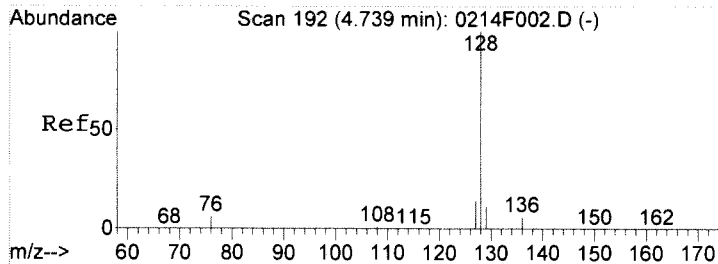
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.73	136	47613m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	23181	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.51	188	46638	200.00	ng/ml	0.00
23) Chrysene-d12	10.01	240	46661	200.00	ng/ml	0.00
28) Perylene-d12	13.01	264	47124	200.00	ng/ml	-0.01
System Monitoring Compounds						
3) 2-Methylnaphthalene-d10	5.35	152	132473	1037.76	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	103.78%	
13) Fluorene-d10	6.72	176	151521	955.51	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	95.55%	
22) Fluoranthene-d10	8.49	212	280278	956.44	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	95.64%	
25) Terphenyl-d14	8.84	244	133312	677.60	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	67.76%	
Target Compounds						
2) Naphthalene	4.75	128	710m	2.62	ng/ml	
4) 2-Methylnaphthalene	5.39	142	157	0.83	ng/ml	90
5) 1-Methylnaphthalene	5.47	142	110	0.66	ng/ml	96
6) Biphenyl	5.79	154	515	2.15	ng/ml	96
11) Dibenzofuran	6.45	168	90	0.36	ng/ml	74
17) Phenanthrene	7.53	178	78	0.27	ng/ml	90
21) Fluoranthene	8.51	202	63m	0.18	ng/ml	
24) Pyrene	8.70	202	174	0.62	ng/ml#	1
26) Benz(a)anthracene	10.01	228	149	0.53	ng/ml	77

(#) = qualifier out of range (m) = manual integration
 0214F017.D 101317PAH.M Wed Feb 14 13:44:50 2018

Data File : J:\MS14\DATA\021418\0214F017.D Vial: 17
Acq On : 14 Feb 2018 11:55 am Operator: LWeiskopf
Sample : K1801267-004 Inst : MS14
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:42 2018 Quant Results File: 101317PAH.RES

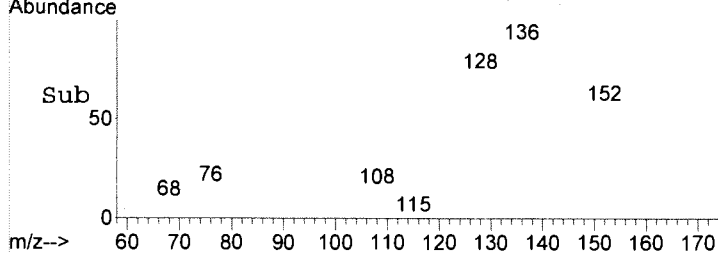
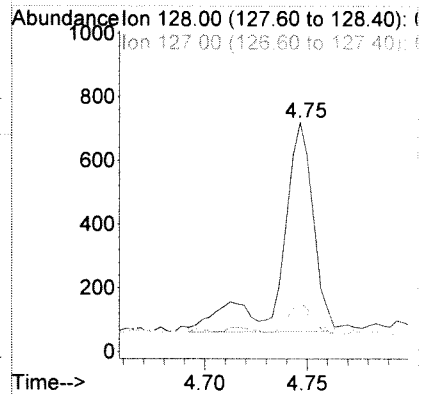
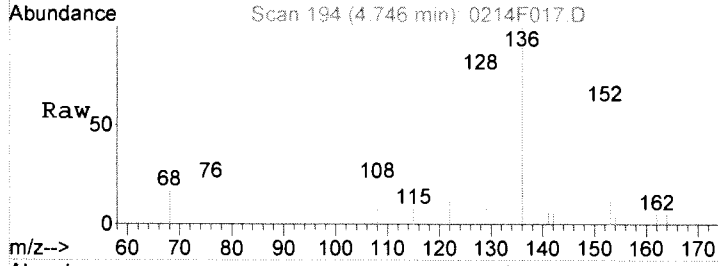
Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Initial Calibration





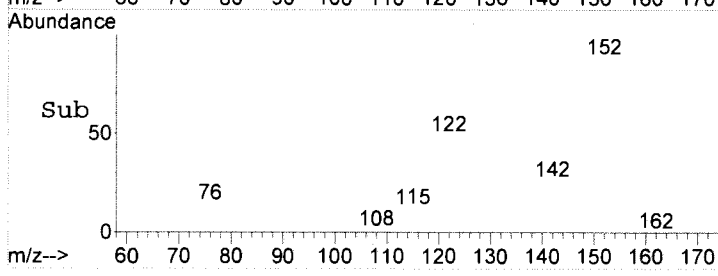
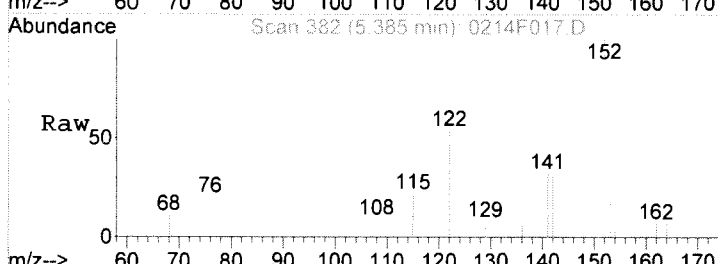
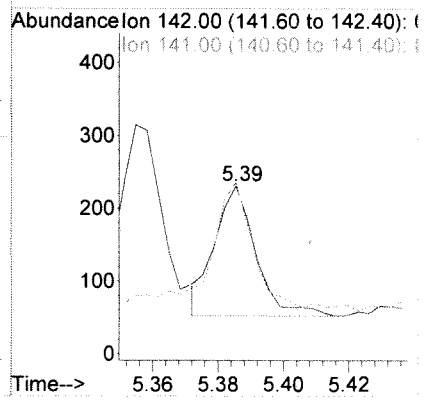
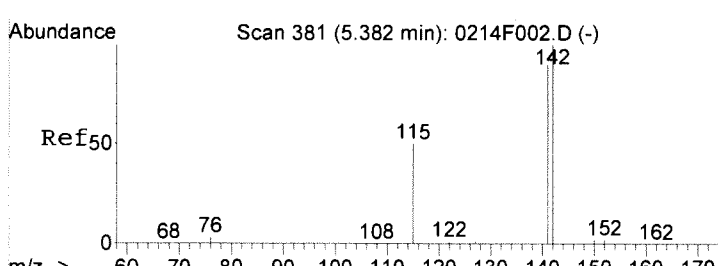
#2
 Naphthalene
 Concen: 2.62 ng/ml m
 RT: 4.75 min Scan# 194
 Delta R.T. 0.00 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

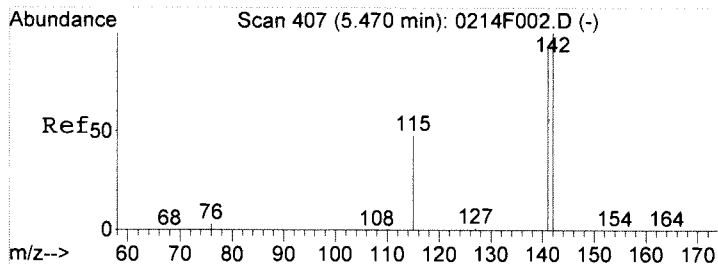
Tgt Ion	Resp	Lower	Upper
128	100		
127	21.1	0.0	52.7
129	19.9	0.5	40.5



#4
 2-Methylnaphthalene
 Concen: 0.83 ng/ml
 RT: 5.39 min Scan# 382
 Delta R.T. -0.00 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

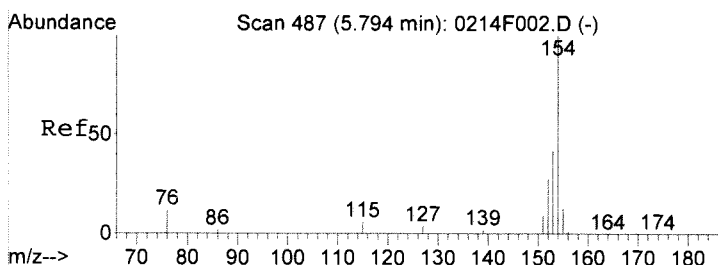
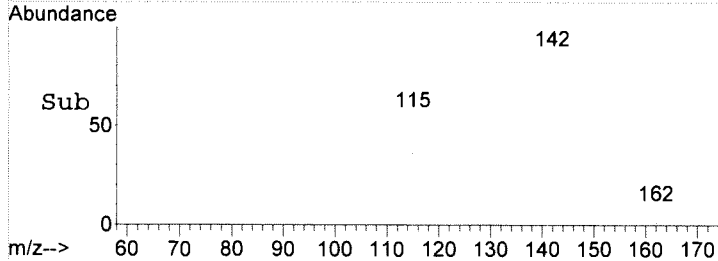
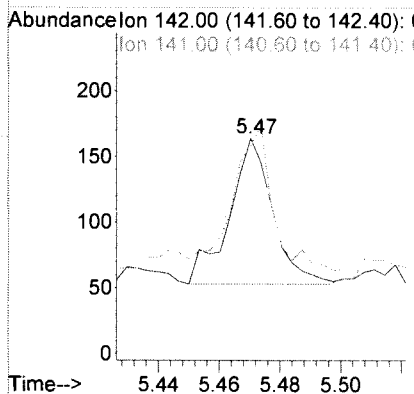
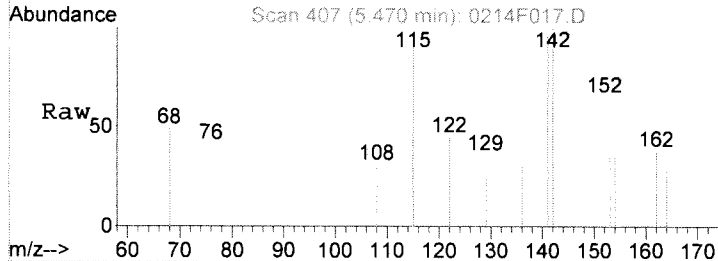
Tgt Ion	Resp	Lower	Upper
142	100		
141	95.0	57.0	117.0
115	39.7	28.1	68.1





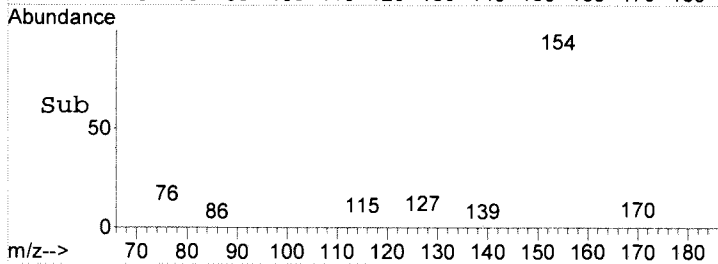
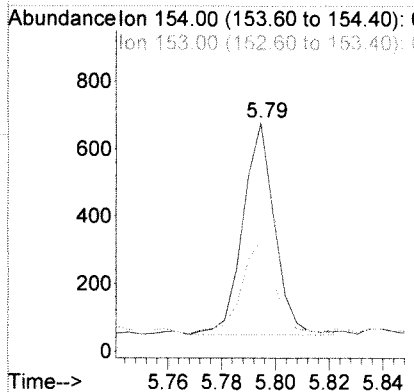
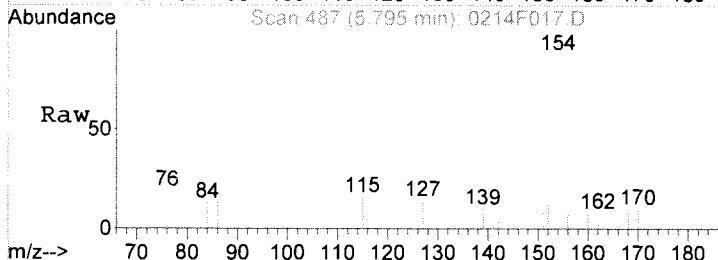
#5
 1-Methylnaphthalene
 Concen: 0.66 ng/ml
 RT: 5.47 min Scan# 407
 Delta R.T. -0.00 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

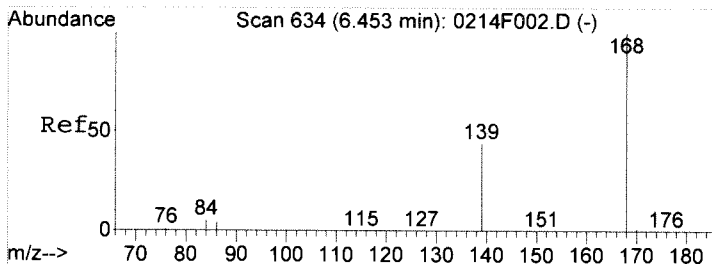
Tgt Ion	Ratio	Lower	Upper
142	100		
141	85.6	60.9	120.9
115	52.3	32.5	72.5



#6
 Biphenyl
 Concen: 2.15 ng/ml
 RT: 5.79 min Scan# 487
 Delta R.T. -0.01 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

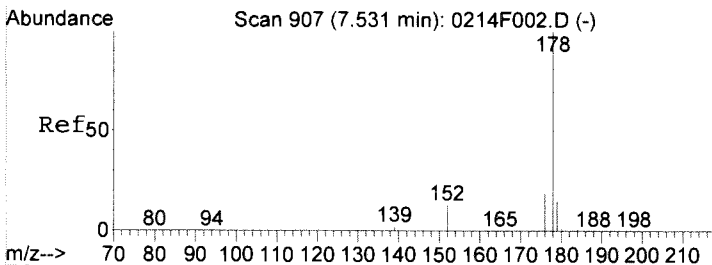
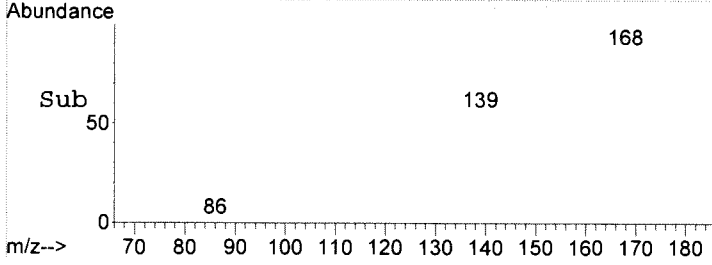
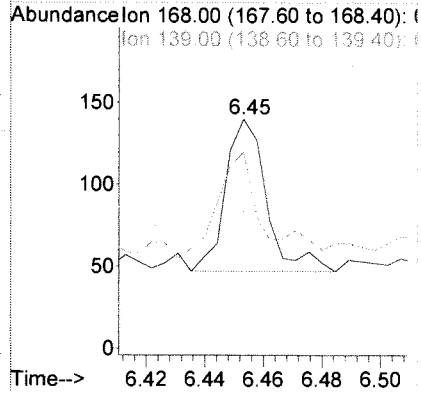
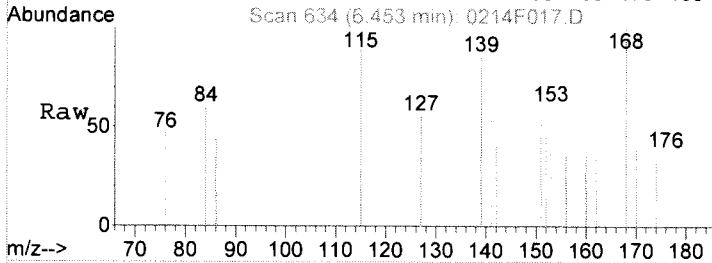
Tgt Ion	Ratio	Lower	Upper
154	100		
153	44.4	11.6	71.6
152	26.2	8.5	48.5





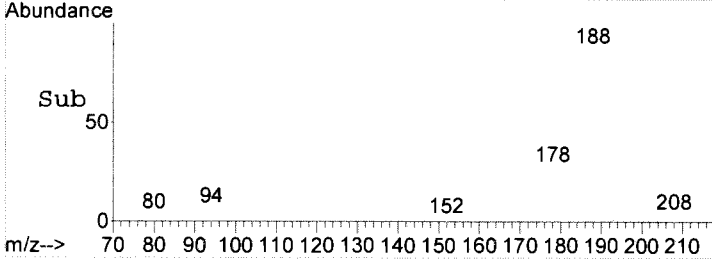
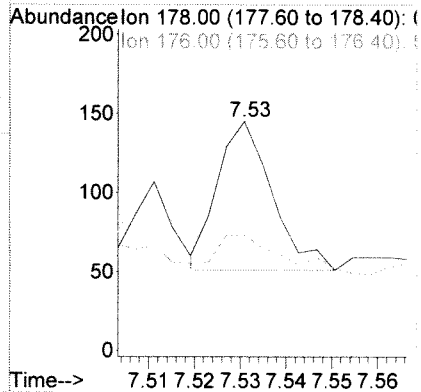
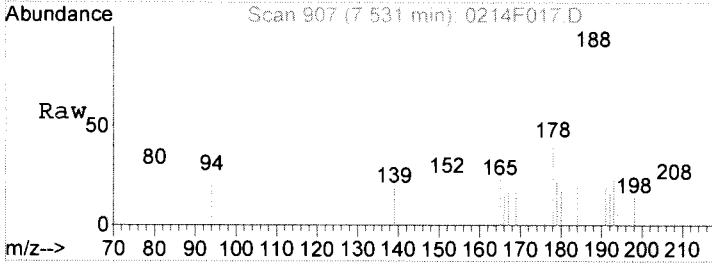
#11
 Dibenzofuran
 Concen: 0.36 ng/ml
 RT: 6.45 min Scan# 634
 Delta R.T. -0.00 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

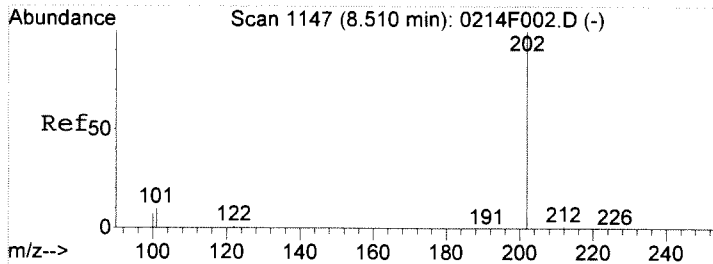
Tgt Ion	Ratio	Lower	Upper
168	100		
139	63.4	15.4	75.4
84	0.0	0.0	24.7



#17
 Phenanthrene
 Concen: 0.27 ng/ml
 RT: 7.53 min Scan# 907
 Delta R.T. -0.01 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

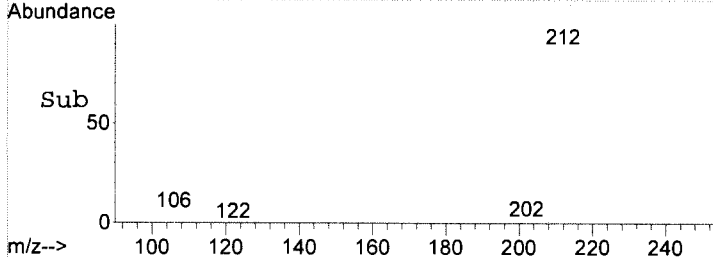
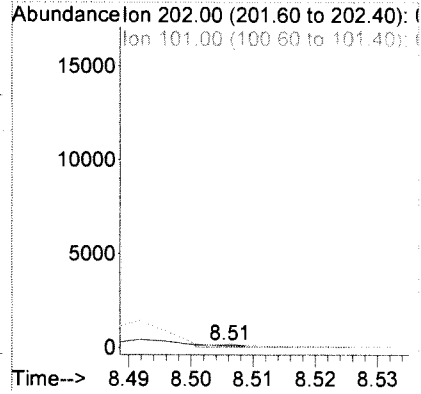
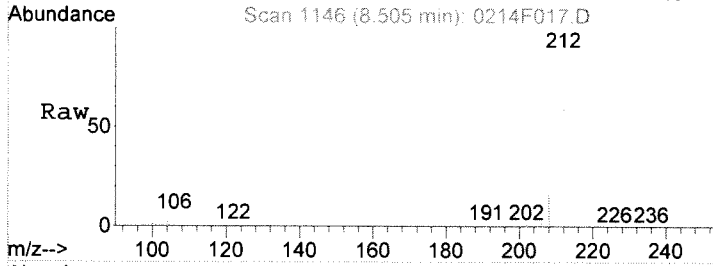
Tgt Ion	Ratio	Lower	Upper
178	100		
176	22.3	0.0	49.6
179	8.5	0.0	35.1





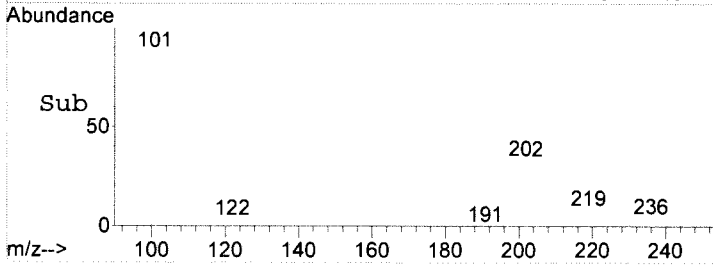
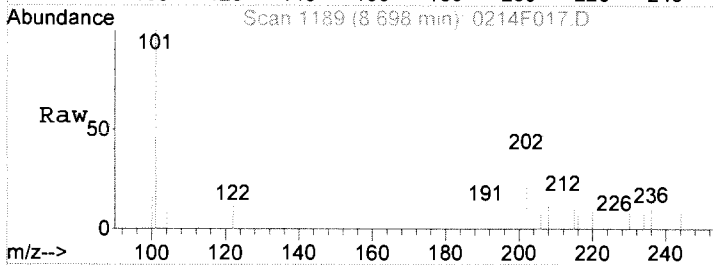
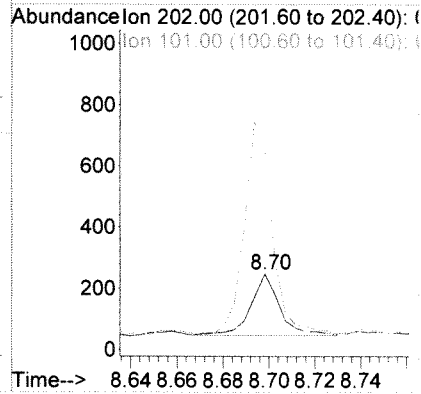
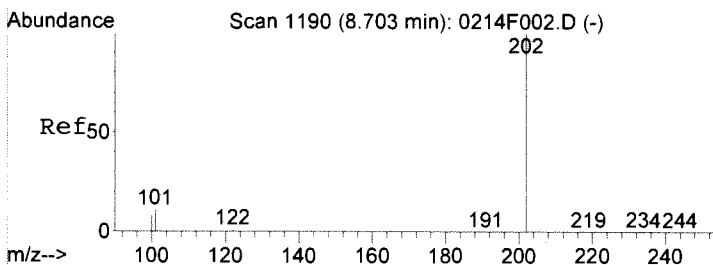
#21
 Fluoranthene
 Concen: 0.18 ng/ml m
 RT: 8.51 min Scan# 1146
 Delta R.T. -0.01 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

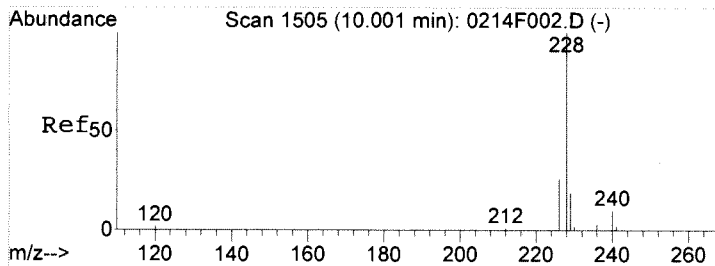
Tgt Ion	202	Resp	63
Ion Ratio	100	Lower	Upper
101	63.4	0.0	39.1#
100	160.7	0.0	27.0#



#24
 Pyrene
 Concen: 0.62 ng/ml
 RT: 8.70 min Scan# 1189
 Delta R.T. -0.01 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

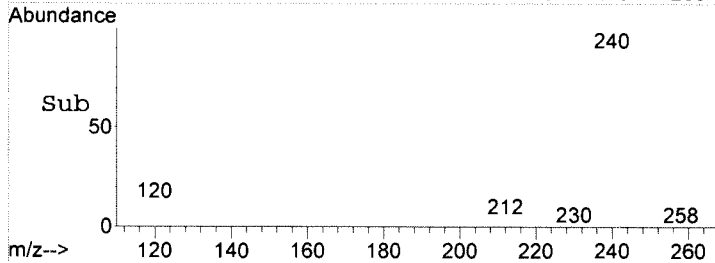
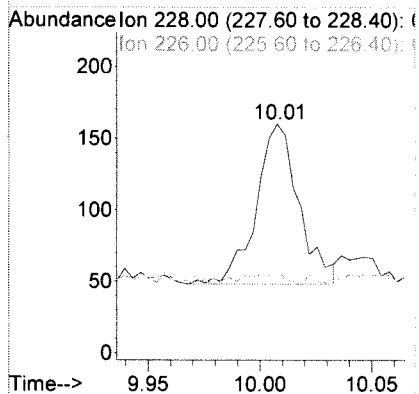
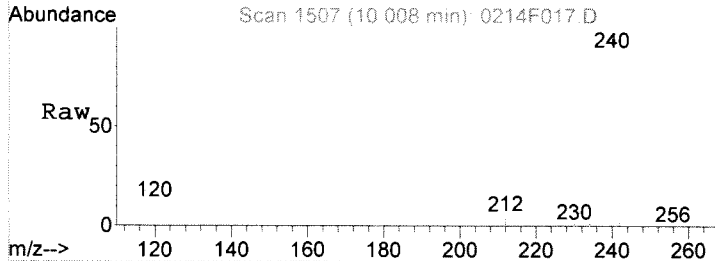
Tgt Ion	202	Resp	174
Ion Ratio	100	Lower	Upper
101	297.5	0.0	41.7#
100	27.0	0.0	29.0





#26
 Benz (a) anthracene
 Concen: 0.53 ng/ml
 RT: 10.01 min Scan# 1507
 Delta R.T. 0.00 min
 Lab File: 0214F017.D
 Acq: 14 Feb 2018 11:55 am

Tgt Ion	Ratio	Lower	Upper
228	100		
226	8.9	0.0	56.5
229	23.2	0.0	39.3

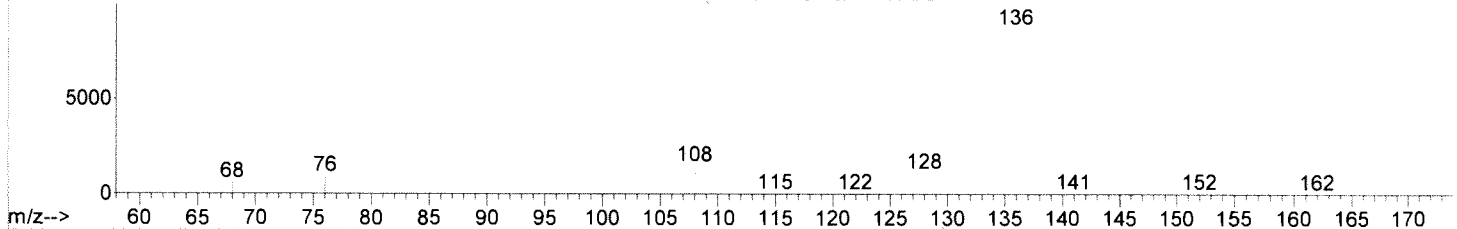
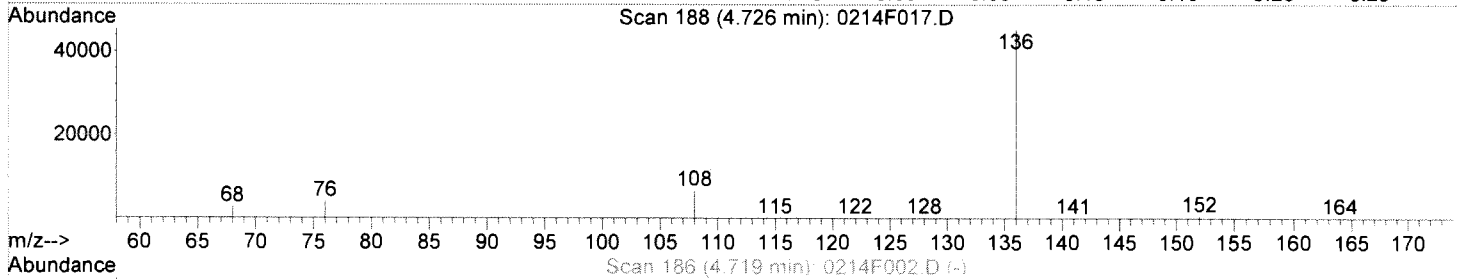
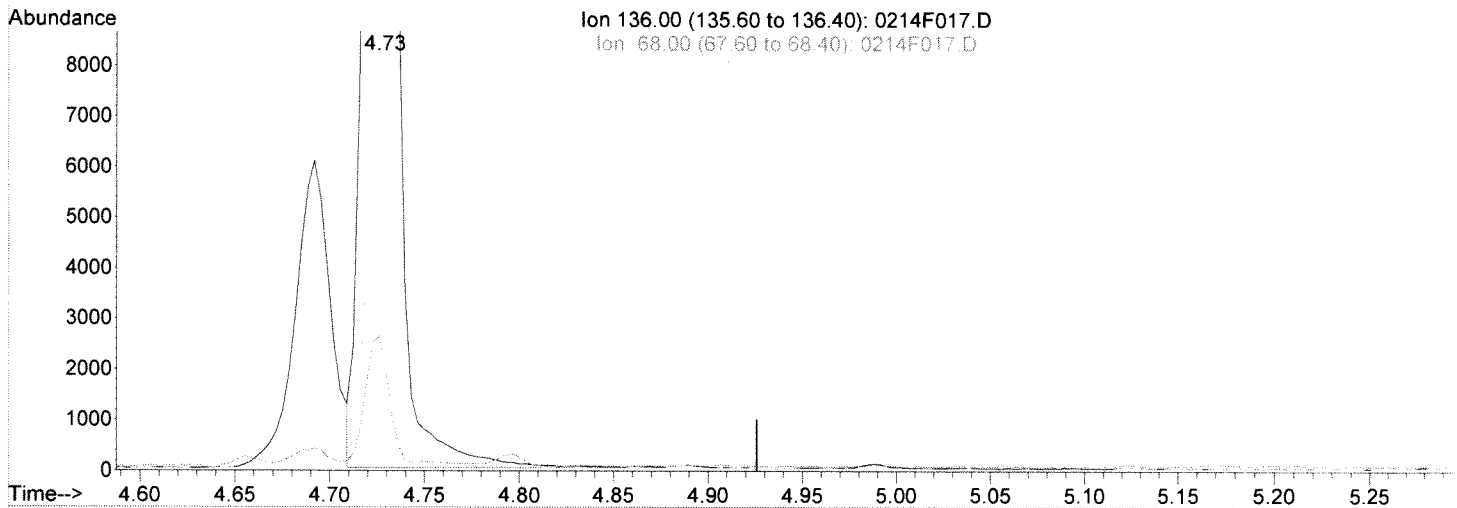


Data File : J:\MS14\DATA\021418\0214F017.D
Acq On : 14 Feb 2018 11:55 am
Sample : K1801267-004
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 12:54 2018

Vial: 17
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F017.D

(1) Naphthalene-d8 (I)

4.73min 200.00ng/ml

response 39749

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.63
108.00	10.50	14.36
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

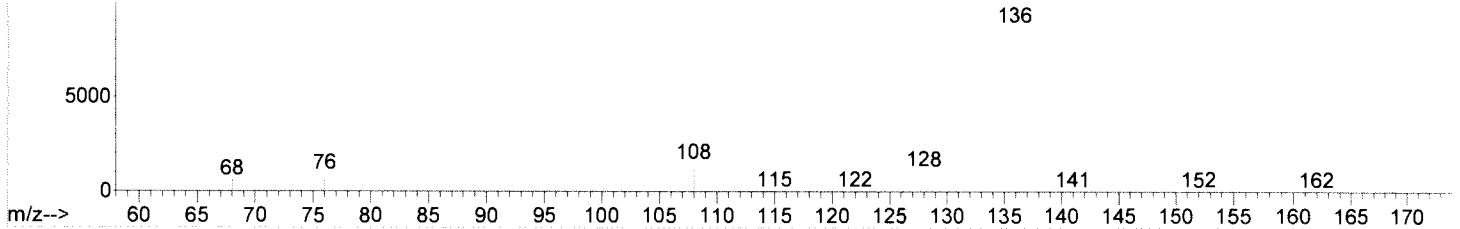
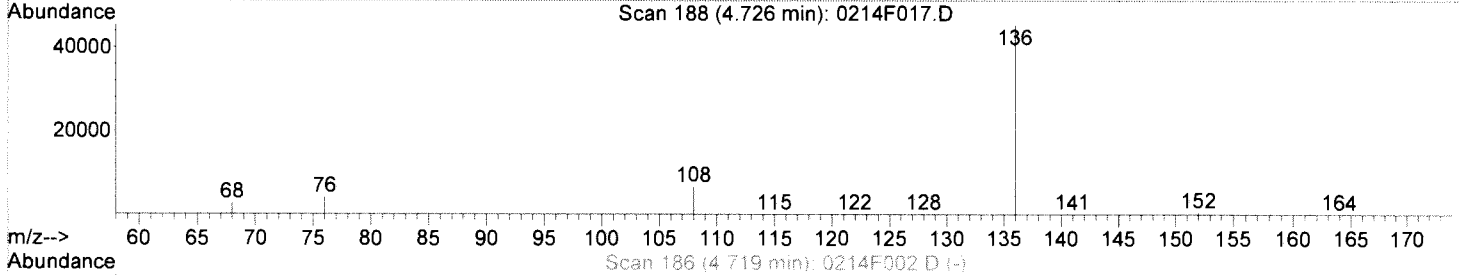
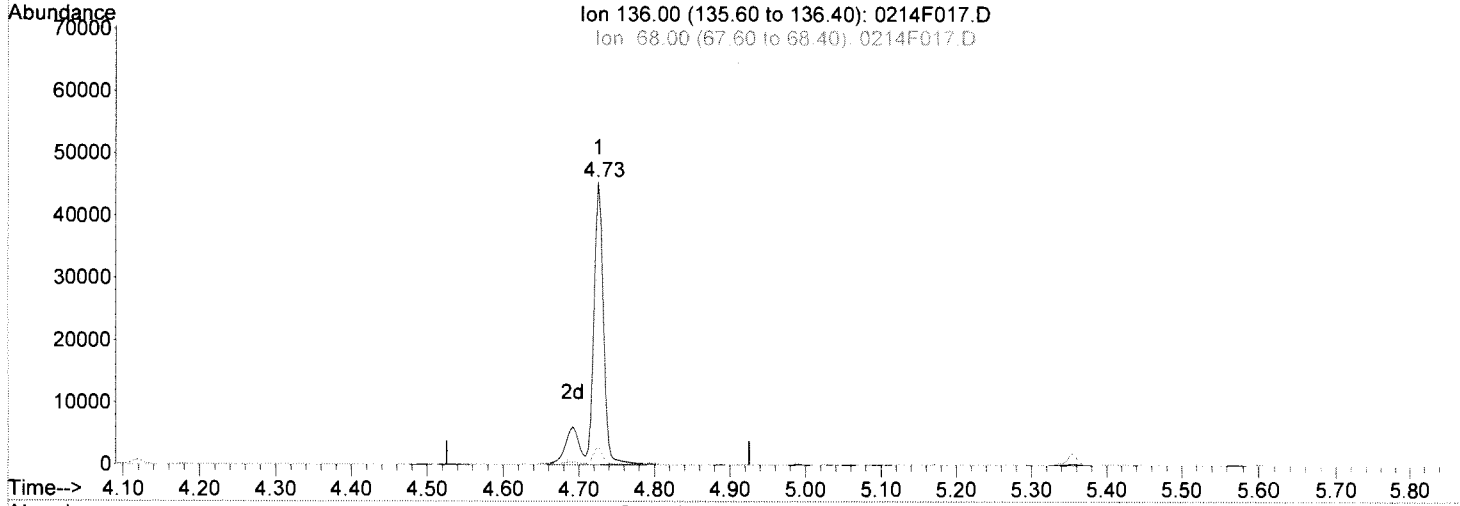
la
[Signature]

Data File : J:\MS14\DATA\021418\0214F017.D
Acq On : 14 Feb 2018 11:55 am
Sample : K1801267-004
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:40 2018

Vial: 17
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F017.D

(1) Naphthalene-d8 (I)		
4.73min	200.00ng/ml m	
response	47613	
Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.81
108.00	10.50	14.47
0.00	0.00	0.00

Manual Integration:
After
IC-Incomplete
02/14/18

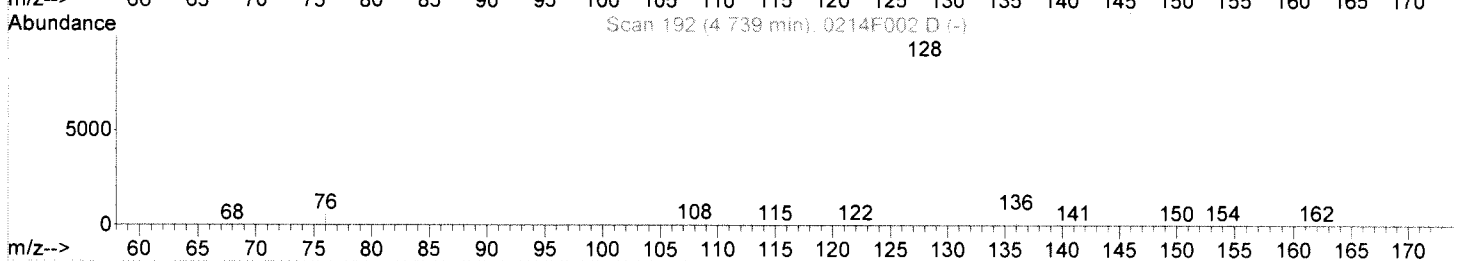
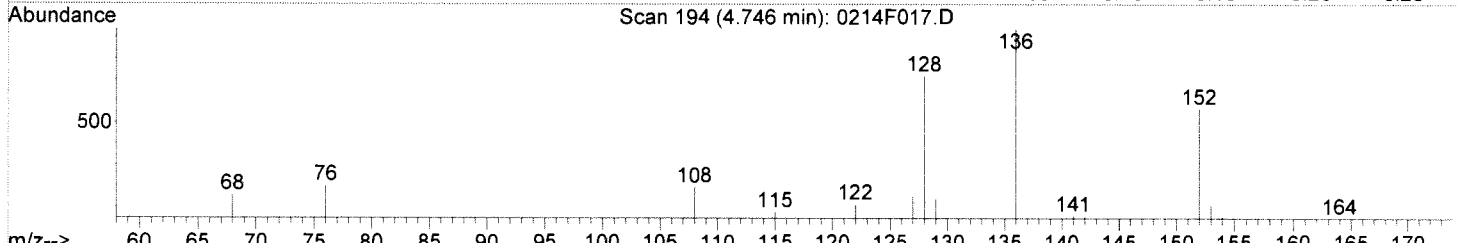
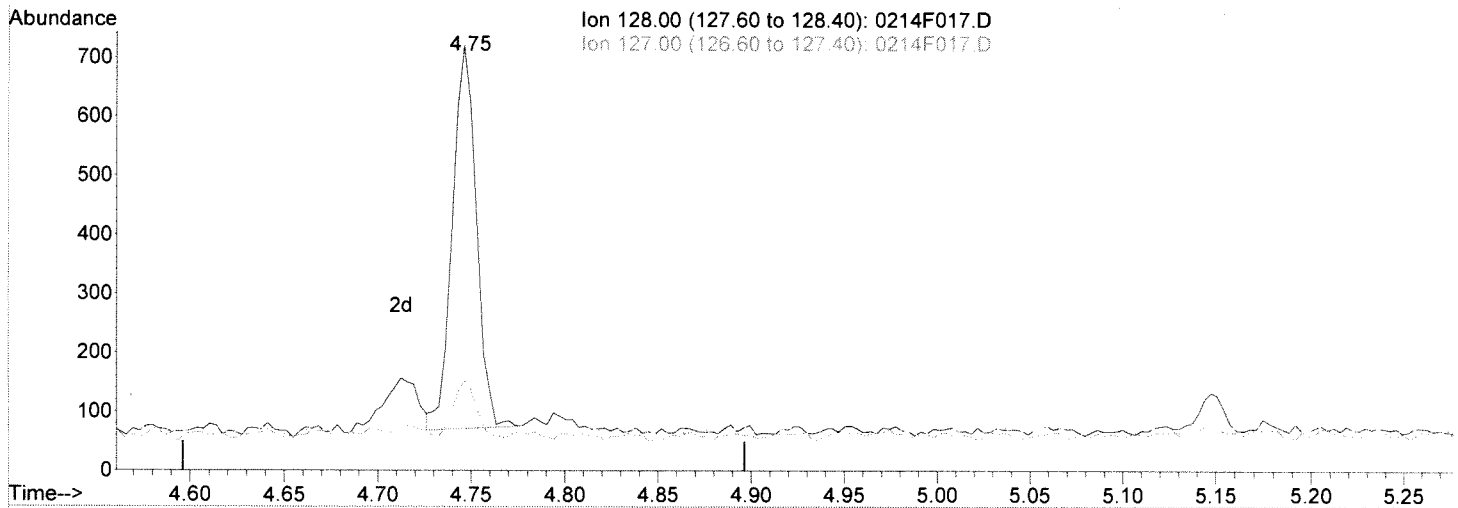
la
lp

Data File : J:\MS14\DATA\021418\0214F017.D
Acq On : 14 Feb 2018 11:55 am
Sample : K1801267-004
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:40 2018

Vial: 17
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F017.D

(2) Naphthalene (T)

4.75min 2.13ng/ml

response 579

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	13.80
129.00	20.50	11.63
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

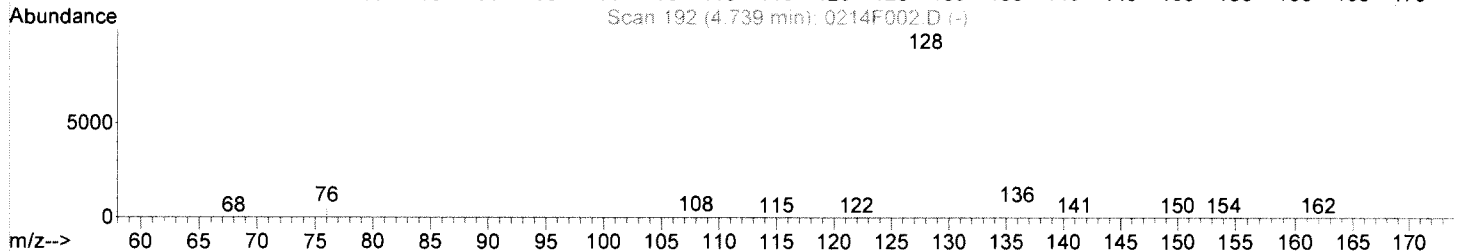
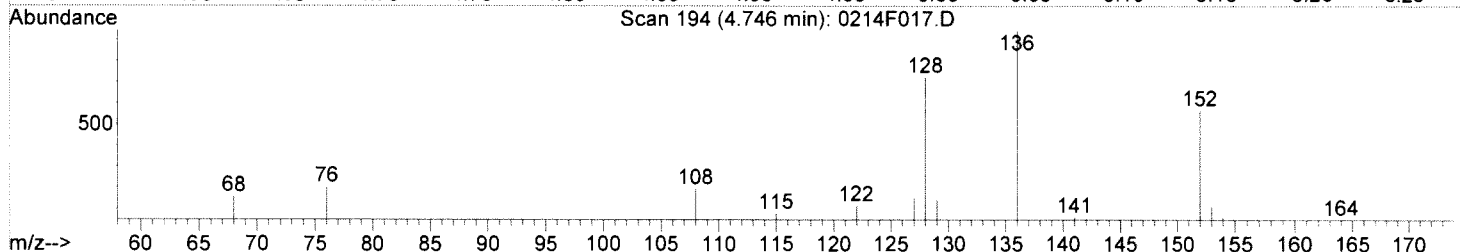
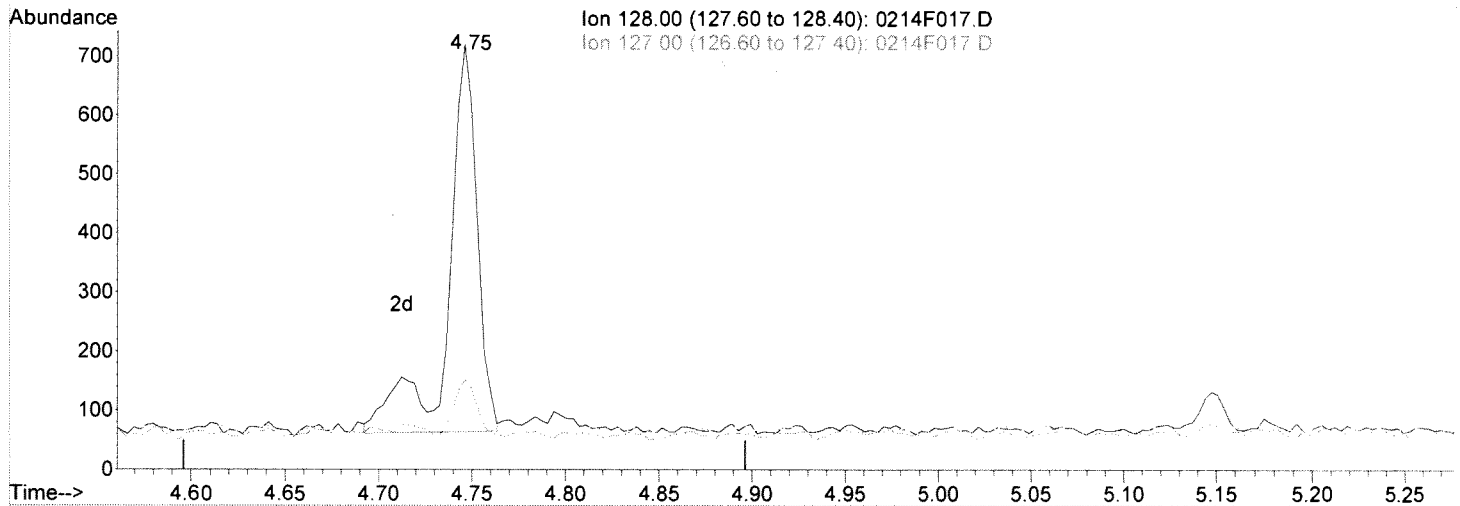
Handwritten signatures and initials

Data File : J:\MS14\DATA\021418\0214F017.D
Acq On : 14 Feb 2018 11:55 am
Sample : K1801267-004
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:41 2018

Vial: 17
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F017.D

(2) Naphthalene (T)

4.75min 2.62ng/ml m

response 710

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	21.11
129.00	20.50	19.86
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

02/14/18

Handwritten signature and initials

Exception Report


Data File: J:\MS14\DATA\031318\0313F006.D
Lab ID: K1801267-008
Run Type: SMPL
Matrix: WATER

Date Acquired: 03/13/2018 07:43
Date Quantitated: 03/13/2018 13:30
Batch ID: KWG1801409
Analysis Method: 8270D SIM
ListJoinID: LJ18861

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:  **MAR 14 2018**

Secondary Review: 

Quantitation Report

Data File:	J:\MS14\DATA\031318\0313F006.D	Instrument:	MS14
Acqu Date:	03/13/2018 07:43	Quant Date:	03/13/2018 13:30
Run Type:	SMPL	ListJoinID:	LJ18861
Lab ID:	K1801267-008	Vial:	6
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:	IV	Matrix:	WATER
Prod Code:	8270D PAH SIM	Collect Date:	03/06/2018	Receive Date:	03/06/2018

Analysis Lot:	KWG1801409	Prep Lot:	KWG1801347	Report Group:	K1801267
Analysis Method:	8270D SIM	Prep Method:	EPA 3511		
Prep Ref:	1666761	Prep Date:	03/09/2018		

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ18861
Tune Ref:	J:\MS14\DATA\031318\0313F001.D	Method ID:	MJ1638
MB Ref:	J:\MS14\DATA\031318\0313F003.D	Quant based on Report List	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.72	0.00	136	56164m	200.00	OK
2	Acenaphthene-d10	6.29	0.00	164	30745	200.00	OK
3	Phenanthrene-d10	7.53	0.00	188	61955	200.00	OK
4	Chrysene-d12	10.05	-0.01	240	76318	200.00	OK
5	Perylene-d12	13.14	0.00	264	82546	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.73	0.00	0.00	176	176410	838.77	84	42-131	OK
3	Fluoranthene-d10	8.52	0.00	0.00	212	359723	924.06	92	42-133	OK
4	Terphenyl-d14	8.86	-0.01	0.00	244	274722	853.74	85	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.74		0.00	128	409	1.28	0.030	J	
1	2-Methylnaphthalene	5.39		0.00	142	108	0.4800	0.011	J	
2	Acenaphthylene	6.18	0.01	0.00	152	763m	2.03	0.047	J	
2	Acenaphthene	6.31	-0.01	0.00	154	614	2.90	0.067	J	
2	Dibenzofuran	6.47		0.00	168	339	1.02	0.024	J	
2	Fluorene	6.75		0.00	166	533m	2.04	0.047	JX	
3	Phenanthrene	7.55		0.00	178	2111m	5.49	0.13		
3	Anthracene	7.59		0.00	178	2297	6.06	0.14		
3	Fluoranthene	8.53		0.00	202	7722m	16.93	0.39		
4	Pyrene	8.72	-0.01	0.00	202	79107	171.73	4.0		
4	Benz(a)anthracene	10.04		0.00	228	3065	6.66	0.15		
4	Chrysene	10.09	-0.01	0.00	228	1583m	3.68	0.086	J	
5	Benzo(b)fluoranthene	12.09	-0.02	0.00	252	15389	29.53	0.69		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\031318\0313F006.D
Acqu Date: 03/13/2018 07:43
Run Type: SMPL
Lab ID: K1801267-008

Quant Date: 03/13/2018 13:30
ListJoinID: LJ18861

Instrument: MS14
Vial: 6
Dilution: 1.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.17	-0.01	0.00	252	5326m	10.41	0.24		
5	Benzo(a)pyrene	12.97	-0.01	0.00	252	8160	17.91	0.42		
5	Indeno(1,2,3-cd)pyrene	15.39	-0.01	0.00	276	2789	6.82	0.16		
5	Dibenz(a,h)anthracene	15.44		0.00	278	892	2.14	0.050	J	
5	Benzo(g,h,i)perylene	15.78		0.00	276	3767	8.27	0.19		

Prep Amount: 86 ml
Prep Final Vol: 2 ml

Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F006.D
 Acq On : 13 Mar 2018 7:43 am
 Sample : K1801267-008
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25:10 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.72	136	56164m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.29	164	30745	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.53	188	61955	200.00	ng/ml	0.00
23) Chrysene-d12	10.05	240	76318	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	82546	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	0.00	152	0d	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
13) Fluorene-d10	6.73	176	176410	838.77	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	83.88%	
22) Fluoranthene-d10	8.52	212	359723	924.06	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	92.41%	
25) Terphenyl-d14	8.86	244	274722	853.74	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	85.37%	

Target Compounds

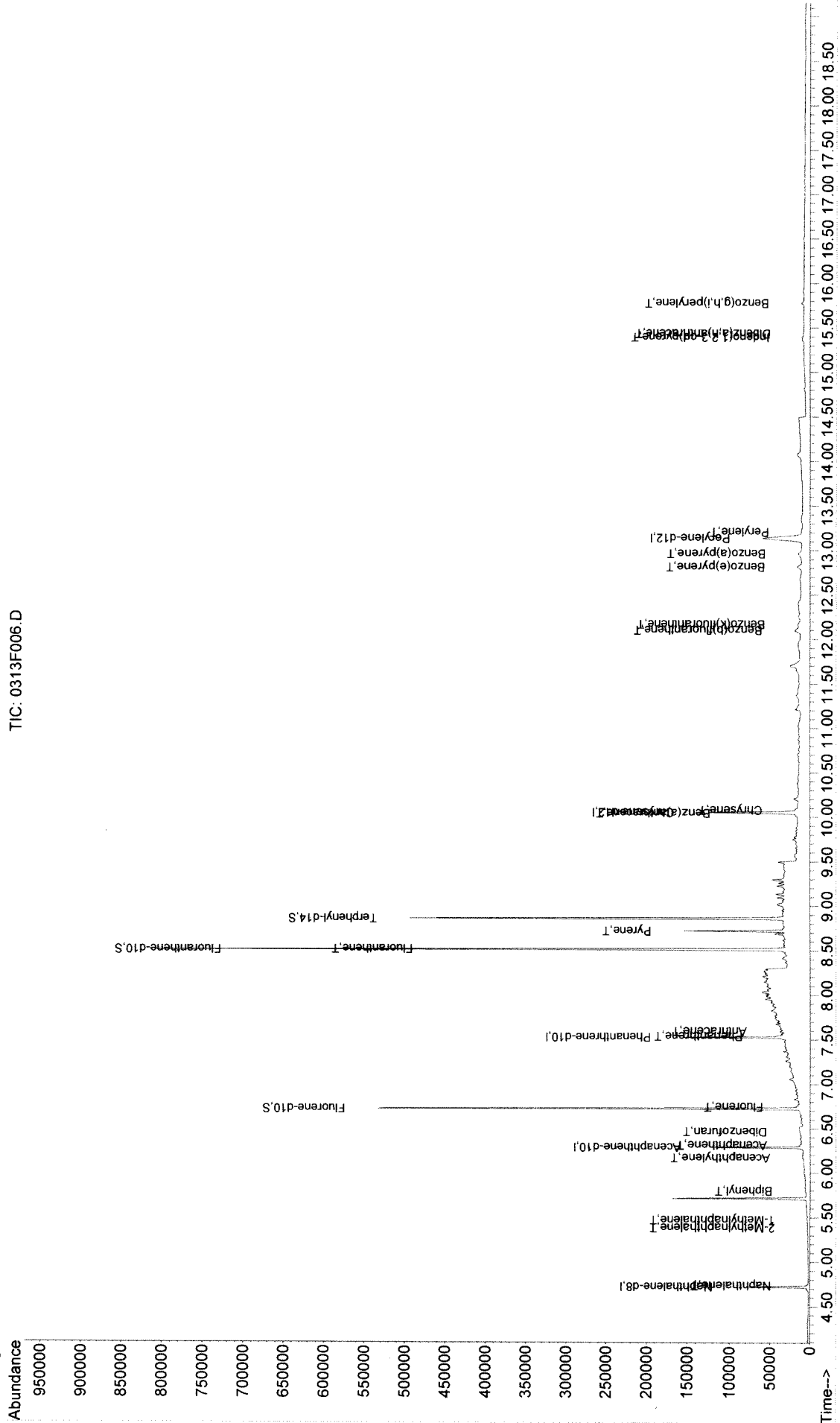
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.74	128	409	1.28	ng/ml	89
4) 2-Methylnaphthalene	5.39	142	108	0.48	ng/ml#	74
5) 1-Methylnaphthalene	5.47	142	77m	0.39	ng/ml	
6) Biphenyl	5.80	154	619	2.20	ng/ml	90
9) Acenaphthylene	6.18	152	763m	2.03	ng/ml	
10) Acenaphthene	6.31	154	614	2.90	ng/ml	90
11) Dibenzofuran	6.47	168	339	1.02	ng/ml	95
14) Fluorene	6.75	166	533m	2.04	ng/ml	
17) Phenanthrene	7.55	178	2111m	5.49	ng/ml	
18) Anthracene	7.59	178	2297	6.06	ng/ml	92
21) Fluoranthene	8.53	202	7722m	16.93	ng/ml	
24) Pyrene	8.72	202	79107	171.73	ng/ml	99
26) Benz(a)anthracene	10.04	228	3065	6.66	ng/ml	90
27) Chrysene	10.09	228	1583m	3.68	ng/ml	
29) Benzo(b)fluoranthene	12.09	252	15389	29.53	ng/ml	91
30) Benzo(k)fluoranthene	12.17	252	5326m	10.41	ng/ml	
31) Benzo(e)pyrene	12.81	252	9478	19.07	ng/ml	96
32) Benzo(a)pyrene	12.97	252	8160	17.91	ng/ml	93
33) Perylene	13.22	252	1041	2.32	ng/ml	68
34) Indeno(1,2,3-cd)pyrene	15.39	276	2789	6.82	ng/ml	98
35) Dibenz(a,h)anthracene	15.44	278	892	2.14	ng/ml	89
36) Benzo(g,h,i)perylene	15.78	276	3767	8.27	ng/ml	97

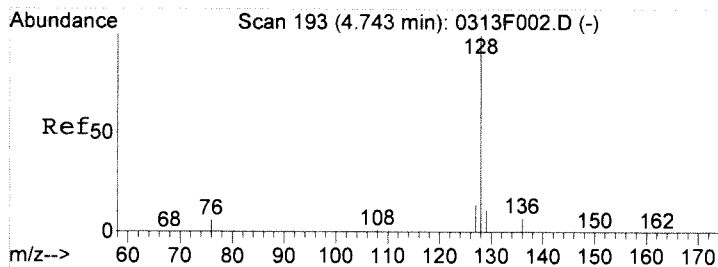
(#) = qualifier out of range (m) = manual integration
 0313F006.D 101317PAH.M Tue Mar 13 13:30:54 2018

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:30 2018

Vial: 6
Operator: Lweiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

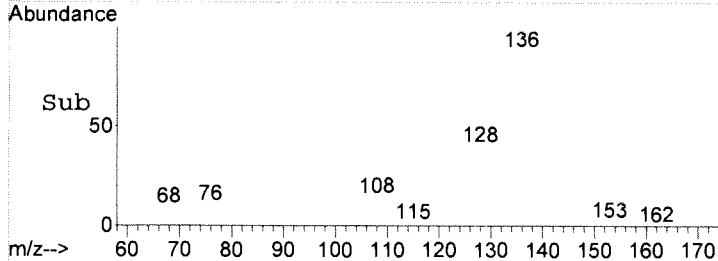
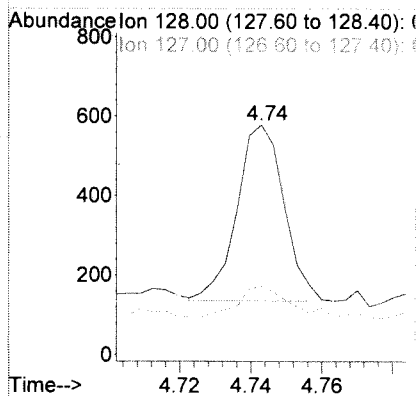
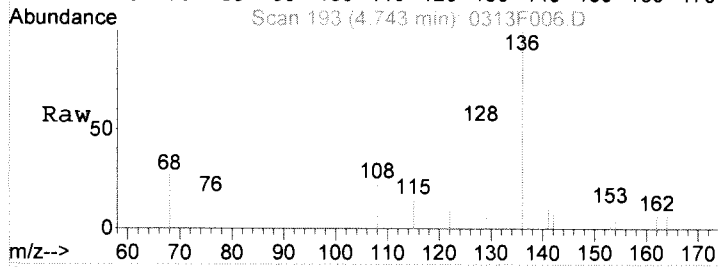
Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Initial Calibration





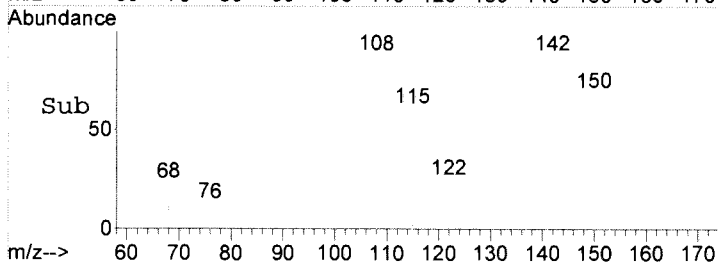
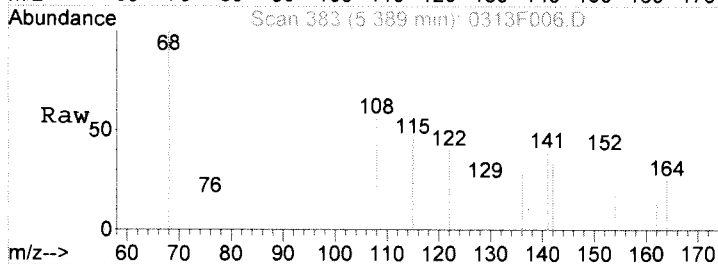
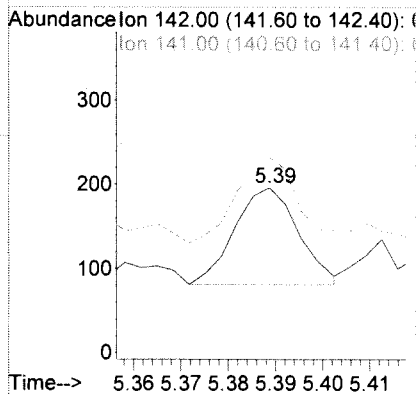
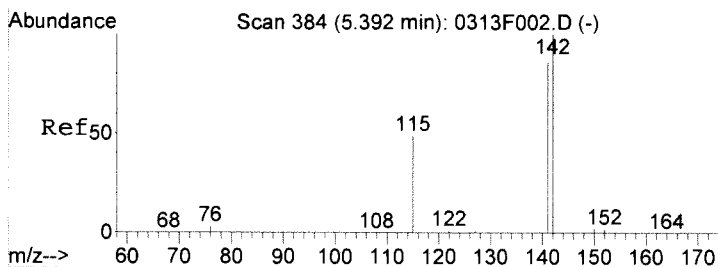
#2
 Naphthalene
 Concen: 1.28 ng/ml
 RT: 4.74 min Scan# 193
 Delta R.T. 0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

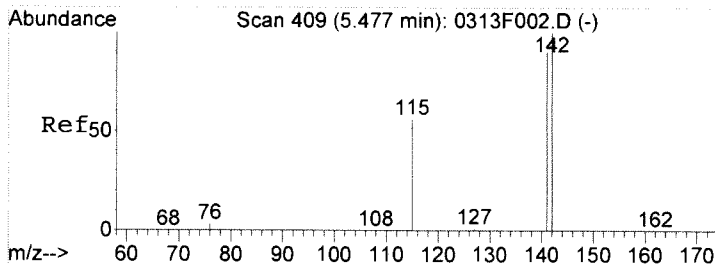
Tgt Ion	Resp	Lower	Upper
128	100		
127	17.6	0.0	44.1
129	15.6	0.0	30.4



#4
 2-Methylnaphthalene
 Concen: 0.48 ng/ml
 RT: 5.39 min Scan# 383
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

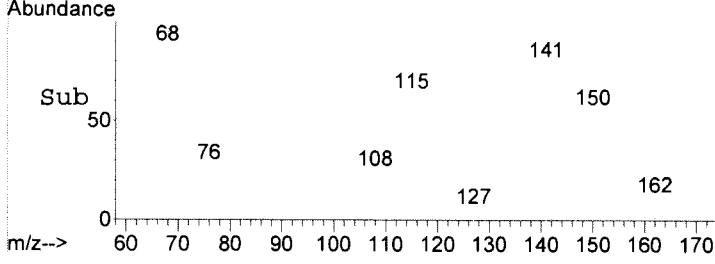
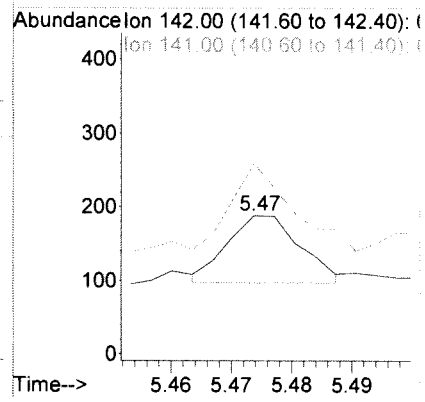
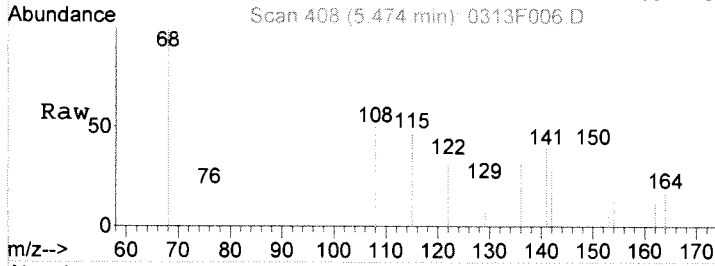
Tgt Ion	Resp	Lower	Upper
142	100		
141	88.7	51.7	111.7
115	67.0	2.0	42.0





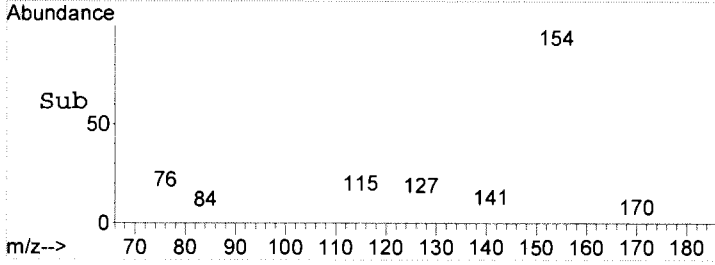
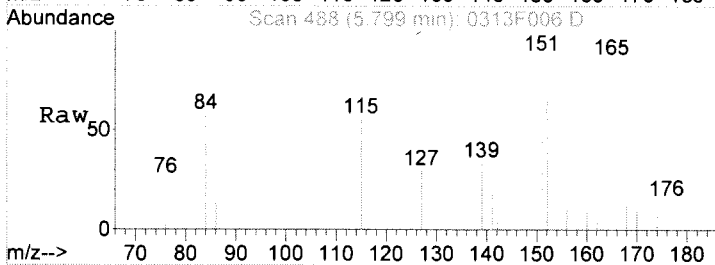
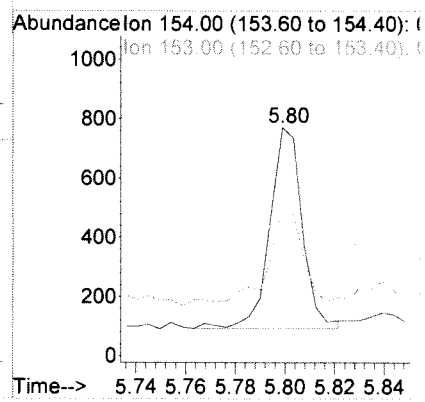
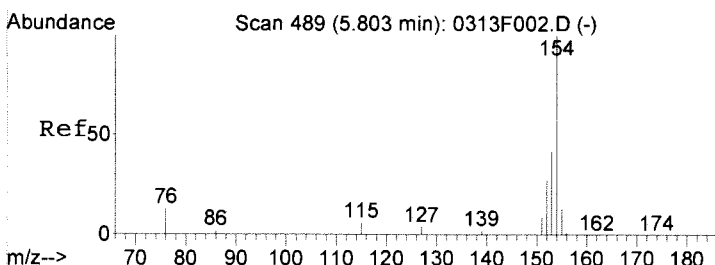
#5
 1-Methylnaphthalene
 Concen: 0.39 ng/ml m
 RT: 5.47 min Scan# 408
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

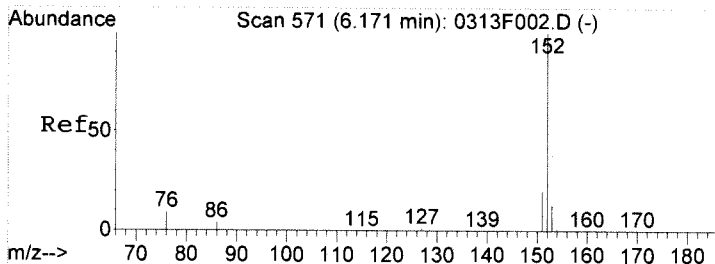
Tgt Ion	Ratio	Lower	Upper
142	100		
141	137.8	63.0	123.0#
115	165.4	22.4	62.4#



#6
 Biphenyl
 Concen: 2.20 ng/ml
 RT: 5.80 min Scan# 488
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

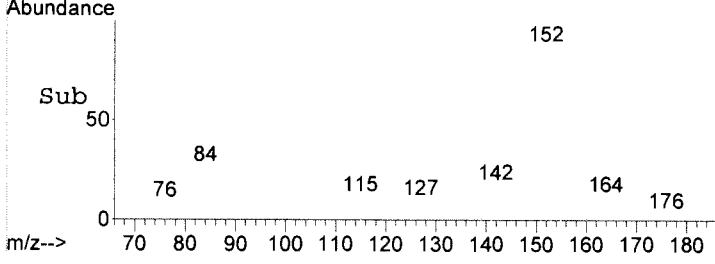
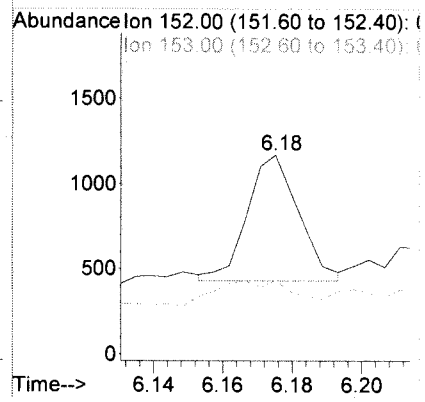
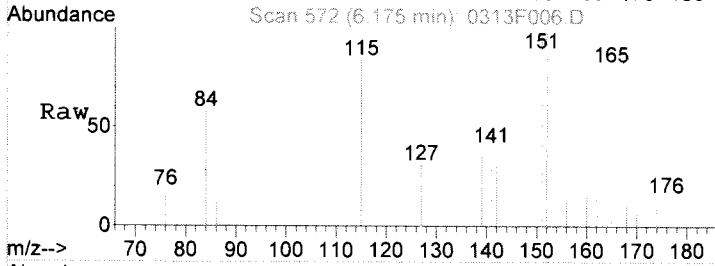
Tgt Ion	Ratio	Lower	Upper
154	100		
153	48.0	11.3	71.3
152	23.6	8.5	48.5





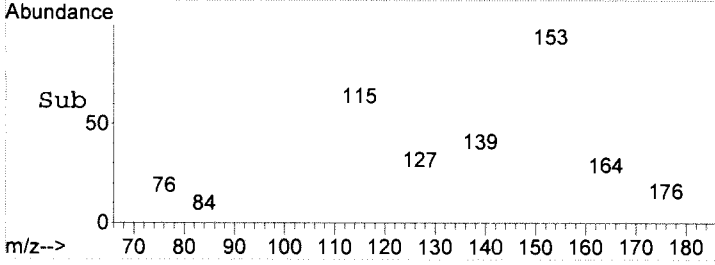
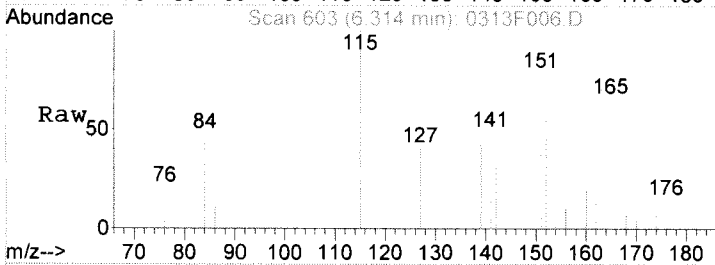
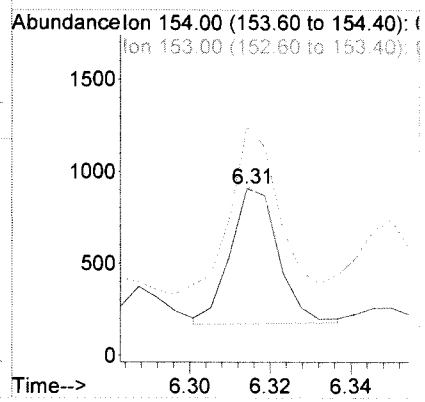
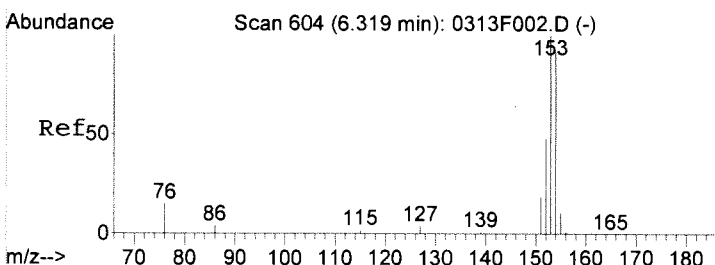
#9
 Acenaphthylene
 Concen: 2.03 ng/ml m
 RT: 6.18 min Scan# 572
 Delta R.T. 0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

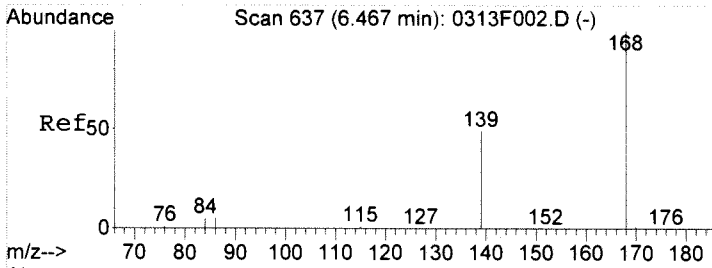
Tgt Ion	Resp	Lower	Upper
152	100		
153	36.9	0.0	42.8
151	102.1	0.3	40.3#



#10
 Acenaphthene
 Concen: 2.90 ng/ml
 RT: 6.31 min Scan# 603
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

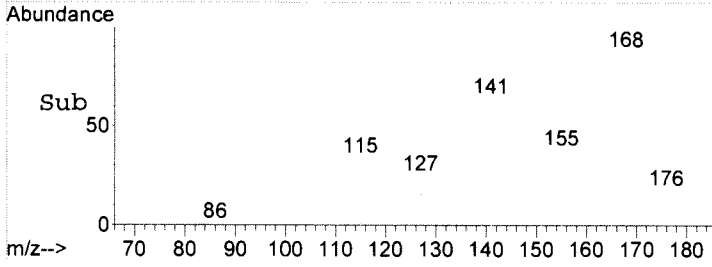
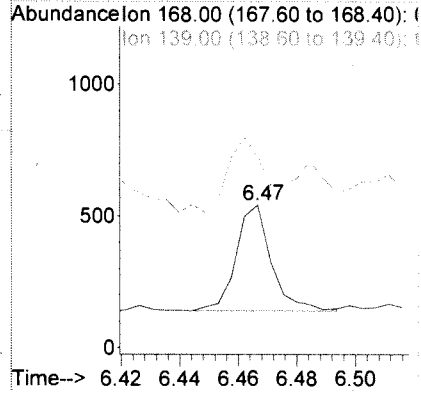
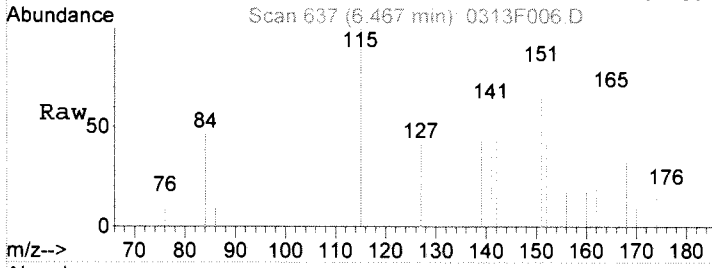
Tgt Ion	Resp	Lower	Upper
154	100		
153	121.3	77.8	137.8
152	49.2	20.8	80.8





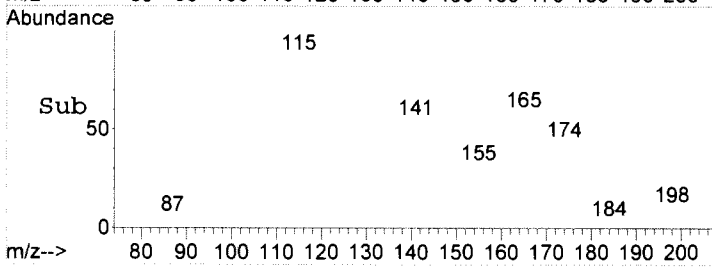
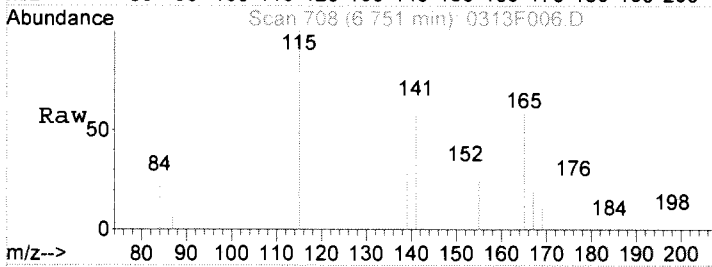
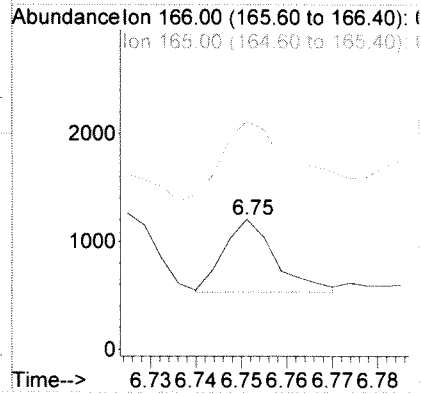
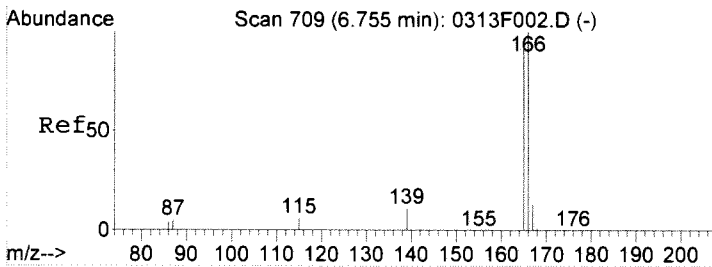
#11
 Dibenzofuran
 Concen: 1.02 ng/ml
 RT: 6.47 min Scan# 637
 Delta R.T. 0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

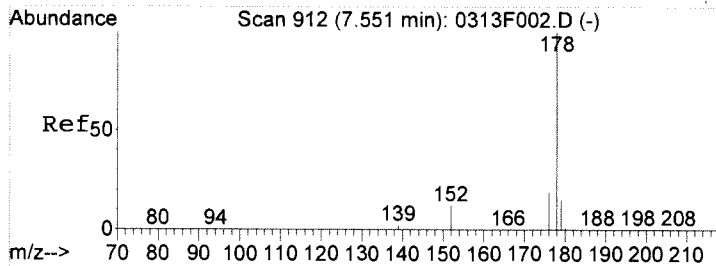
Tgt Ion	Ratio	Lower	Upper
168	100		
139	43.8	15.4	75.4
84	13.1	0.0	24.7



#14
 Fluorene
 Concen: 2.04 ng/ml m
 RT: 6.75 min Scan# 708
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

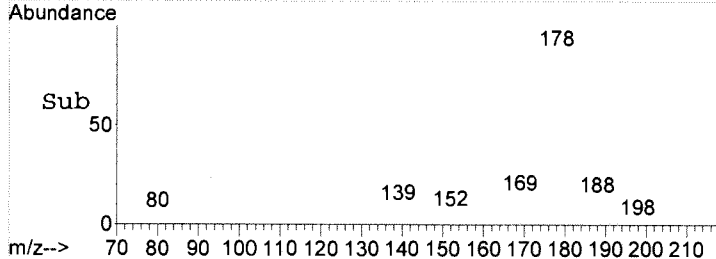
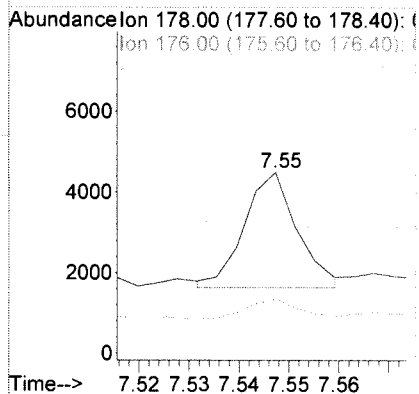
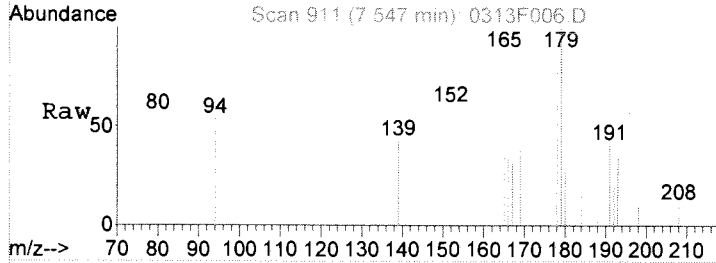
Tgt Ion	Ratio	Lower	Upper
166	100		
165	175.3	65.6	125.6#
167	57.7	0.0	33.0#





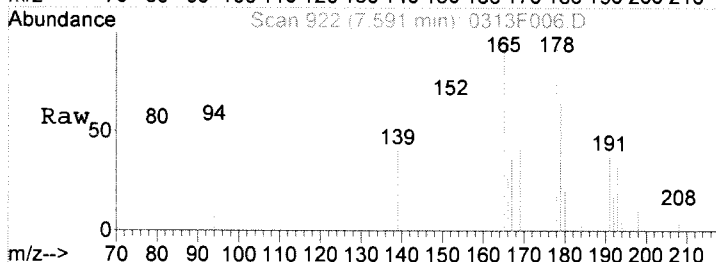
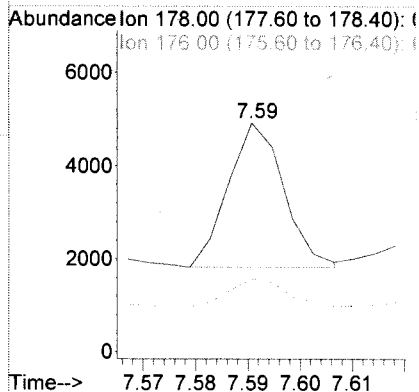
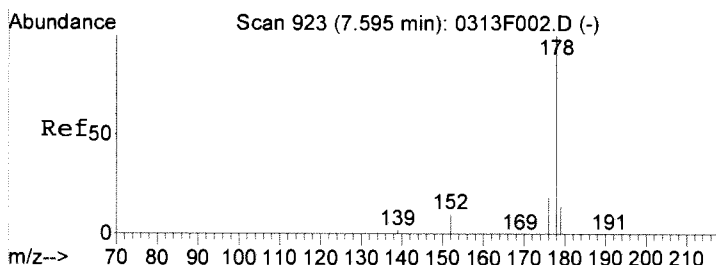
#17
 Phenanthrene
 Concen: 5.49 ng/ml m
 RT: 7.55 min Scan# 911
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

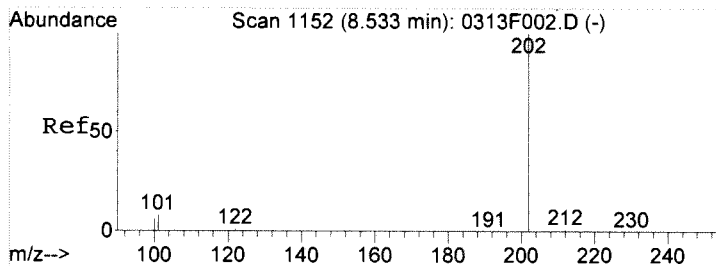
Tgt Ion	Ratio	Lower	Upper
178	100		
176	30.1	0.0	49.6
179	109.7	0.0	35.1#



#18
 Anthracene
 Concen: 6.06 ng/ml
 RT: 7.59 min Scan# 922
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

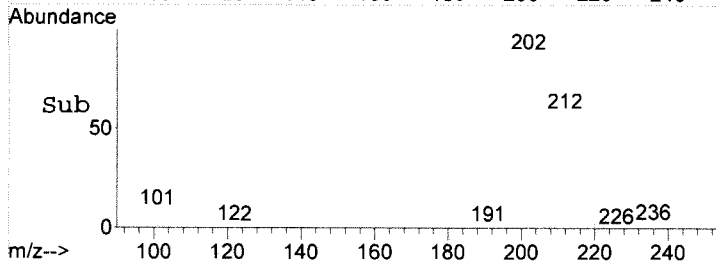
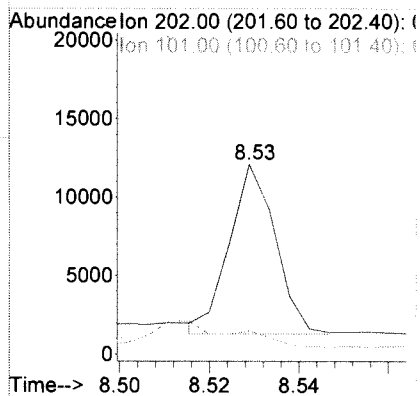
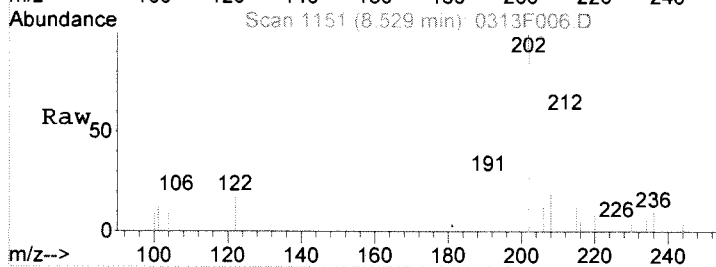
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.5	0.0	48.2
179	20.5	0.0	34.8





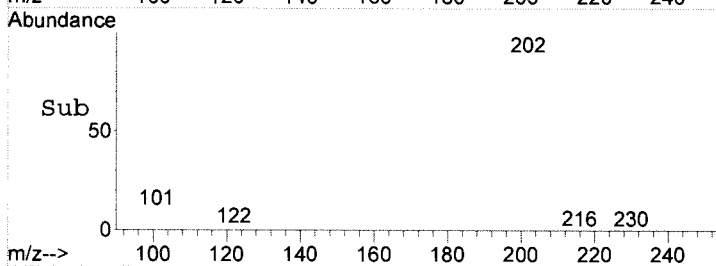
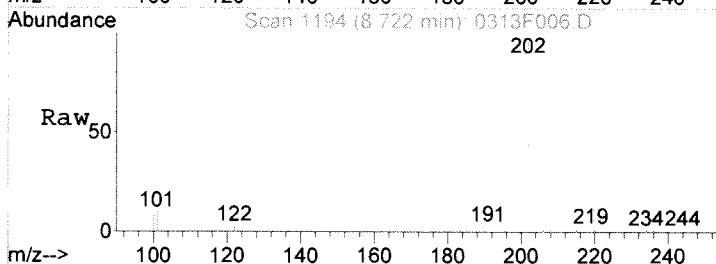
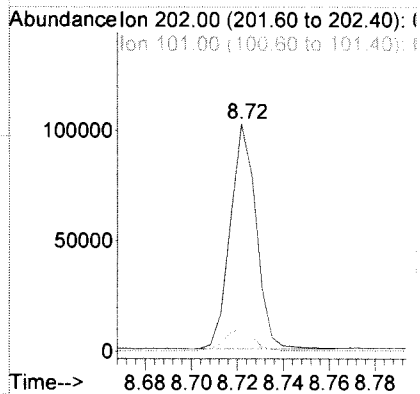
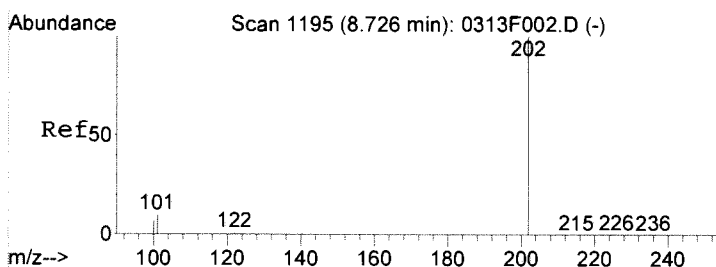
#21
 Fluoranthene
 Concen: 16.93 ng/ml m
 RT: 8.53 min Scan# 1151
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

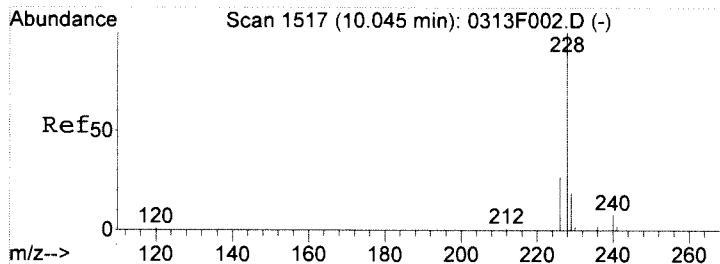
Tgt Ion	202	Resp	7722
Ion Ratio	100	Lower	Upper
101	12.1	0.0	39.1
100	8.7	0.0	27.0



#24
 Pyrene
 Concen: 171.73 ng/ml
 RT: 8.72 min Scan# 1194
 Delta R.T. -0.00 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

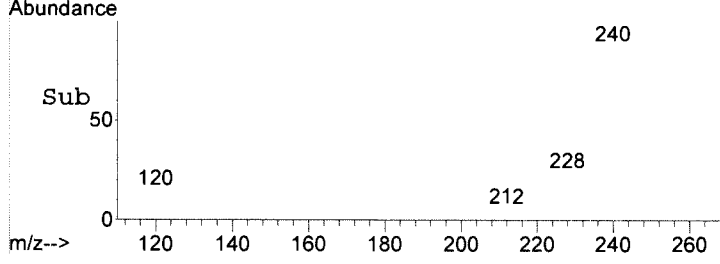
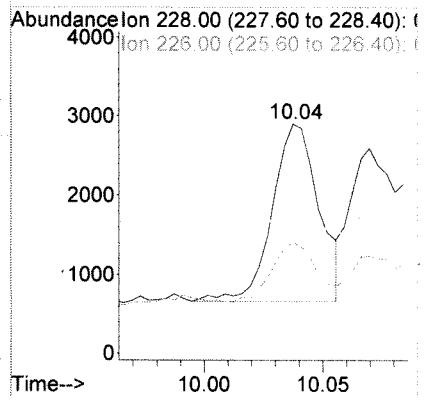
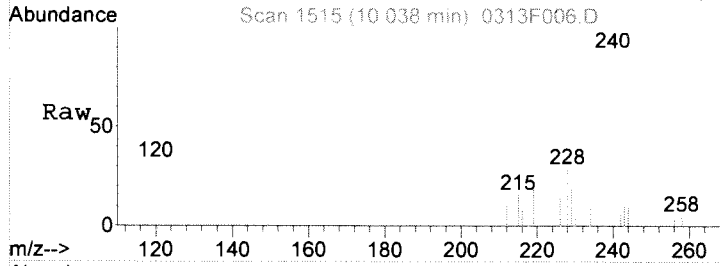
Tgt Ion	202	Resp	79107
Ion Ratio	100	Lower	Upper
101	10.0	0.0	40.5
100	7.7	0.0	28.3





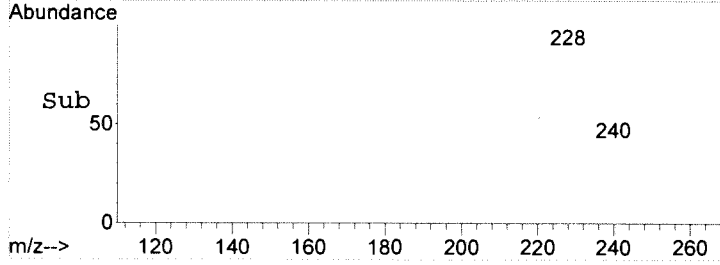
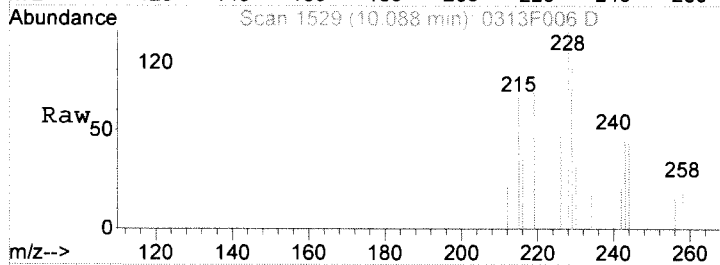
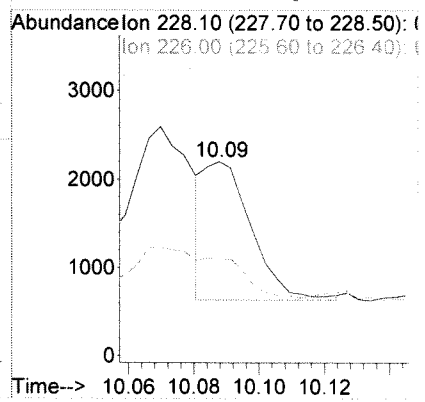
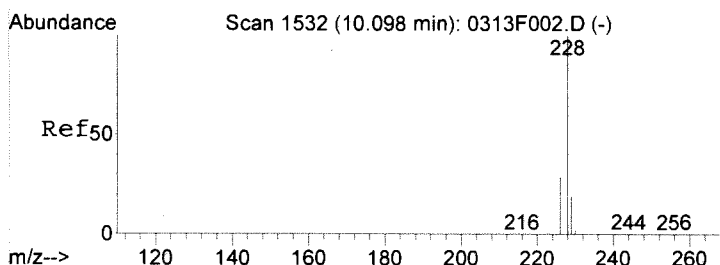
#26
Benz (a)anthracene
Concen: 6.66 ng/ml
RT: 10.04 min Scan# 1515
Delta R.T. -0.01 min
Lab File: 0313F006.D
Acq: 13 Mar 2018 7:43 am

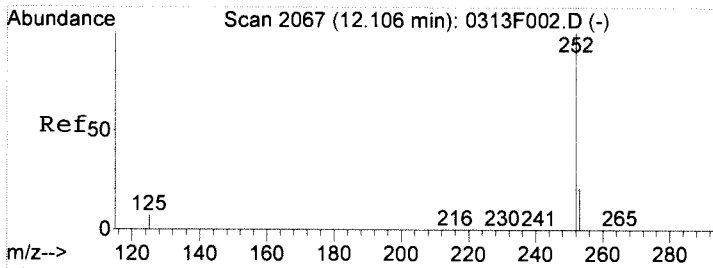
Tgt Ion	Resp	Lower	Upper
228	100		
226	31.1	0.0	56.4
229	24.8	0.0	39.3



#27
Chrysene
Concen: 3.68 ng/ml m
RT: 10.09 min Scan# 1529
Delta R.T. -0.01 min
Lab File: 0313F006.D
Acq: 13 Mar 2018 7:43 am

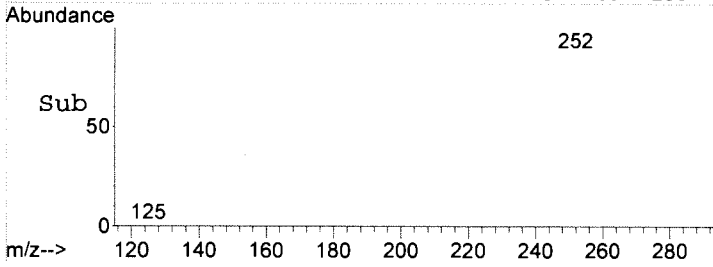
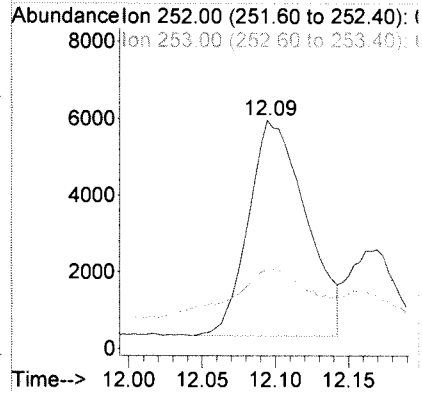
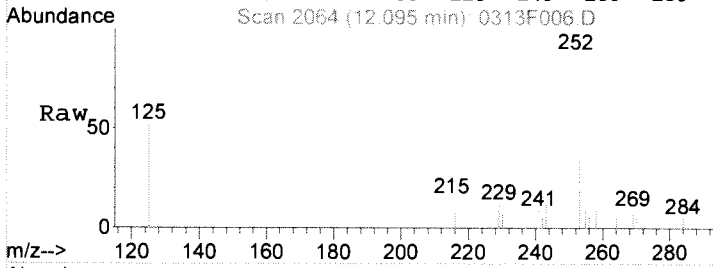
Tgt Ion	Resp	Lower	Upper
228	100		
226	49.8	0.0	59.0
229	82.9	0.0	39.2#





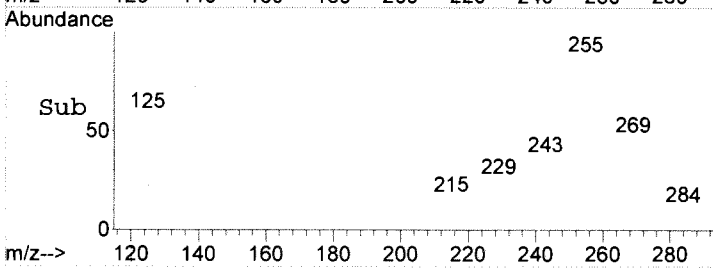
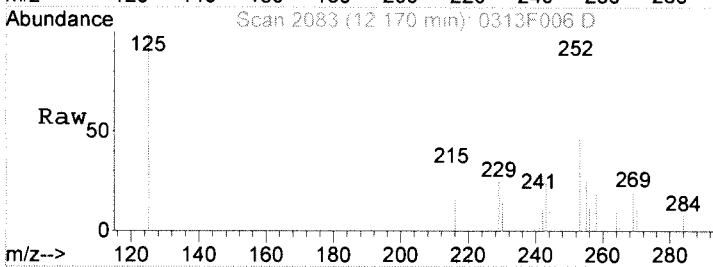
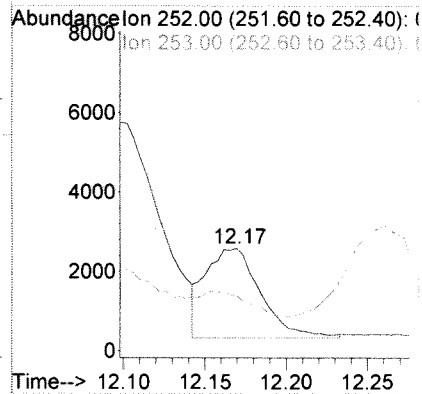
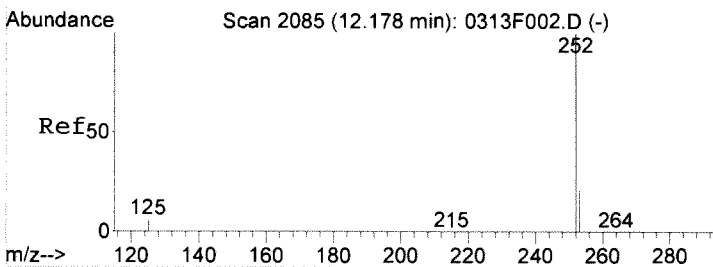
#29
 Benzo(b)fluoranthene
 Concen: 29.53 ng/ml
 RT: 12.09 min Scan# 2064
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

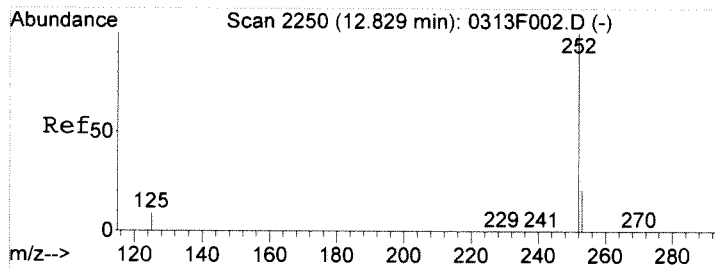
Tgt Ion	Ratio	Lower	Upper
252	100		
253	17.5	0.0	51.8
125	6.8	0.0	29.7



#30
 Benzo(k)fluoranthene
 Concen: 10.41 ng/ml m
 RT: 12.17 min Scan# 2083
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

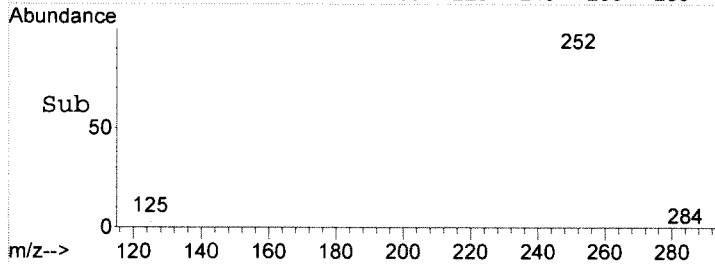
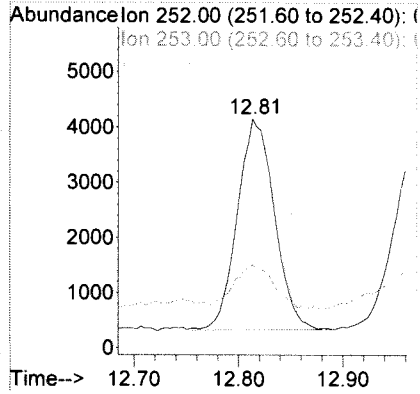
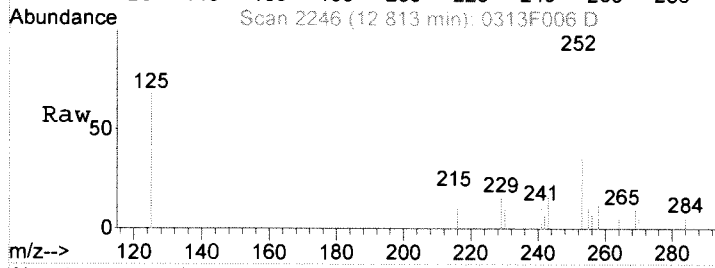
Tgt Ion	Ratio	Lower	Upper
252	100		
253	54.2	0.0	51.6#
125	116.3	0.0	29.7#





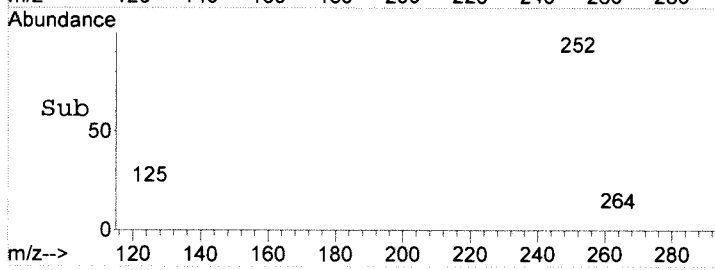
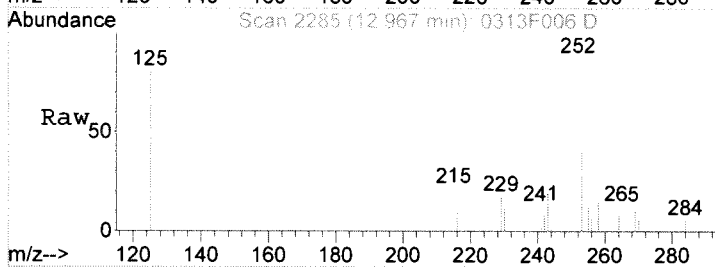
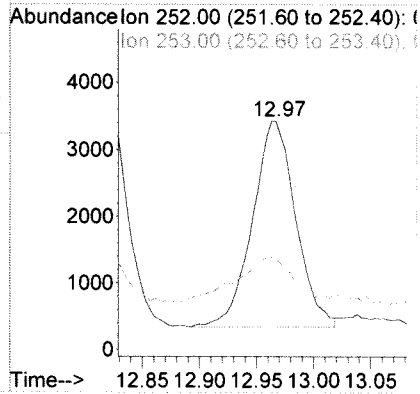
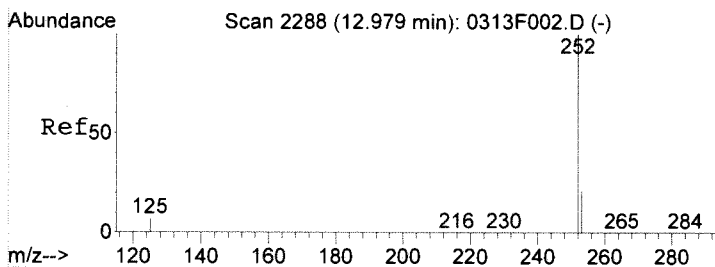
#31
 Benzo(e)pyrene
 Concen: 19.07 ng/ml
 RT: 12.81 min Scan# 2246
 Delta R.T. -0.02 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

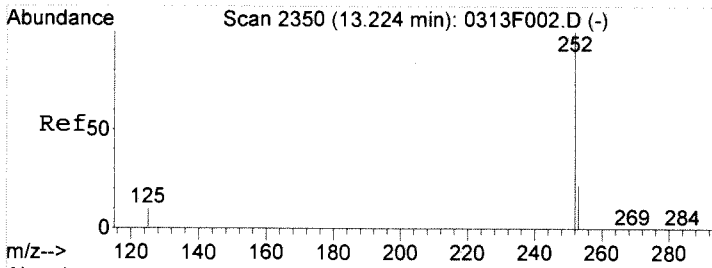
Tgt Ion	Resp	Lower	Upper
252	100		
253	19.5	0.0	51.6
125	12.5	0.0	33.5



#32
 Benzo(a)pyrene
 Concen: 17.91 ng/ml
 RT: 12.97 min Scan# 2285
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

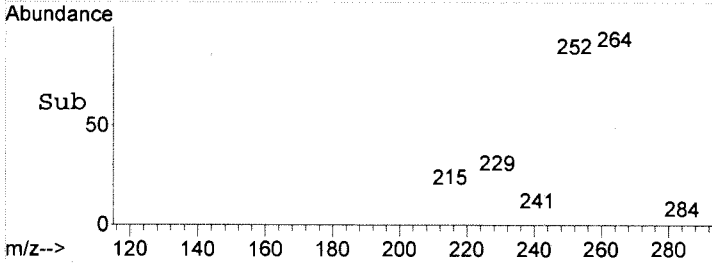
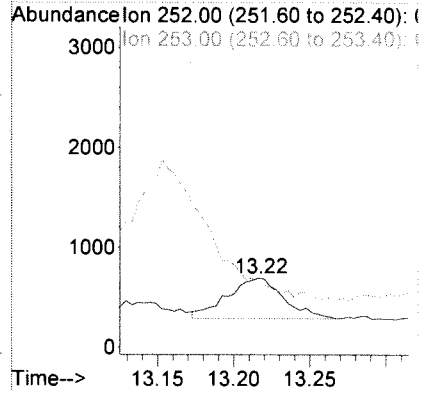
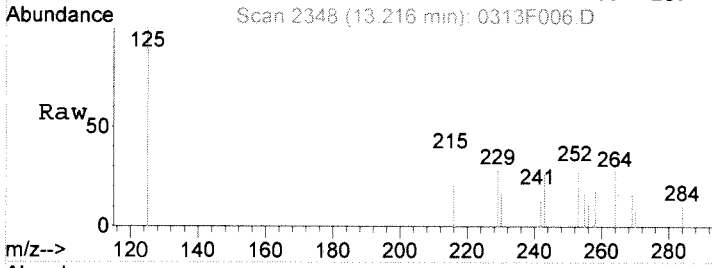
Tgt Ion	Resp	Lower	Upper
252	100		
253	19.4	0.0	51.8
125	14.7	0.0	31.1





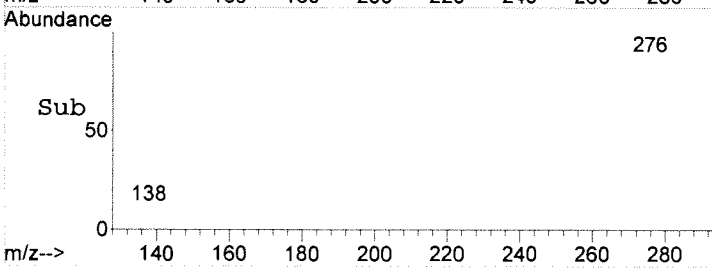
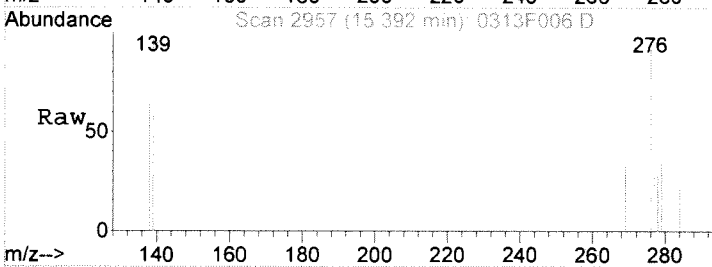
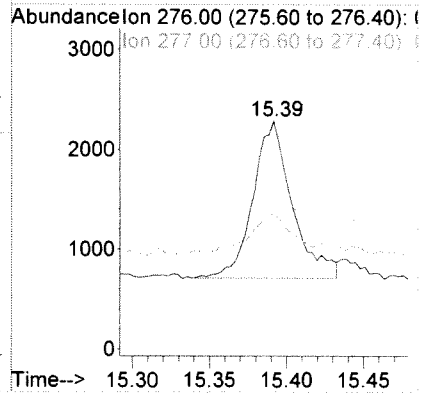
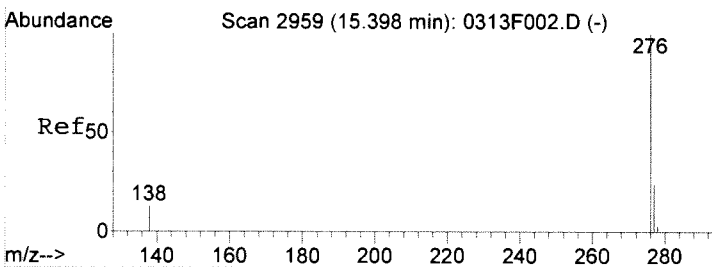
#33
 Perylene
 Concen: 2.32 ng/ml
 RT: 13.22 min Scan# 2348
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

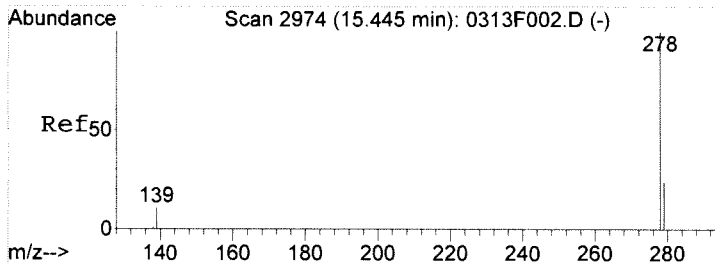
Tgt Ion	Ratio	Lower	Upper
252	100		
253	35.0	0.0	51.9
125	30.0	0.0	34.4



#34
 Indeno(1,2,3-cd)pyrene
 Concen: 6.82 ng/ml
 RT: 15.39 min Scan# 2957
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

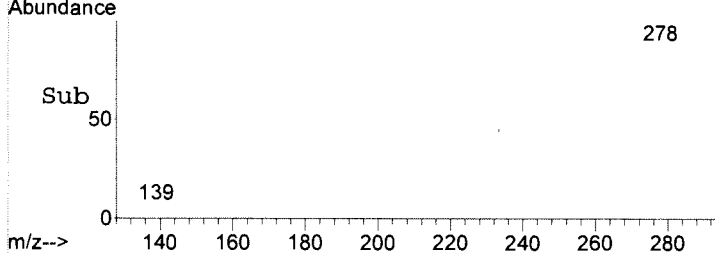
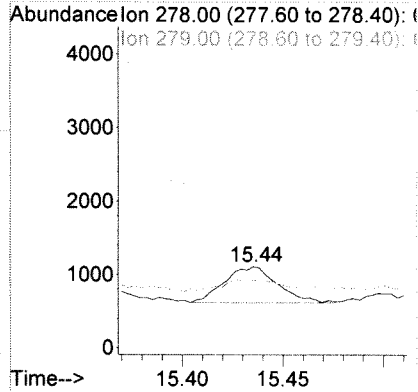
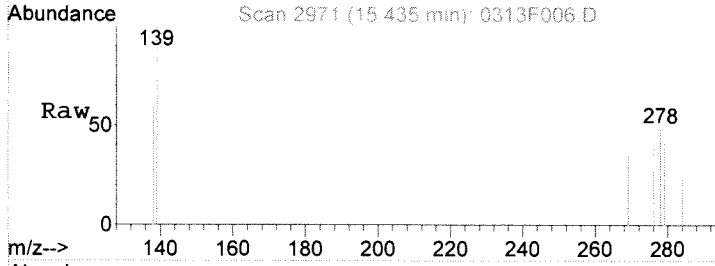
Tgt Ion	Ratio	Lower	Upper
276	100		
277	22.5	0.0	53.6
138	16.1	0.0	37.2





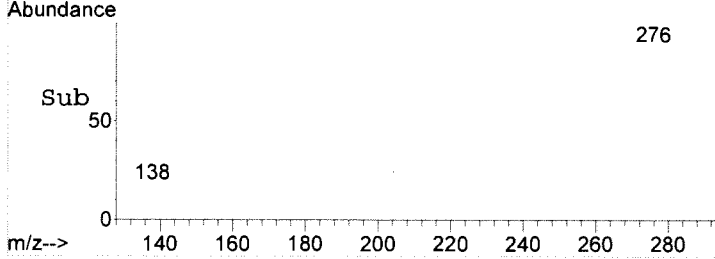
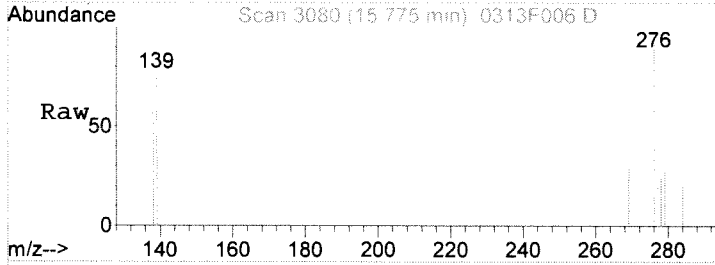
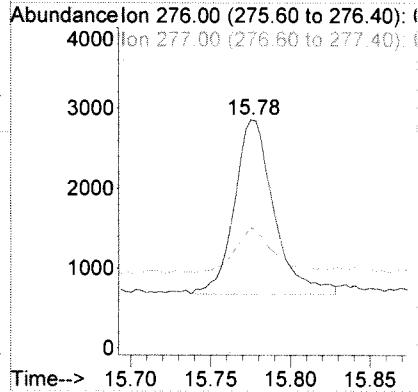
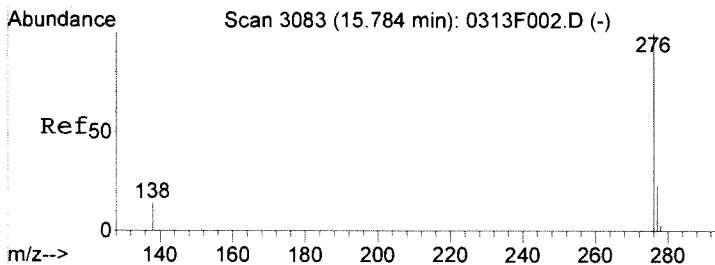
#35
 Dibenz(a,h)anthracene
 Concen: 2.14 ng/ml
 RT: 15.44 min Scan# 2971
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

Tgt Ion	Resp	Lower	Upper
278	892		
279	22.7	0.0	54.1
139	3.5	0.0	34.1



#36
 Benzo(g,h,i)perylene
 Concen: 8.27 ng/ml
 RT: 15.78 min Scan# 3080
 Delta R.T. -0.01 min
 Lab File: 0313F006.D
 Acq: 13 Mar 2018 7:43 am

Tgt Ion	Resp	Lower	Upper
276	3767		
277	25.6	0.0	53.4
138	19.3	0.0	38.8

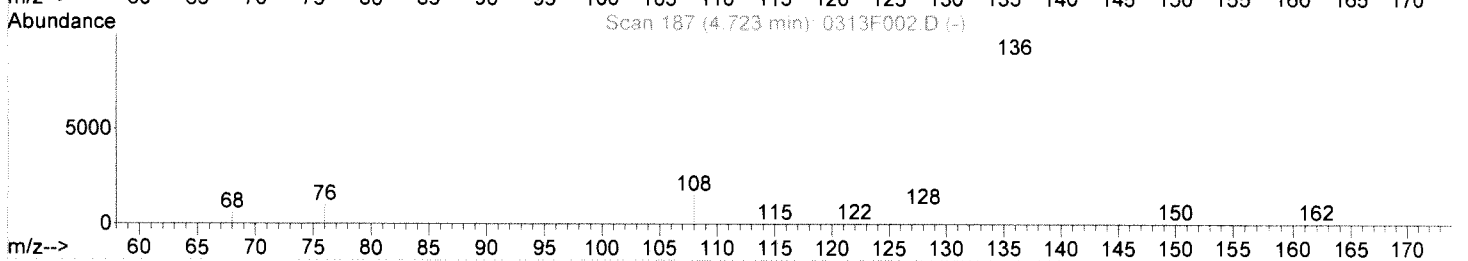
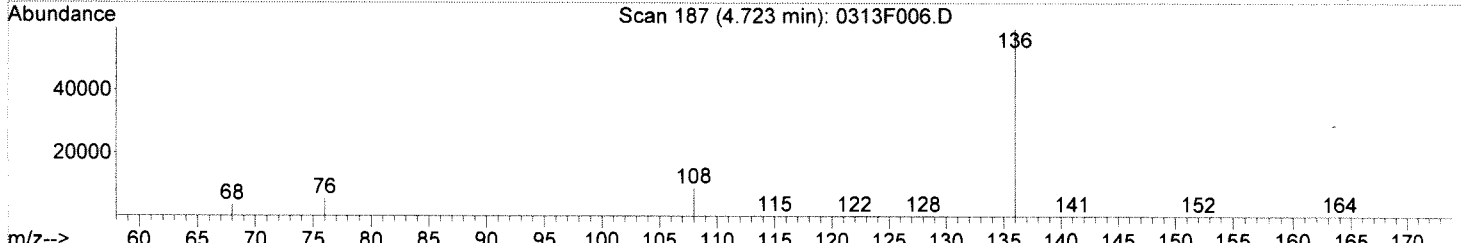
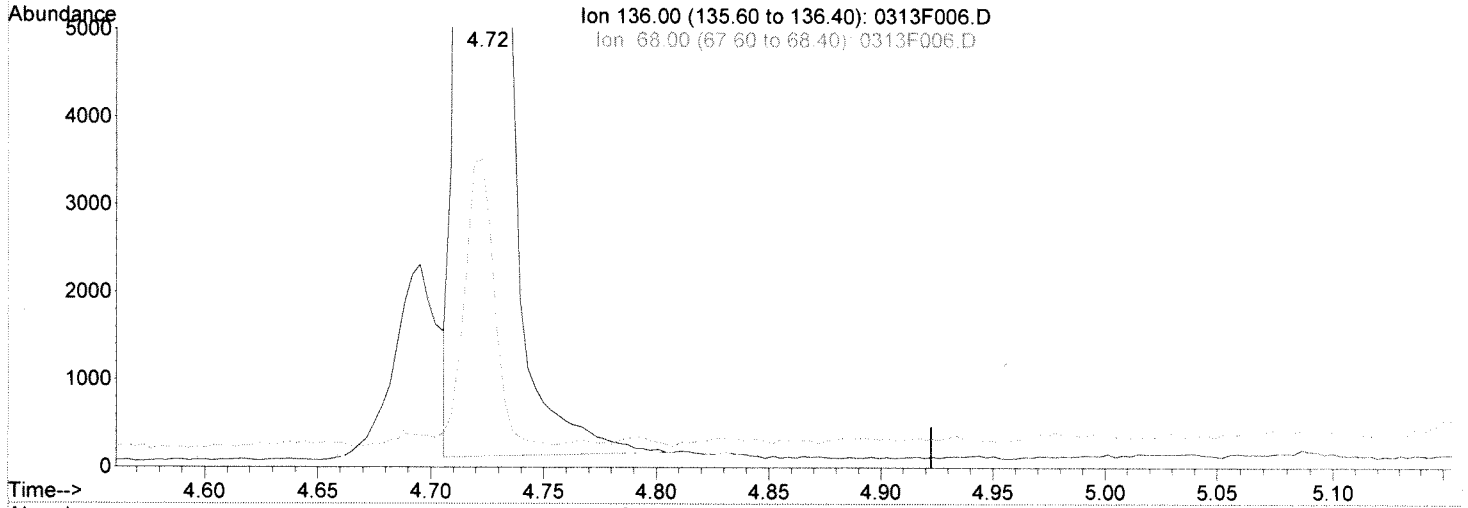


Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:25 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(1) Naphthalene-d8 (I)

4.72min 200.00ng/ml

response 52892

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.50
108.00	11.60	14.74
0.00	0.00	0.00

Manual Integration:

Before

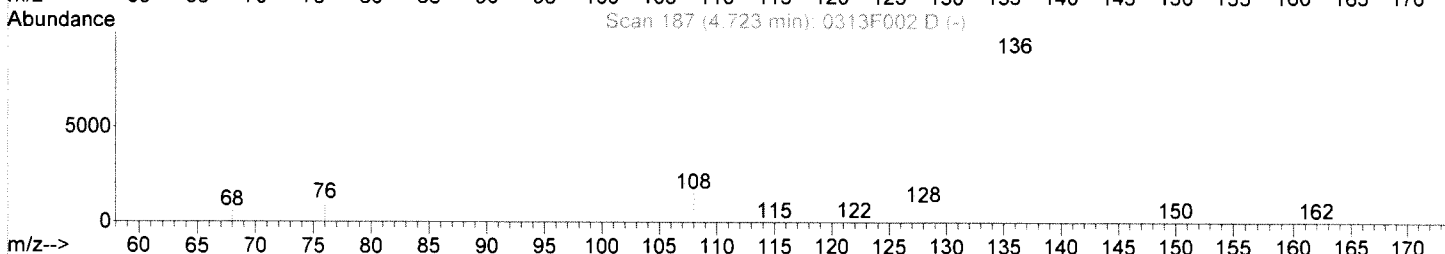
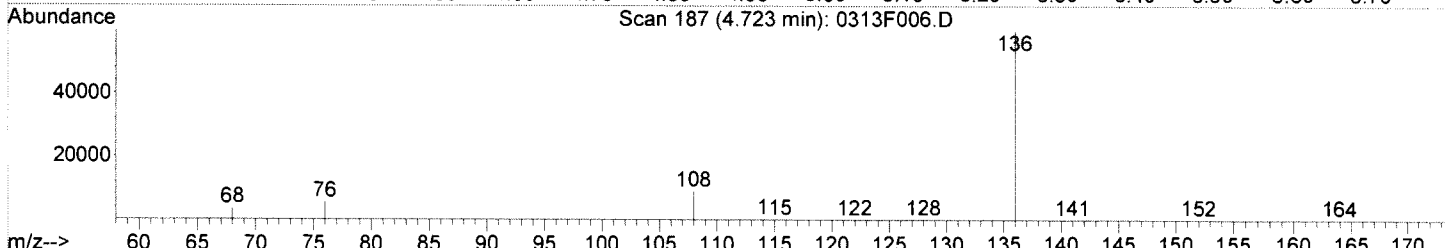
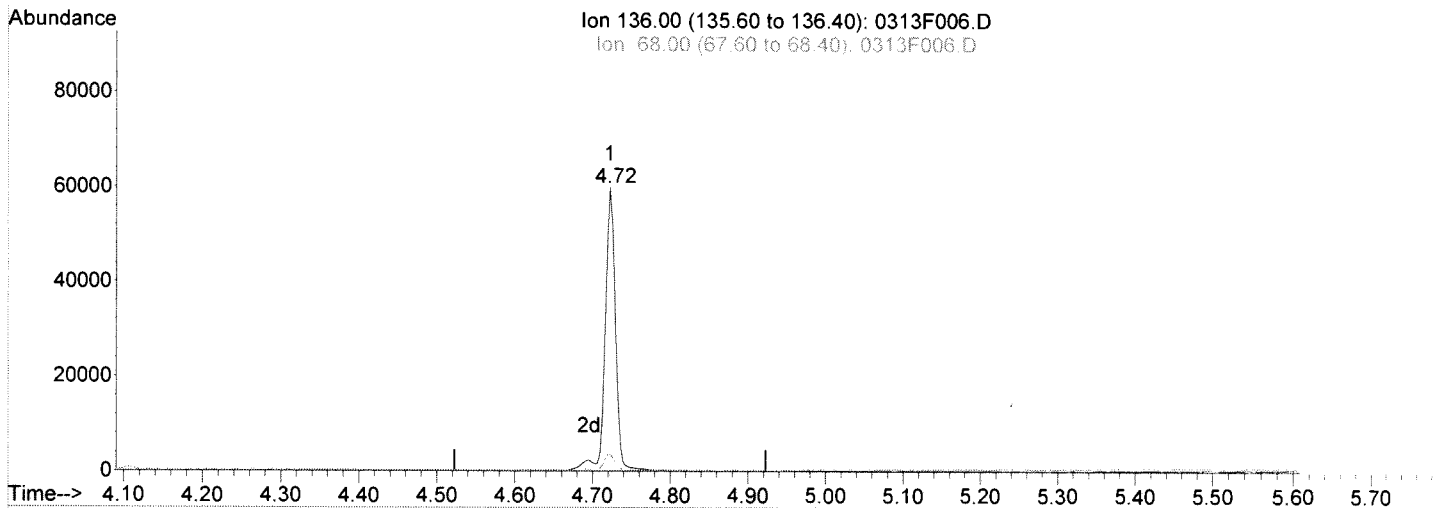
03/13/18

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:28 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(1) Naphthalene-d8 (I)

4.72min 200.00ng/ml m

response 56164

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.87
108.00	11.60	14.95
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

03/13/18

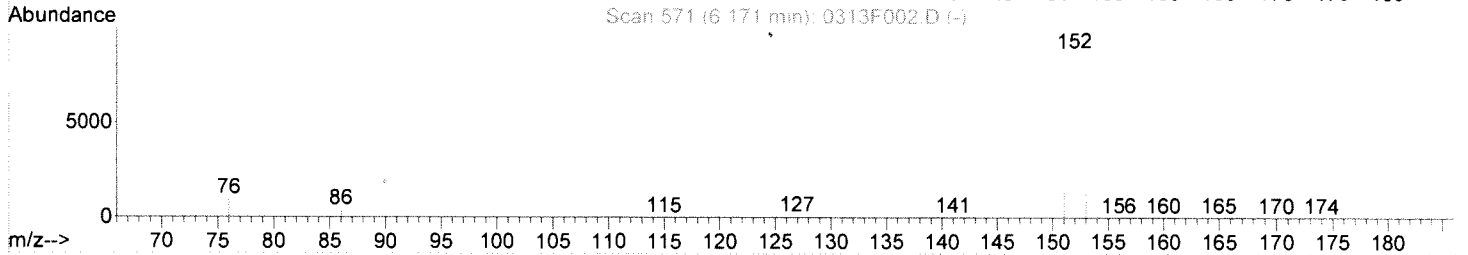
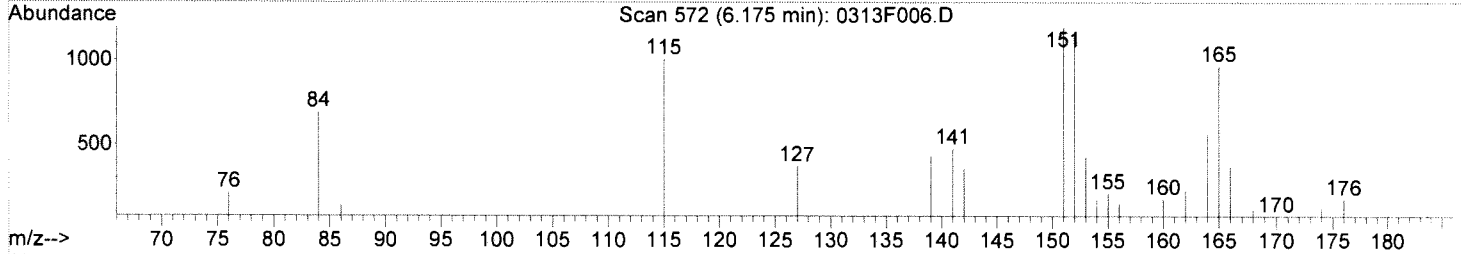
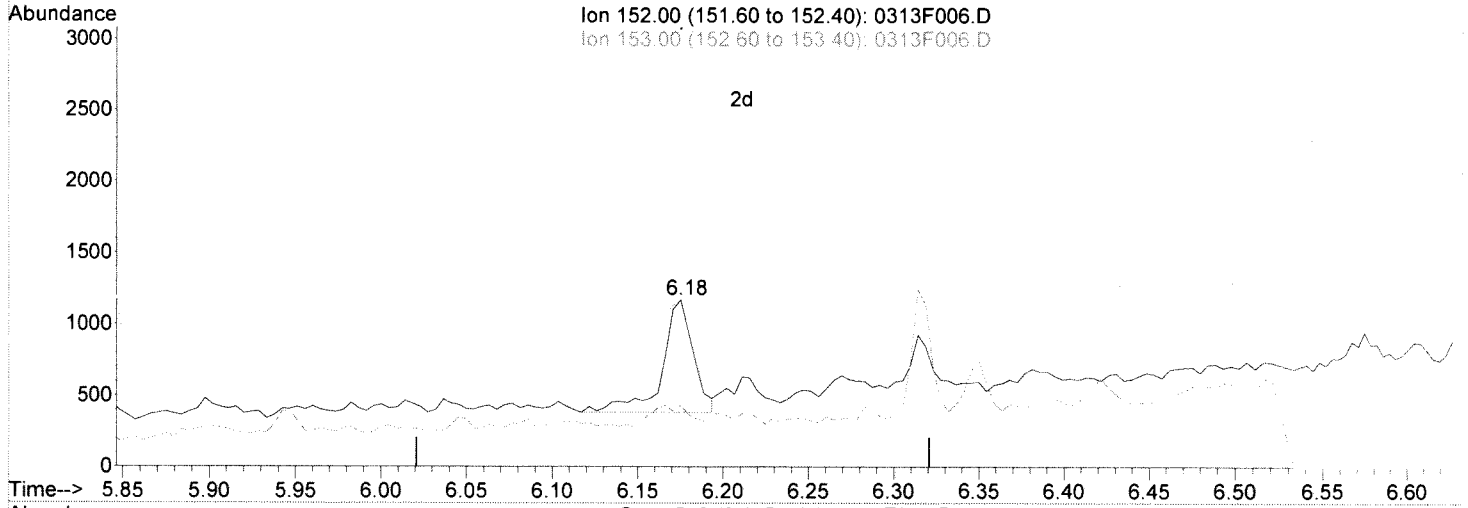
lu
MP

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:28 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(9) Acenaphthylene (T)

6.18min 2.69ng/ml

response 1012

Ion	Exp%	Act%
152.00	100	100
153.00	12.80	16.60
151.00	20.30	29.02
0.00	0.00	0.00

Manual Integration:

Before

03/13/18

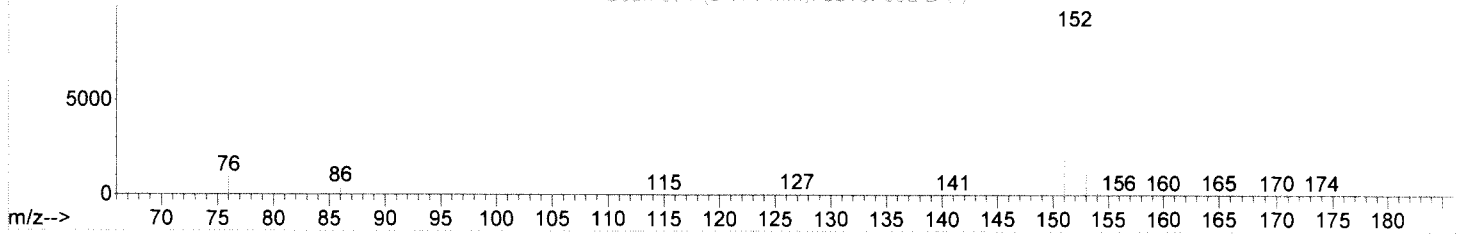
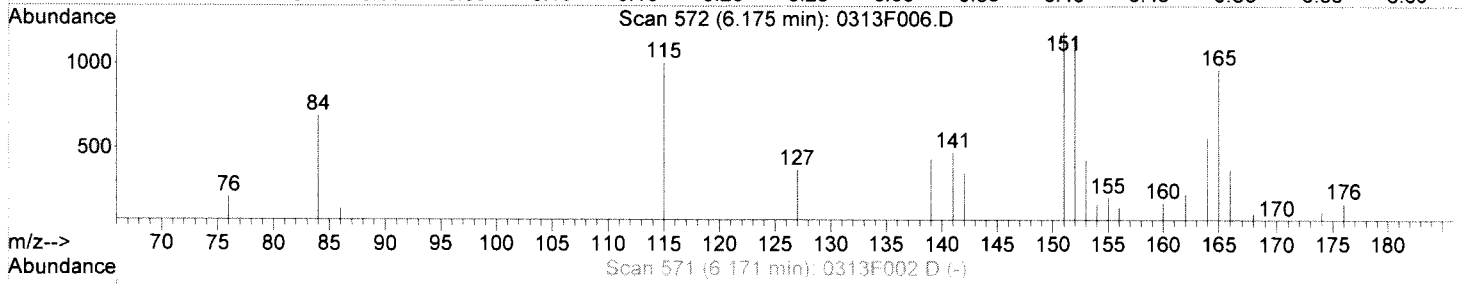
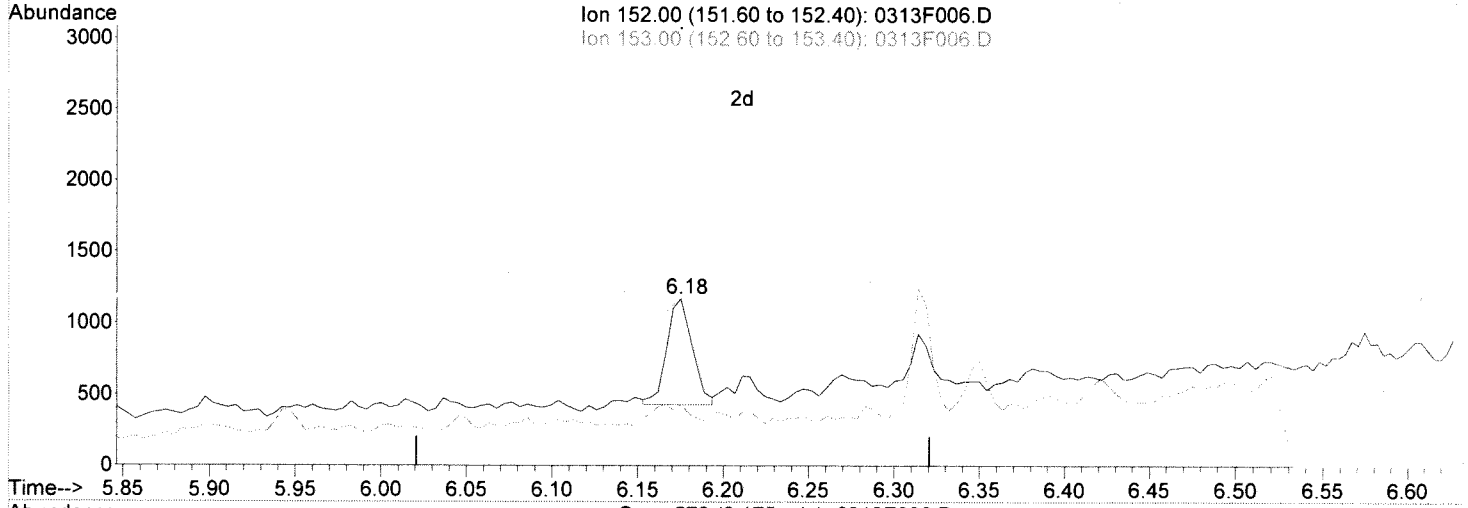
Handwritten signatures and initials

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:28 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(9) Acenaphthylene (T)

6.18min 2.03ng/ml m

response 763

Ion	Exp%	Act%
152.00	100	100
153.00	12.80	36.92
151.00	20.30	102.14#
0.00	0.00	0.00

Manual Integration:

After

BLC

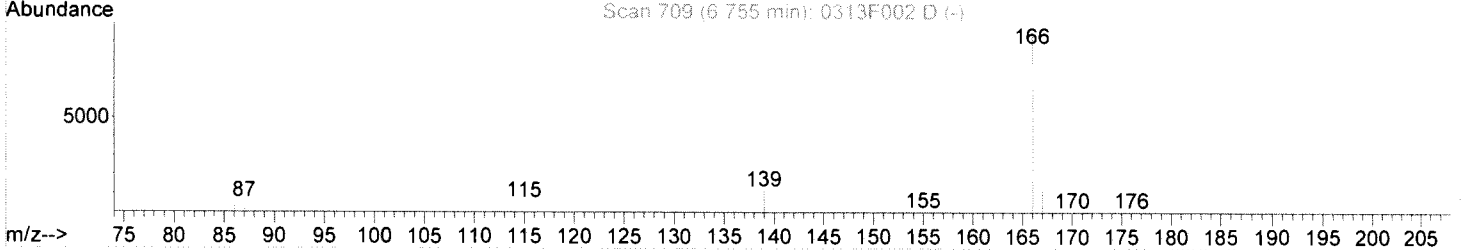
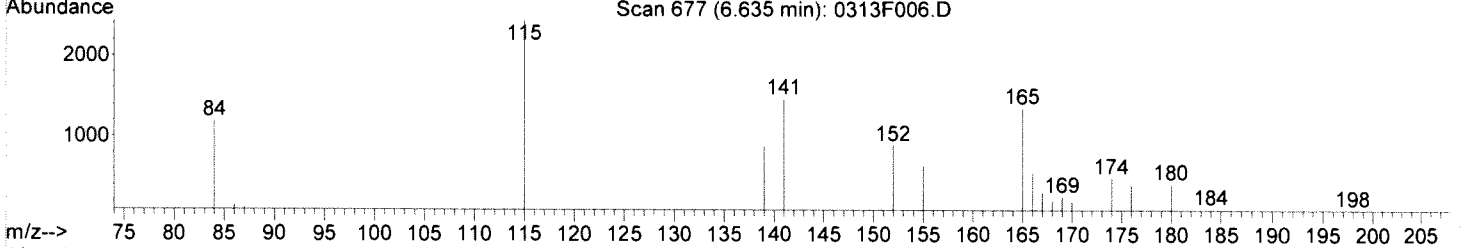
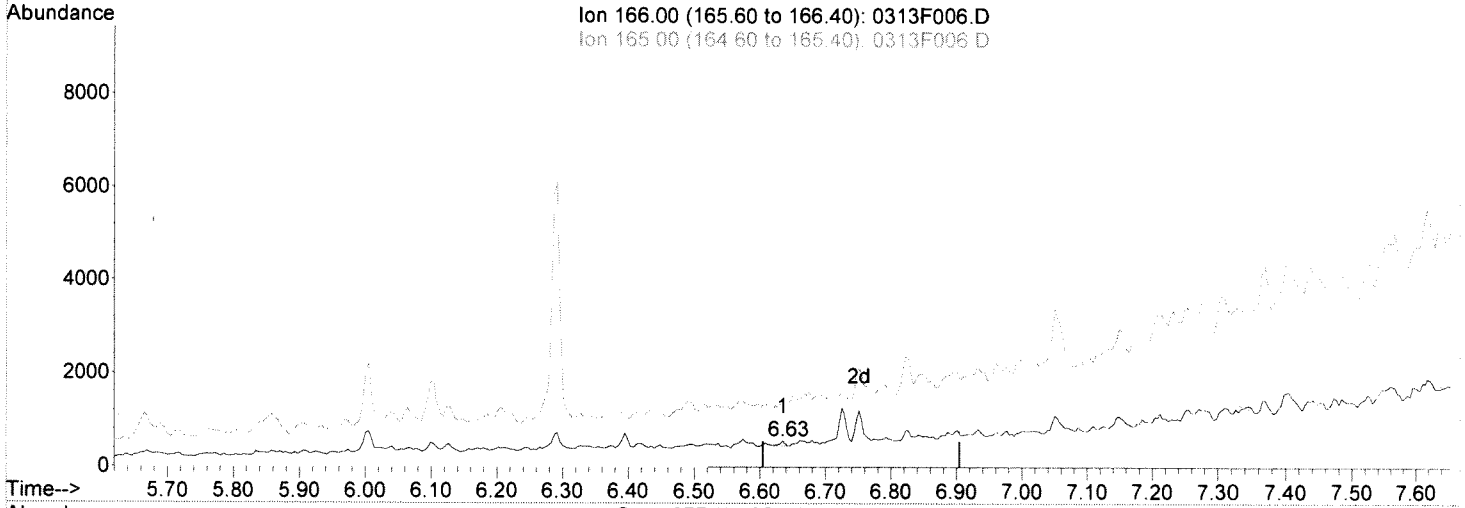
03/13/18

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:29 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(14) Fluorene (T)

6.63min 0.23ng/ml

response 59

Ion	Exp%	Act%
166.00	100	100
165.00	95.60	114.95
167.00	13.00	24.30
0.00	0.00	0.00

Manual Integration:

Before

03/13/18

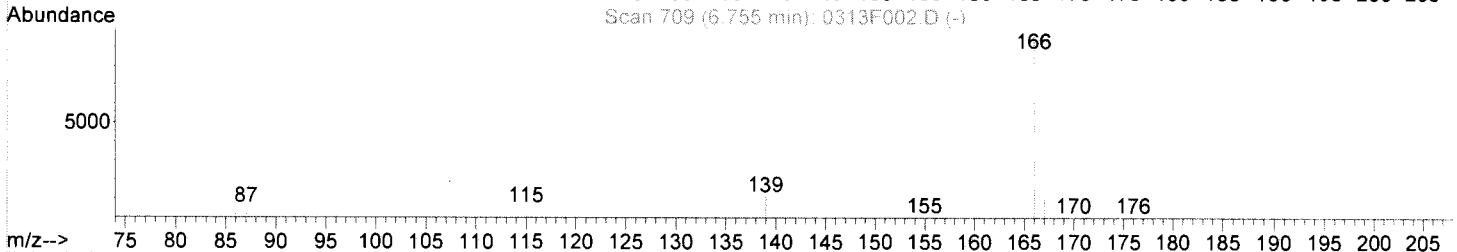
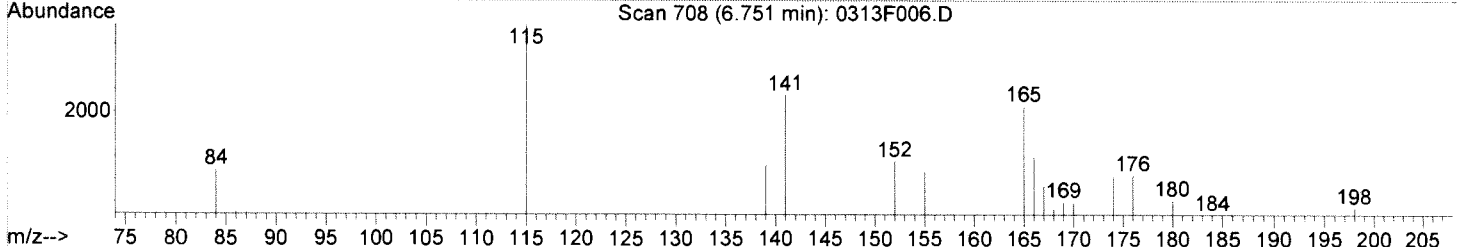
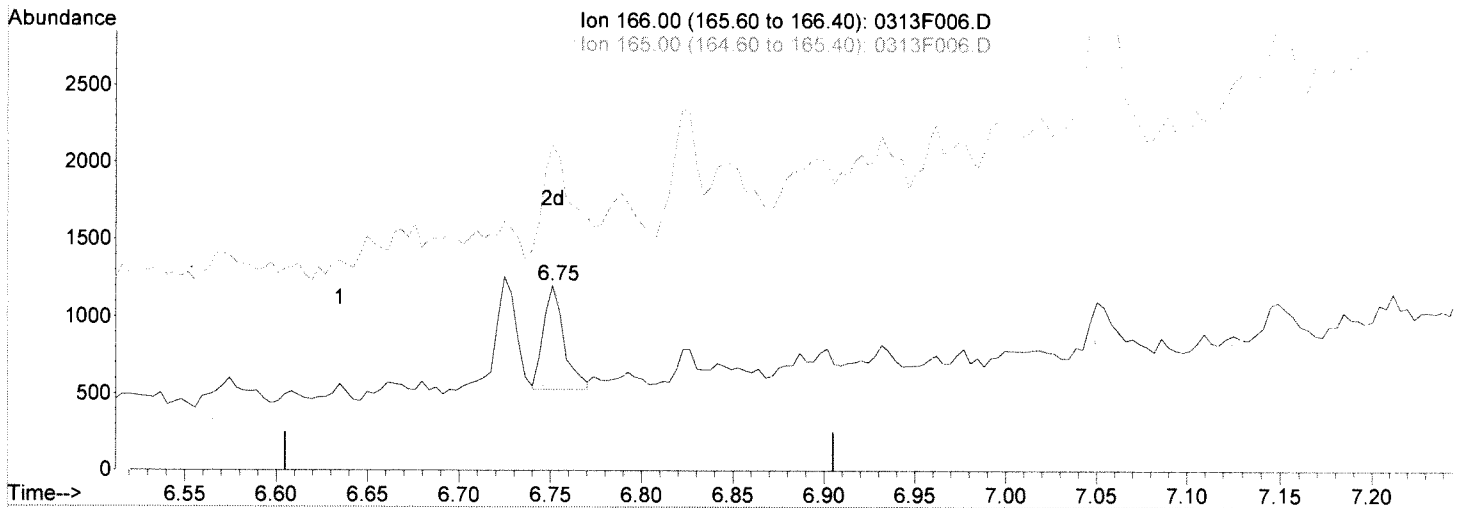
Handwritten signatures and initials

Data File : J:\MS14\DATA\031318\0313F006.D
 Acq On : 13 Mar 2018 7:43 am
 Sample : K1801267-008
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:29 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F006.D

(14) Fluorene (T)

6.75min 2.04ng/ml m

response 533

Ion	Exp%	Act%
166.00	100	100
165.00	95.60	175.27#
167.00	13.00	57.68#
0.00	0.00	0.00

Manual Integration:

After

WP

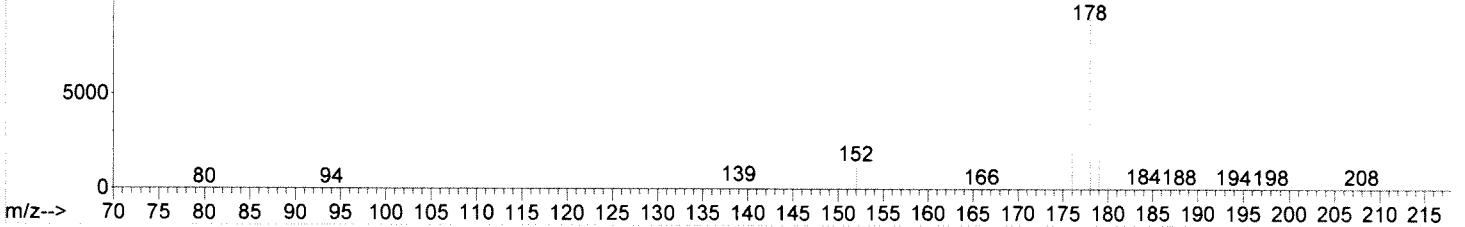
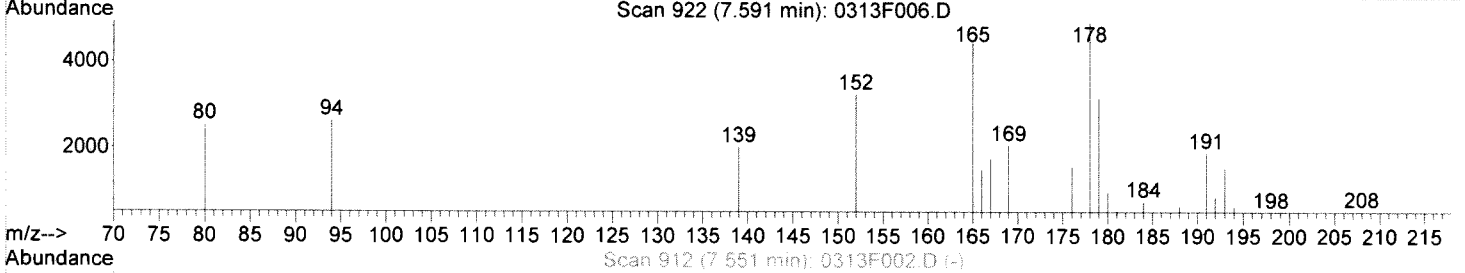
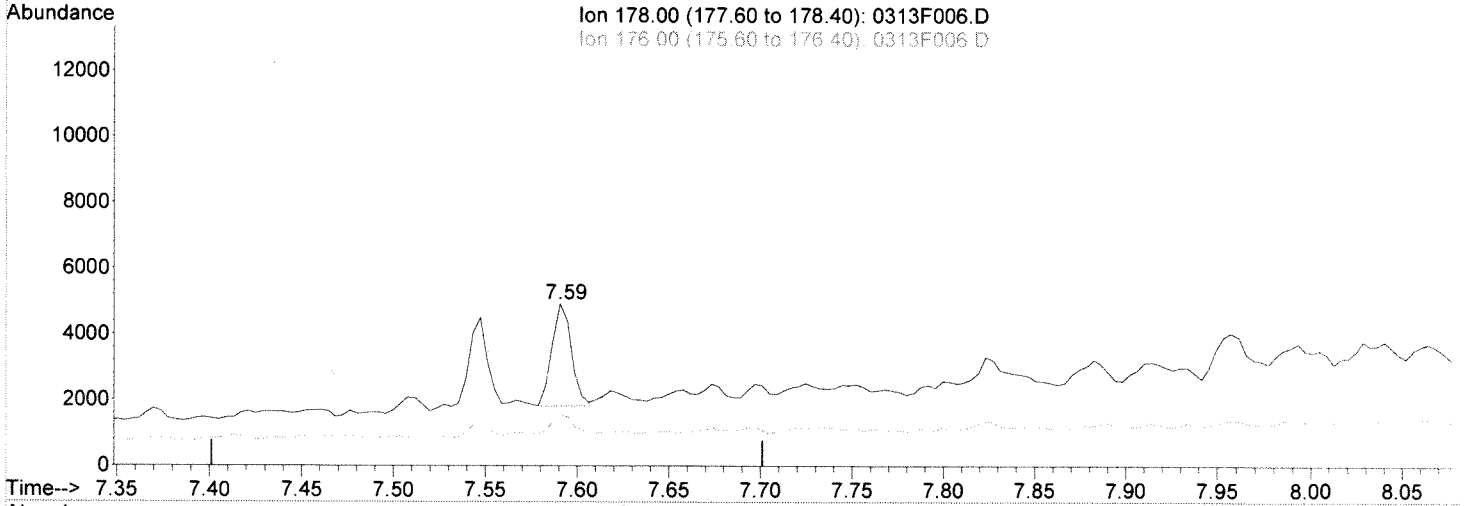
03/13/18

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:29 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(17) Phenanthrene (T)

7.59min 5.98ng/ml

response 2297

Ion	Exp%	Act%
178.00	100	100
176.00	19.60	19.54
179.00	15.10	20.48
0.00	0.00	0.00

Manual Integration:

Before

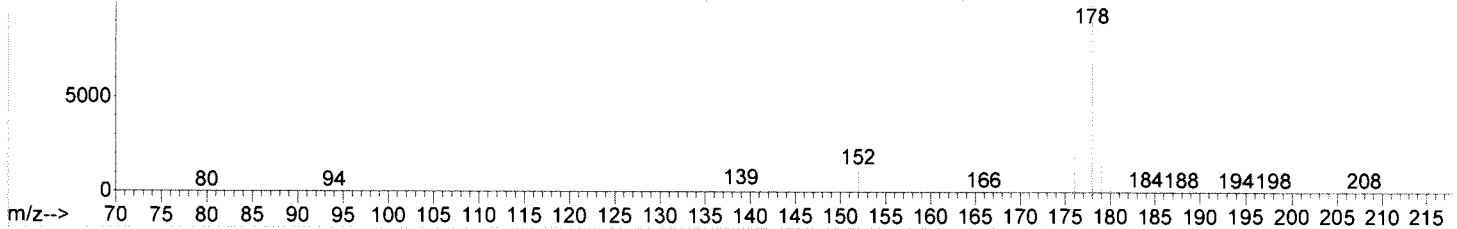
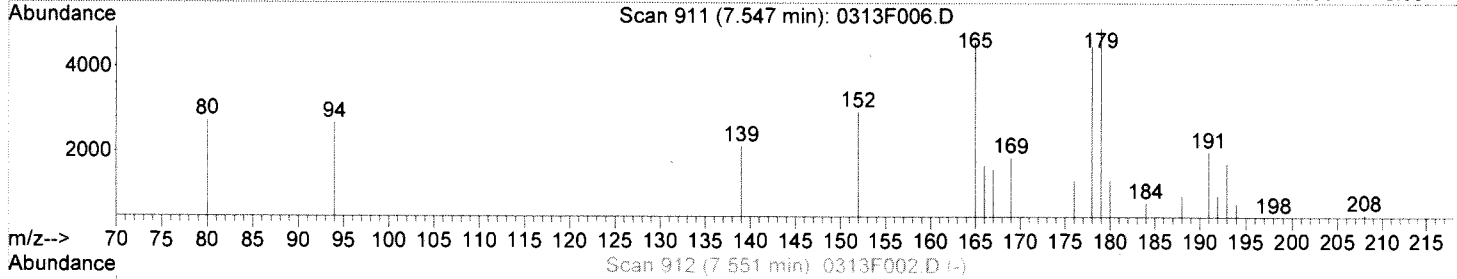
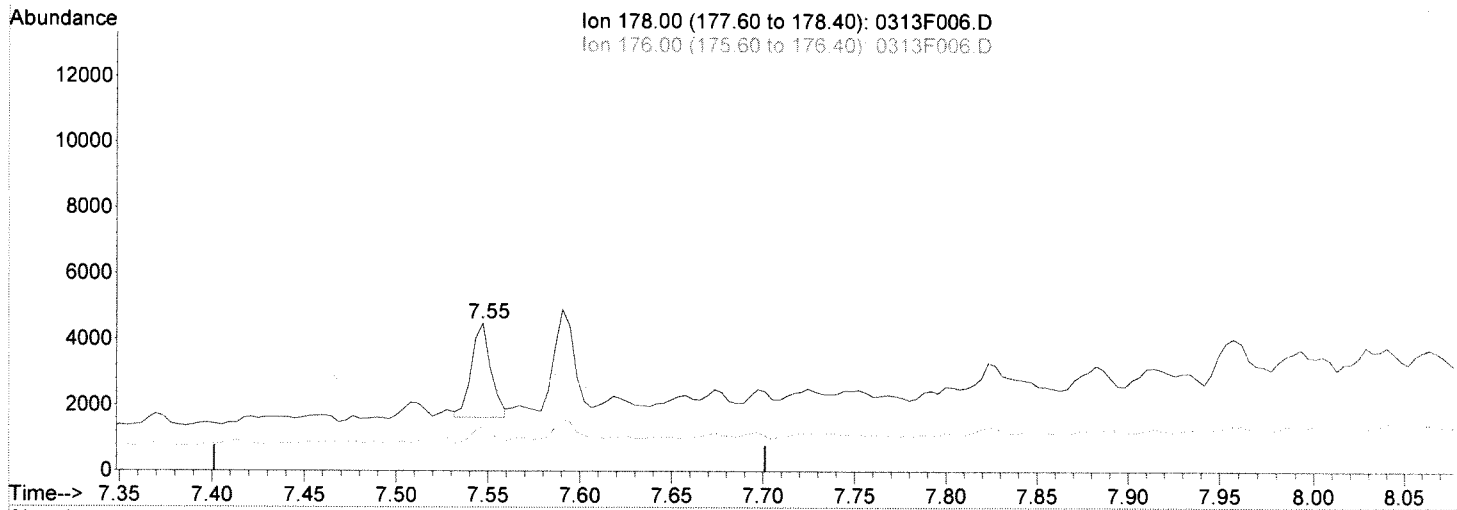
03/13/18

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:29 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(17) Phenanthrene (T)

7.55min 5.49ng/ml m

response 2111

Ion	Exp%	Act%
178.00	100	100
176.00	19.60	30.11
179.00	15.10	109.66#
0.00	0.00	0.00

Manual Integration:

After

WP

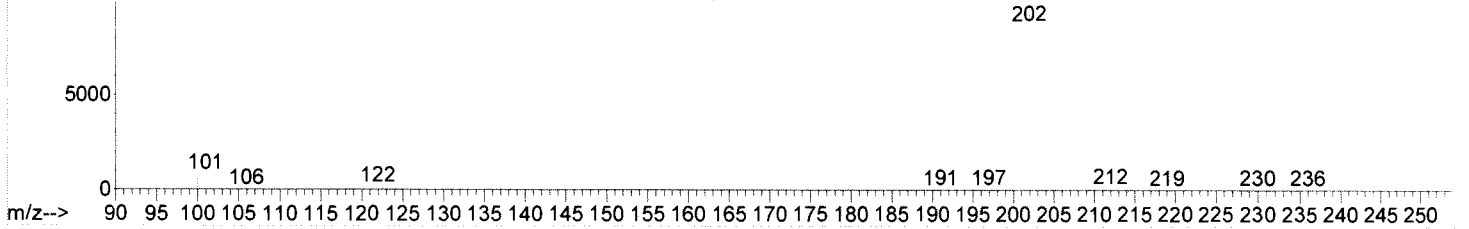
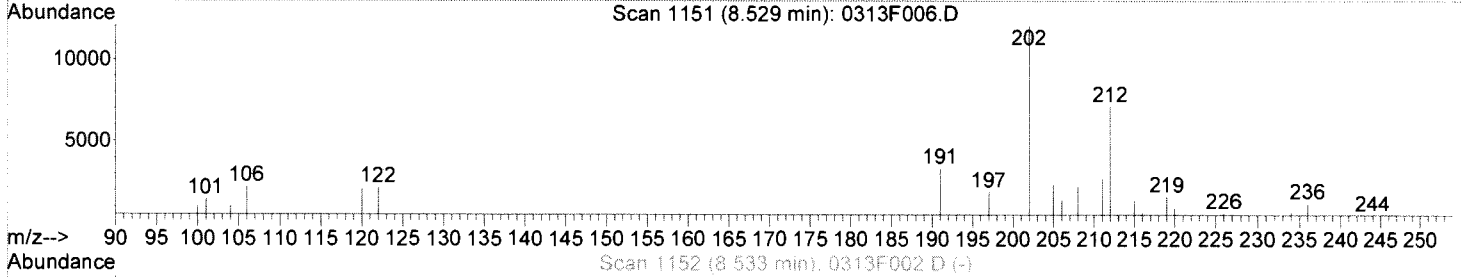
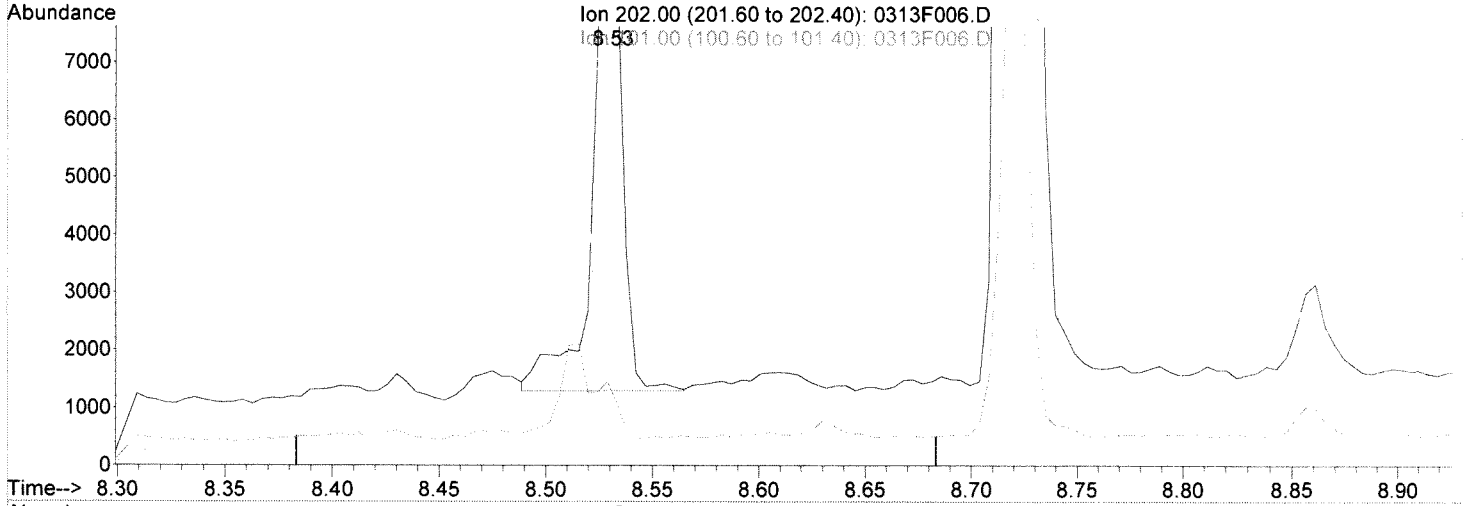
03/13/18

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:29 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(21) Fluoranthene (T)

8.53min 19.18ng/ml

response 8747

Ion	Exp%	Act%
202.00	100	100
101.00	9.10	8.73
100.00	7.00	7.36
0.00	0.00	0.00

Manual Integration:

Before

03/13/18

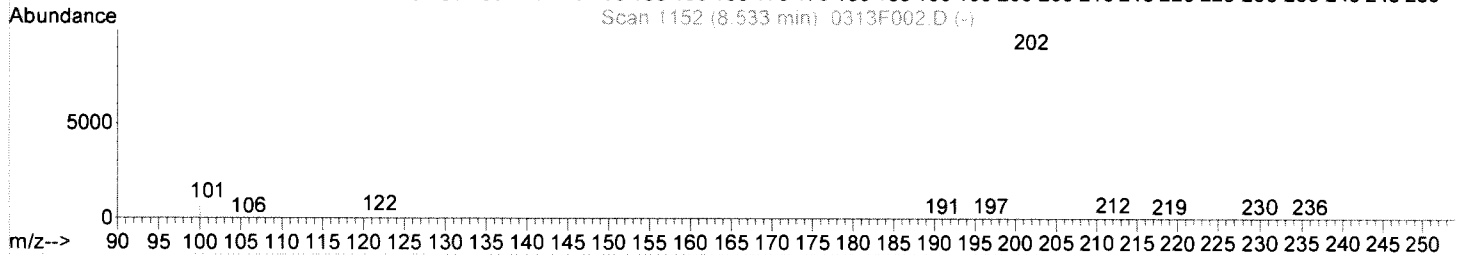
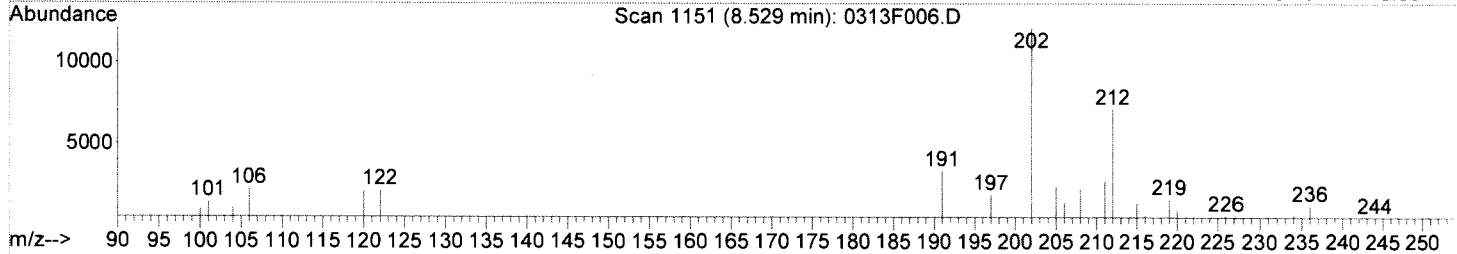
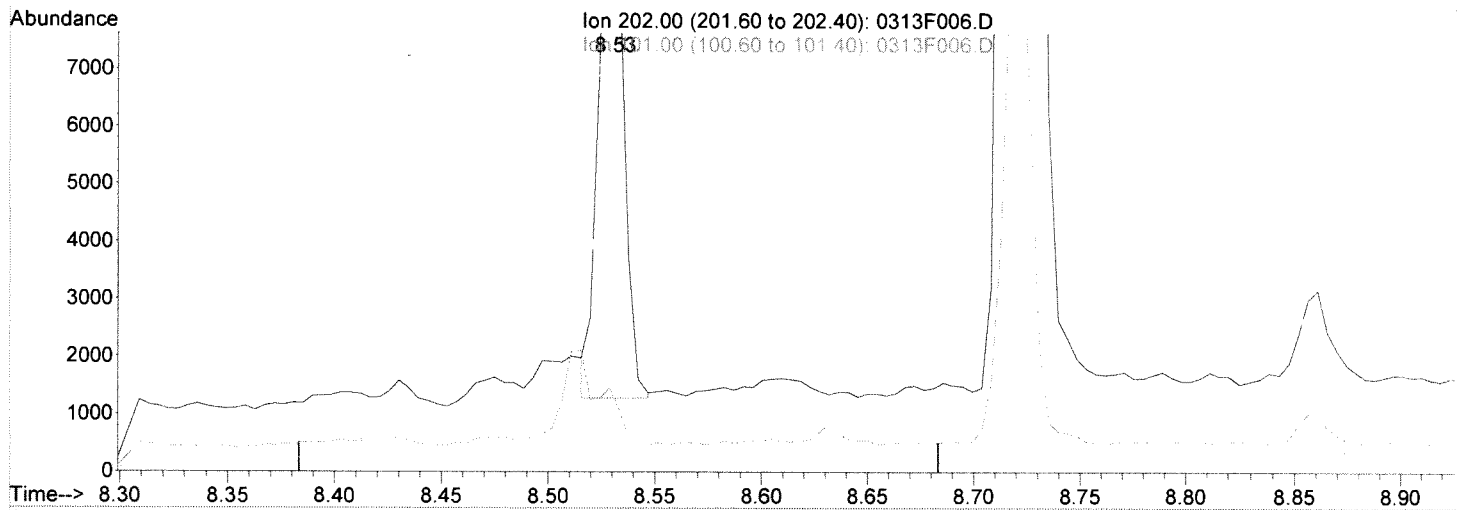
Handwritten signatures and initials

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:29 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(21) Fluoranthene (T)

8.53min 16.93ng/ml m

response 7722

Ion	Exp%	Act%
202.00	100	100
101.00	9.10	12.05
100.00	7.00	8.67
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

03/13/18

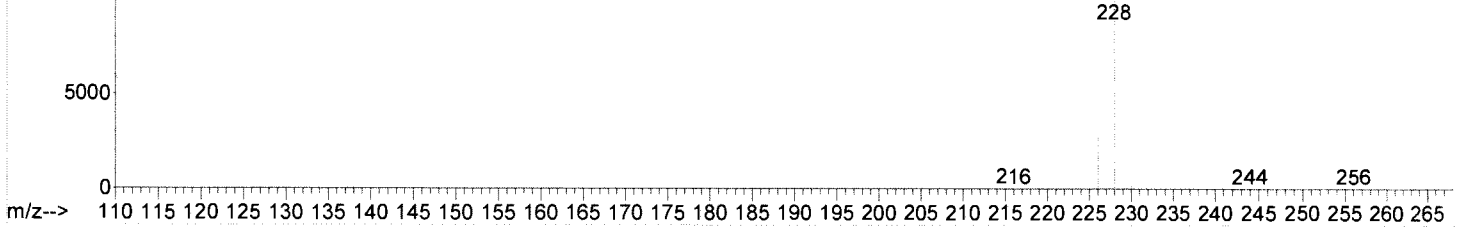
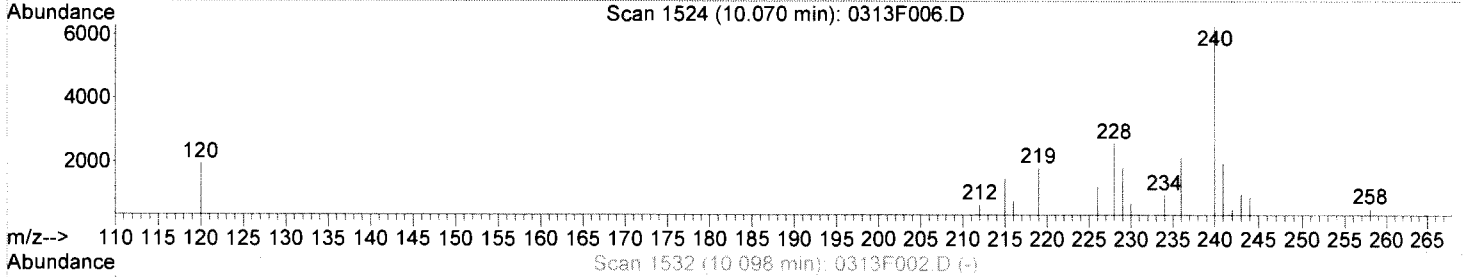
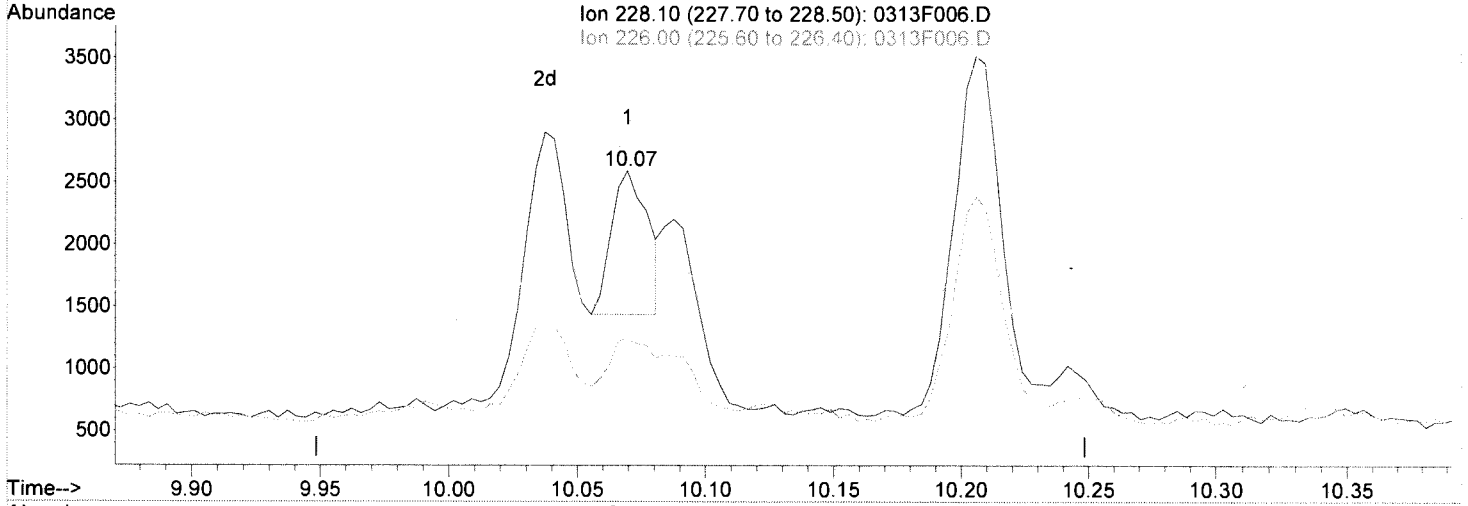
Handwritten signatures and initials

Data File : J:\MS14\DATA\031318\0313F006.D
Acq On : 13 Mar 2018 7:43 am
Sample : K1801267-008
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:29 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F006.D

(27) Chrysene (T)

10.07min 2.67ng/ml

response 1148

Ion	Exp%	Act%
228.10	100	100
226.00	29.00	32.82
229.00	19.20	27.89
0.00	0.00	0.00

Manual Integration:

Before

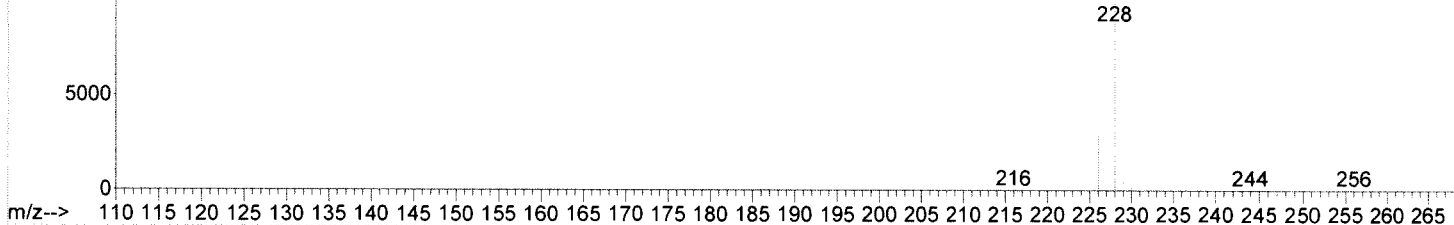
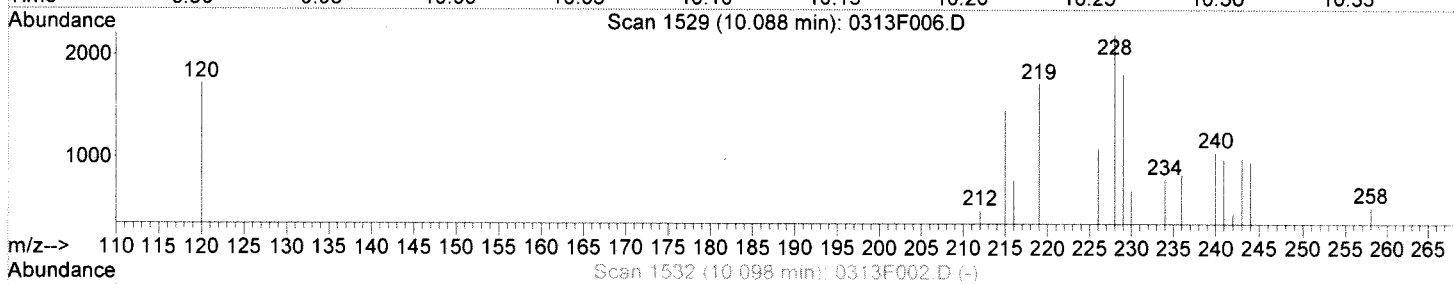
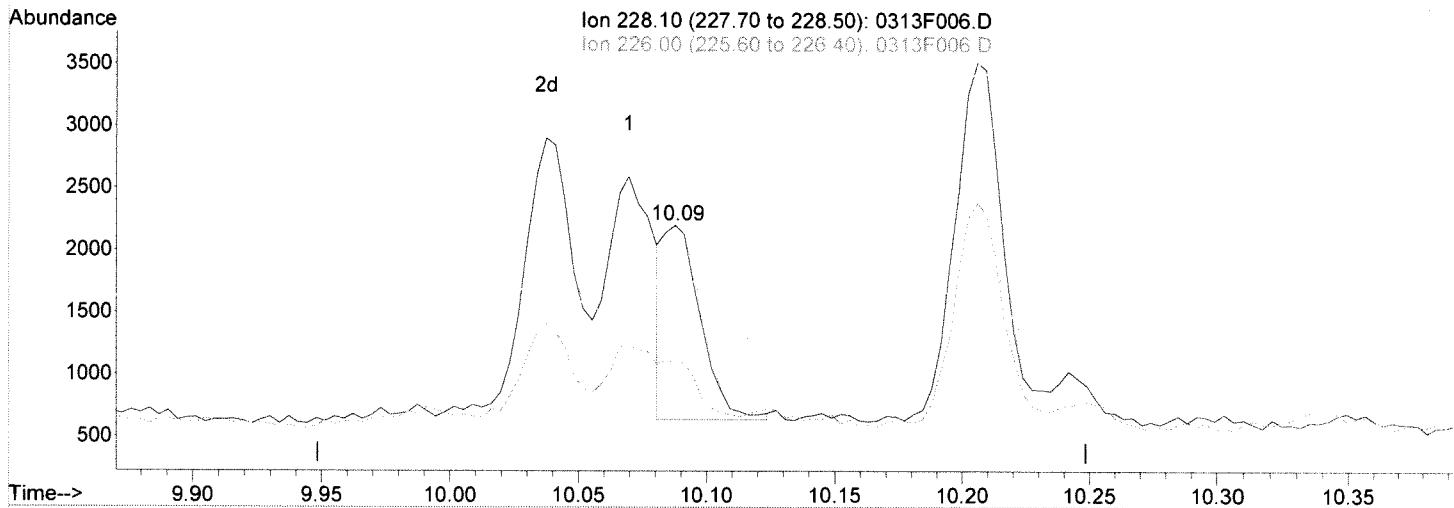
03/13/18

Data File : J:\MS14\DATA\031318\0313F006.D
 Acq On : 13 Mar 2018 7:43 am
 Sample : K1801267-008
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:30 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F006.D

(27) Chrysene (T)		
10.09min	3.68ng/ml m	
response	1583	
Ion	Exp%	Act%
228.10	100	100
226.00	29.00	49.80
229.00	19.20	82.87#
0.00	0.00	0.00

Manual Integration:

After

WP

03/13/18

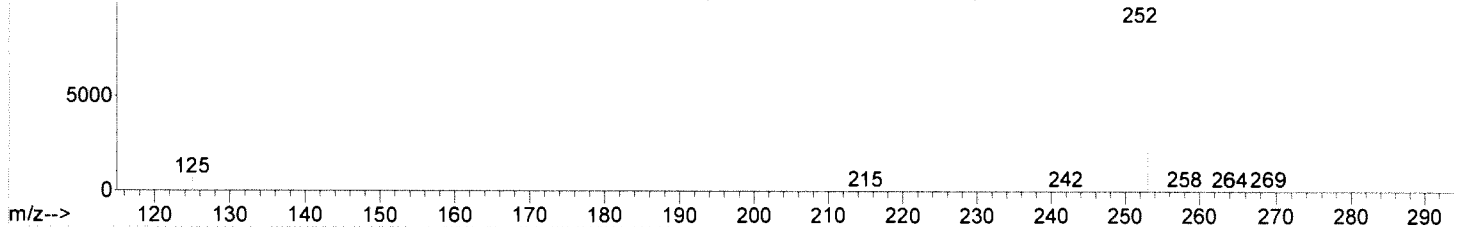
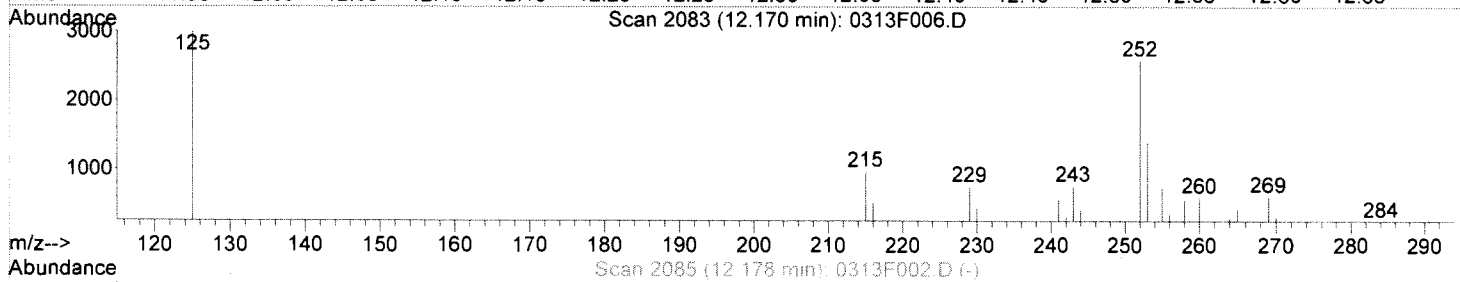
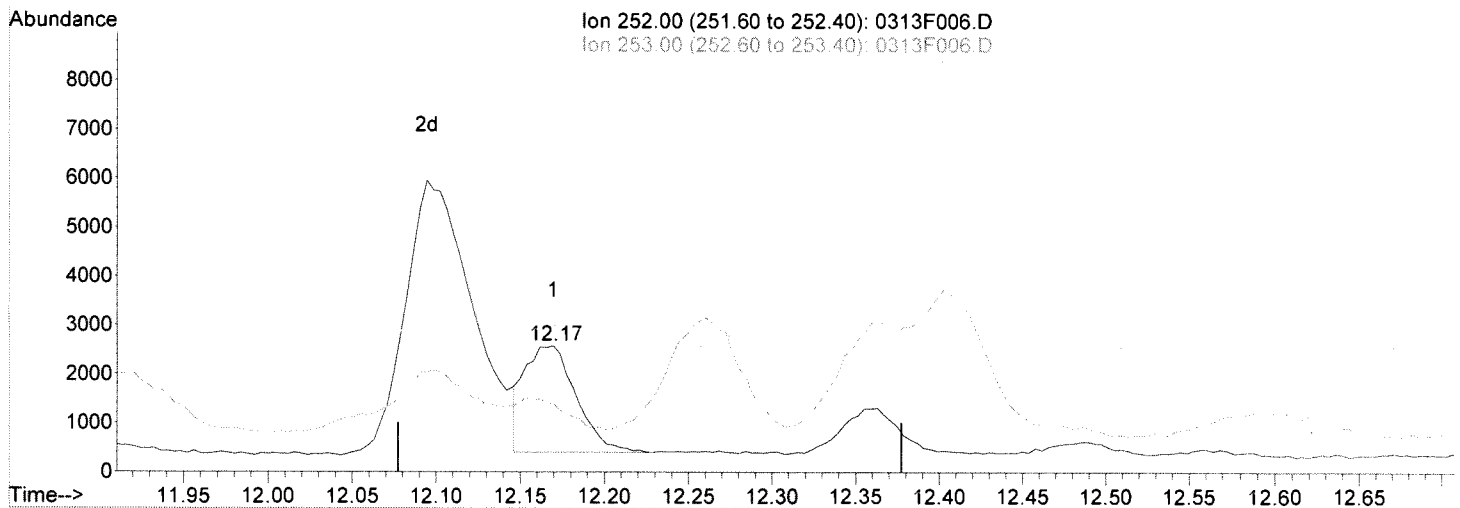
Handwritten signatures and initials.

Data File : J:\MS14\DATA\031318\0313F006.D
 Acq On : 13 Mar 2018 7:43 am
 Sample : K1801267-008
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:30 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F006.D

(30) Benzo(k)fluoranthene (T)

12.17min 9.05ng/ml

response 4634

Ion	Exp%	Act%
252.00	100	100
253.00	21.60	2.57
125.00	9.70	2.20
0.00	0.00	0.00

Manual Integration:

Before

03/13/18

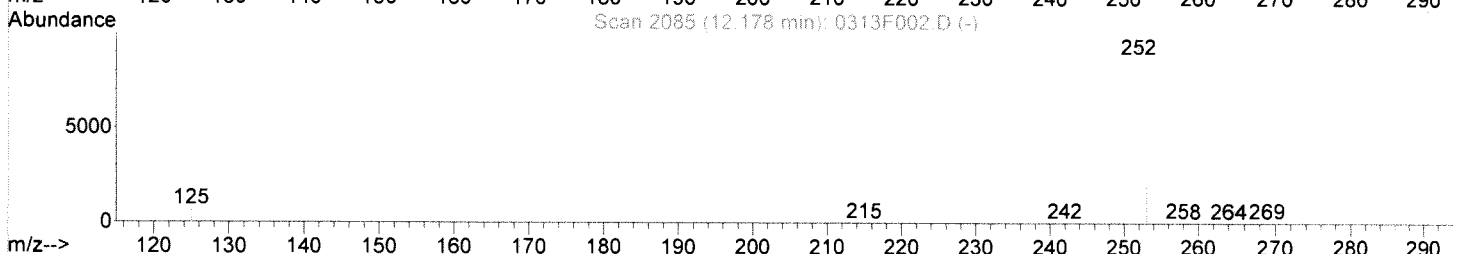
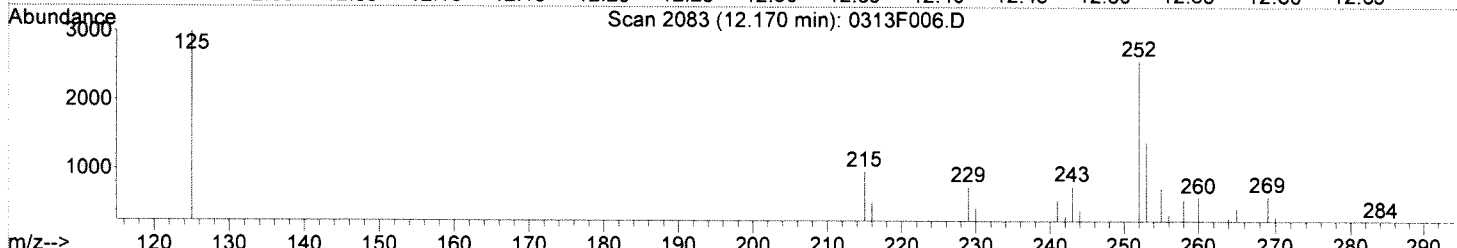
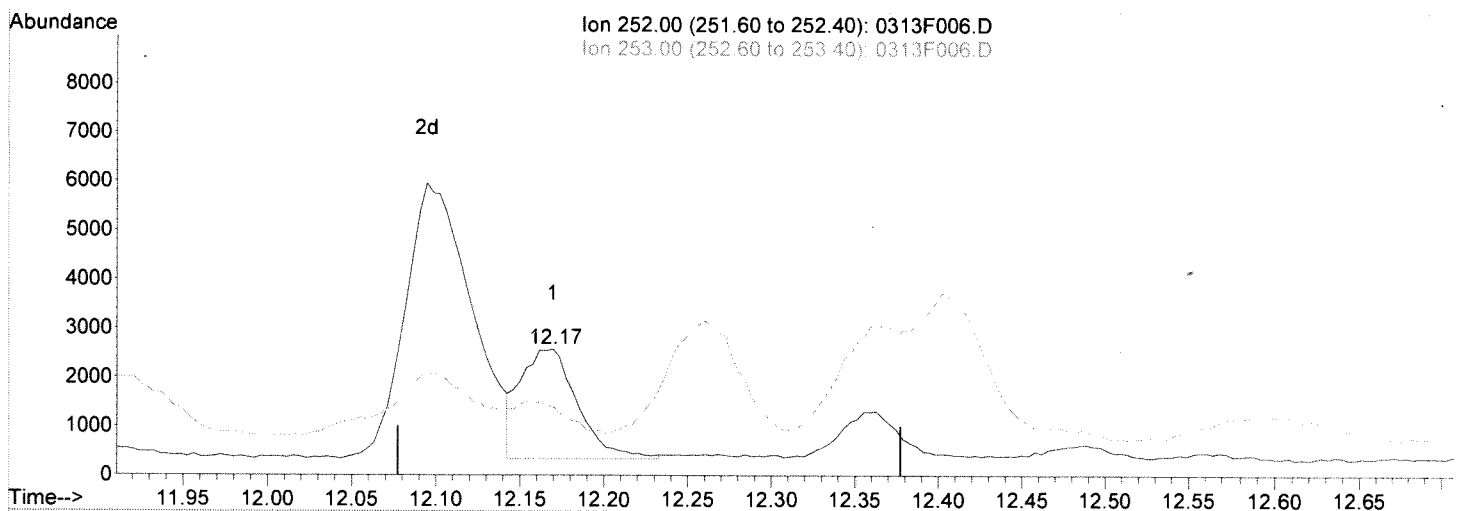
Handwritten signatures and initials.

Data File : J:\MS14\DATA\031318\0313F006.D
 Acq On : 13 Mar 2018 7:43 am
 Sample : K1801267-008
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:30 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F006.D

(30) Benzo(k)fluoranthene (T)

12.17min	10.41ng/ml m	
response	5326	
Ion	Exp%	Act%
252.00	100	100
253.00	21.60	54.22#
125.00	9.70	116.32#
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

03/13/18

Exception Report

Data File: J:\MS14\DATA\031318\0313F007.D
Lab ID: K1801267-017
Run Type: SMPL
Matrix: WATER


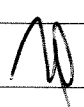
Date Acquired: 03/13/2018 08:06
Date Quantitated: 03/13/2018 13:33
Batch ID: KWG1801409
Analysis Method: 8270D SIM
ListJoinID: LJ18861

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	30	NA	7		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Above Highest ICAL Level	Acenaphthene	4096.65	NA	2000	See D1
	Fluoranthene	3039.21	NA	2000	
	Pyrene	3196.40	NA	2000	

Primary Review:  **MAR 14 2018**
 Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\031318\0313F007.D	Instrument: MS14
Acqu Date: 03/13/2018 08:06	Quant Date: 03/13/2018 13:33
Run Type: SMPL	Vial: 7
Lab ID: K1801267-017	ListJoinID: LJ18861
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date: 02/07/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801409	Prep Lot: KWG1801347	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3511	
Prep Ref: 1666762	Prep Date: 03/09/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18861
Tune Ref: J:\MS14\DATA\031318\0313F001.D	Method ID: MJ1638
MB Ref: J:\MS14\DATA\031318\0313F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.72	0.00	136	52848m	200.00	OK
2	Acenaphthene-d10	6.29	0.00	164	30024	200.00	OK
3	Phenanthrene-d10	7.54	0.01	188	70840	200.00	OK
4	Chrysene-d12	10.06	0.00	240	76409	200.00	OK
5	Perylene-d12	13.16	0.02	264	80514	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.73	0.00	0.00	176	203950	993.00	99	42-131	OK
3	Fluoranthene-d10	8.52	0.00	0.00	212	459847	1,033	103	42-133	OK
4	Terphenyl-d14	8.87	0.00	0.00	244	304940	946.52	95	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.74		0.00	128	7907	26.27	0.41		
1	2-Methylnaphthalene	5.39		0.00	142	162363	774.71	12		
2	Acenaphthylene	6.17		0.00	152	22808	62.08	0.97		
2	Acenaphthene	6.32		0.00	154	846335	4,097	64	E	NR
2	Dibenzofuran	6.47		0.00	168	533560	1,644	26		
2	Fluorene	6.75		0.00	166	469299m	1,843	29		
3	Phenanthrene	7.56	0.01	0.00	178	823549	1,875	29		
3	Anthracene	7.60	0.01	0.00	178	180159	415.84	6.5		
3	Fluoranthene	8.54	0.01	0.00	202	1585011	3,039	47	E	NR
4	Pyrene	8.73		0.00	202	1474163	3,196	50	E	NR
4	Benz(a)anthracene	10.05	0.01	0.00	228	189904	412.15	6.4		
4	Chrysene	10.10		0.00	228	95119m	220.78	3.4		
5	Benzo(b)fluoranthene	12.12	0.01	0.00	252	147000	289.20	4.5		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\031318\0313F007.D	Instrument:	MS14
Acqu Date:	03/13/2018 08:06	Quant Date:	03/13/2018 13:33
Run Type:	SMPL	ListJoinID:	LJ18861
Lab ID:	K1801267-017	Vial:	7
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.19	0.01	0.00	252	45516m	91.17	1.4		
5	Benzo(a)pyrene	12.99	0.01	0.00	252	72581	163.36	2.6		
5	Indeno(1,2,3-cd)pyrene	15.41	0.01	0.00	276	20738m	51.96	0.81		
5	Dibenz(a,h)anthracene	15.45	0.01	0.00	278	5757	14.17	0.22		
5	Benzo(g,h,i)perylene	15.80	0.02	0.00	276	21352	48.08	0.75		

Prep Amount: 128 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F007.D
 Acq On : 13 Mar 2018 8:06 am
 Sample : K1801267-017
 Misc :

Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25:11 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.72	136	52848m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.29	164	30024	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.54	188	70840	200.00	ng/ml	0.00
23) Chrysene-d12	10.06	240	76409	200.00	ng/ml	0.00
28) Perylene-d12	13.16	264	80514	200.00	ng/ml	0.02
System Monitoring Compounds						
3) 2-Methylnaphthalene-d10	0.00	152	Od	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
13) Fluorene-d10	6.73	176	203950	993.00	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	99.30%	
22) Fluoranthene-d10	8.52	212	459847	1033.10	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	103.31%	
25) Terphenyl-d14	8.87	244	304940	946.52	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	94.65%	
Target Compounds						
						Qvalue
2) Naphthalene	4.74	128	7907	26.27	ng/ml	98
4) 2-Methylnaphthalene	5.39	142	162363	774.71	ng/ml#	84
5) 1-Methylnaphthalene	5.48	142	324093	1749.54	ng/ml	93
6) Biphenyl	5.80	154	74170	279.61	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.94	156	47889	254.04	ng/ml	98
9) Acenaphthylene	6.17	152	22808	62.08	ng/ml	82
10) Acenaphthene	6.32	154	846335	4096.65	ng/ml	96
11) Dibenzofuran	6.47	168	533560	1643.70	ng/ml	92
12) 2,3,5-Trimethylnaphthalene	6.64	170	17266	82.63	ng/ml	80
14) Fluorene	6.75	166	469299m	1843.14	ng/ml	
16) Dibenzothiophene	7.45	184	81833	182.19	ng/ml	95
17) Phenanthrene	7.56	178	823549	1874.78	ng/ml	97
18) Anthracene	7.60	178	180159	415.84	ng/ml	98
19) Carbazole	7.73	167	25467	64.86	ng/ml	85
20) 1-Methylphenanthrene	8.06	192	25240m	75.57	ng/ml	
21) Fluoranthene	8.54	202	1585011	3039.21	ng/ml	96
24) Pyrene	8.73	202	1474163	3196.40	ng/ml	95
26) Benz(a)anthracene	10.05	228	189904	412.15	ng/ml	99
27) Chrysene	10.10	228	95119m	220.78	ng/ml	
29) Benzo(b)fluoranthene	12.12	252	147000	289.20	ng/ml	98
30) Benzo(k)fluoranthene	12.19	252	45516m	91.17	ng/ml	
31) Benzo(e)pyrene	12.84	252	66351	136.85	ng/ml	98
32) Benzo(a)pyrene	12.99	252	72581	163.36	ng/ml	97
33) Perylene	13.24	252	12620	28.83	ng/ml	91
34) Indeno(1,2,3-cd)pyrene	15.41	276	20738m	51.96	ng/ml	
35) Dibenz(a,h)anthracene	15.45	278	5757	14.17	ng/ml	94
36) Benzo(g,h,i)perylene	15.80	276	21352	48.08	ng/ml	98

(#) = qualifier out of range (m) = manual integration
 0313F007.D 101317PAH.M Tue Mar 13 13:33:57 2018

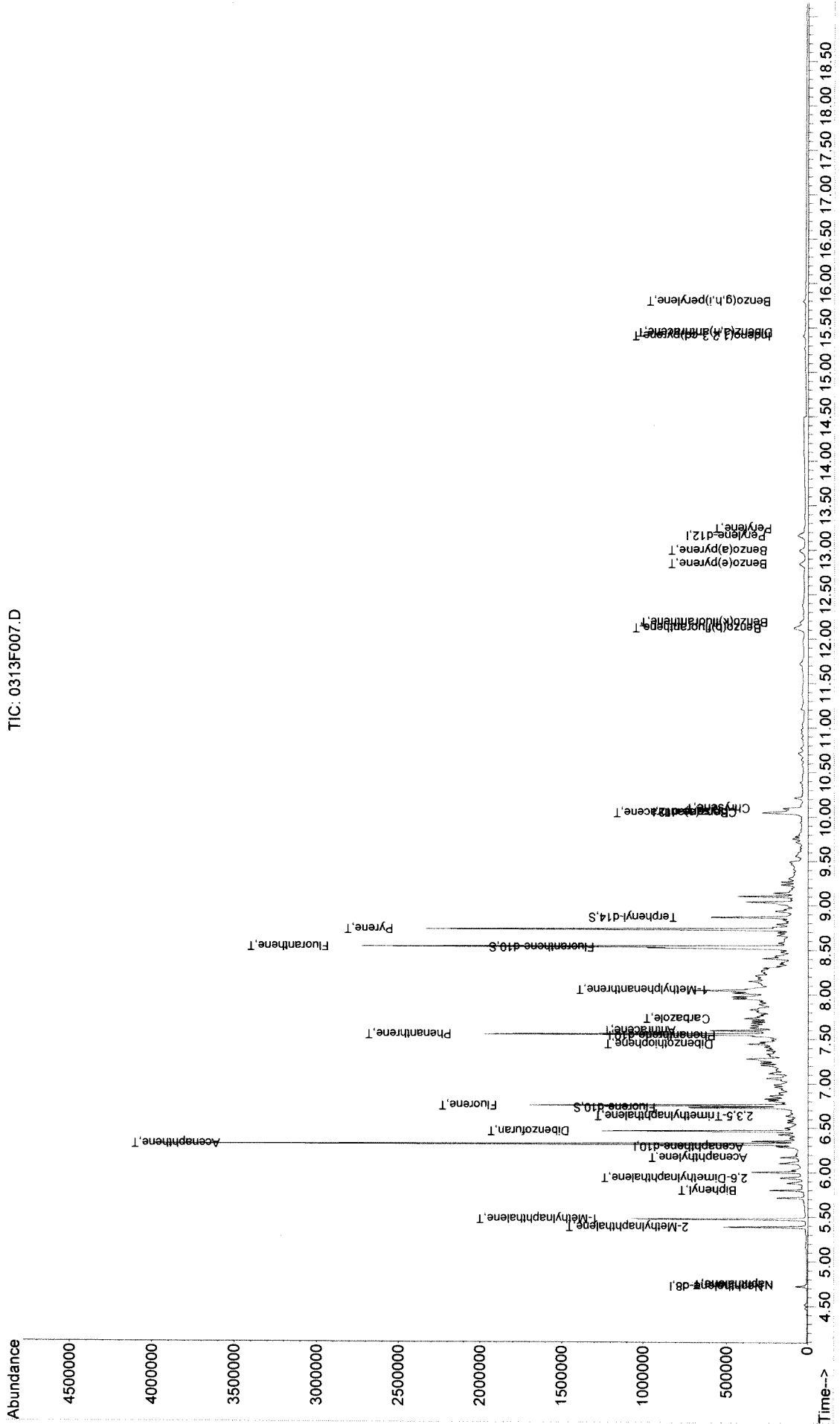
Data File : J:\MS14\DATA\031318\0313F007.D
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 Sample : K1801267-017
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:33 2018

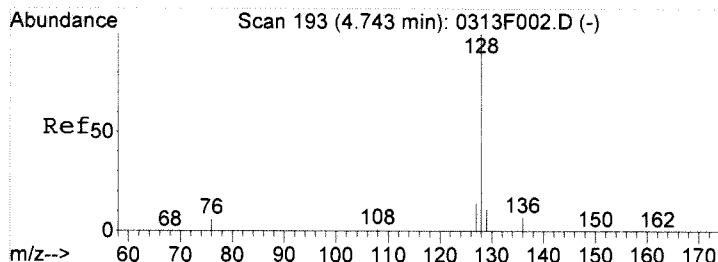
Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Initial Calibration

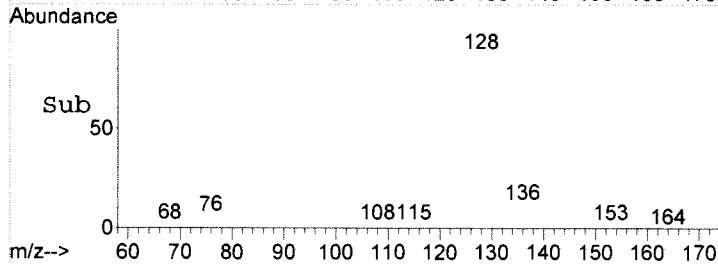
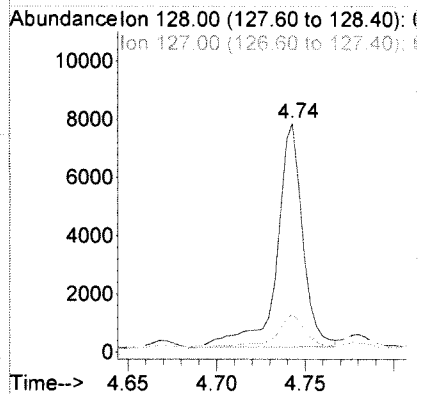
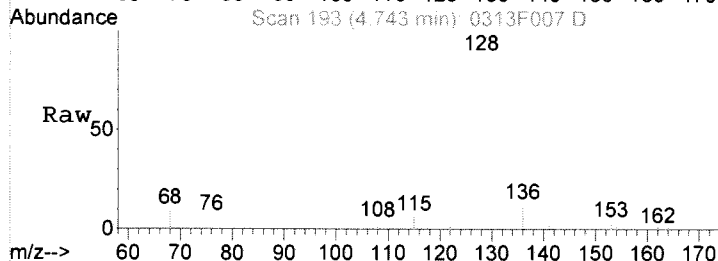
TIC: 0313F007.D





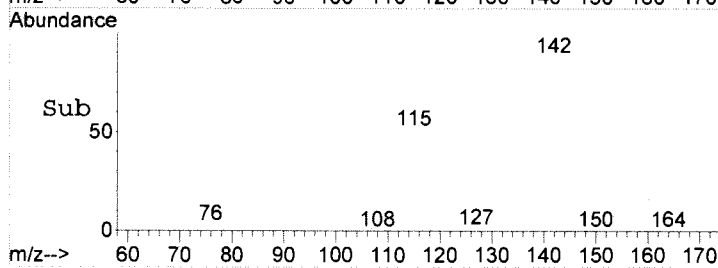
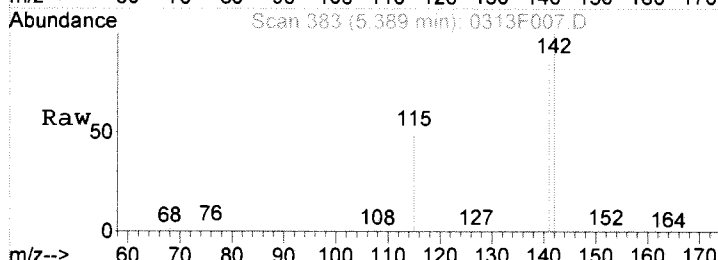
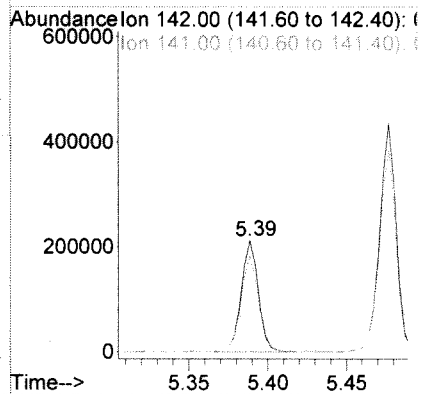
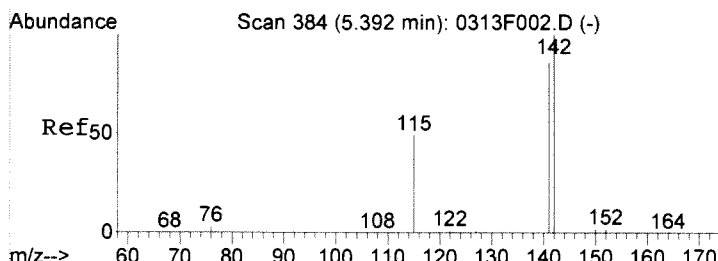
#2
 Naphthalene
 Concen: 26.27 ng/ml
 RT: 4.74 min Scan# 193
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

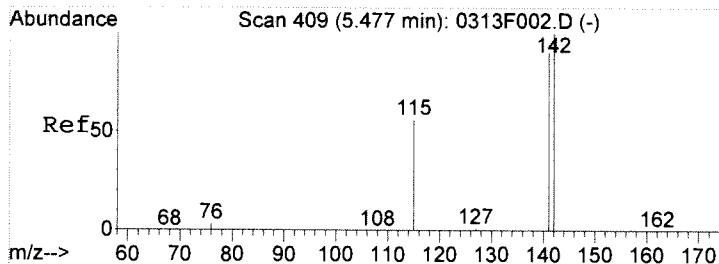
Tgt Ion	Resp	Lower	Upper
128	100		
127	15.0	0.0	44.1
129	11.2	0.0	30.4



#4
 2-Methylnaphthalene
 Concen: 774.71 ng/ml
 RT: 5.39 min Scan# 383
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

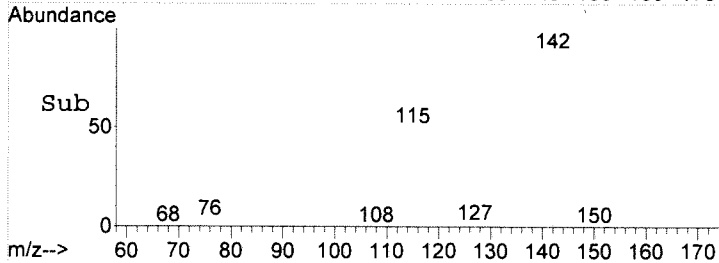
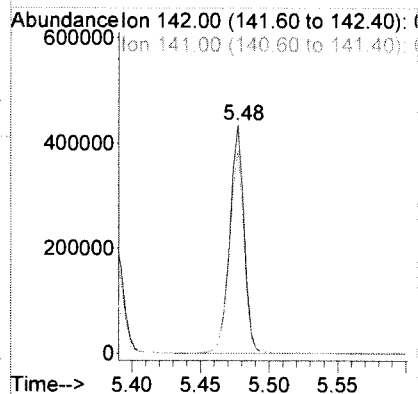
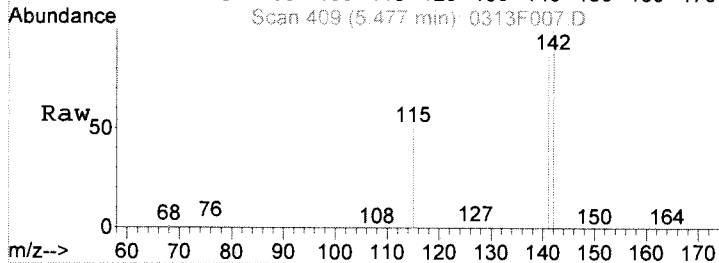
Tgt Ion	Resp	Lower	Upper
142	100		
141	86.1	51.7	111.7
115	50.4	2.0	42.0#





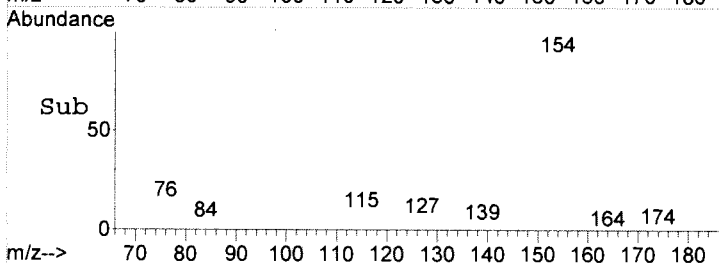
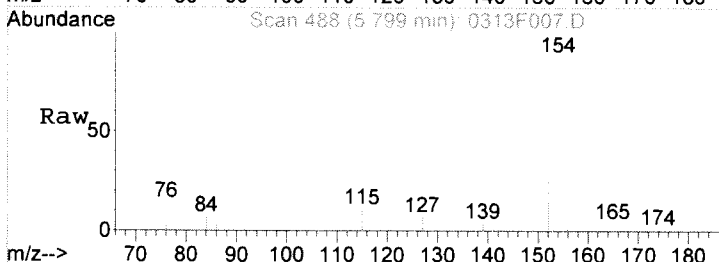
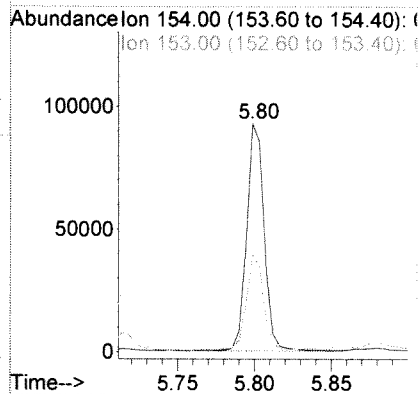
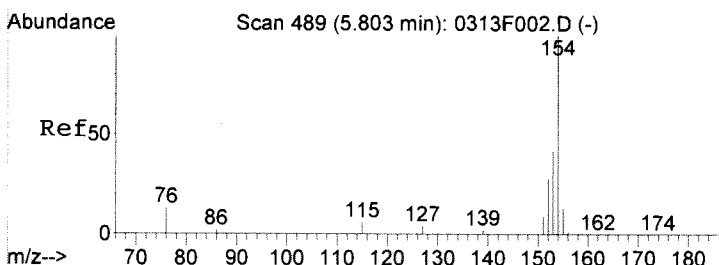
#5
 1-Methylnaphthalene
 Concen: 1749.54 ng/ml
 RT: 5.48 min Scan# 409
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

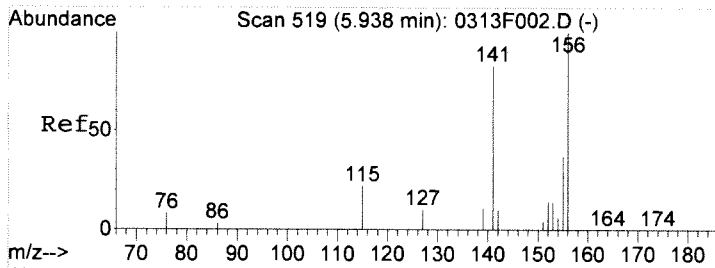
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.6	63.0	123.0
115	50.5	22.4	62.4



#6
 Biphenyl
 Concen: 279.61 ng/ml
 RT: 5.80 min Scan# 488
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

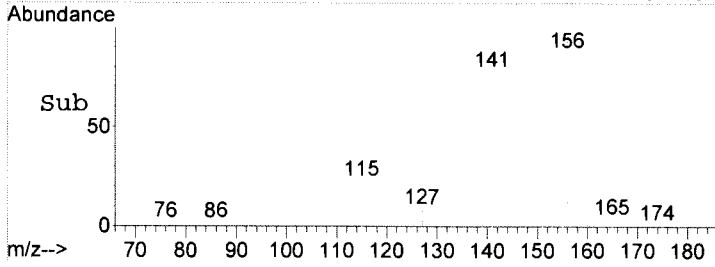
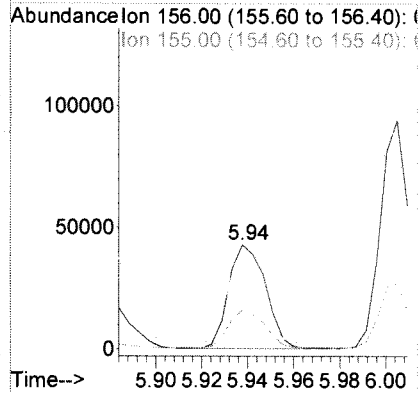
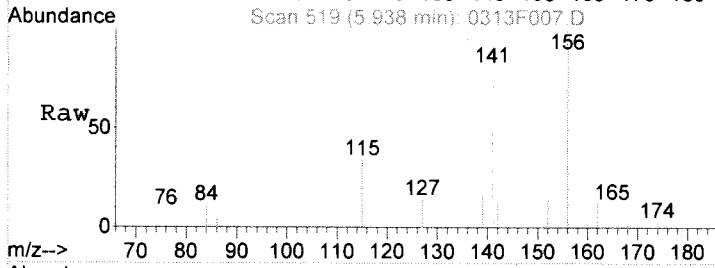
Tgt Ion	Ratio	Lower	Upper
154	100		
153	41.7	11.3	71.3
152	28.9	8.5	48.5





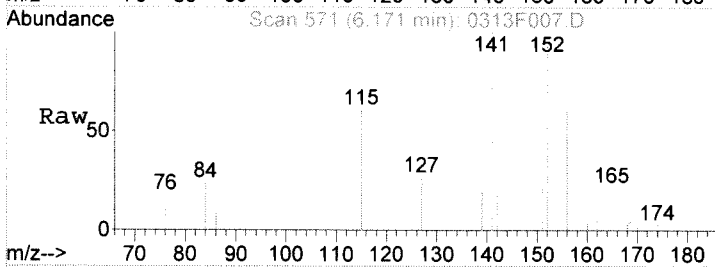
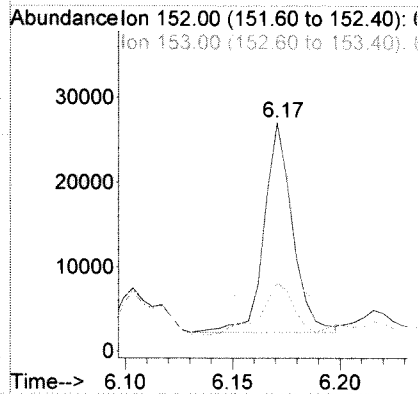
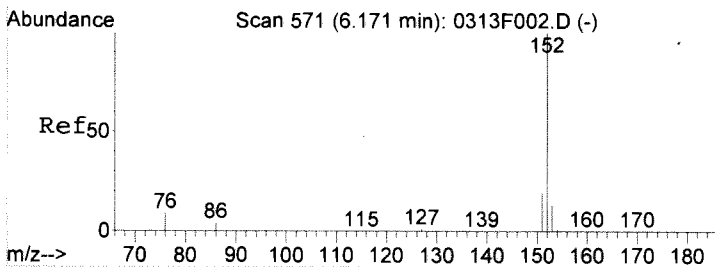
#7
 2,6-Dimethylnaphthalene
 Concen: 254.04 ng/ml
 RT: 5.94 min Scan# 519
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

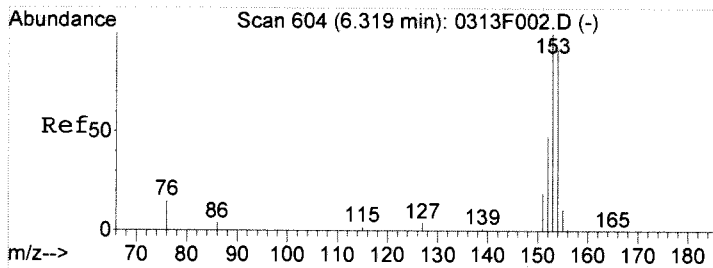
Tgt Ion	Resp	Lower	Upper
156	100		
155	36.0	8.0	68.0
141	77.7	56.4	96.4



#9
 Acenaphthylene
 Concen: 62.08 ng/ml
 RT: 6.17 min Scan# 571
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

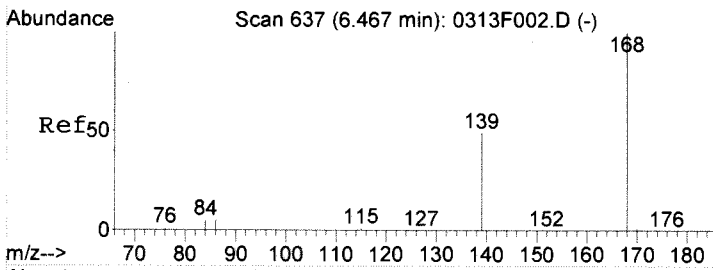
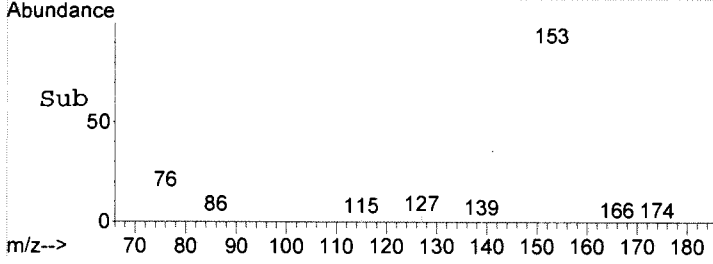
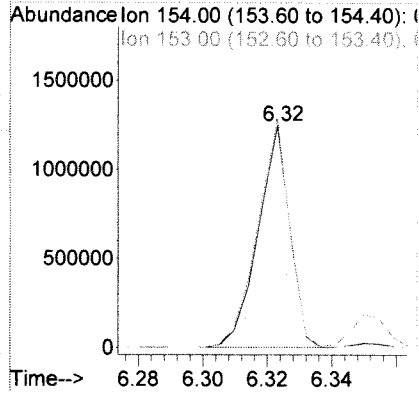
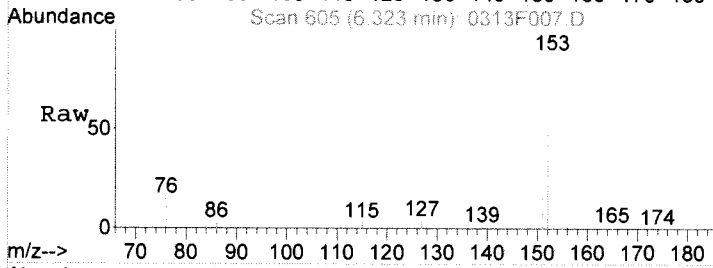
Tgt Ion	Resp	Lower	Upper
152	100		
153	24.4	0.0	42.8
151	25.4	0.3	40.3





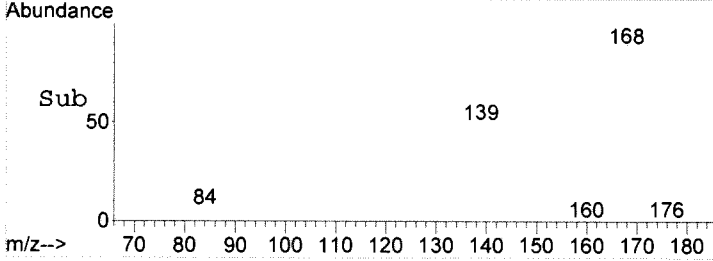
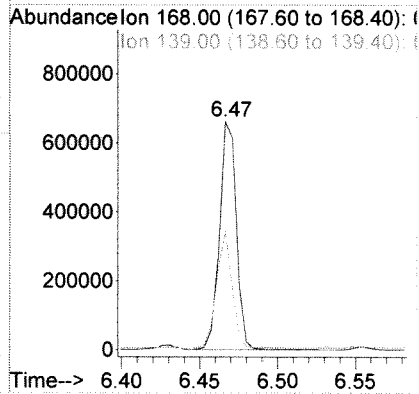
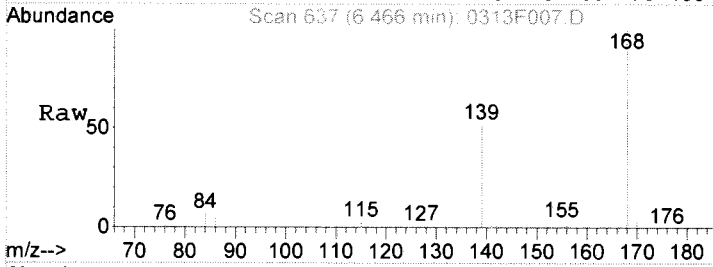
#10
 Acenaphthene
 Concen: 4096.65 ng/ml
 RT: 6.32 min Scan# 605
 Delta R.T. 0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

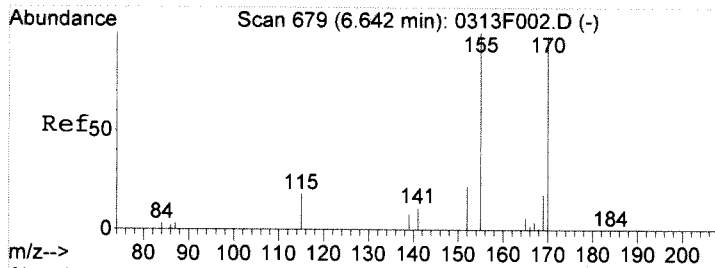
Tgt Ion	Resp	Lower	Upper
154	100		
153	102.9	77.8	137.8
152	49.6	20.8	80.8



#11
 Dibenzofuran
 Concen: 1643.70 ng/ml
 RT: 6.47 min Scan# 637
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

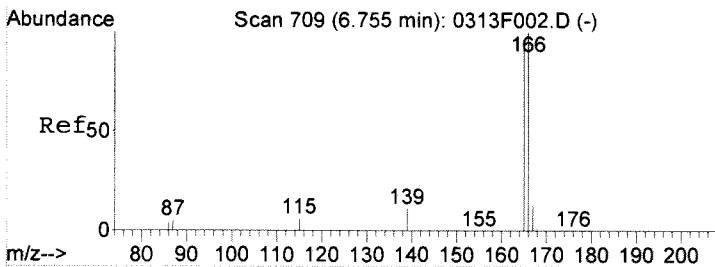
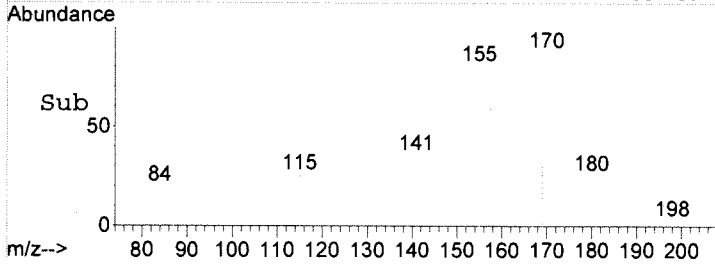
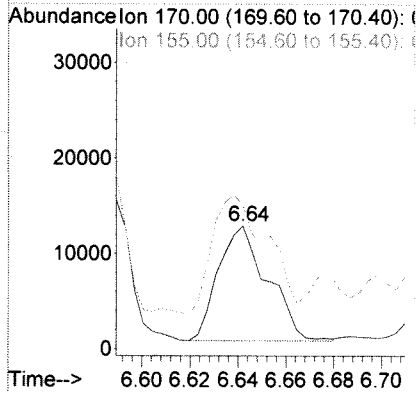
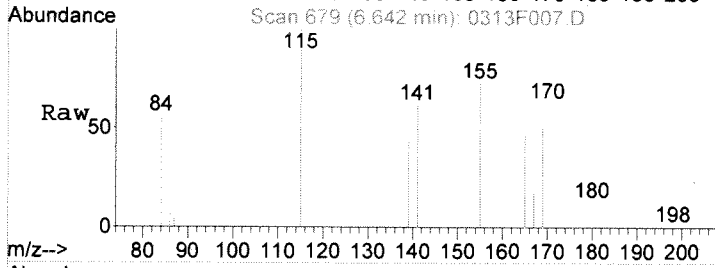
Tgt Ion	Resp	Lower	Upper
168	100		
139	51.2	15.4	75.4
84	5.8	0.0	24.7





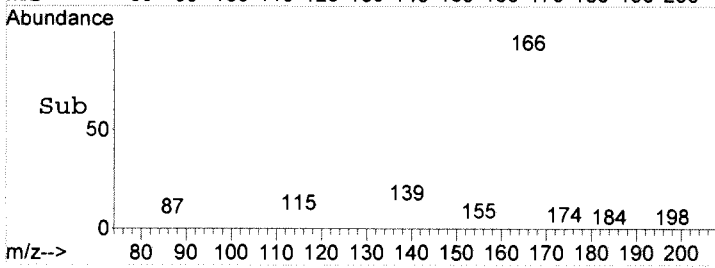
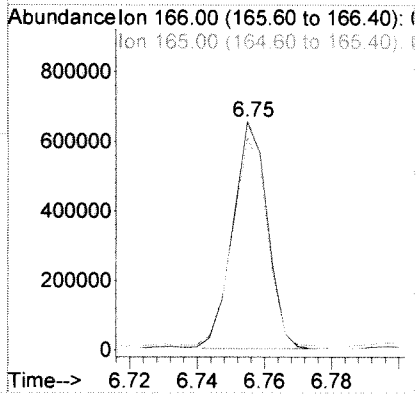
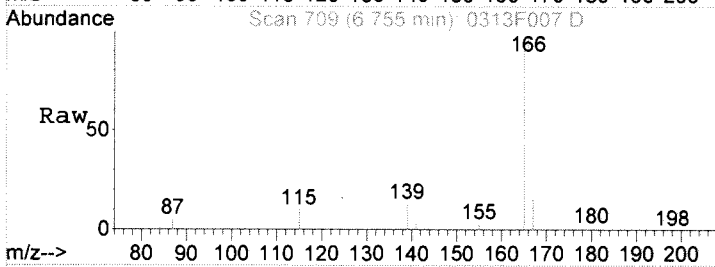
#12
 2,3,5-Trimethylnaphthalene
 Concen: 82.63 ng/ml
 RT: 6.64 min Scan# 679
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

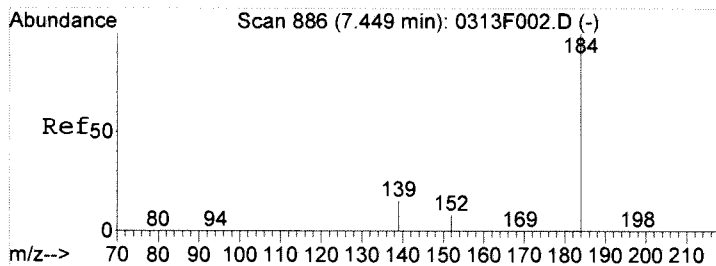
Tgt Ion	Resp	Lower	Upper
170	17266		
155	94.0	87.2	147.2
115	26.5	0.8	40.8



#14
 Fluorene
 Concen: 1843.14 ng/ml m
 RT: 6.75 min Scan# 709
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

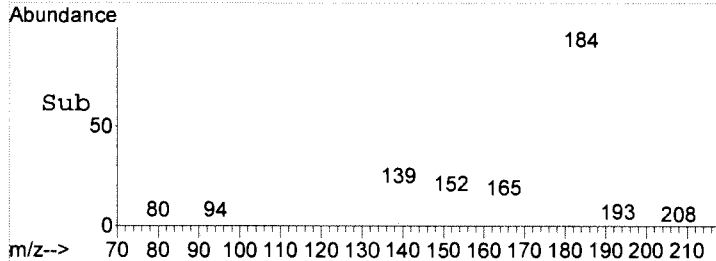
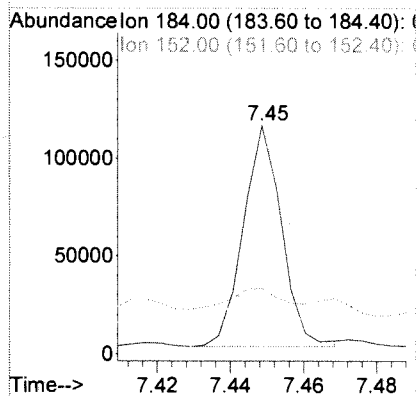
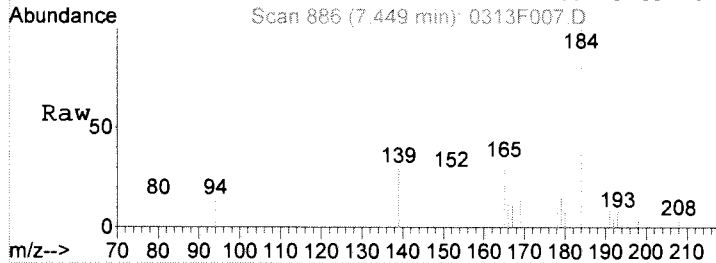
Tgt Ion	Resp	Lower	Upper
166	469299		
165	93.3	65.6	125.6
167	15.8	0.0	33.0





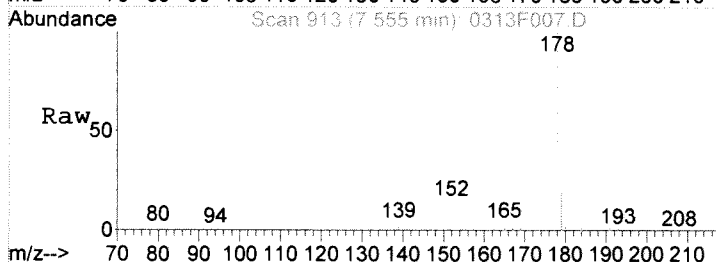
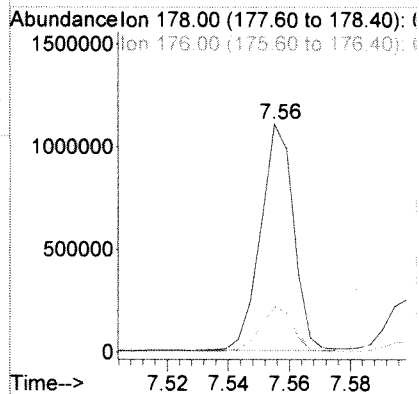
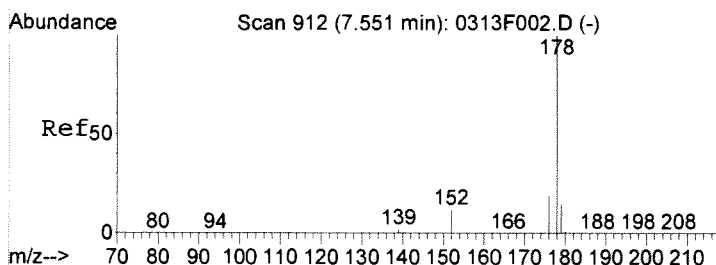
#16
 Dibenzenothiophene
 Concen: 182.19 ng/ml
 RT: 7.45 min Scan# 886
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

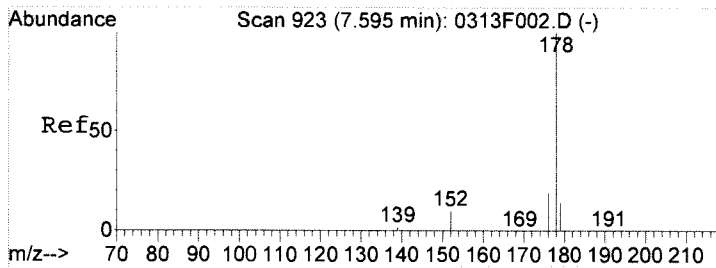
Tgt Ion	Ratio	Lower	Upper
184	100		
152	9.5	0.0	38.5
139	17.0	0.0	34.3



#17
 Phenanthrene
 Concen: 1874.78 ng/ml
 RT: 7.56 min Scan# 913
 Delta R.T. 0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

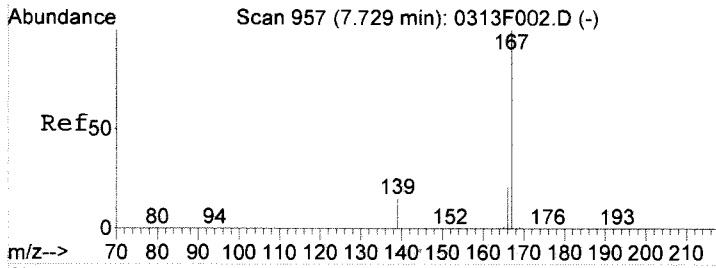
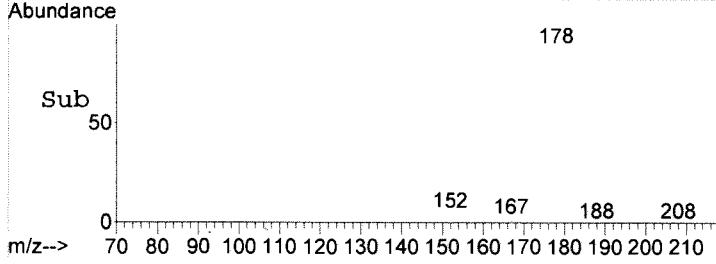
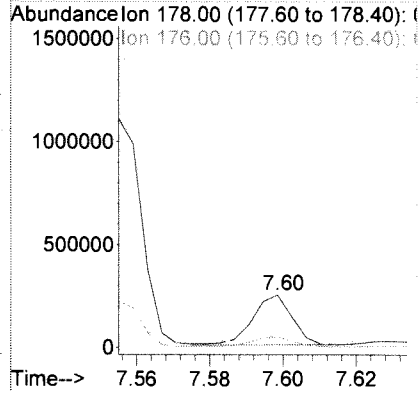
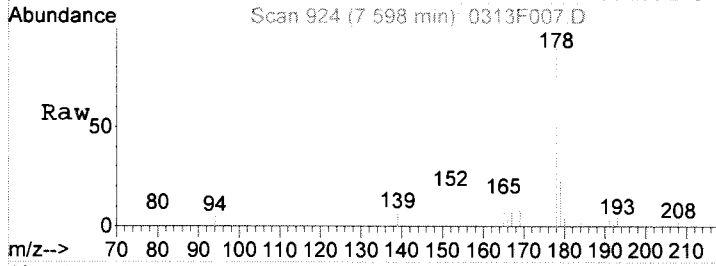
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.6	0.0	49.6
179	17.5	0.0	35.1





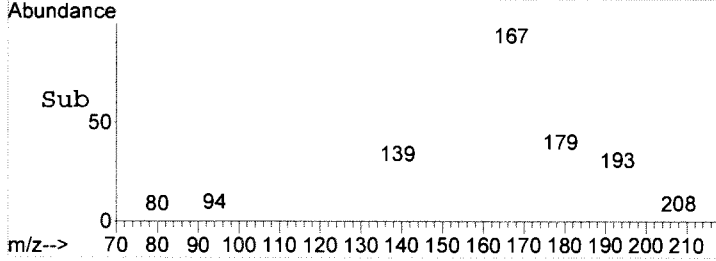
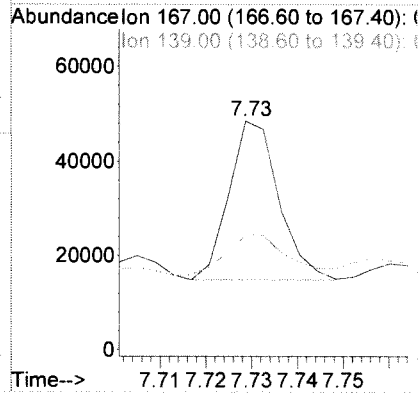
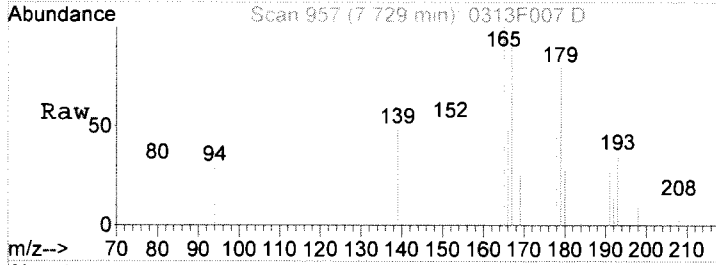
#18
 Anthracene
 Concen: 415.84 ng/ml
 RT: 7.60 min Scan# 924
 Delta R.T. 0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

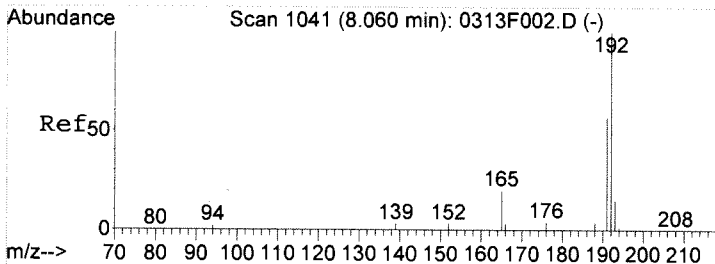
Tgt Ion	Ratio	Lower	Upper
178	100		
176	18.8	0.0	48.2
179	16.2	0.0	34.8



#19
 Carbazole
 Concen: 64.86 ng/ml
 RT: 7.73 min Scan# 957
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

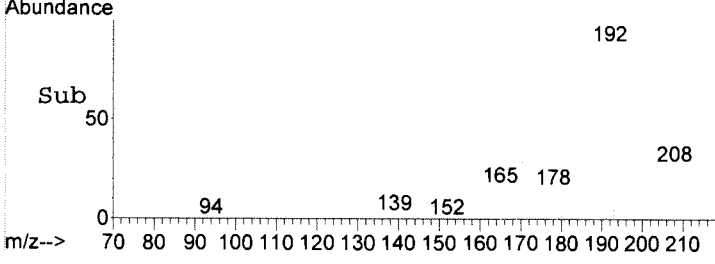
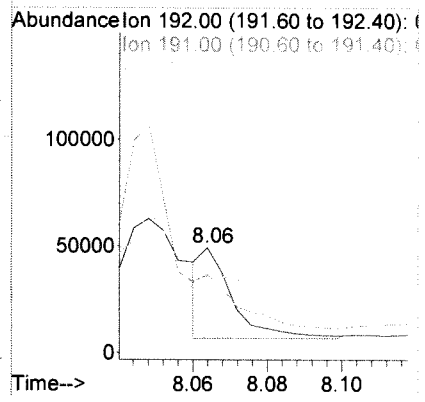
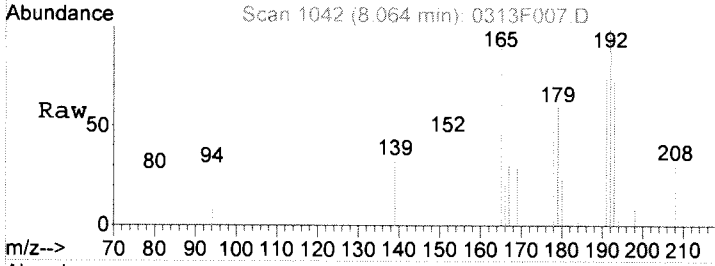
Tgt Ion	Ratio	Lower	Upper
167	100		
139	24.9	0.0	45.2
166	26.0	1.6	41.6





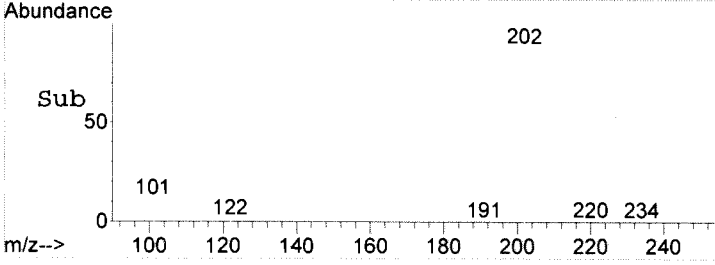
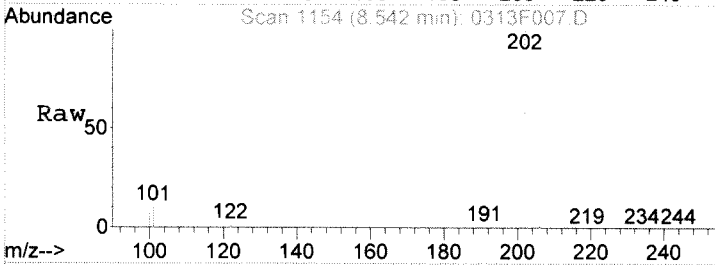
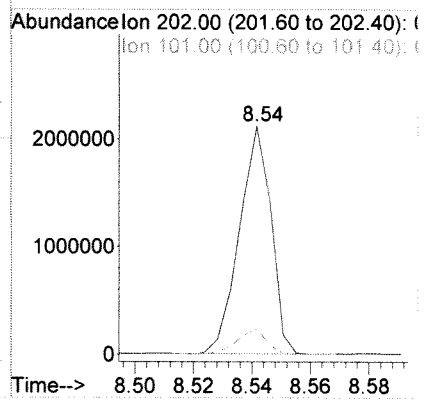
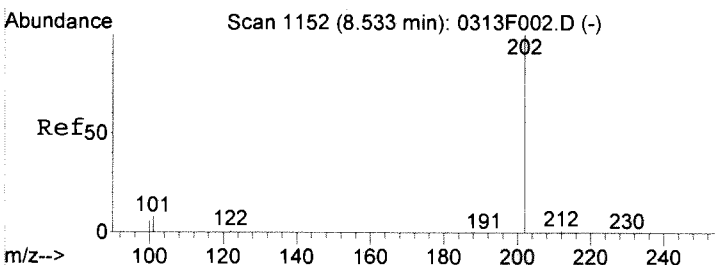
#20
 1-Methylphenanthrene
 Concen: 75.57 ng/ml m
 RT: 8.06 min Scan# 1042
 Delta R.T. 0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

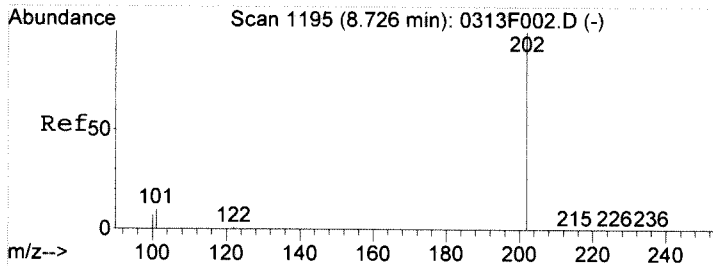
Tgt Ion	Resp	Lower	Upper
192	100		
191	74.3	26.8	86.8
193	73.2	0.0	45.3#



#21
 Fluoranthene
 Concen: 3039.21 ng/ml
 RT: 8.54 min Scan# 1154
 Delta R.T. 0.01 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

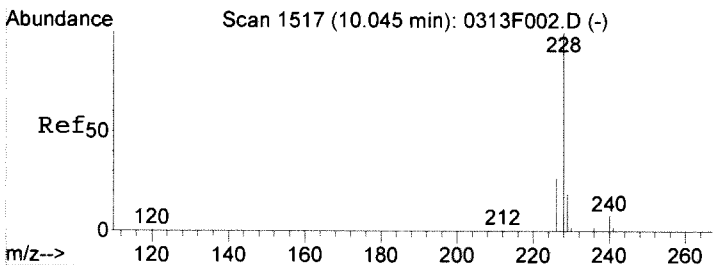
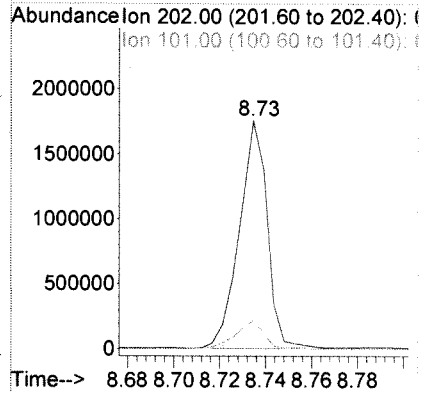
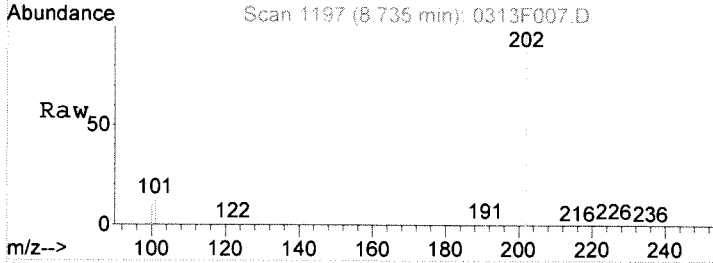
Tgt Ion	Resp	Lower	Upper
202	100		
101	11.1	0.0	39.1
100	8.1	0.0	27.0





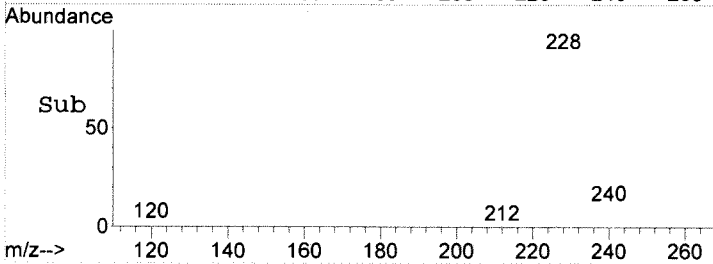
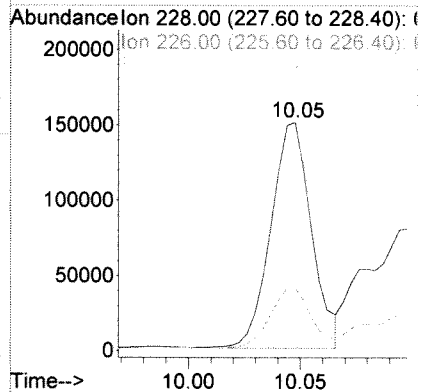
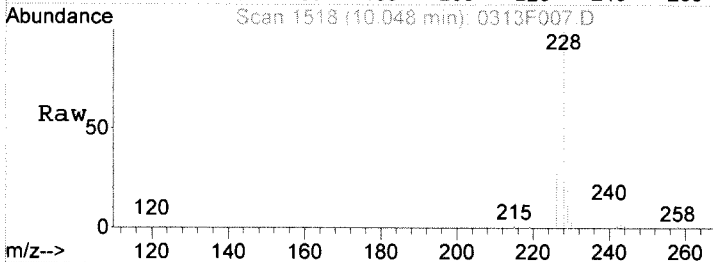
#24
 Pyrene
 Concen: 3196.40 ng/ml
 RT: 8.73 min Scan# 1197
 Delta R.T. 0.01 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

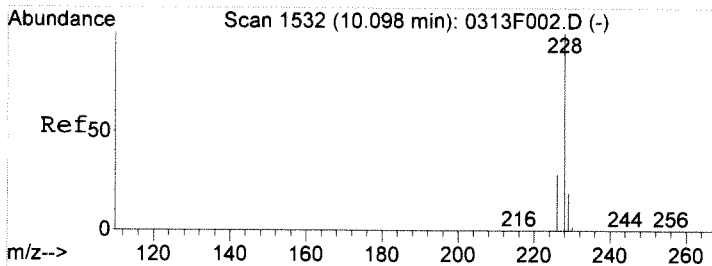
Tgt Ion	202	Resp	1474163
Ion Ratio	Lower	Upper	
202	100		
101	12.5	0.0	40.5
100	9.8	0.0	28.3



#26
 Benz (a) anthracene
 Concen: 412.15 ng/ml
 RT: 10.05 min Scan# 1518
 Delta R.T. 0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

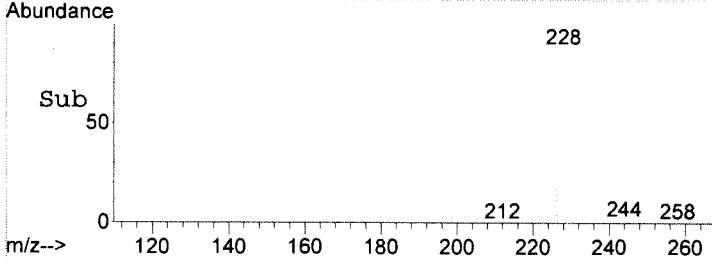
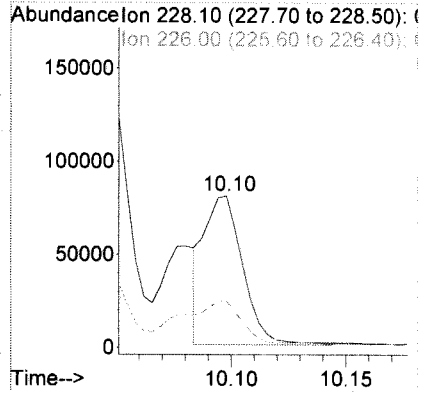
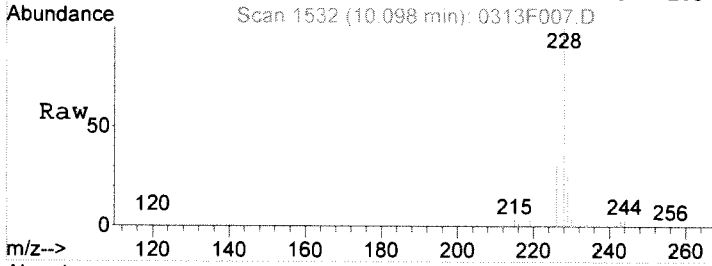
Tgt Ion	228	Resp	189904
Ion Ratio	Lower	Upper	
228	100		
226	26.9	0.0	56.4
229	19.7	0.0	39.3





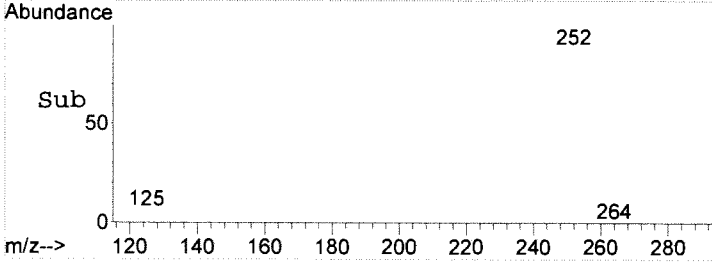
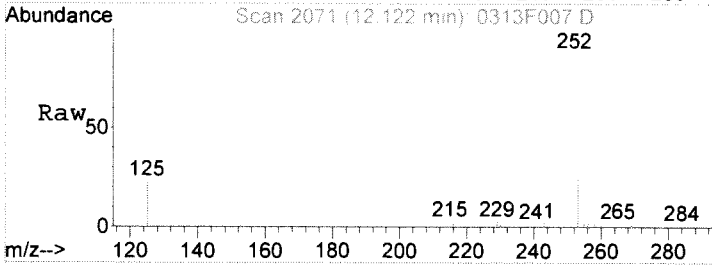
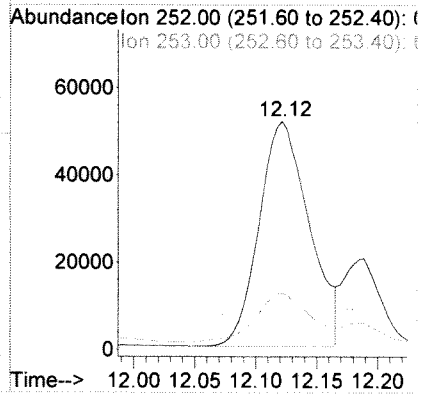
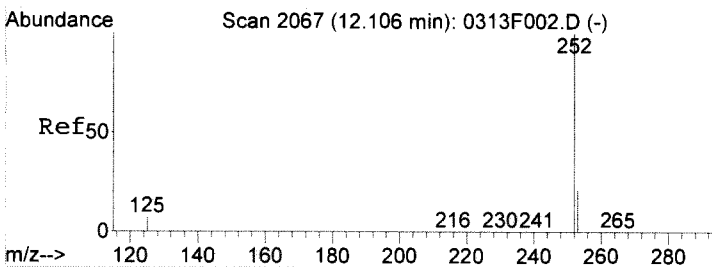
#27
 Chrysene
 Concen: 220.78 ng/ml m
 RT: 10.10 min Scan# 1532
 Delta R.T. -0.00 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

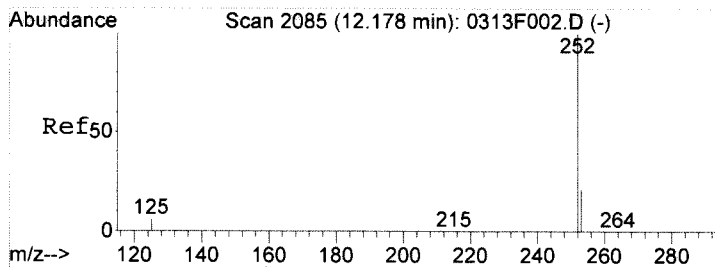
Tgt Ion	Ratio	Lower	Upper
228	100		
226	30.6	0.0	59.0
229	25.9	0.0	39.2



#29
 Benzo(b) fluoranthene
 Concen: 289.20 ng/ml
 RT: 12.12 min Scan# 2071
 Delta R.T. 0.02 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

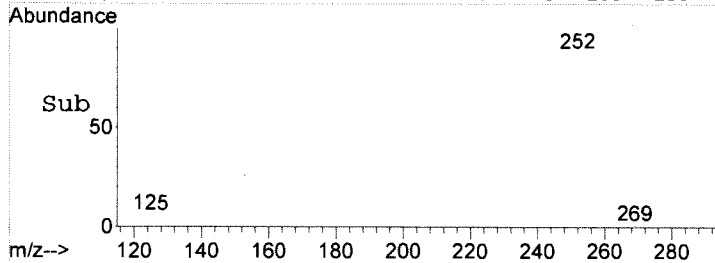
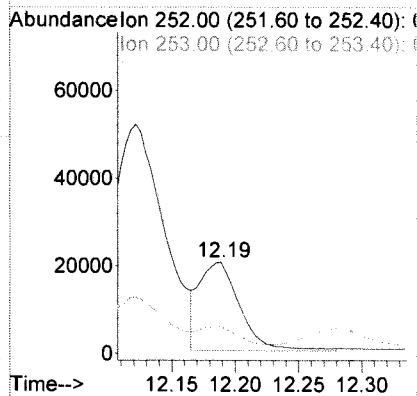
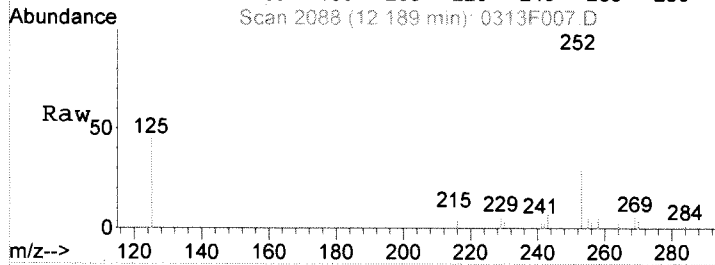
Tgt Ion	Ratio	Lower	Upper
252	100		
253	21.4	0.0	51.8
125	7.6	0.0	29.7





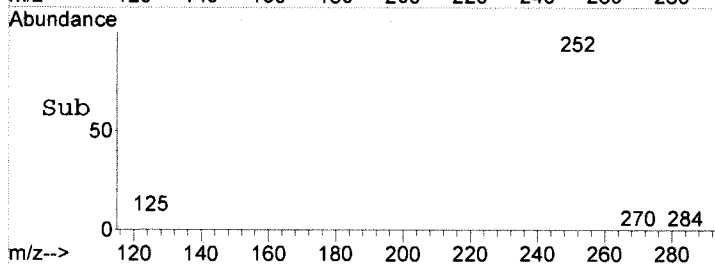
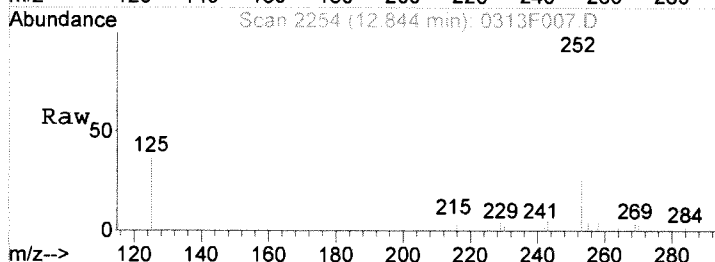
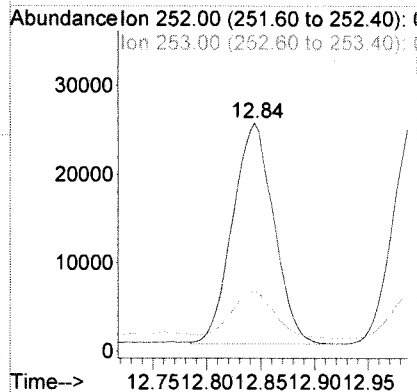
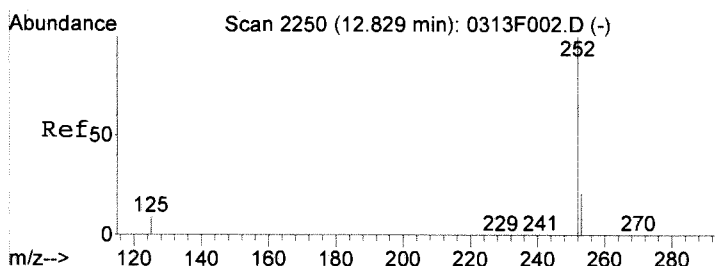
#30
 Benzo(k) fluoranthene
 Concen: 91.17 ng/ml m
 RT: 12.19 min Scan# 2088
 Delta R.T. 0.01 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

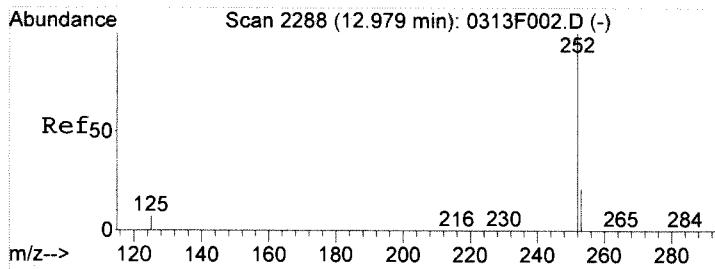
Tgt Ion	Resp	Lower	Upper
252	100		
253	29.3	0.0	51.6
125	44.8	0.0	29.7#



#31
 Benzo(e) pyrene
 Concen: 136.85 ng/ml
 RT: 12.84 min Scan# 2254
 Delta R.T. 0.02 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

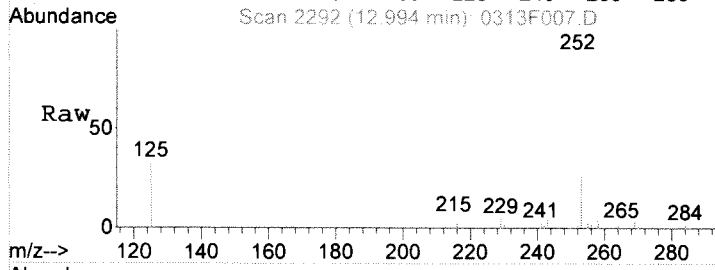
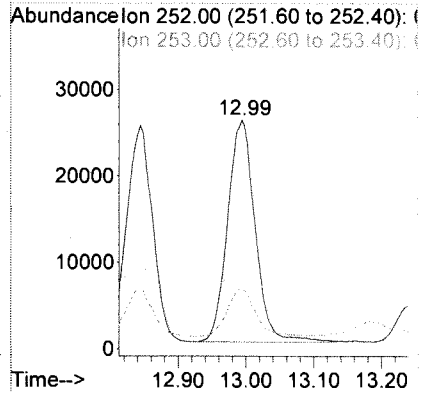
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.1	0.0	51.6
125	12.4	0.0	33.5





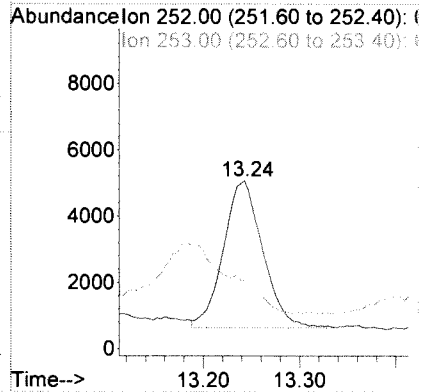
#32
 Benzo (a) pyrene
 Concen: 163.36 ng/ml
 RT: 12.99 min Scan# 2292
 Delta R.T. 0.02 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

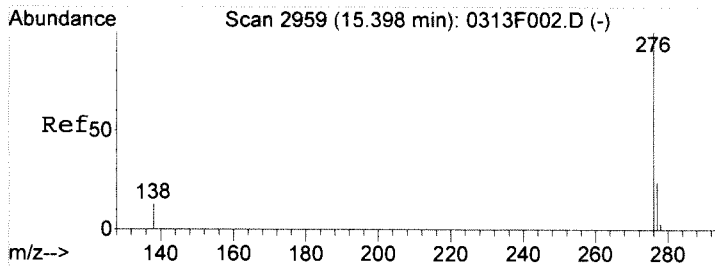
Tgt Ion	Ratio	Lower	Upper
252	100		
253	20.9	0.0	51.8
125	9.1	0.0	31.1



#33
 Perylene
 Concen: 28.83 ng/ml
 RT: 13.24 min Scan# 2355
 Delta R.T. 0.02 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

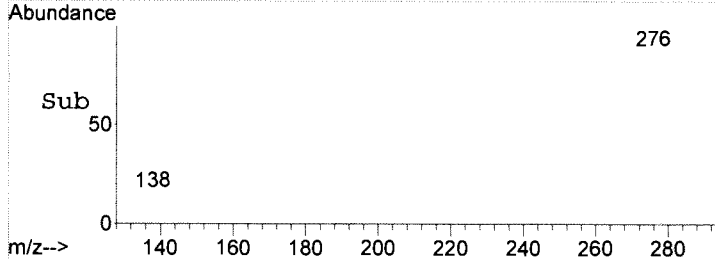
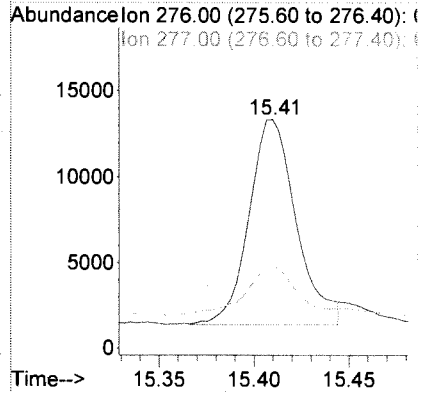
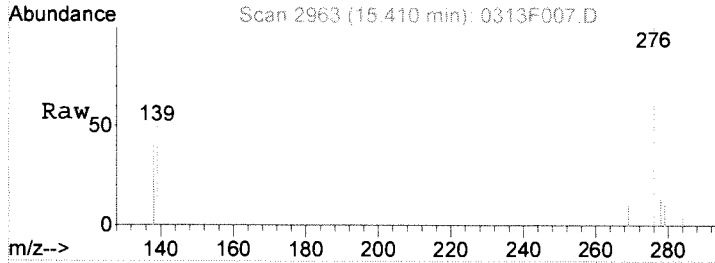
Tgt Ion	Ratio	Lower	Upper
252	100		
253	22.7	0.0	51.9
125	5.8	0.0	34.4





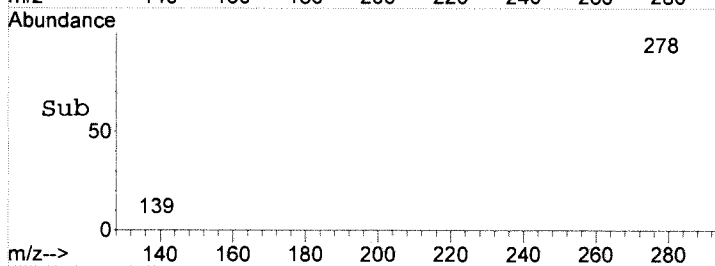
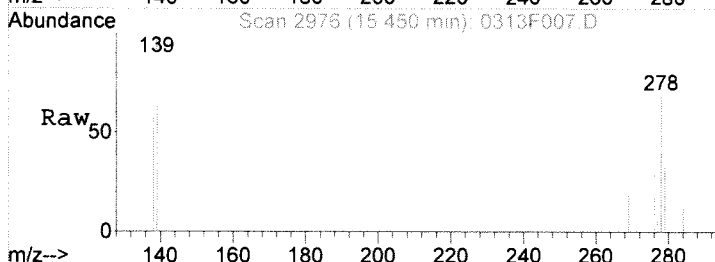
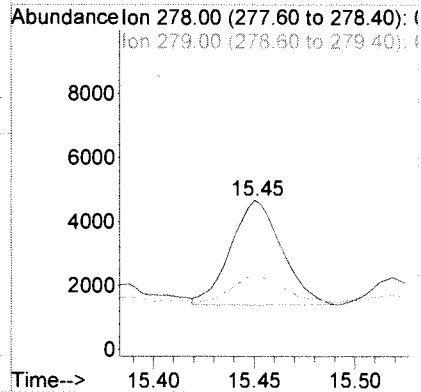
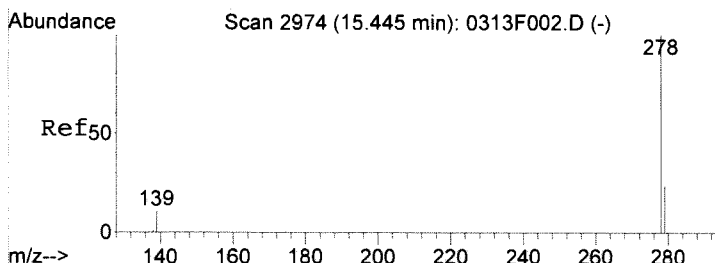
#34
 Indeno(1,2,3-cd)pyrene
 Concen: 51.96 ng/ml m
 RT: 15.41 min Scan# 2963
 Delta R.T. 0.01 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

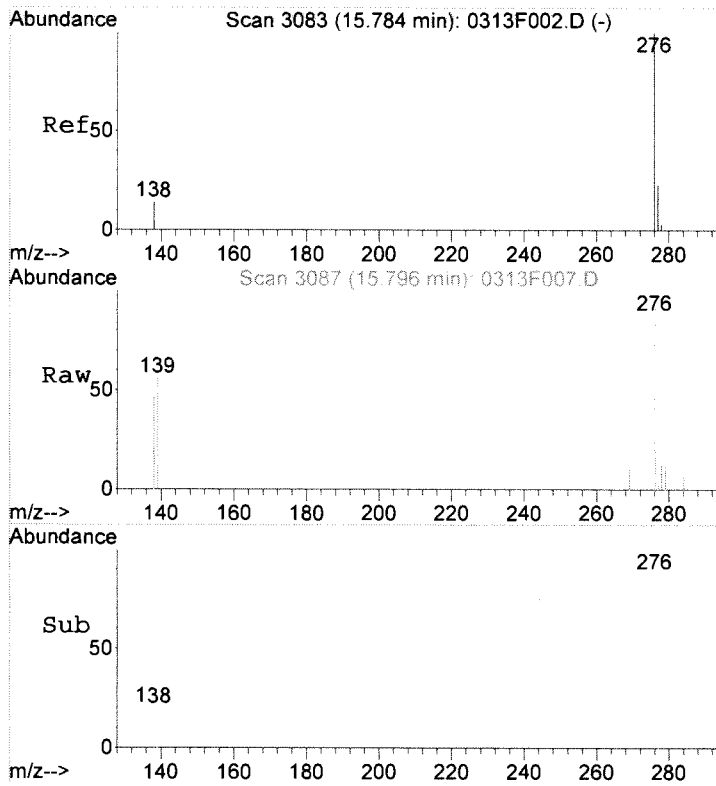
Tgt Ion	Ratio	Lower	Upper
276	100		
277	35.8	0.0	53.6
138	40.4	0.0	37.2#



#35
 Dibenz(a,h)anthracene
 Concen: 14.17 ng/ml
 RT: 15.45 min Scan# 2976
 Delta R.T. 0.01 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

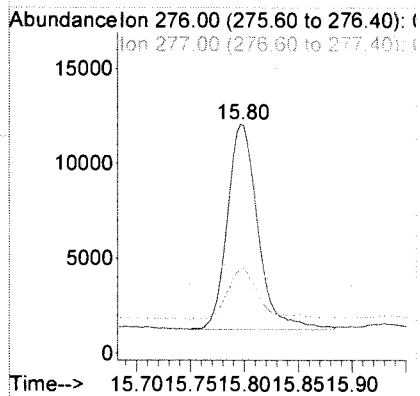
Tgt Ion	Ratio	Lower	Upper
278	100		
279	24.4	0.0	54.1
139	8.0	0.0	34.1





#36
 Benzo(g,h,i)perylene
 Concen: 48.08 ng/ml
 RT: 15.80 min Scan# 3087
 Delta R.T. 0.01 min
 Lab File: 0313F007.D
 Acq: 13 Mar 2018 8:06 am

Tgt Ion	Ratio	Lower	Upper
276	100		
277	24.5	0.0	53.4
138	17.9	0.0	38.8

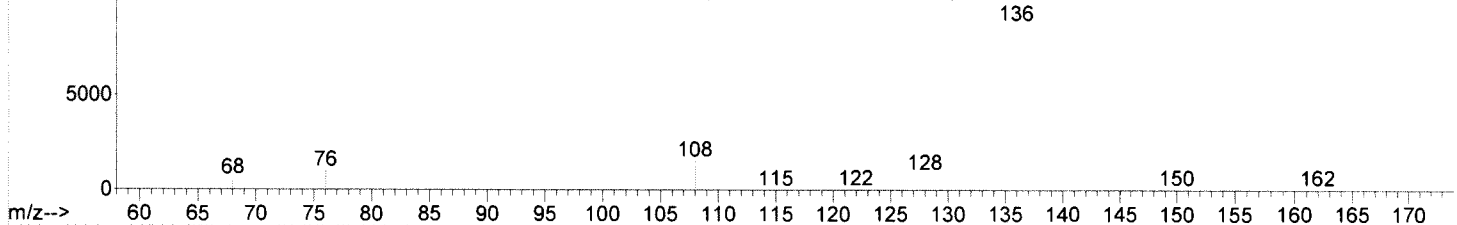
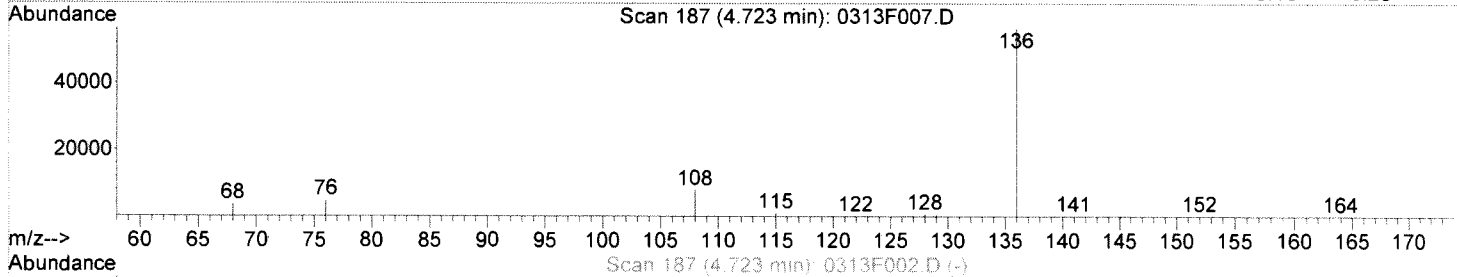
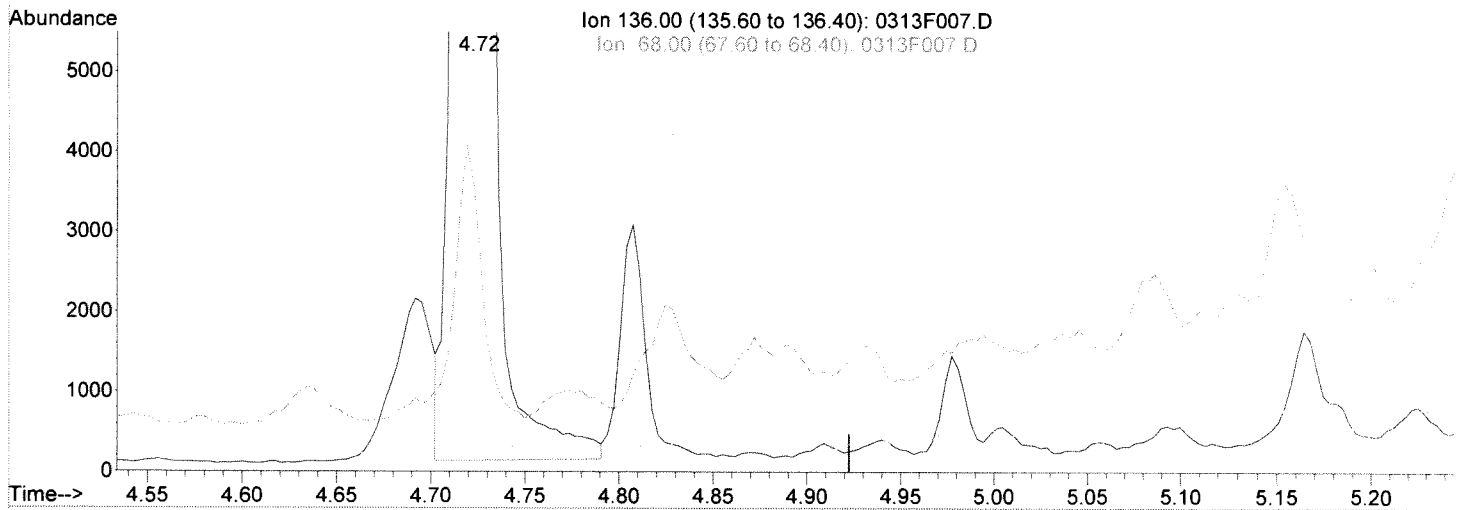


Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:25 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(1) Naphthalene-d8 (I)

4.72min 200.00ng/ml

response 49637

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	4.88
108.00	11.60	13.64
0.00	0.00	0.00

Manual Integration:

Before

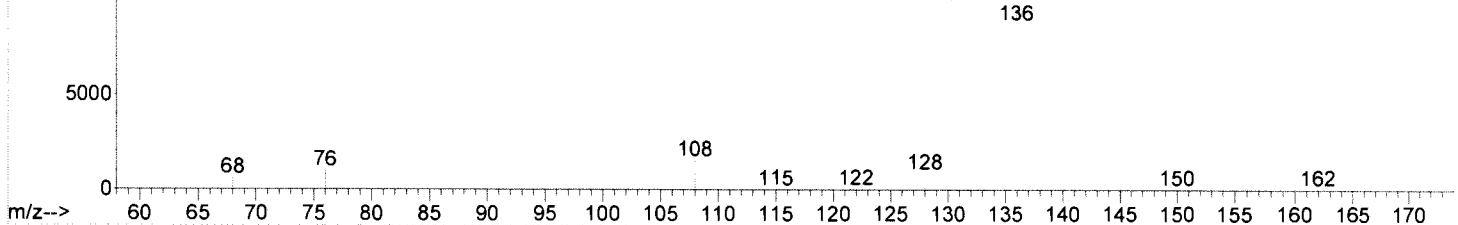
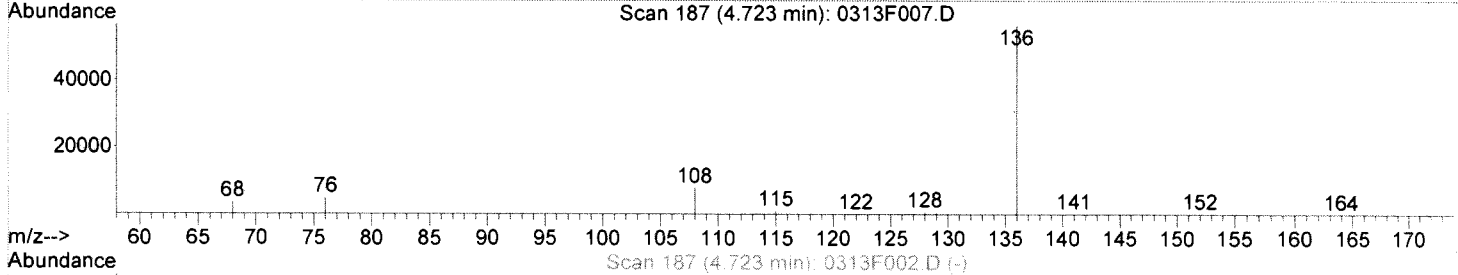
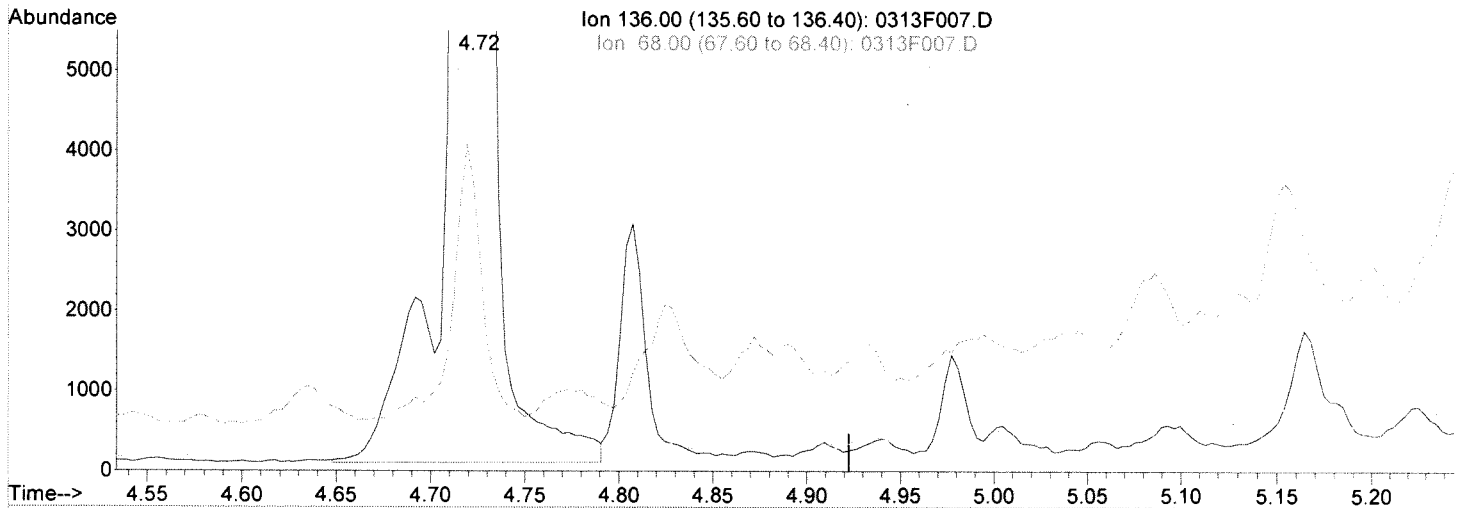
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:32 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(1) Naphthalene-d8 (I)

4.72min 200.00ng/ml m
response 52848

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	6.37
108.00	11.60	14.09
0.00	0.00	0.00

Manual Integration:

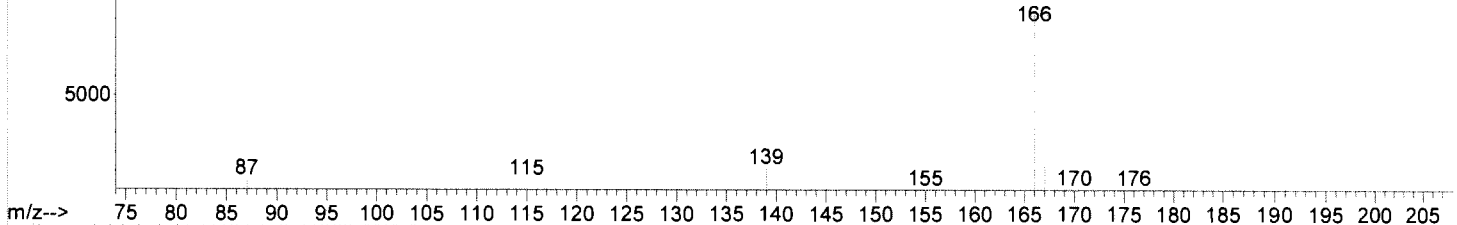
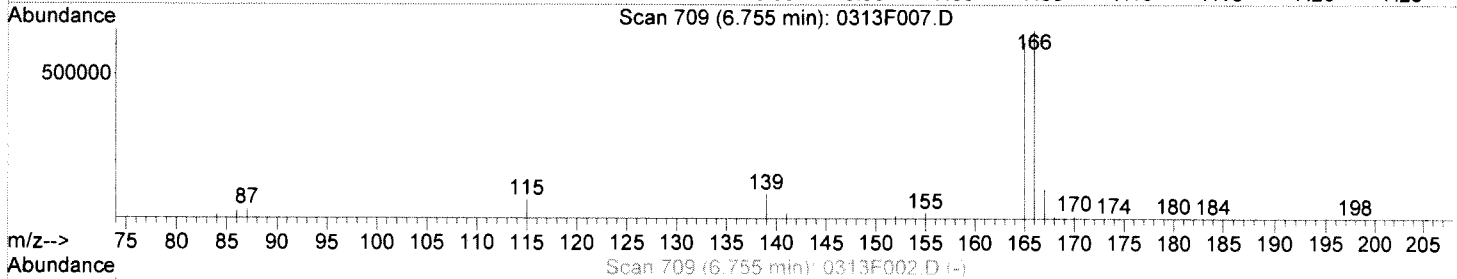
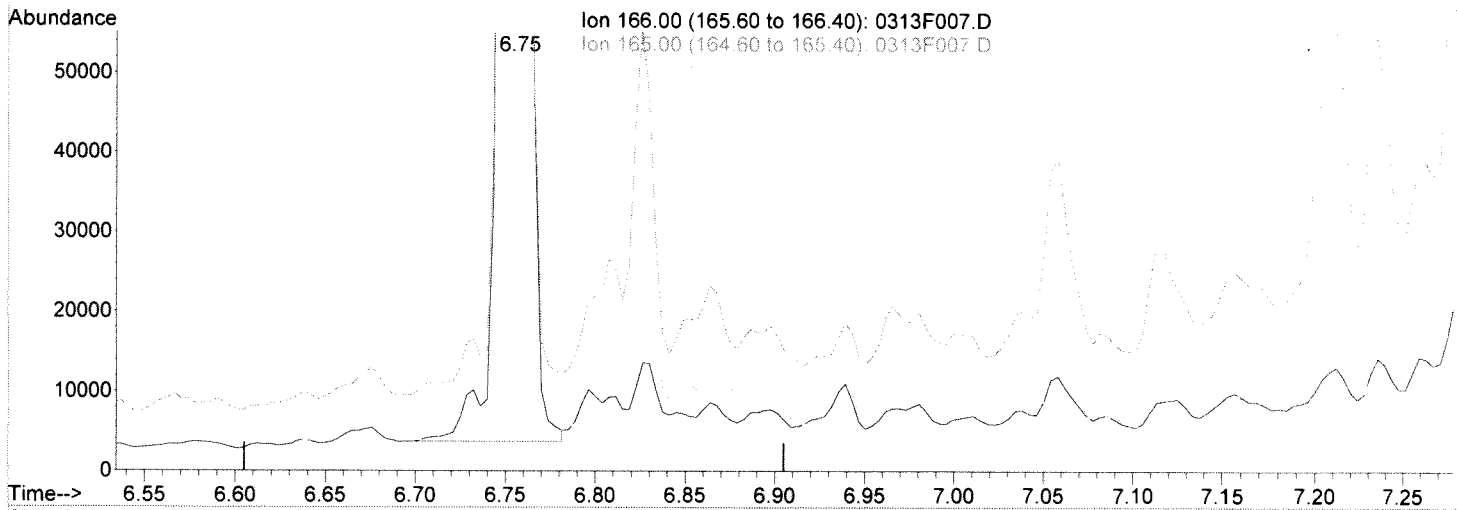
After
IC-Incomplete
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:32 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(14) Fluorene (T)
6.75min 1868.60ng/ml
response 475782
Ion Exp% Act%
166.00 100 100
165.00 95.60 92.37
167.00 13.00 15.44
0.00 0.00 0.00

Manual Integration:

Before

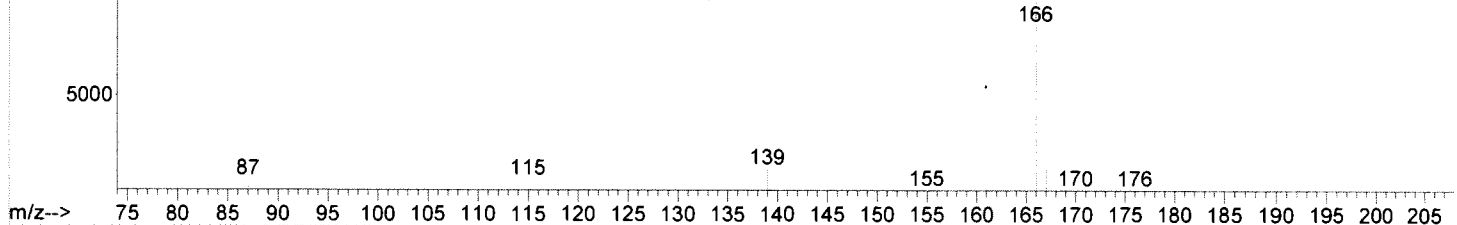
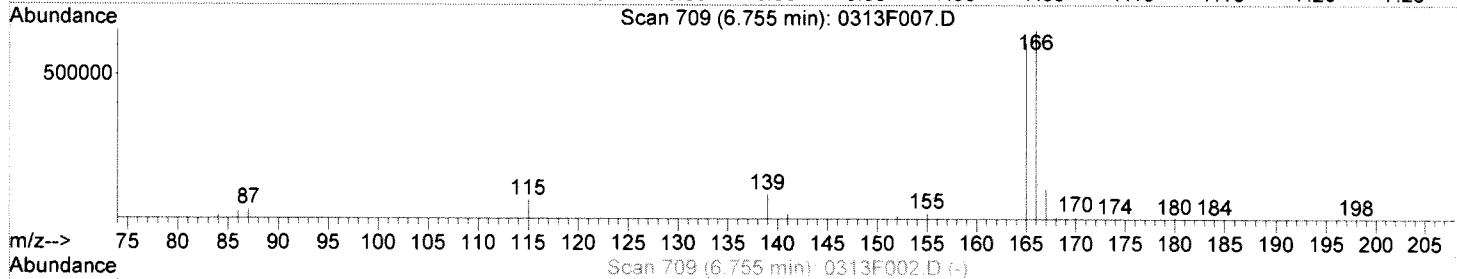
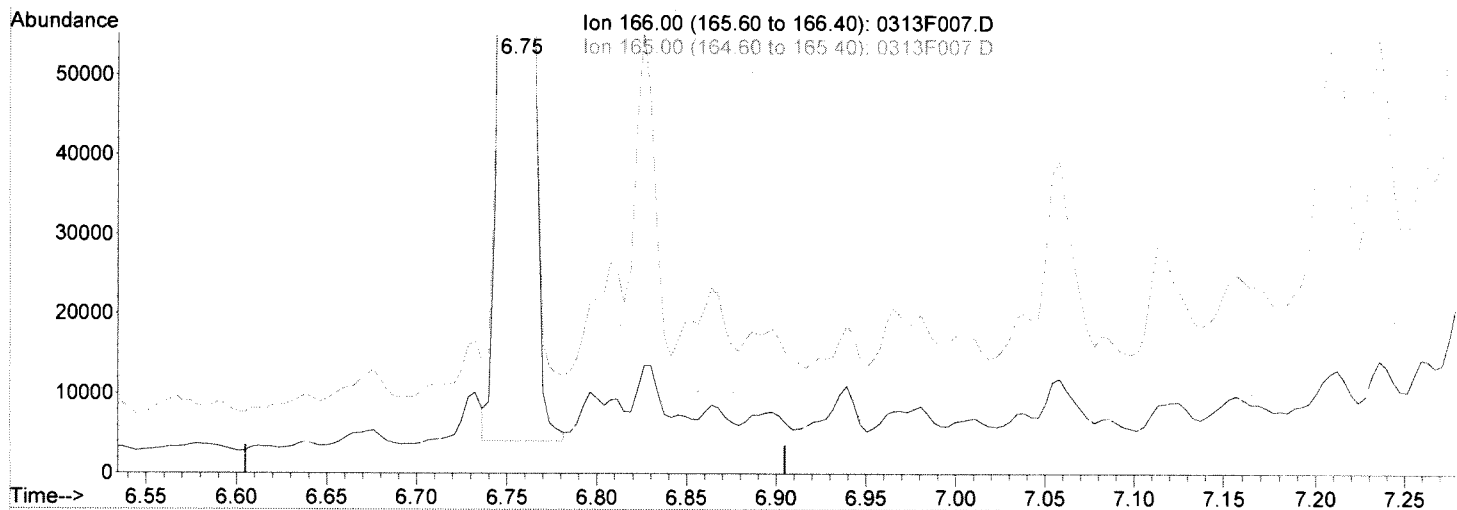
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:32 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(14) Fluorene (T)

6.75min 1843.14ng/ml m
response 469299

Ion	Exp%	Act%
166.00	100	100
165.00	95.60	93.31
167.00	13.00	15.85
0.00	0.00	0.00

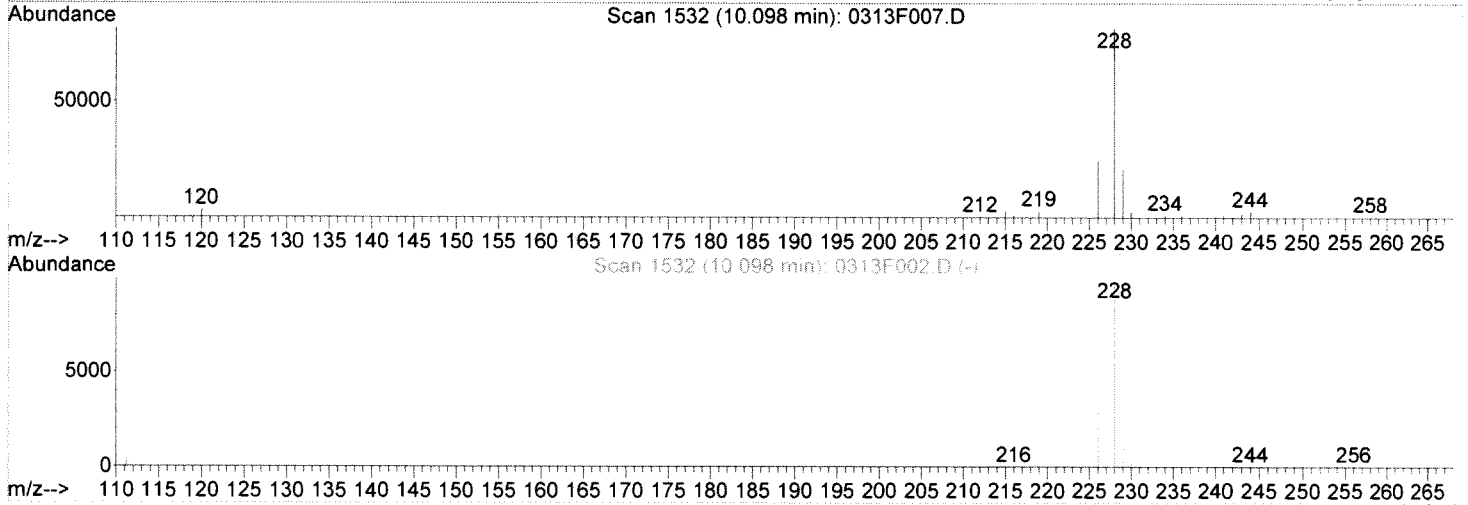
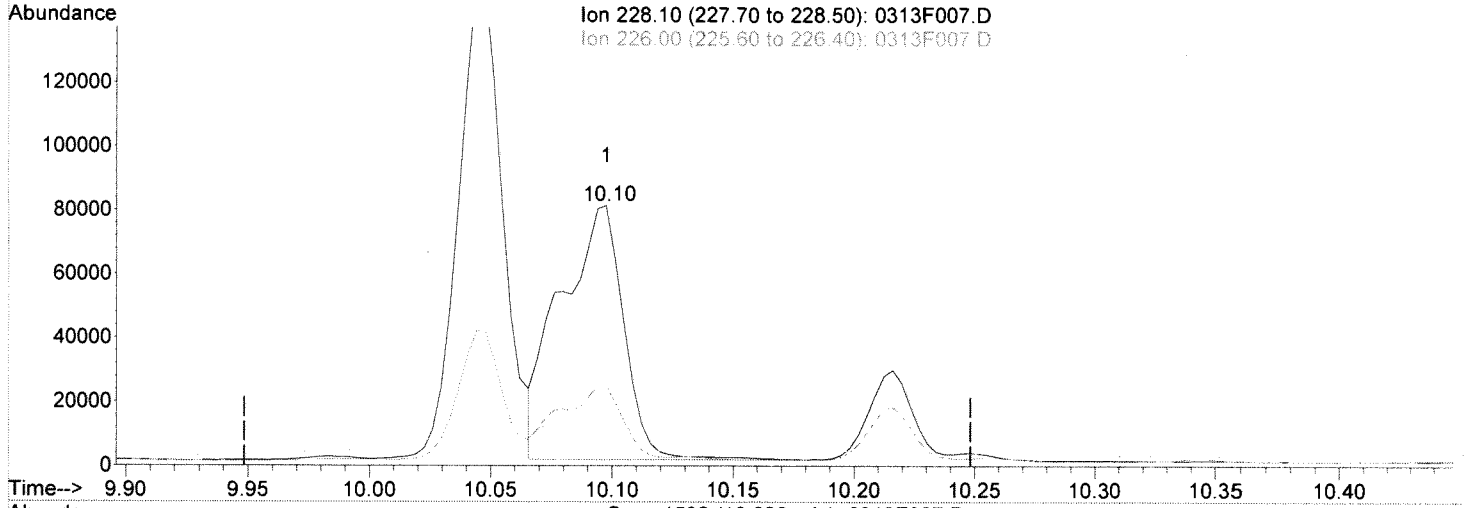
Manual Integration:
After
IC-Overintegrated
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:32 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(27) Chrysene (T)		
10.10min	334.35ng/ml	
response	144048	
Ion	Exp%	Act%
228.10	100	100
226.00	29.00	29.21
229.00	19.20	22.01
0.00	0.00	0.00

Manual Integration:

Before

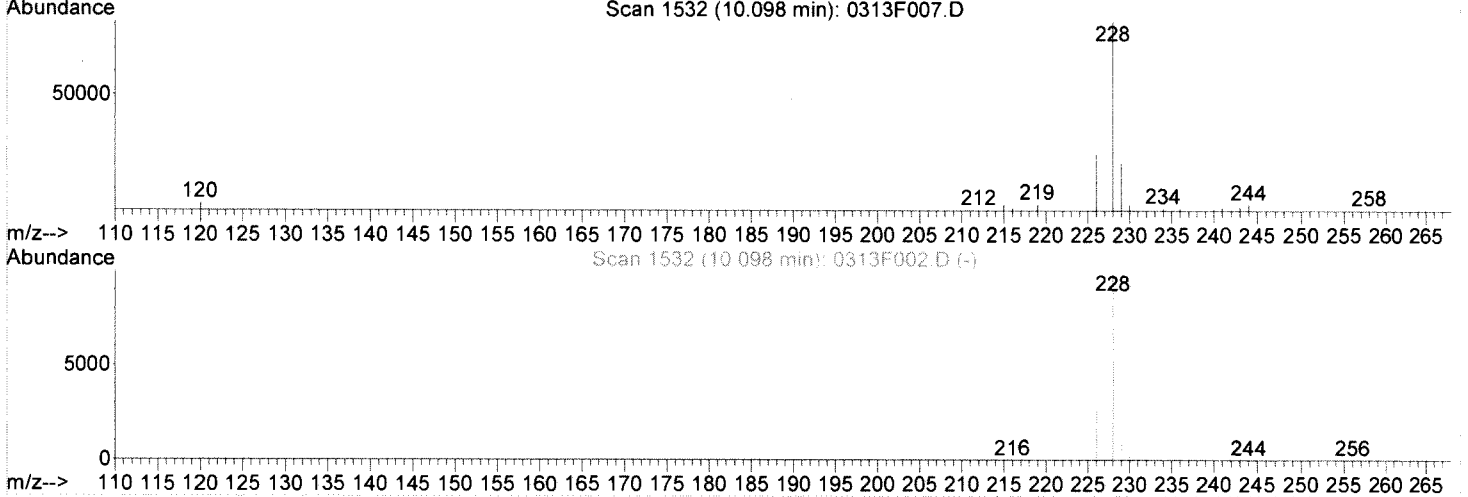
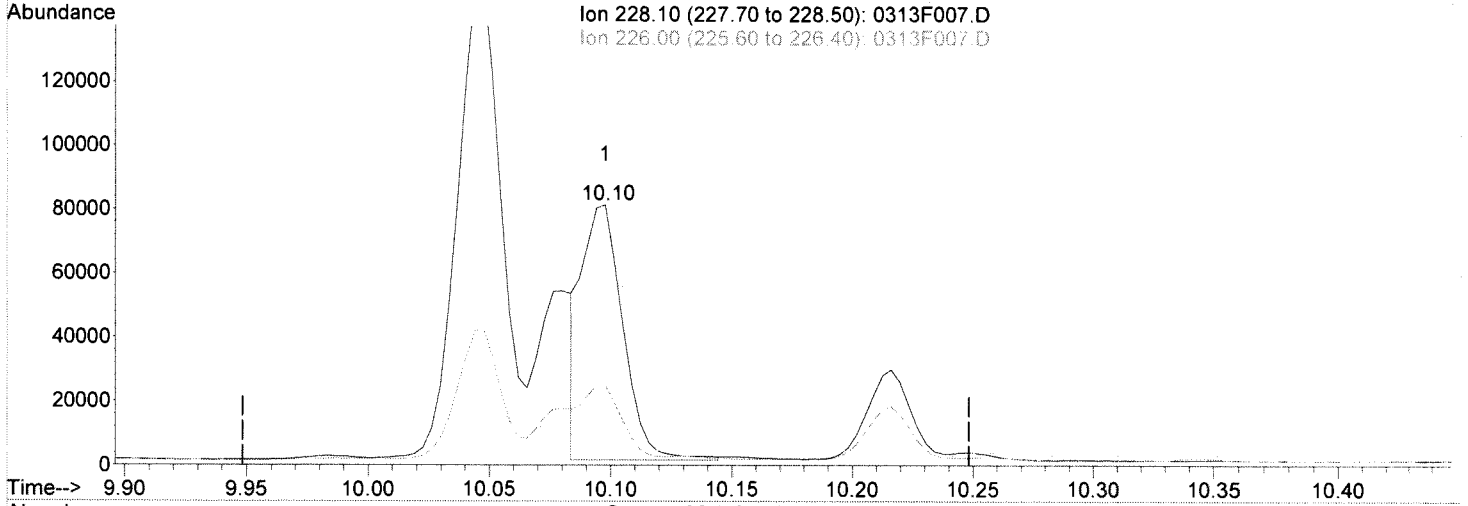
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:32 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(27) Chrysene (T)

10.10min 220.78ng/ml m

response 95119

Ion	Exp%	Act%
228.10	100	100
226.00	29.00	30.62
229.00	19.20	25.95
0.00	0.00	0.00

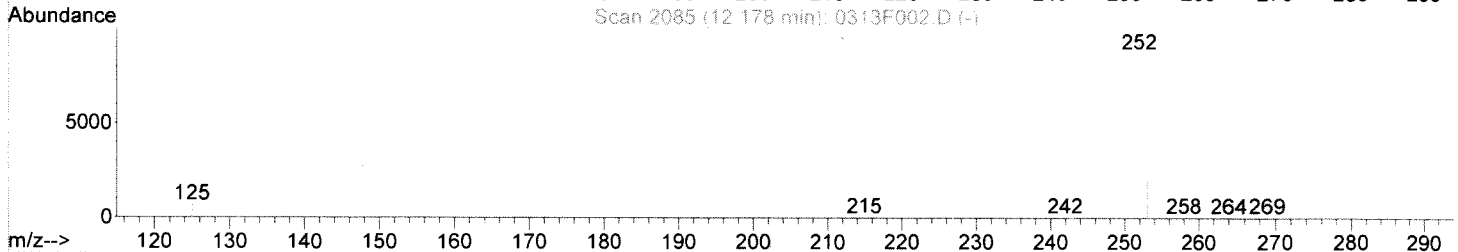
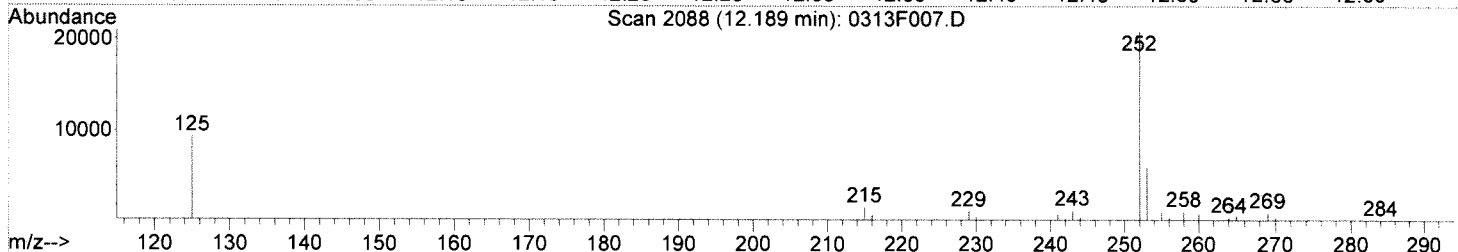
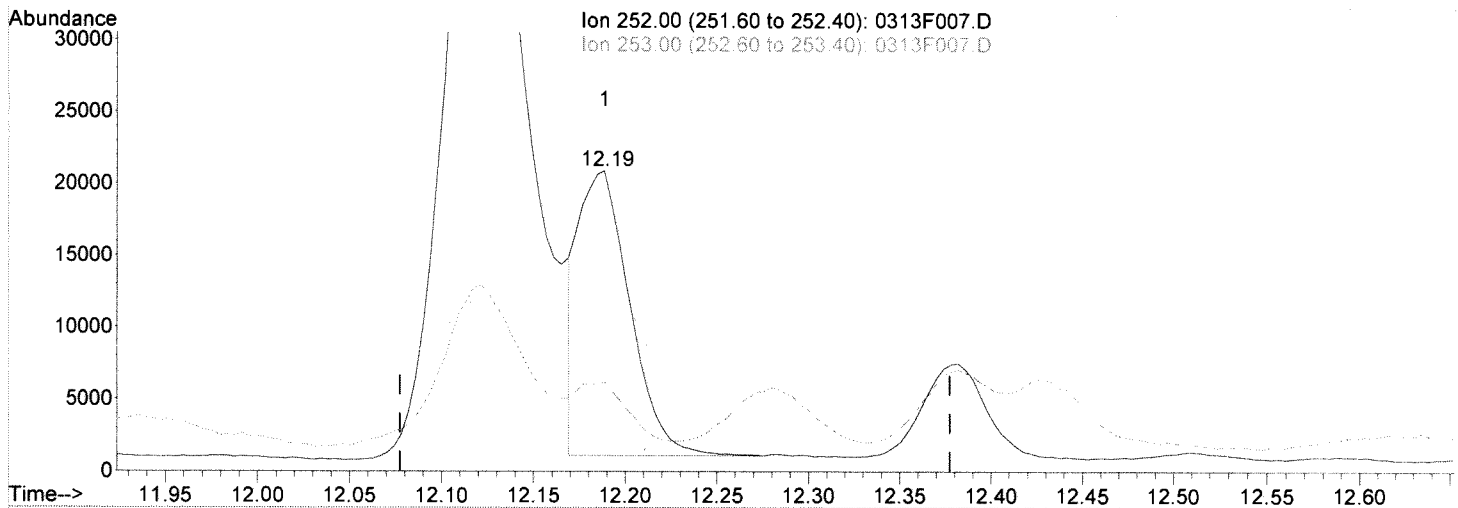
Manual Integration:
After
IC-Overintegrated
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:32 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(30) Benzo(k)fluoranthene (T)

12.19min 77.92ng/ml

response 38900

Ion	Exp%	Act%
252.00	100	100
253.00	21.60	5.29
125.00	9.70	4.59
0.00	0.00	0.00

Manual Integration:

Before

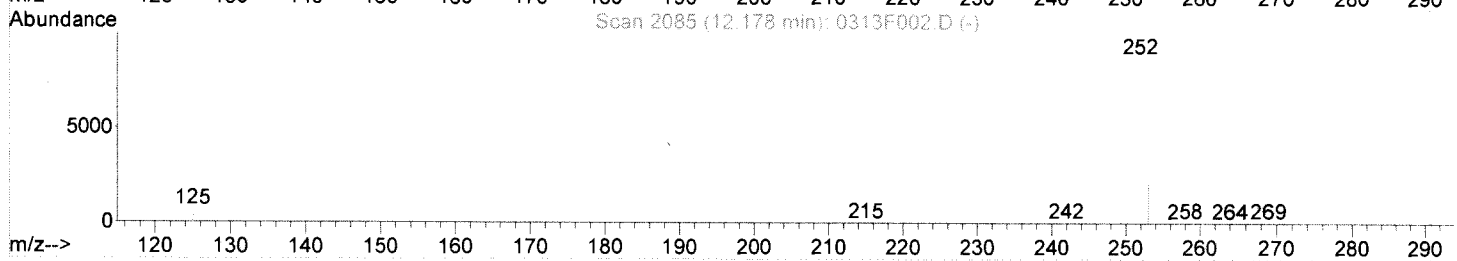
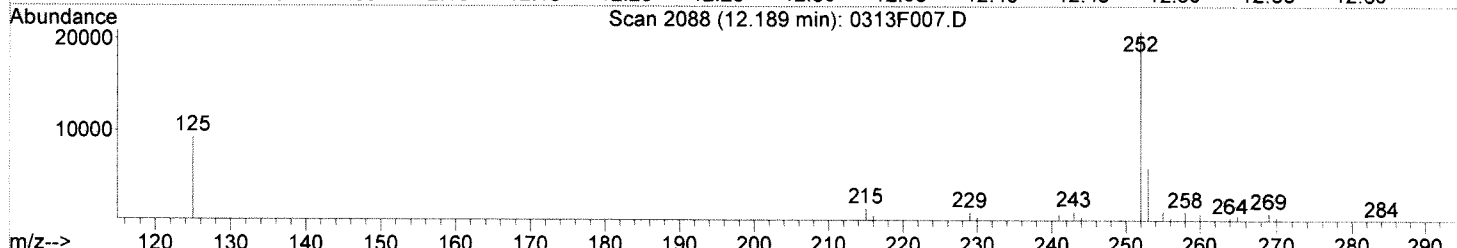
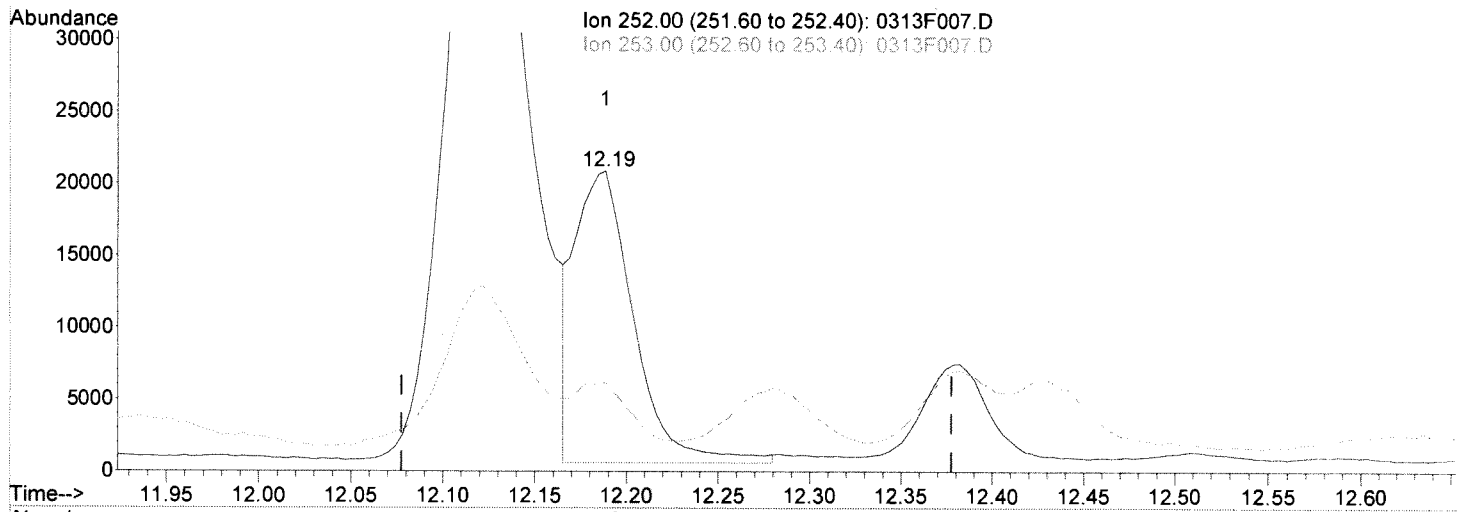
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:33 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(30) Benzo(k)fluoranthene (T)

12.19min 91.17ng/ml m

response 45516

Ion	Exp%	Act%
252.00	100	100
253.00	21.60	29.31
125.00	9.70	44.85#
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

03/13/18

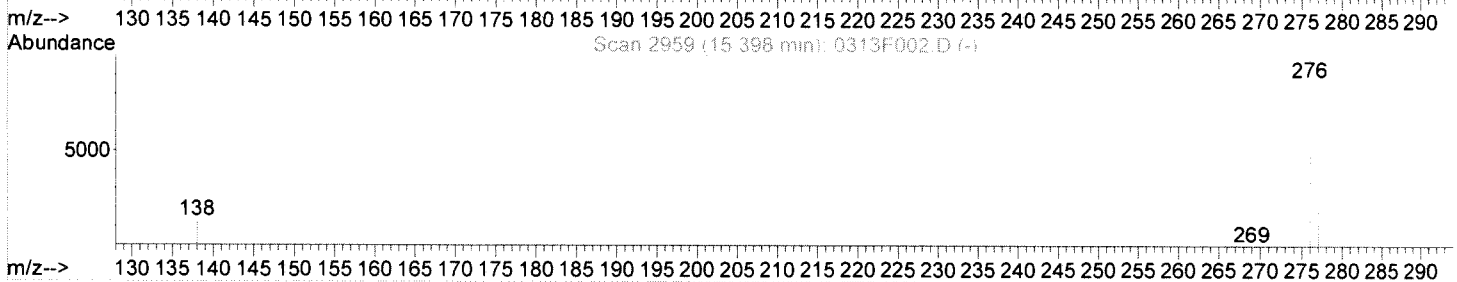
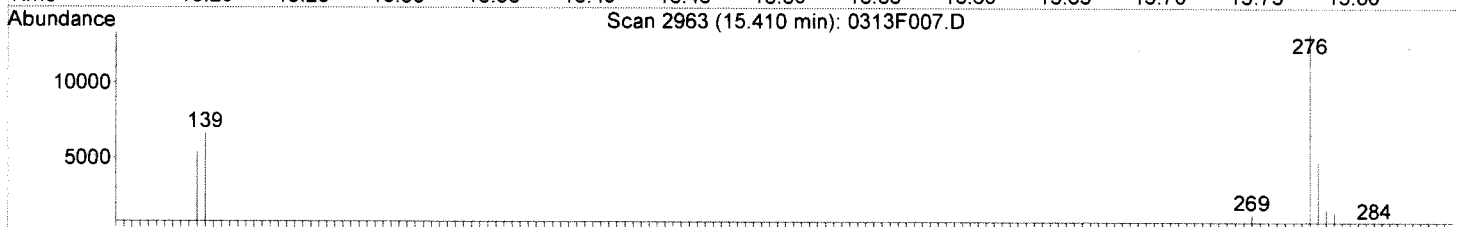
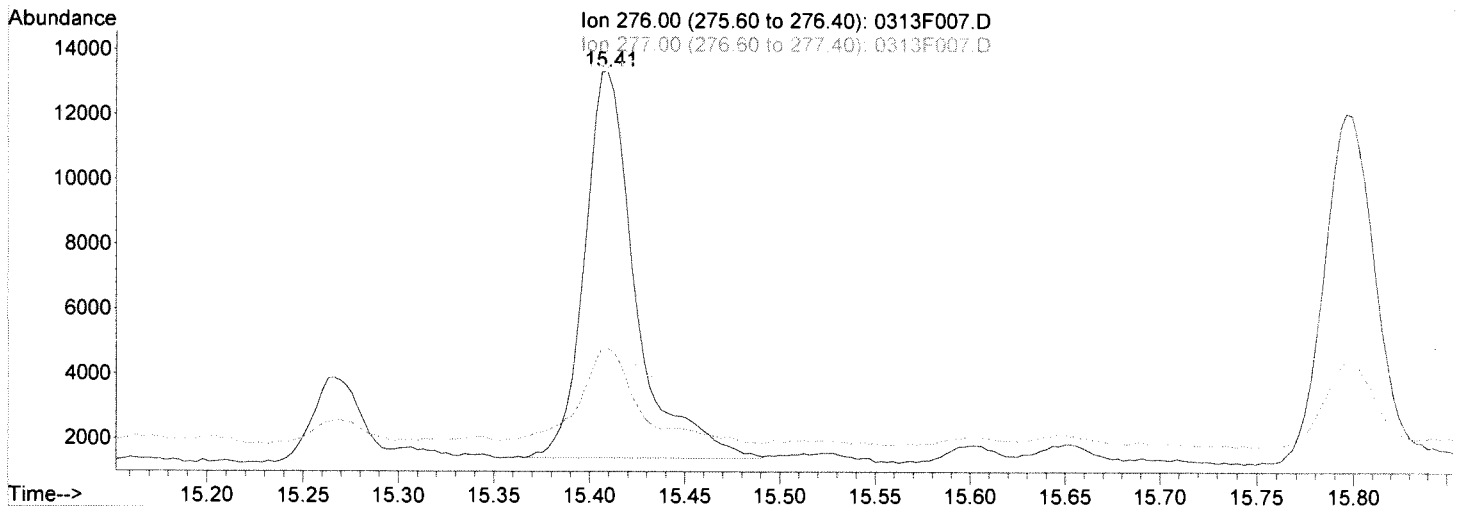
Handwritten signatures and initials

Data File : J:\MS14\DATA\031318\0313F007.D
Acq On : 13 Mar 2018 8:06 am
Sample : K1801267-017
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:33 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Multiple Level Calibration



TIC: 0313F007.D

(34) Indeno(1,2,3-cd)pyrene (T)

15.41min 55.59ng/ml

response 22188

Ion	Exp%	Act%
276.00	100	100
277.00	23.60	24.39
138.00	17.20	14.97
0.00	0.00	0.00

Manual Integration:

Before

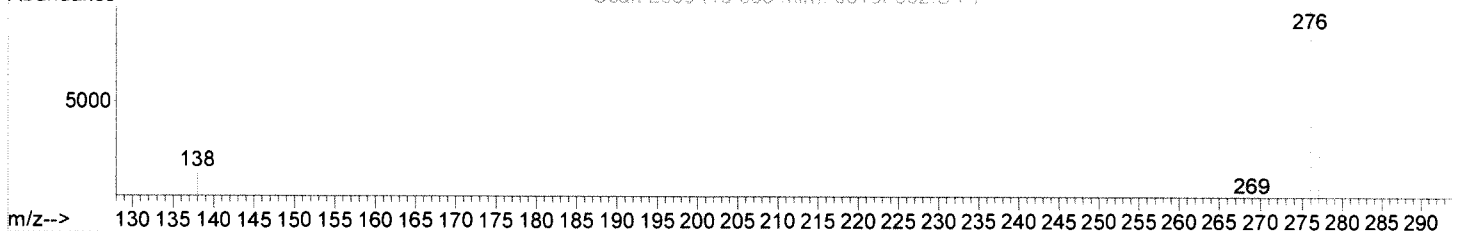
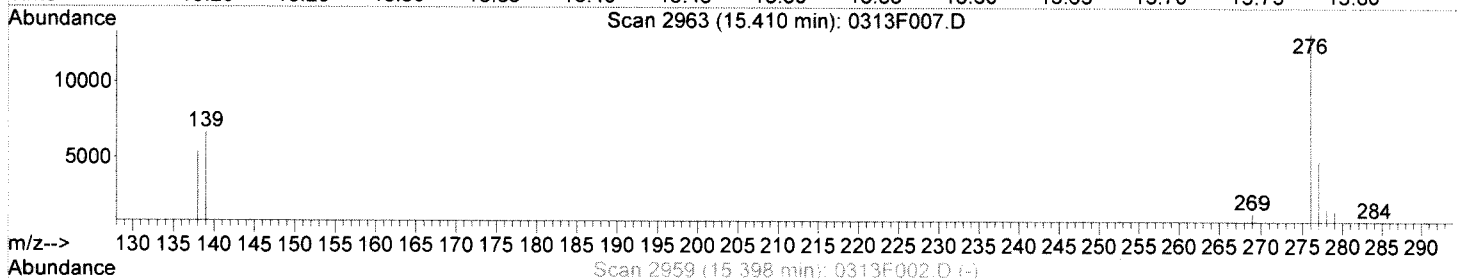
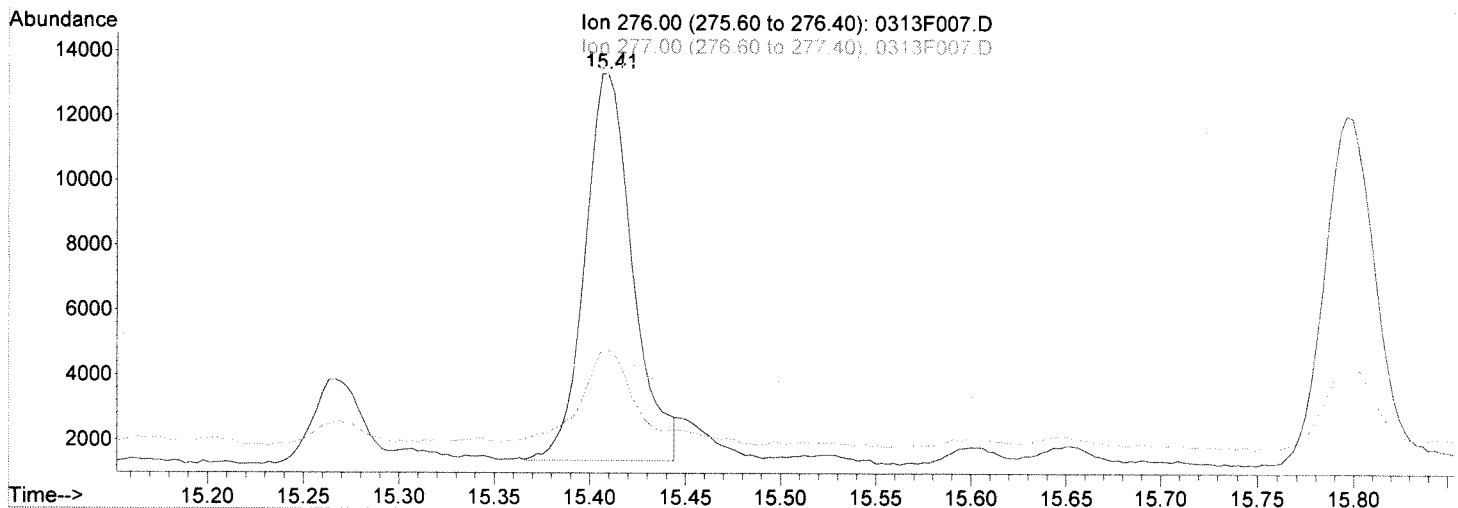
03/13/18

Data File : J:\MS14\DATA\031318\0313F007.D
 Acq On : 13 Mar 2018 8:06 am
 Sample : K1801267-017
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:33 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F007.D

(34) Indeno(1,2,3-cd)pyrene (T)

15.41min 51.96ng/ml m

response 20738

Ion	Exp%	Act%
276.00	100	100
277.00	23.60	35.84
138.00	17.20	40.39#
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

03/13/18

Exception Report

Data File: J:\MS14\DATA\031318\0313F013.D
Lab ID: K1801267-017
RunType: DL
Matrix: WATER

Date Acquired: 03/13/2018 10:26
Date Quantitated: 03/14/2018 06:36
Batch ID: KWG1801409
Analysis Method: 8270D SIM
ListJoinID: LJ18861

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	30	NA	7		x
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____


MAR 14 2018

Secondary Review: _____

Quantitation Report

Data File: J:\MS14\DATA\031318\0313F013.D	Instrument: MS14
Acqu Date: 03/13/2018 10:26	Quant Date: 03/14/2018 06:36
Run Type: DL	Vial: 5
Lab ID: K1801267-017	ListJoinID: LJ18861
	Dilution: 10.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date: 02/07/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801409	Prep Lot: KWG1801347	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3511	
Prep Ref: 1666762	Prep Date: 03/09/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18861
Tune Ref: J:\MS14\DATA\031318\0313F001.D	Method ID: MJ1638
MB Ref: J:\MS14\DATA\031318\0313F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.71	-0.01	136	43655	200.00	OK
2	Acenaphthene-d10	6.29	0.00	164	25019	200.00	OK
3	Phenanthrene-d10	7.53	0.00	188	49678	200.00	OK
4	Chrysene-d12	10.05	-0.01	240	60509	200.00	OK
5	Perylene-d12	13.12	-0.02	264	66808	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	-0.01	0.00	176	18141	105.99	106	42-131	OK NR
3	Fluoranthene-d10	8.51	-0.01	0.00	212	35872	114.92	115	42-133	OK NR
4	Terphenyl-d14	8.86	-0.01	0.00	244	25618	100.41	100	32-129	OK NR

Target Compounds

								Final Conc. Units: ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.73	-0.01	0.00	128	704	2.83	0.44	JD	NR
1	2-Methylnaphthalene	5.38	-0.01	0.00	142	16436	94.94	15	D	NR
2	Acenaphthylene	6.17		0.00	152	2656	8.68	1.4	D	NR
2	Acenaphthene	6.31	-0.01	0.00	154	69909	406.09	63	D	
2	Dibenzofuran	6.46	-0.01	0.00	168	49490	182.96	29	D	NR
2	Fluorene	6.75		0.00	166	40174	189.34	30	D	NR
3	Phenanthrene	7.55		0.00	178	61031	198.12	31	D	NR
3	Anthracene	7.59		0.00	178	13757	45.28	7.1	D	NR
3	Fluoranthene	8.53		0.00	202	116324	318.06	50	D	
4	Pyrene	8.72	-0.01	0.00	202	111243	304.59	48	D	
4	Benz(a)anthracene	10.03	-0.01	0.00	228	16949	46.45	7.3	D	NR
4	Chrysene	10.08	-0.02	0.00	228	8169m	23.94	3.7	D	NR
5	Benzo(b)fluoranthene	12.08	-0.03	0.00	252	13802	32.72	5.1	D	NR

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\031318\0313F013.D
Acqu Date: 03/13/2018 10:26
Run Type: DL
Lab ID: K1801267-017

Quant Date: 03/14/2018 06:36
ListJoinID: LJ18861

Instrument: MS14
Vial: 5
Dilution: 10.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.15	-0.03	0.00	252	4002	9.66	1.5	D	NR
5	Benzo(a)pyrene	12.95	-0.03	0.00	252	6866	18.62	2.9	D	NR
5	Indeno(1,2,3-cd)pyrene	15.38	-0.02	0.00	276	2166	6.54	1.0	D	NR
5	Dibenz(a,h)anthracene	15.42	-0.02	0.00	278	539	1.60	0.25	JD	NR
5	Benzo(g,h,i)perylene	15.76	-0.02	0.00	276	1901	5.16	0.81	D	NR

Prep Amount: 128 ml
Prep Final Vol: 2 ml

Dilution: 10.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F013.D
 Acq On : 13 Mar 2018 10:26 am
 Sample : K1801267-017DIL 10X
 Misc :

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25:13 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.71	136	43655	200.00	ng/ml	-0.01
8) Acenaphthene-d10	6.29	164	25019	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.53	188	49678	200.00	ng/ml	0.00
23) Chrysene-d12	10.05	240	60509	200.00	ng/ml	-0.01
28) Perylene-d12	13.12	264	66808	200.00	ng/ml	-0.03

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	0.00	152	0d	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
13) Fluorene-d10	6.72	176	18141	105.99	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	10.60%	
22) Fluoranthene-d10	8.51	212	35872	114.92	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	11.49%	
25) Terphenyl-d14	8.86	244	25618	100.41	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	10.04%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.73	128	704	2.83	ng/ml	91
4) 2-Methylnaphthalene	5.38	142	16436	94.94	ng/ml#	80
5) 1-Methylnaphthalene	5.47	142	32563	212.80	ng/ml	94
6) Biphenyl	5.80	154	7657	34.94	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.93	156	4931	31.67	ng/ml	96
9) Acenaphthylene	6.17	152	2656	8.68	ng/ml	79
10) Acenaphthene	6.31	154	69909	406.09	ng/ml	100
11) Dibenzofuran	6.46	168	49490	182.96	ng/ml	91
12) 2,3,5-Trimethylnaphthalene	6.63	170	1572	9.03	ng/ml	84
14) Fluorene	6.75	166	40174	189.34	ng/ml	99
16) Dibenzothiophene	7.44	184	6461	20.51	ng/ml	90
17) Phenanthrene	7.55	178	61031	198.12	ng/ml	99
18) Anthracene	7.59	178	13757	45.28	ng/ml	96
19) Carbazole	7.72	167	2228	8.09	ng/ml	88
20) 1-Methylphenanthrene	8.05	192	2059m	8.79	ng/ml	
21) Fluoranthene	8.53	202	116324	318.06	ng/ml	95
24) Pyrene	8.72	202	111243	304.59	ng/ml	96
26) Benz(a)anthracene	10.03	228	16949	46.45	ng/ml	97
27) Chrysene	10.08	228	8169m	23.94	ng/ml	
29) Benzo(b)fluoranthene	12.08	252	13802	32.72	ng/ml	98
30) Benzo(k)fluoranthene	12.15	252	4002	9.66	ng/ml	73
31) Benzo(e)pyrene	12.80	252	6352	15.79	ng/ml	98
32) Benzo(a)pyrene	12.95	252	6866	18.62	ng/ml	95
33) Perylene	13.19	252	1123	3.09	ng/ml	91
34) Indeno(1,2,3-cd)pyrene	15.38	276	2166	6.54	ng/ml	96
35) Dibenz(a,h)anthracene	15.42	278	539	1.60	ng/ml	92
36) Benzo(g,h,i)perylene	15.76	276	1901	5.16	ng/ml	94

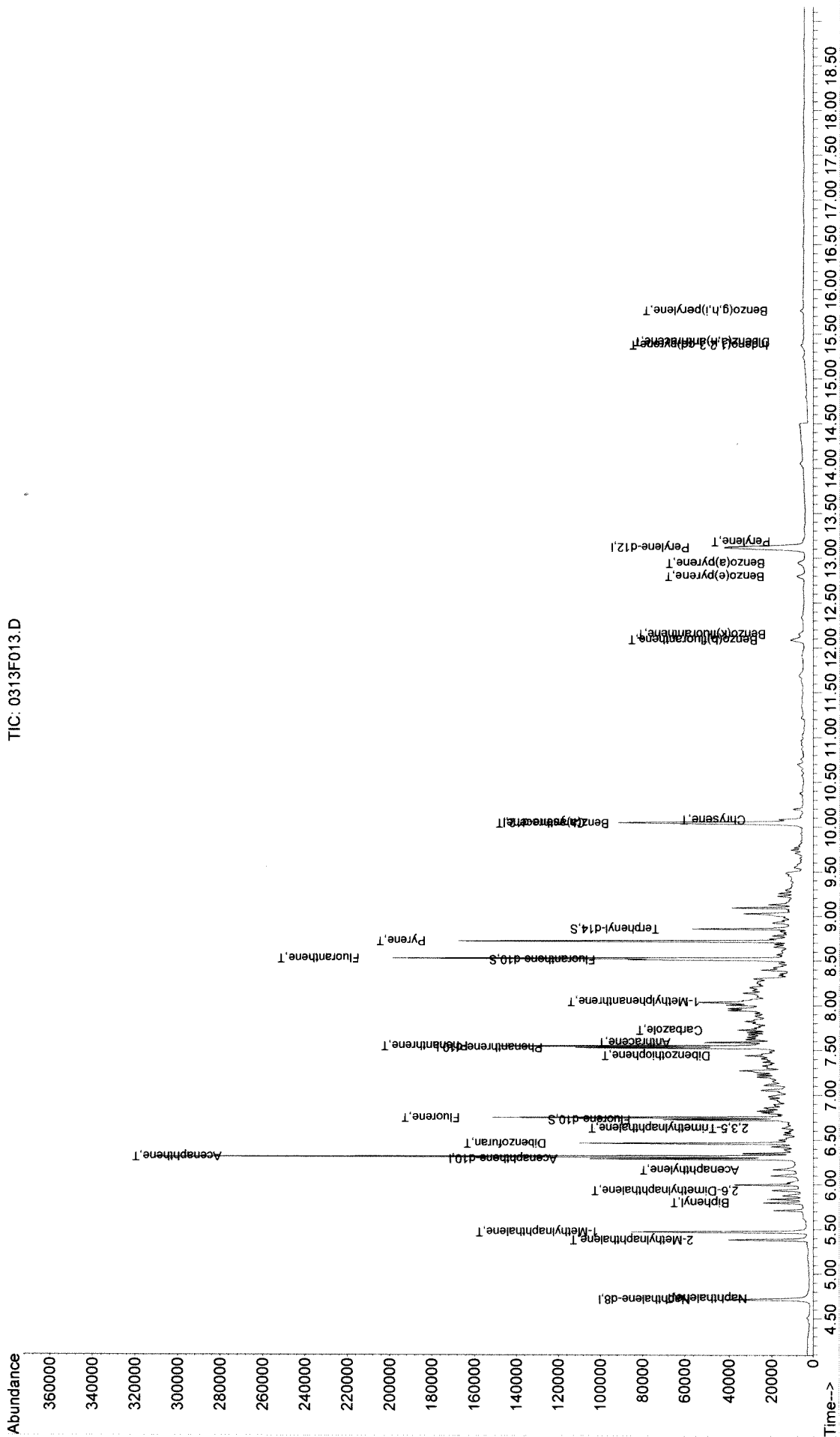
(#) = qualifier out of range (m) = manual integration
 0313F013.D 101317PAH.M Wed Mar 14 06:36:22 2018

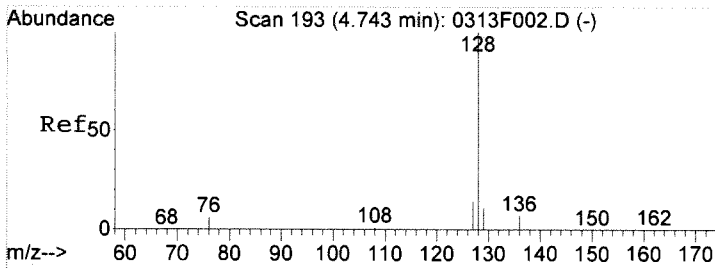
Data File : J:\MS14\DATA\031318\0313F013.D
 Acq On : 13 Mar 2018 10:26 am
 Sample : K1801267-017DIL 10X
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 14 6:36 2018

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00
 Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:02 2018
 Response via : Initial Calibration

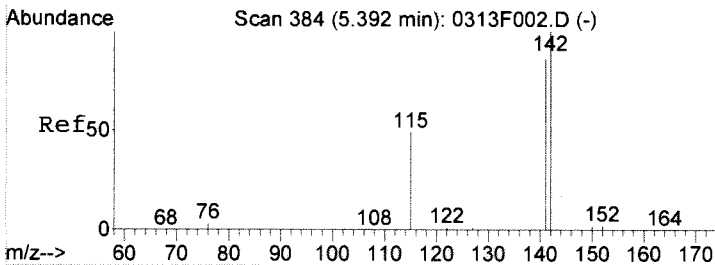
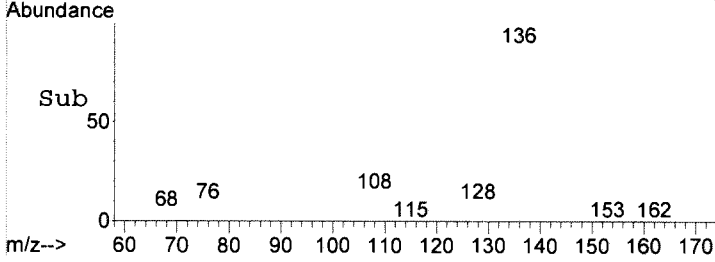
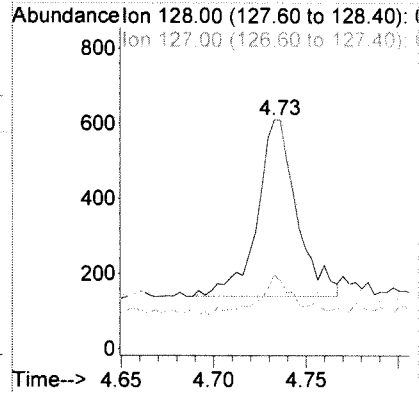
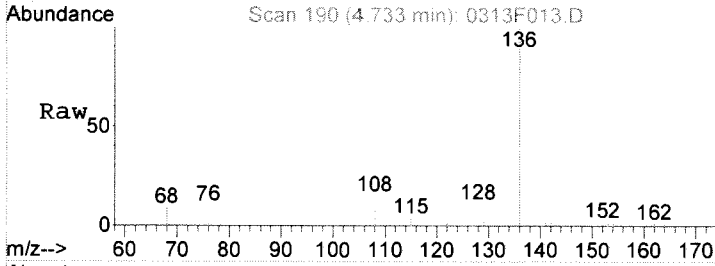
TIC: 0313F013.D





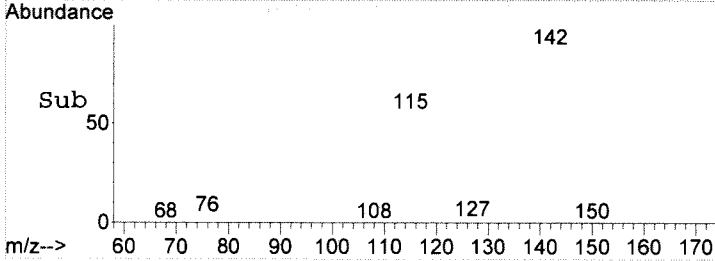
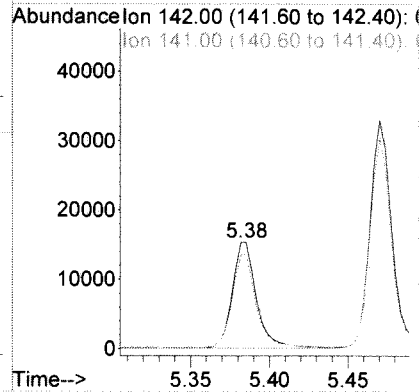
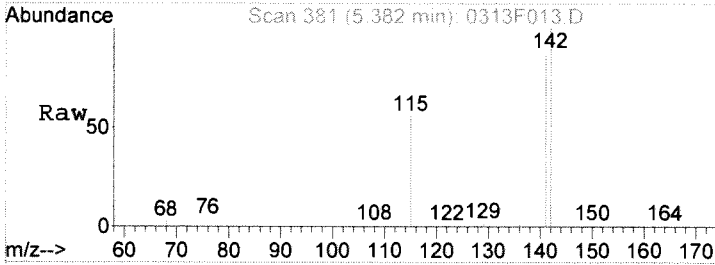
#2
 Naphthalene
 Concen: 2.83 ng/ml
 RT: 4.73 min Scan# 190
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

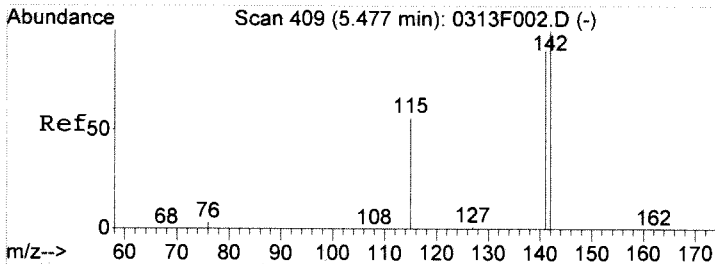
Tgt Ion	Resp	Lower	Upper
128	100		
127	19.5	0.0	44.1
129	8.9	0.0	30.4



#4
 2-Methylnaphthalene
 Concen: 94.94 ng/ml
 RT: 5.38 min Scan# 381
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

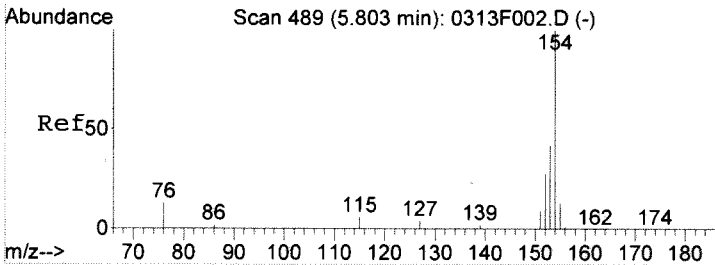
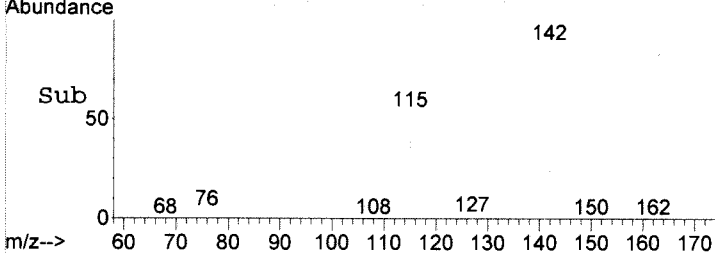
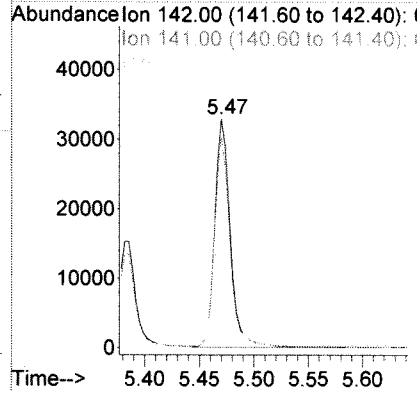
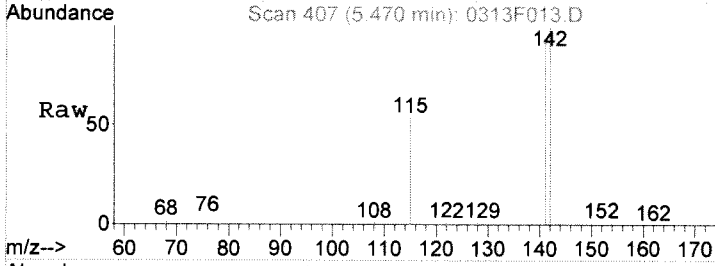
Tgt Ion	Resp	Lower	Upper
142	100		
141	87.6	51.7	111.7
115	54.1	2.0	42.0#





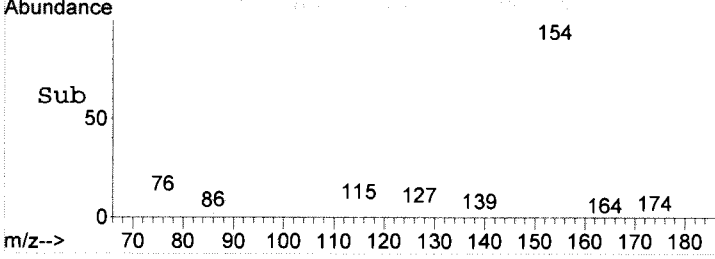
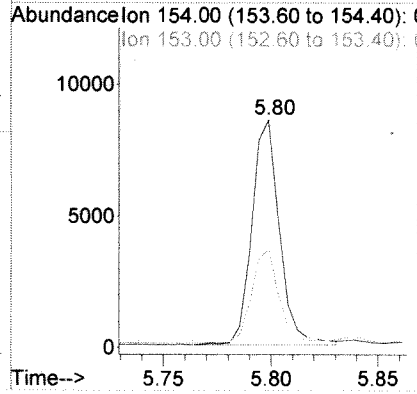
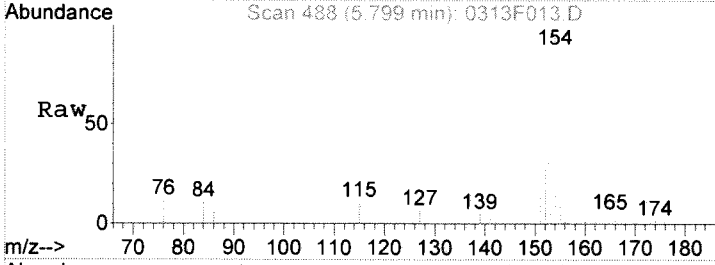
#5
 1-Methylnaphthalene
 Concen: 212.80 ng/ml
 RT: 5.47 min Scan# 407
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

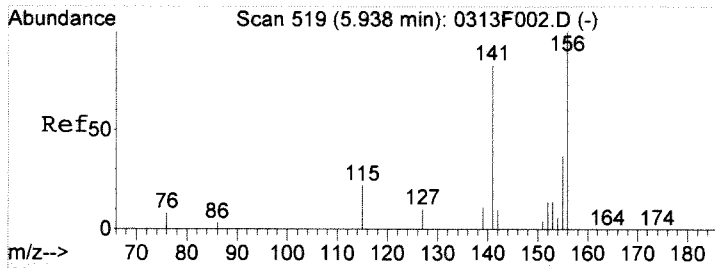
Tgt Ion	Ratio	Lower	Upper
142	100		
141	92.0	63.0	123.0
115	53.6	22.4	62.4



#6
 Biphenyl
 Concen: 34.94 ng/ml
 RT: 5.80 min Scan# 488
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

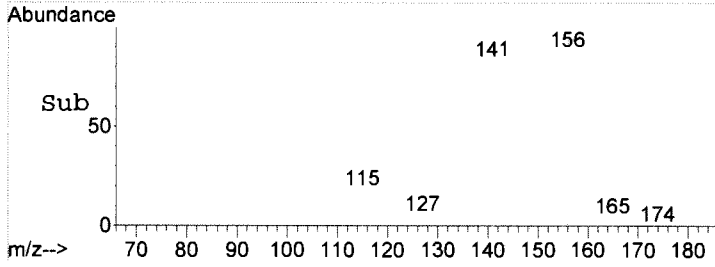
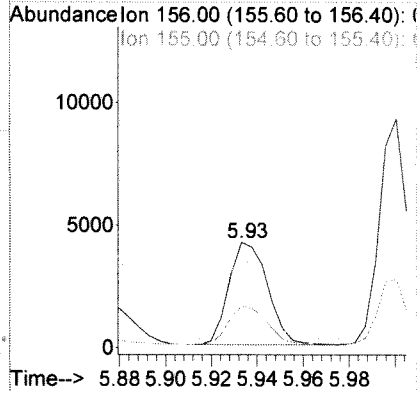
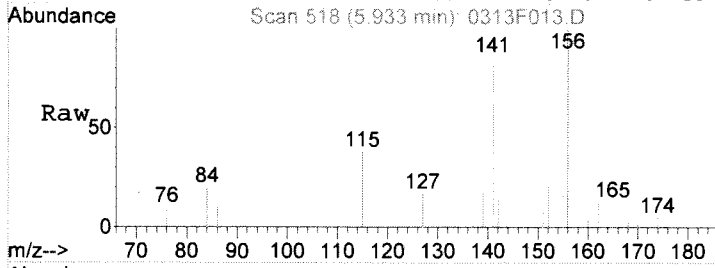
Tgt Ion	Ratio	Lower	Upper
154	100		
153	41.4	11.3	71.3
152	27.9	8.5	48.5





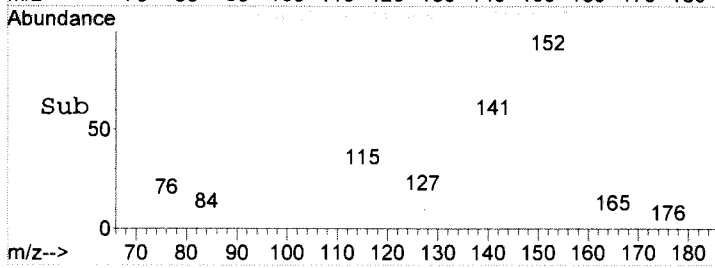
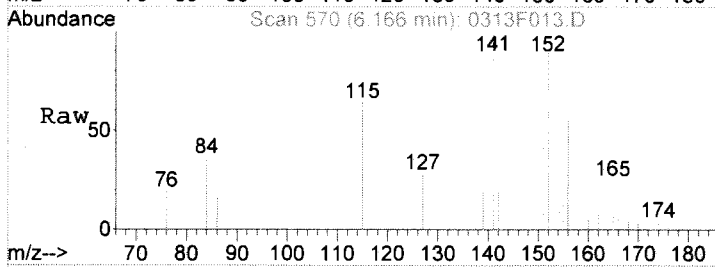
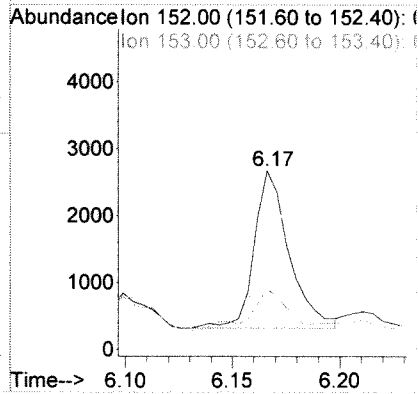
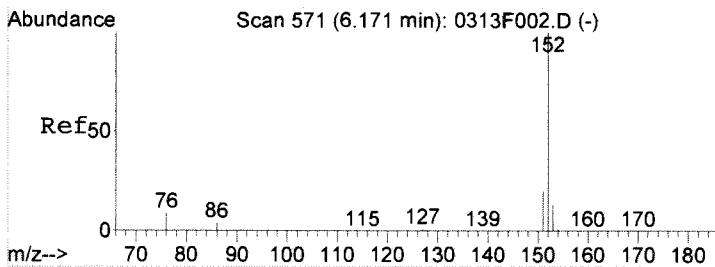
#7
 2,6-Dimethylnaphthalene
 Concen: 31.67 ng/ml
 RT: 5.93 min Scan# 518
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

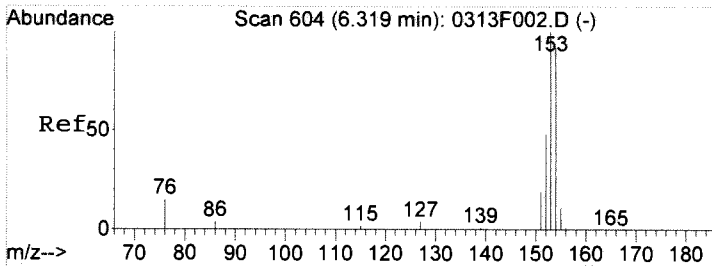
Tgt Ion	Resp	Lower	Upper
156	4931		
155	37.1	8.0	68.0
141	80.9	56.4	96.4



#9
 Acenaphthylene
 Concen: 8.68 ng/ml
 RT: 6.17 min Scan# 570
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

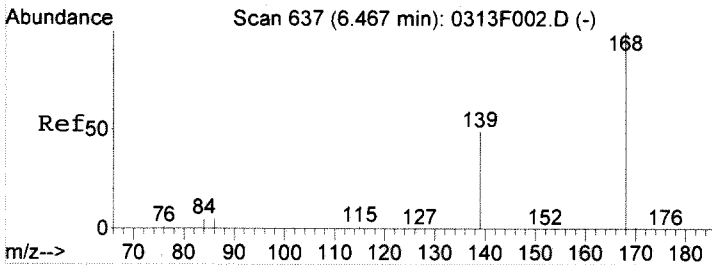
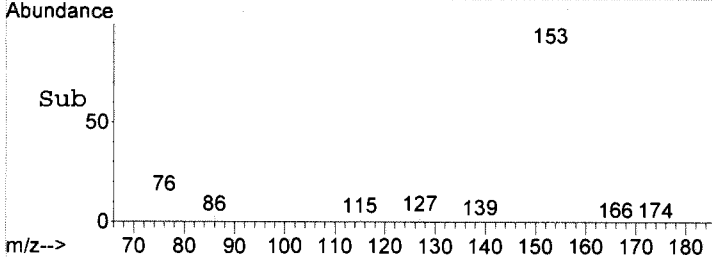
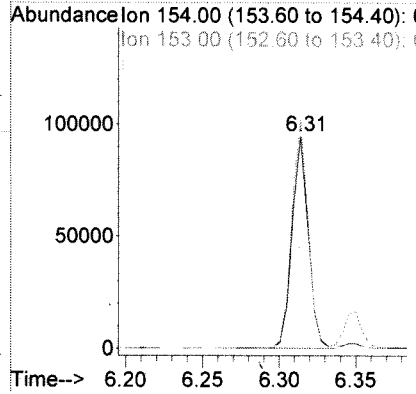
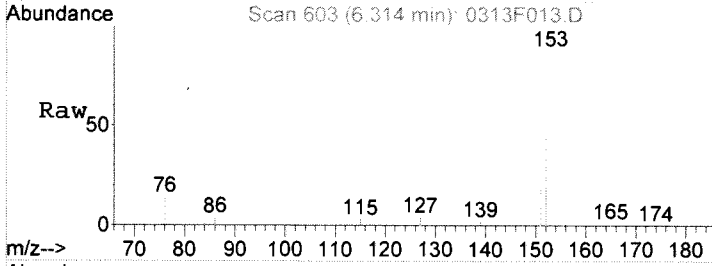
Tgt Ion	Resp	Lower	Upper
152	2656		
153	26.2	0.0	42.8
151	26.2	0.3	40.3





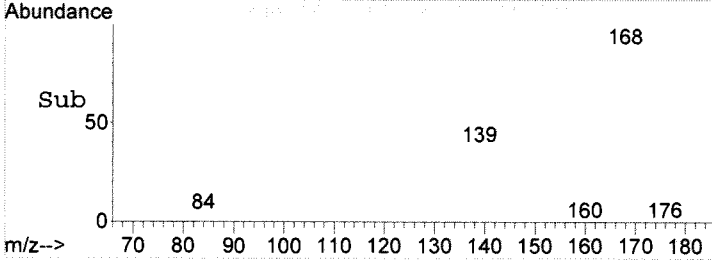
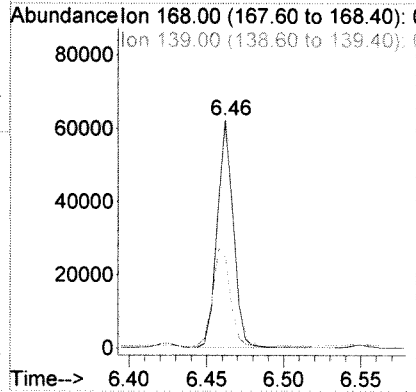
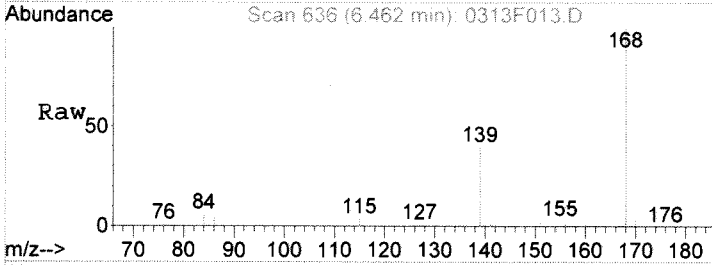
#10
 Acenaphthene
 Concen: 406.09 ng/ml
 RT: 6.31 min Scan# 603
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

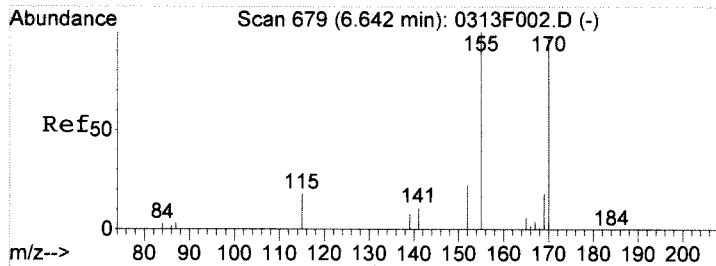
Tgt Ion	Ratio	Lower	Upper
154	100		
153	107.5	77.8	137.8
152	51.0	20.8	80.8



#11
 Dibenzofuran
 Concen: 182.96 ng/ml
 RT: 6.46 min Scan# 636
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

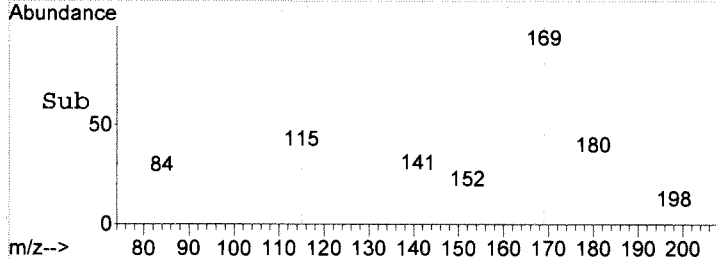
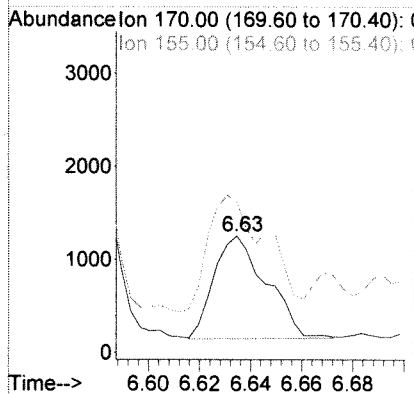
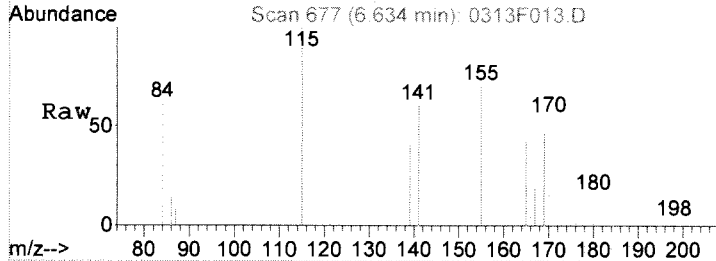
Tgt Ion	Ratio	Lower	Upper
168	100		
139	39.0	15.4	75.4
84	3.9	0.0	24.7





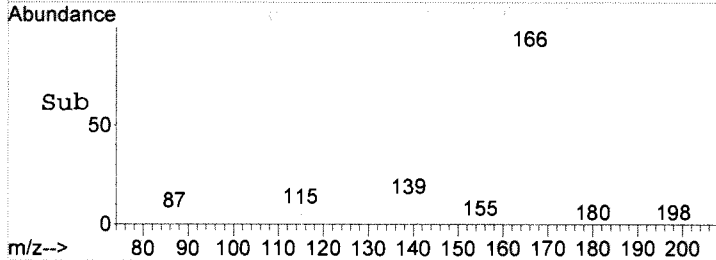
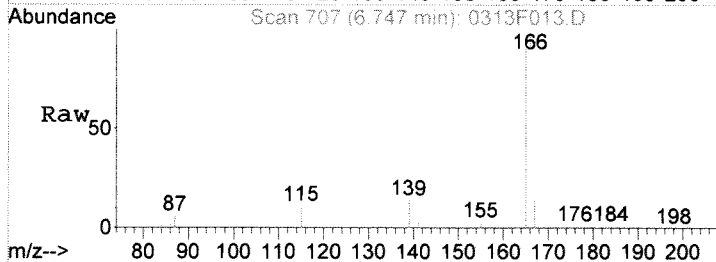
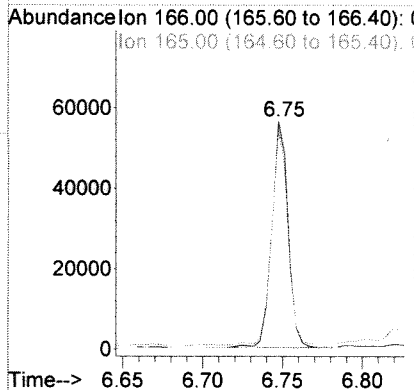
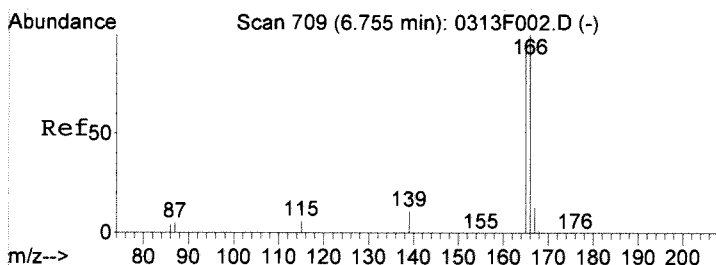
#12
 2,3,5-Trimethylnaphthalene
 Concen: 9.03 ng/ml
 RT: 6.63 min Scan# 677
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

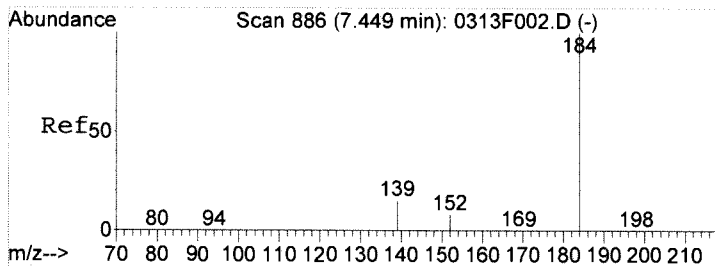
Tgt Ion	Resp	Lower	Upper
170	100		
155	104.4	87.2	147.2
115	38.1	0.8	40.8



#14
 Fluorene
 Concen: 189.34 ng/ml
 RT: 6.75 min Scan# 707
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

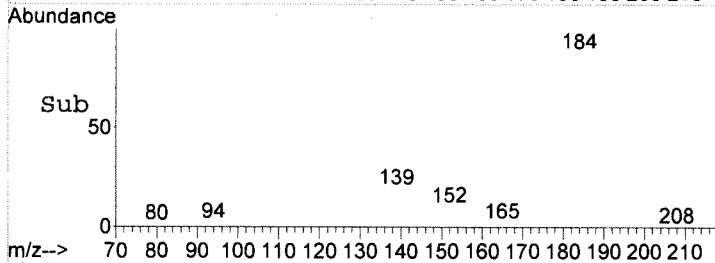
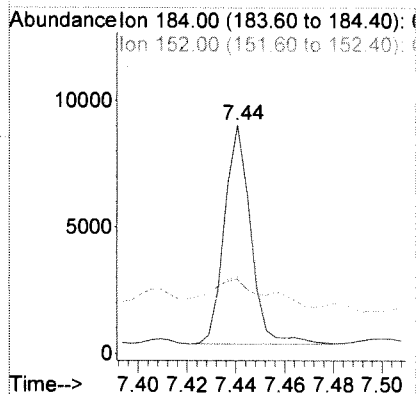
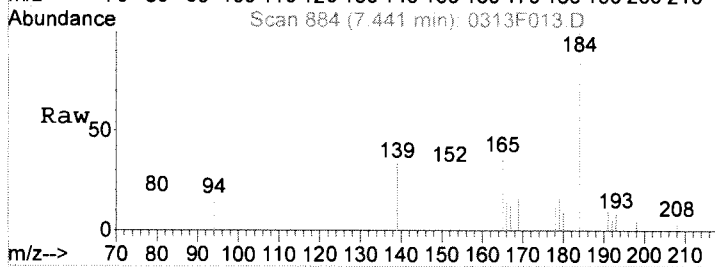
Tgt Ion	Resp	Lower	Upper
166	100		
165	95.4	65.6	125.6
167	14.5	0.0	33.0





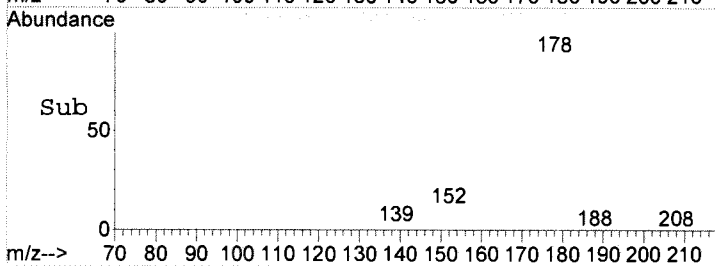
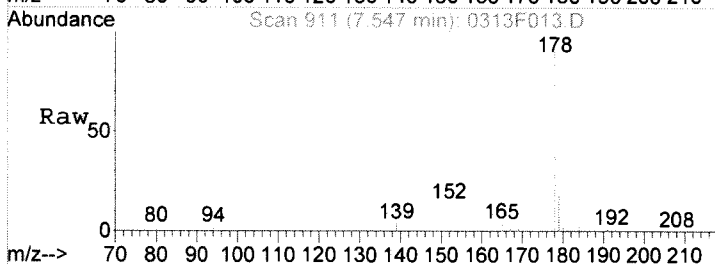
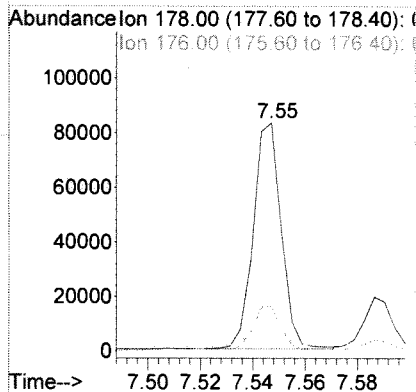
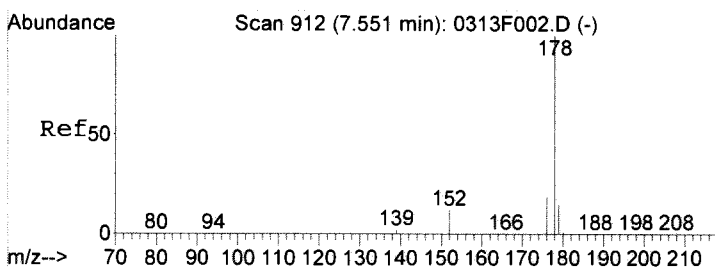
#16
 Dibenzo(a,h)thiophene
 Concen: 20.51 ng/ml
 RT: 7.44 min Scan# 884
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

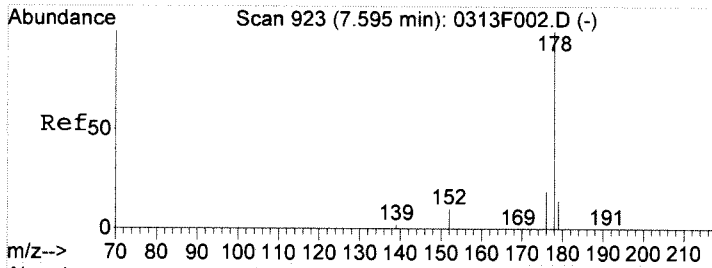
Tgt Ion	184	152	139	Resp	6461	Lower	Upper
Ion Ratio	100	11.0	18.9			0.0	38.5
						0.0	34.3



#17
 Phenanthrene
 Concen: 198.12 ng/ml
 RT: 7.55 min Scan# 911
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

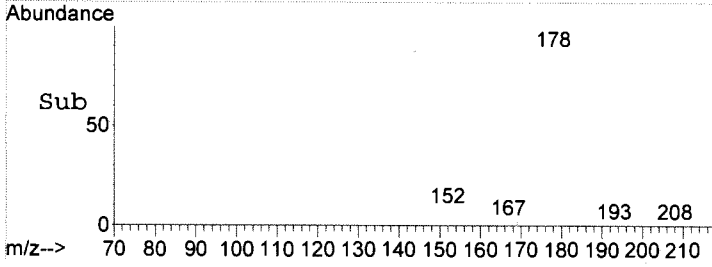
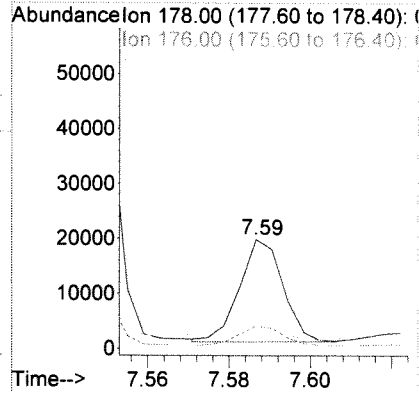
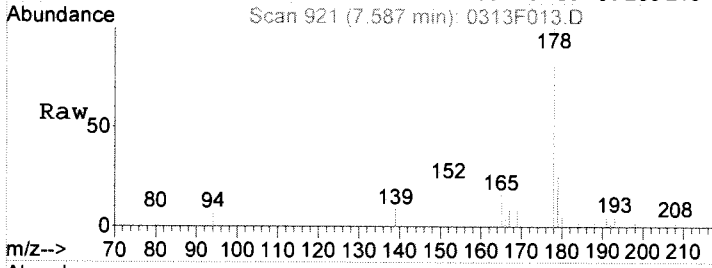
Tgt Ion	178	176	179	Resp	61031	Lower	Upper
Ion Ratio	100	18.9	15.6			0.0	49.6
						0.0	35.1





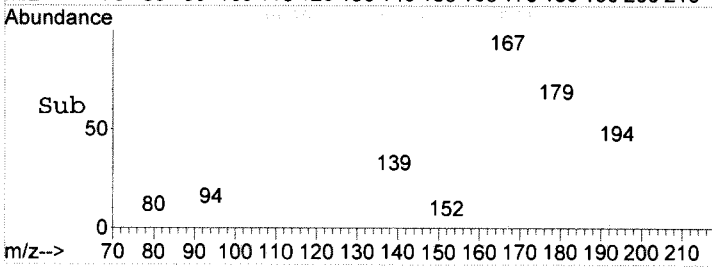
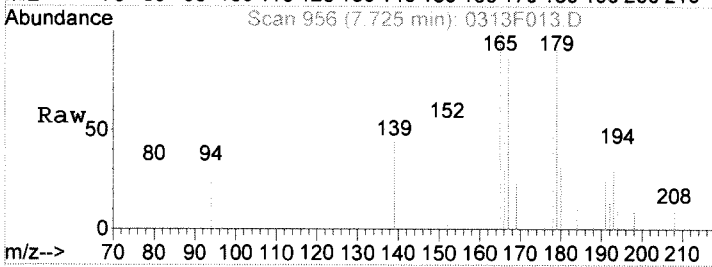
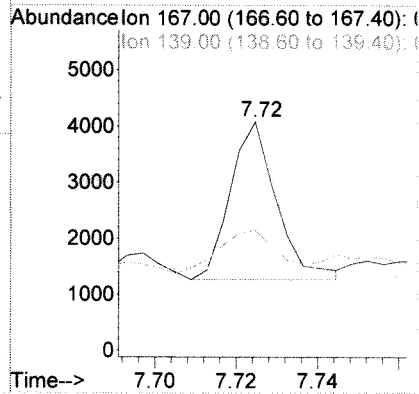
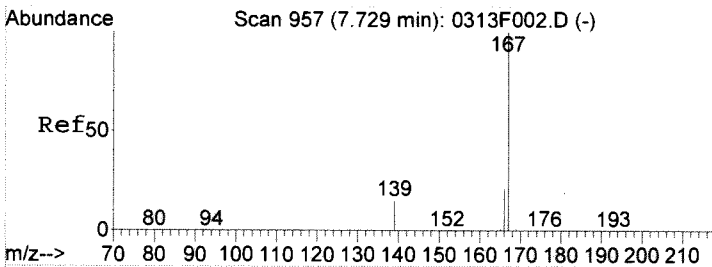
#18
 Anthracene
 Concen: 45.28 ng/ml
 RT: 7.59 min Scan# 921
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

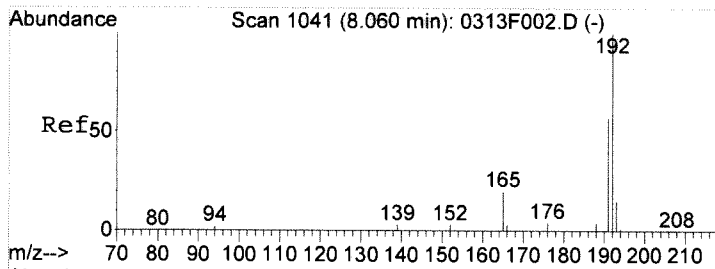
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.3	0.0	48.2
179	17.2	0.0	34.8



#19
 Carbazole
 Concen: 8.09 ng/ml
 RT: 7.72 min Scan# 956
 Delta R.T. -0.00 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

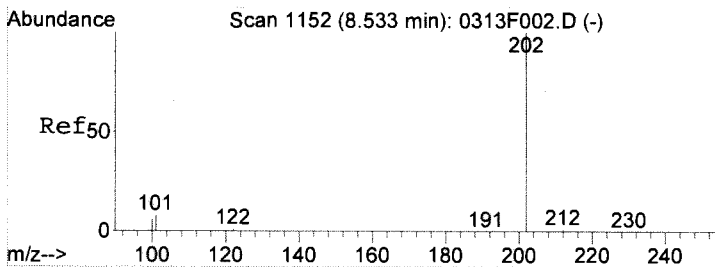
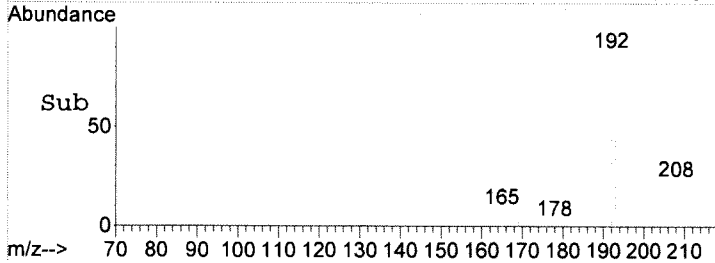
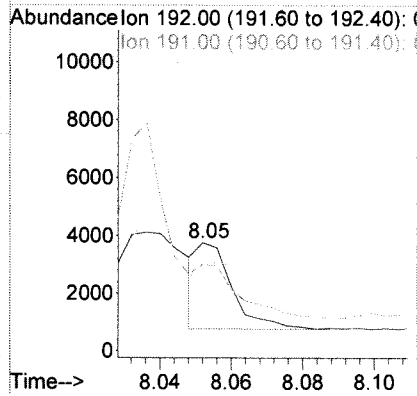
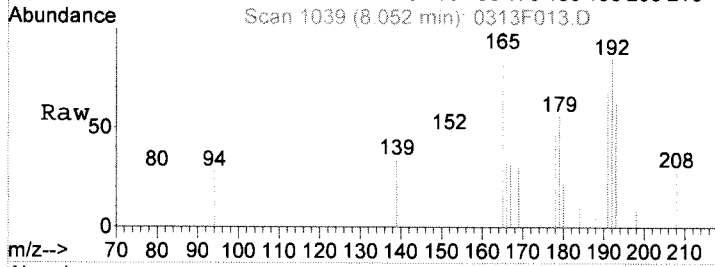
Tgt Ion	Ratio	Lower	Upper
167	100		
139	24.0	0.0	45.2
166	24.4	1.6	41.6





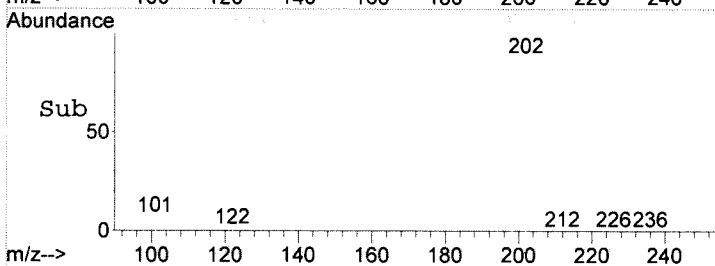
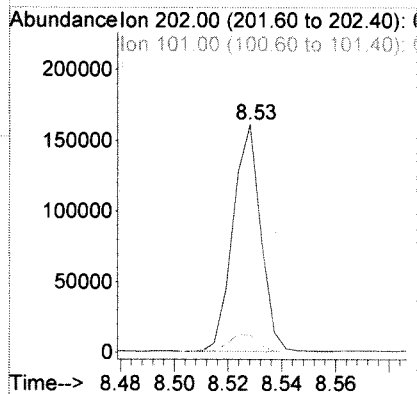
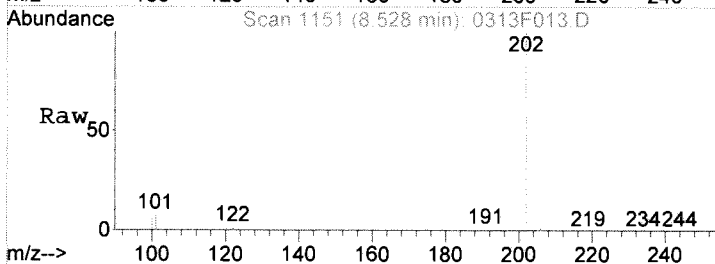
#20
 1-Methylphenanthrene
 Concen: 8.79 ng/ml m
 RT: 8.05 min Scan# 1039
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

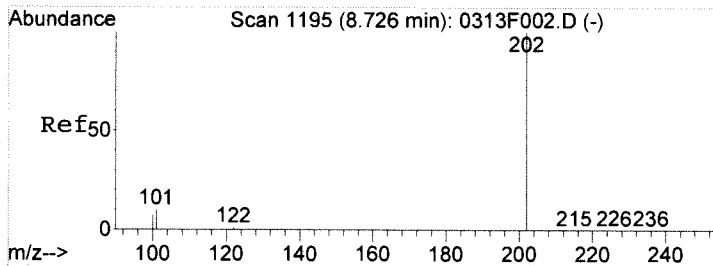
Tgt Ion	Ratio	Lower	Upper
192	100		
191	79.9	26.8	86.8
193	74.6	0.0	45.3#



#21
 Fluoranthene
 Concen: 318.06 ng/ml
 RT: 8.53 min Scan# 1151
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

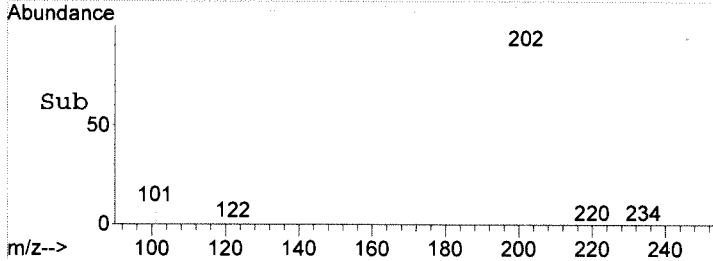
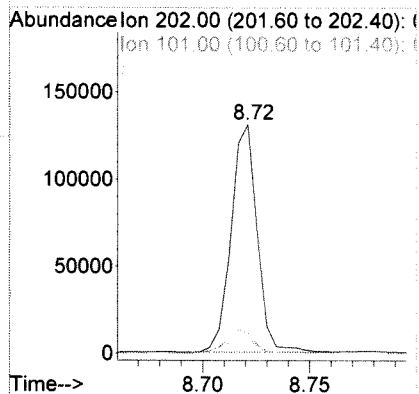
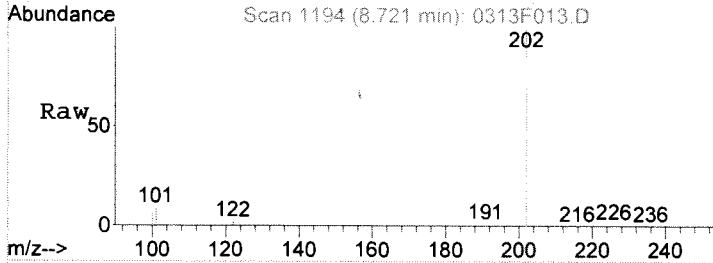
Tgt Ion	Ratio	Lower	Upper
202	100		
101	7.4	0.0	39.1
100	5.4	0.0	27.0





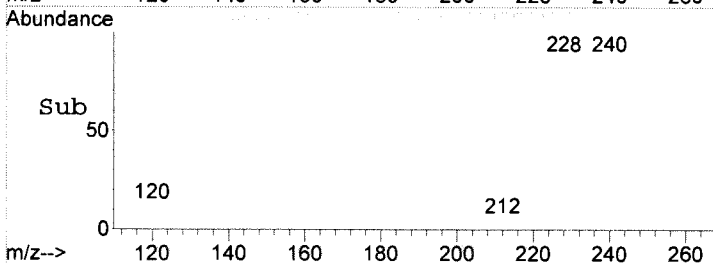
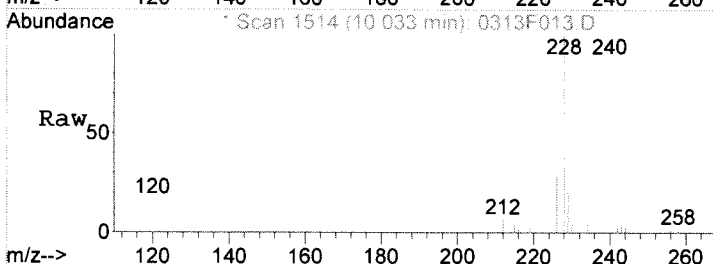
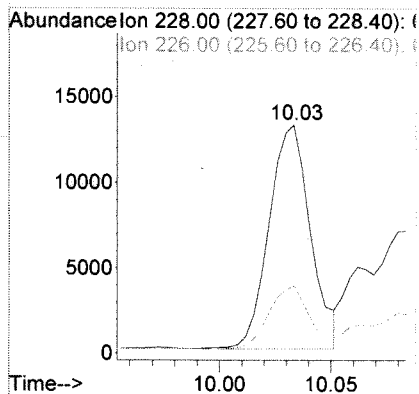
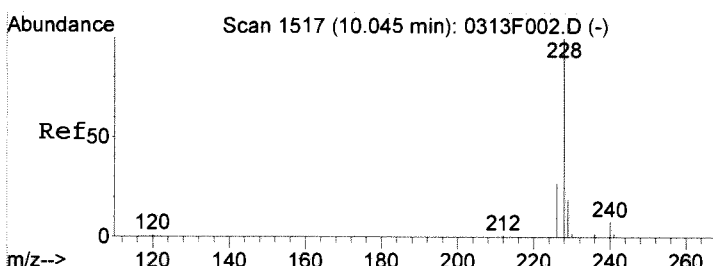
#24
 Pyrene
 Concen: 304.59 ng/ml
 RT: 8.72 min Scan# 1194
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

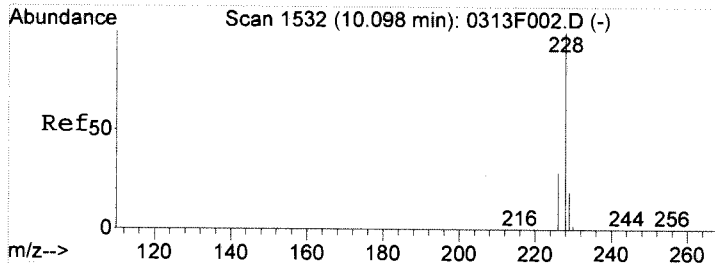
Tgt Ion	Ratio	Lower	Upper
202	100		
101	8.7	0.0	40.5
100	6.8	0.0	28.3



#26
 Benz(a)anthracene
 Concen: 46.45 ng/ml
 RT: 10.03 min Scan# 1514
 Delta R.T. -0.01 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

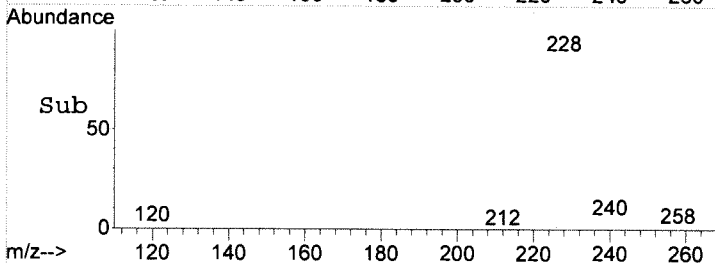
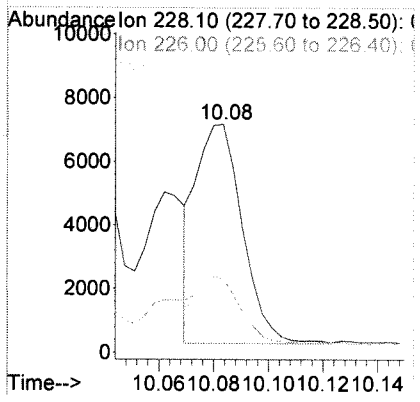
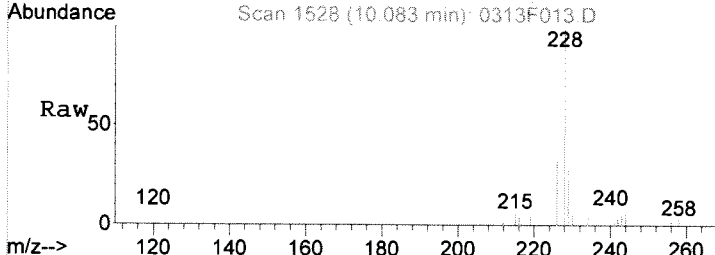
Tgt Ion	Ratio	Lower	Upper
228	100		
226	28.2	0.0	56.4
229	19.8	0.0	39.3





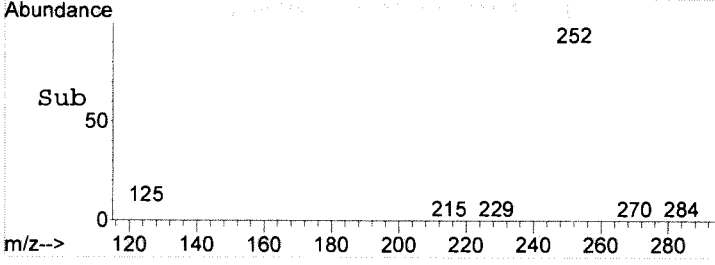
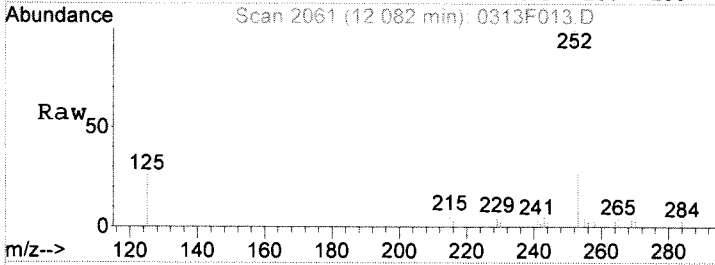
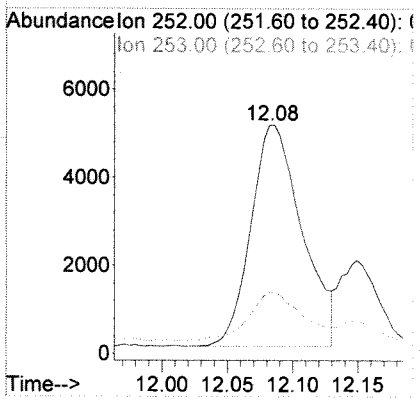
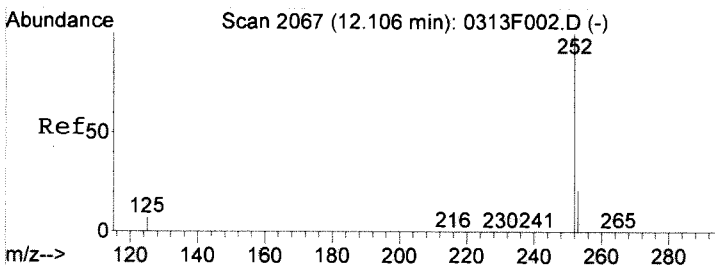
#27
 Chrysene
 Concen: 23.94 ng/ml m
 RT: 10.08 min Scan# 1528
 Delta R.T. -0.02 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

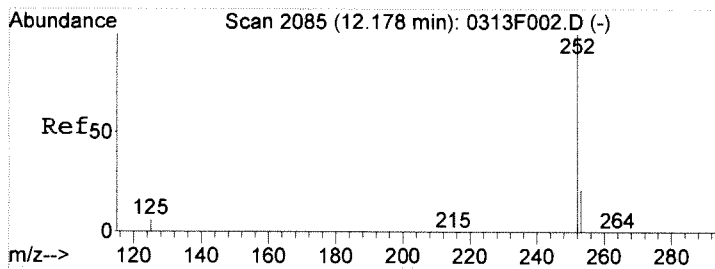
Tgt Ion	Resp	Lower	Upper
228	100		
226	32.1	0.0	59.0
229	28.2	0.0	39.2



#29
 Benzo(b)fluoranthene
 Concen: 32.72 ng/ml
 RT: 12.08 min Scan# 2061
 Delta R.T. -0.02 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

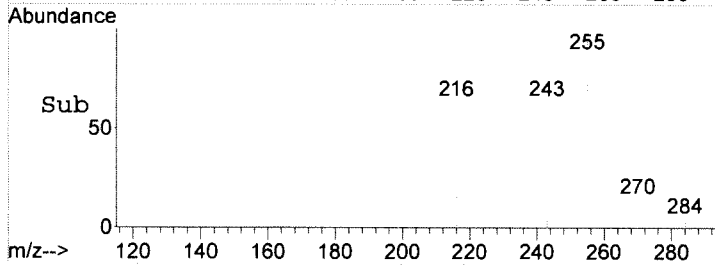
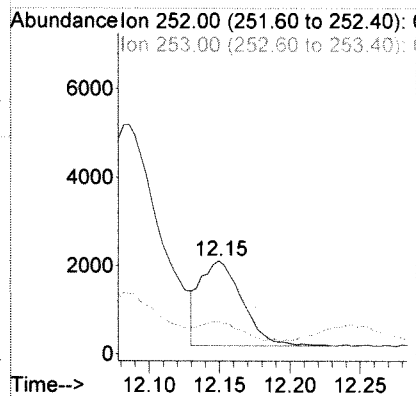
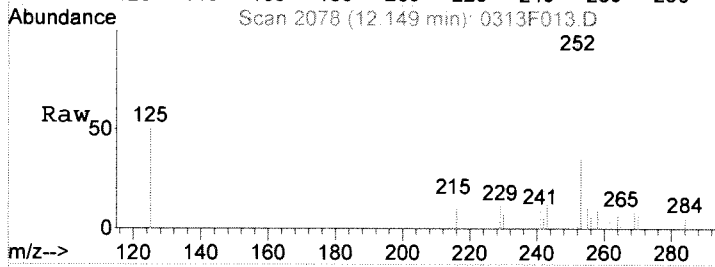
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.9	0.0	51.8
125	7.8	0.0	29.7





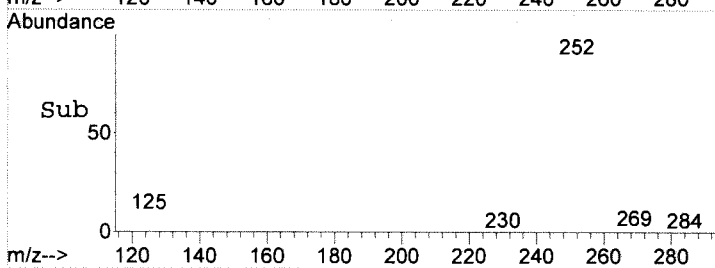
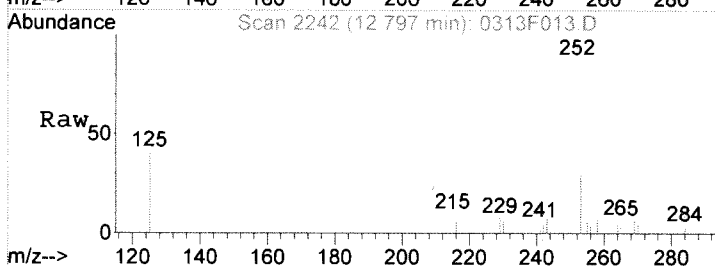
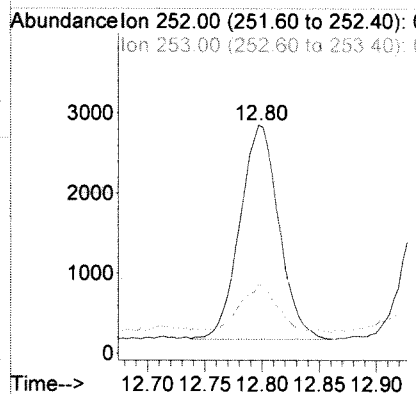
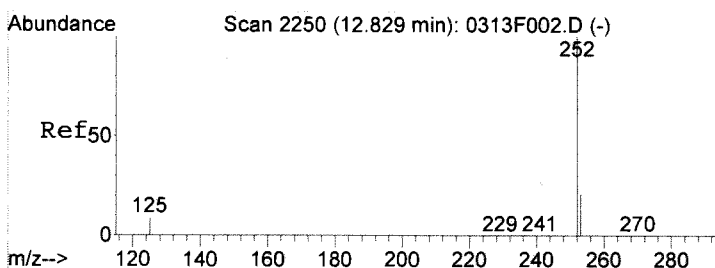
#30
 Benzo(k)fluoranthene
 Concen: 9.66 ng/ml
 RT: 12.15 min Scan# 2078
 Delta R.T. -0.03 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

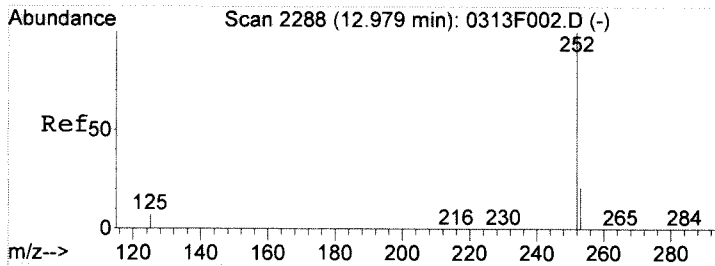
Tgt Ion	Resp	Lower	Upper
252	100		
253	6.9	0.0	51.6
125	2.9	0.0	29.7



#31
 Benzo(e)pyrene
 Concen: 15.79 ng/ml
 RT: 12.80 min Scan# 2242
 Delta R.T. -0.03 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

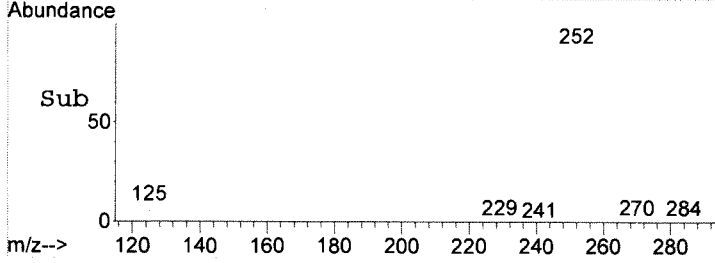
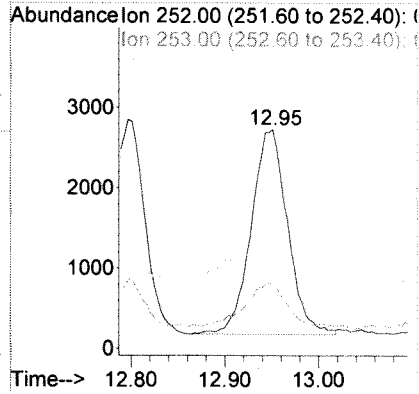
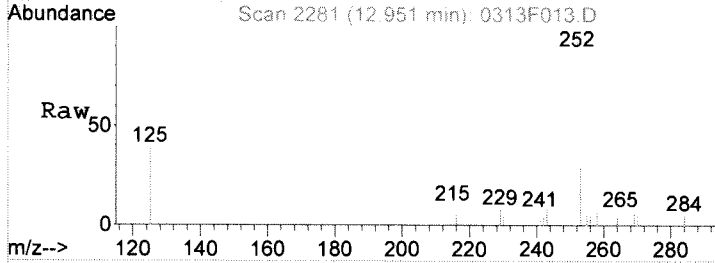
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.4	0.0	51.6
125	11.4	0.0	33.5





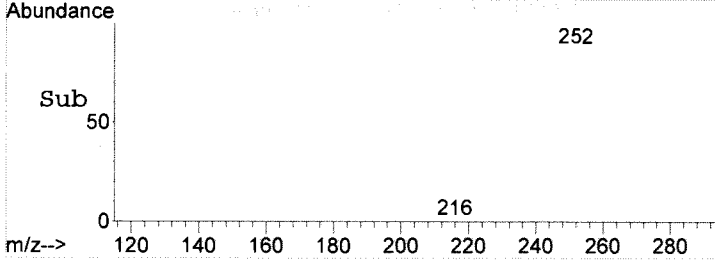
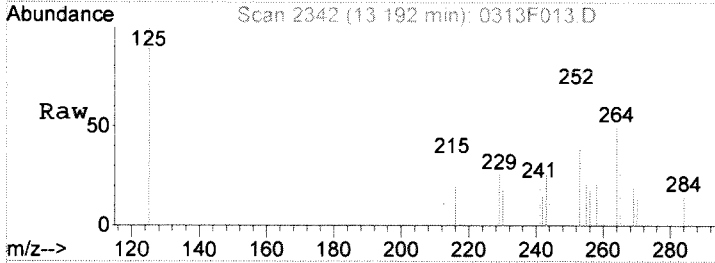
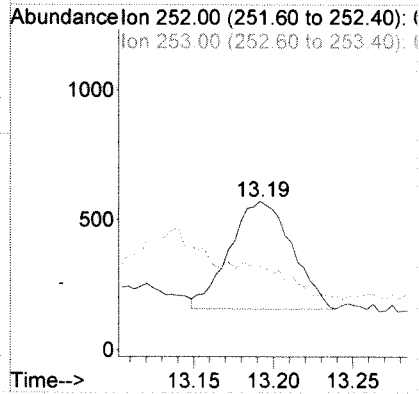
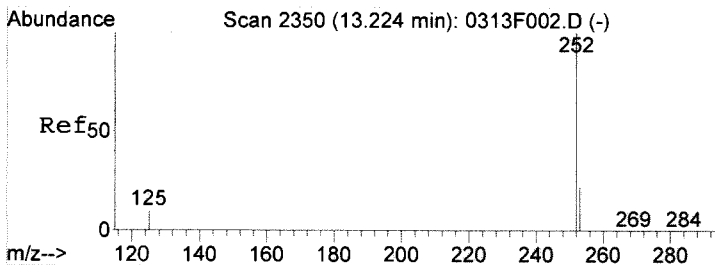
#32
 Benzo (a) pyrene
 Concen: 18.62 ng/ml
 RT: 12.95 min Scan# 2281
 Delta R.T. -0.03 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

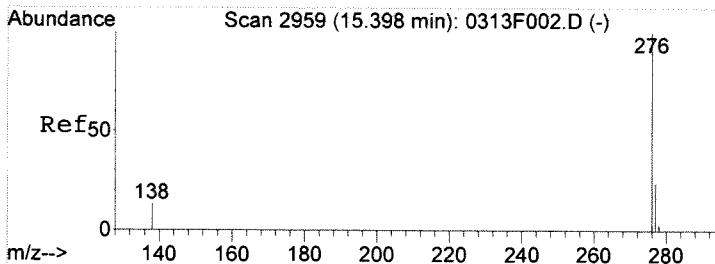
Tgt Ion	Resp	Lower	Upper
252	100		
253	20.8	0.0	51.8
125	7.5	0.0	31.1



#33
 Perylene
 Concen: 3.09 ng/ml
 RT: 13.19 min Scan# 2342
 Delta R.T. -0.03 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

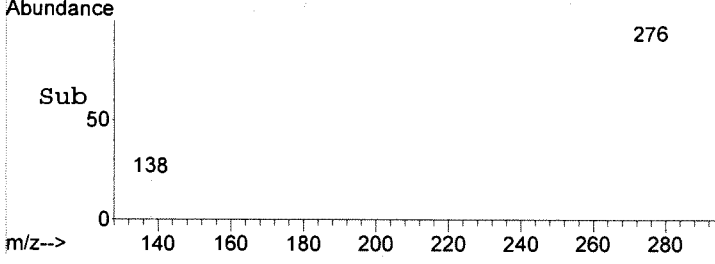
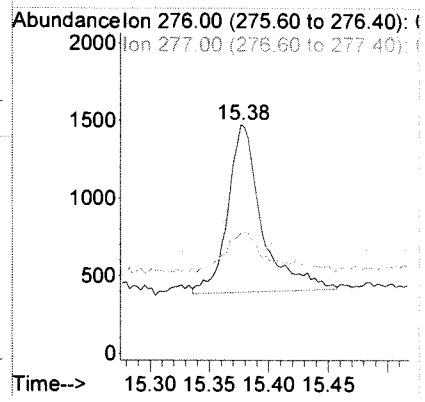
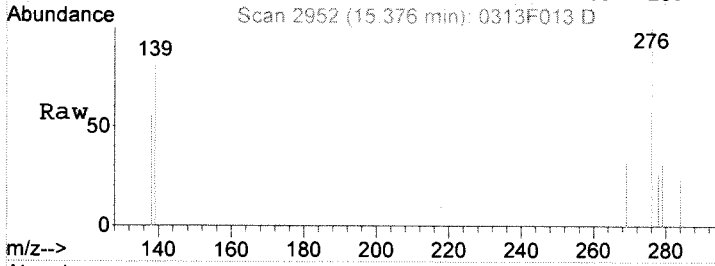
Tgt Ion	Resp	Lower	Upper
252	100		
253	28.6	0.0	51.9
125	15.0	0.0	34.4





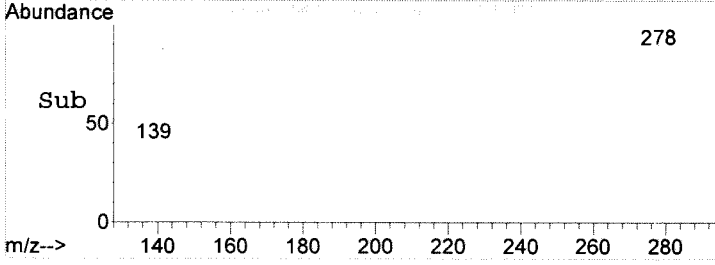
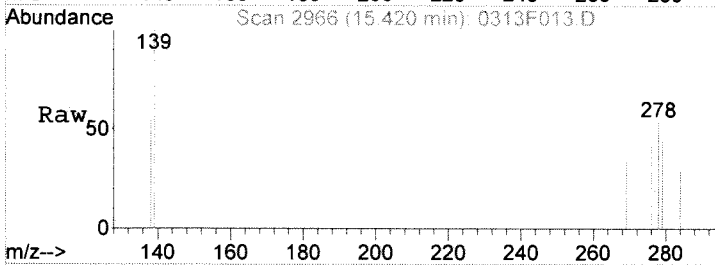
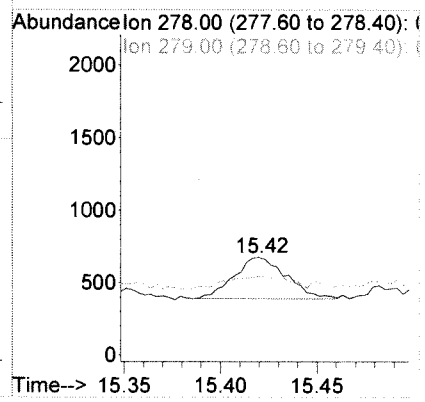
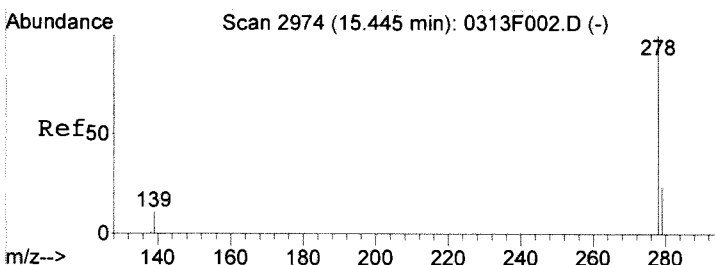
#34
 Indeno(1,2,3-cd)pyrene
 Concen: 6.54 ng/ml
 RT: 15.38 min Scan# 2952
 Delta R.T. -0.02 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

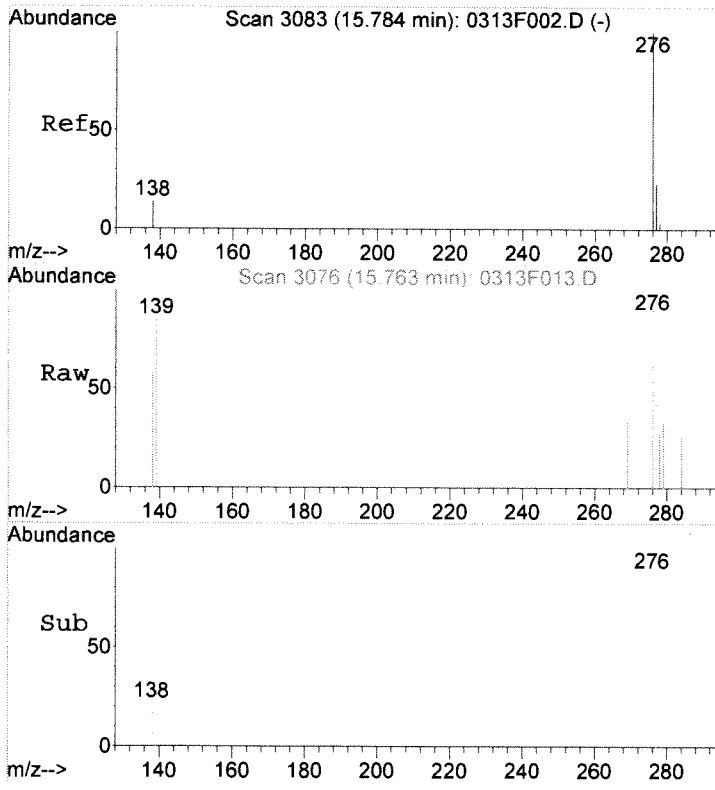
Tgt Ion	Resp	Lower	Upper
276	100		
277	22.3	0.0	53.6
138	14.9	0.0	37.2



#35
 Dibenz(a,h)anthracene
 Concen: 1.60 ng/ml
 RT: 15.42 min Scan# 2966
 Delta R.T. -0.02 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

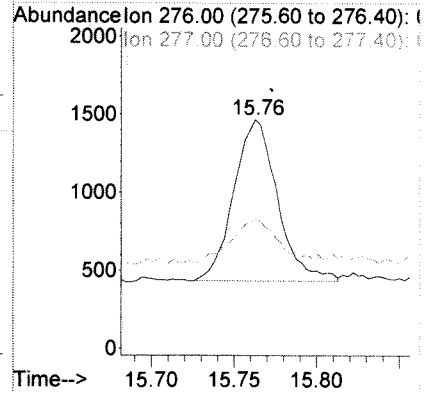
Tgt Ion	Resp	Lower	Upper
278	100		
279	29.6	0.0	54.1
139	14.8	0.0	34.1





#36
 Benzo(g,h,i)perylene
 Concen: 5.16 ng/ml
 RT: 15.76 min Scan# 3076
 Delta R.T. -0.02 min
 Lab File: 0313F013.D
 Acq: 13 Mar 2018 10:26 am

Tgt Ion	Ratio	Lower	Upper
276	100		
277	26.2	0.0	53.4
138	16.2	0.0	38.8





Exception Report

Data File: J:\MS14\DATA\021418\0214F018.D
Lab ID: K1801267-018
Run Type: SMPL
Matrix: WATER

Date Acquired: 02/14/2018 12:18
Date Quantitated: 02/14/2018 13:44
Batch ID: KWG1800938
Analysis Method: 8270D SIM
ListJoinID: LJ18861

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Duplicate Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:  **FEB 15 2018**
 Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\021418\0214F018.D	Instrument: MS14
Acqu Date: 02/14/2018 12:18	Quant Date: 02/14/2018 13:44
Run Type: SMPL	ListJoinID: LJ18861
Lab ID: K1801267-018	Vial: 18
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date: 02/08/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1800938	Prep Lot: KWG1800892	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3511	
Prep Ref: 1663642	Prep Date: 02/13/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18861
Tune Ref: J:\MS14\DATA\021418\0214F001.D	Method ID: MJ1638
MB Ref: J:\MS14\DATA\021418\0214F006.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.73	0.01	136	47548m	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	22835	200.00	OK
3	Phenanthrene-d10	7.51	0.00	188	46079	200.00	OK
4	Chrysene-d12	10.01	-0.01	240	46895	200.00	OK
5	Perylene-d12	13.01	-0.02	264	47529	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	156865	1.004	100	42-131	OK
3	Fluoranthene-d10	8.49	0.00	0.00	212	293923	1.015	102	42-133	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	178645	903.49	90	32-129	OK

Target Compounds

								Final Conc. Units: ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.75	0.01	0.00	128	728m	2.69	0.013	J	
1	2-Methylnaphthalene	5.39	0.01	0.00	142	153	0.8100	0.0038	J	
2	Acenaphthylene				152	0d		0.0012	U	
2	Acenaphthene				154	0d		0.0013	U	
2	Dibenzofuran	6.45		0.00	168	85m	0.3400	0.0016	J	
2	Fluorene				166	0d		0.0012	U	
3	Phenanthrene	7.53		0.00	178	88	0.3100	0.0014	J	
3	Anthracene				178	0d		0.00086	U	
3	Fluoranthene				202	0d		0.00086	U	
4	Pyrene				202	0d		0.0011	U	
4	Benz(a)anthracene	10.01	0.01	0.00	228	146	0.5200	0.0024	J	
4	Chrysene				228	0d		0.00080	U	
5	Benzo(b)fluoranthene				252	0		0.00087	U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL, also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\021418\0214F018.D	Instrument:	MS14
Acqu Date:	02/14/2018 12:18	Quant Date:	02/14/2018 13:44
Run Type:	SMPL	ListJoinID:	LJ18861
Lab ID:	K1801267-018	Vial:	18
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/L		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene				252	0		0.00099	U	
5	Benzo(a)pyrene				252	0d		0.0012	U	
5	Indeno(1,2,3-cd)pyrene				276	0		0.00094	U	
5	Dibenz(a,h)anthracene				278	0		0.0014	U	
5	Benzo(g,h,i)perylene				276	0		0.00091	U	

Prep Amount: 430 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\021418\0214F018.D
 Acq On : 14 Feb 2018 12:18 pm
 Sample : K1801267-018
 Misc :

Vial: 18
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 14 12:54:26 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.73	136	47548m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	22835	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.51	188	46079	200.00	ng/ml	0.00
23) Chrysene-d12	10.01	240	46895	200.00	ng/ml	0.00
28) Perylene-d12	13.01	264	47529	200.00	ng/ml	-0.01
System Monitoring Compounds						
3) 2-Methylnaphthalene-d10	5.36	152	137582	1079.26	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	107.93%	
13) Fluorene-d10	6.72	176	156865	1004.19	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	100.42%	
22) Fluoranthene-d10	8.49	212	293923	1015.17	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	101.52%	
25) Terphenyl-d14	8.84	244	178645	903.49	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	90.35%	
Target Compounds						
2) Naphthalene	4.75	128	728m	2.69	ng/ml	Qvalue
4) 2-Methylnaphthalene	5.39	142	153	0.81	ng/ml	98
5) 1-Methylnaphthalene	5.47	142	90m	0.54	ng/ml	
6) Biphenyl	5.79	154	540	2.26	ng/ml	99
11) Dibenzofuran	6.45	168	85m	0.34	ng/ml	
17) Phenanthrene	7.53	178	88	0.31	ng/ml	96
26) Benz(a)anthracene	10.01	228	146	0.52	ng/ml	86

(#) = qualifier out of range (m) = manual integration
 0214F018.D 101317PAH.M Wed Feb 14 13:44:55 2018

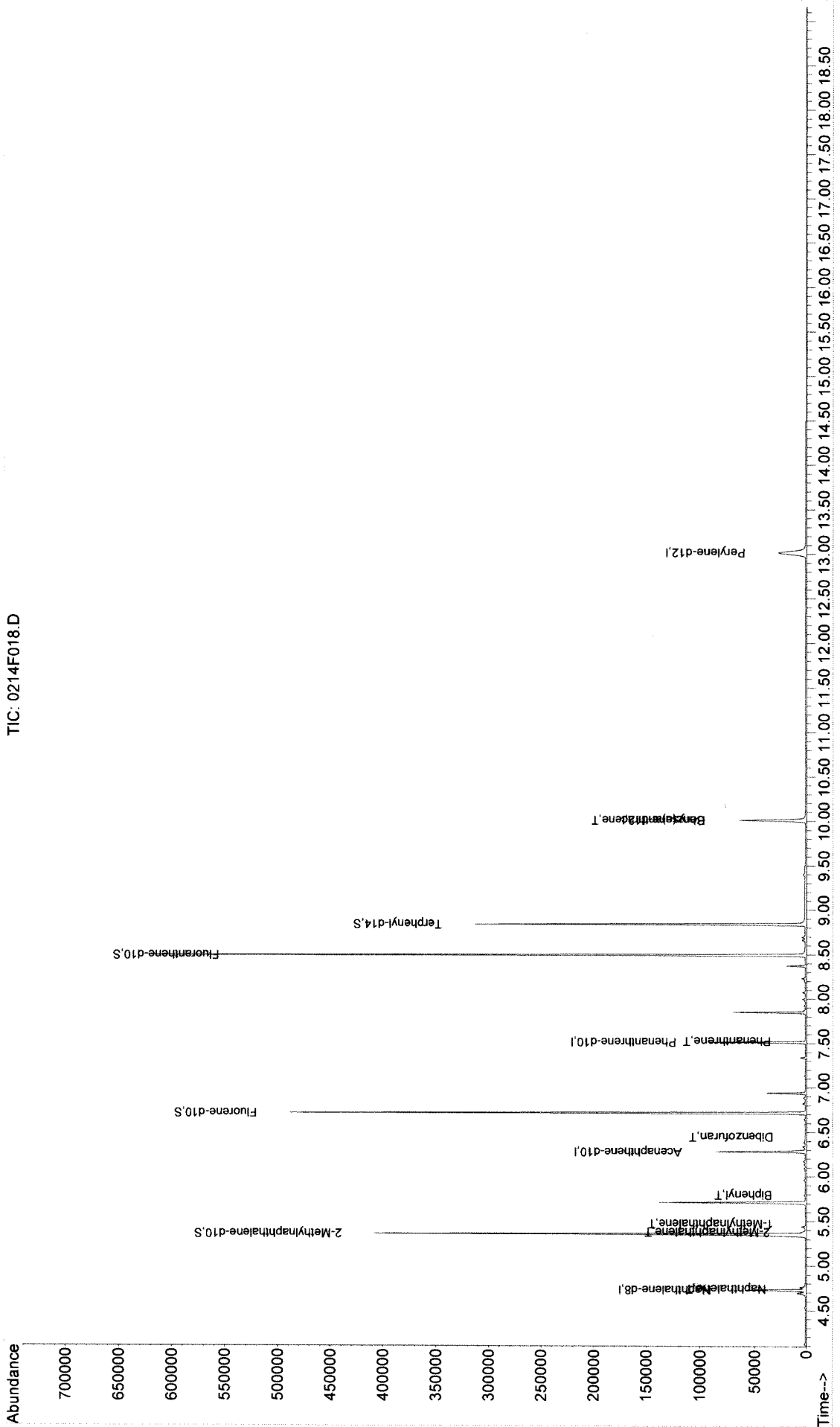
Data File : J:\MS14\DATA\021418\0214F018.D
Acq On : 14 Feb 2018 12:18 pm
Sample : K1801267-018
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:44 2018

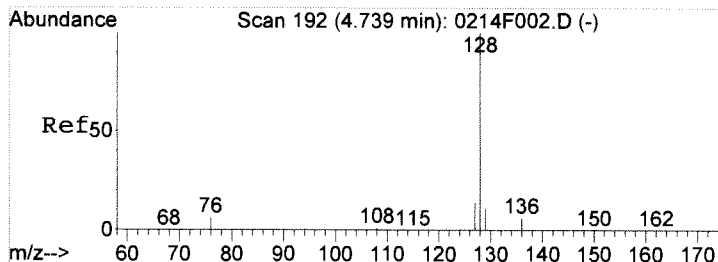
Vial: 18
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Initial Calibration

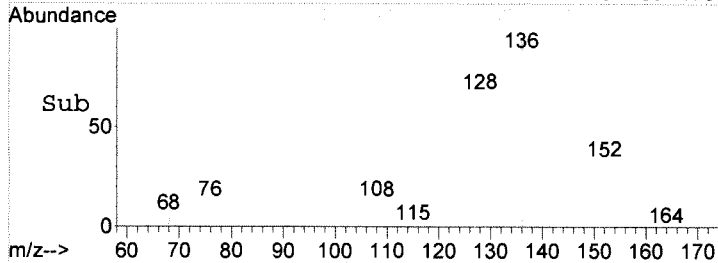
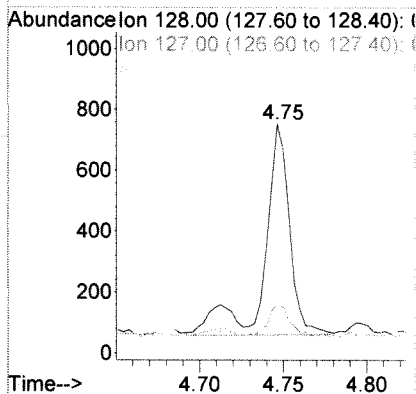
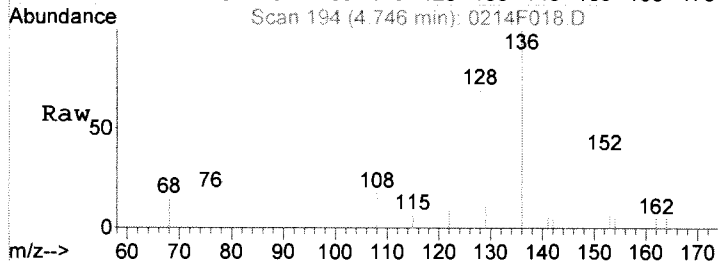
TIC: 0214F018.D





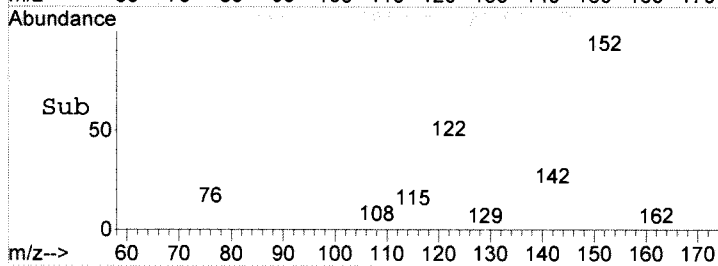
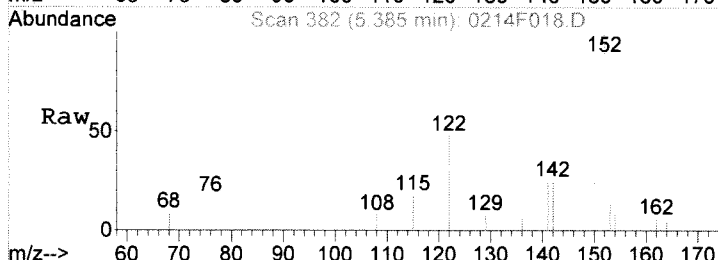
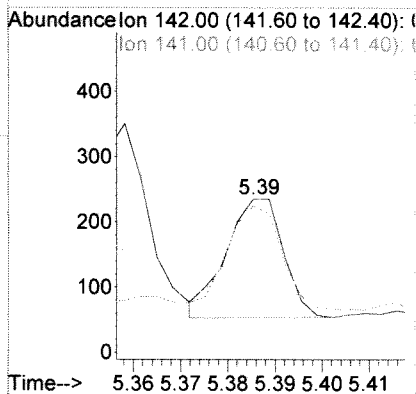
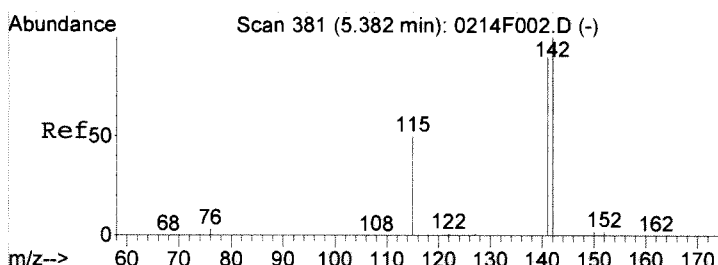
#2
 Naphthalene
 Concen: 2.69 ng/ml m
 RT: 4.75 min Scan# 194
 Delta R.T. 0.00 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

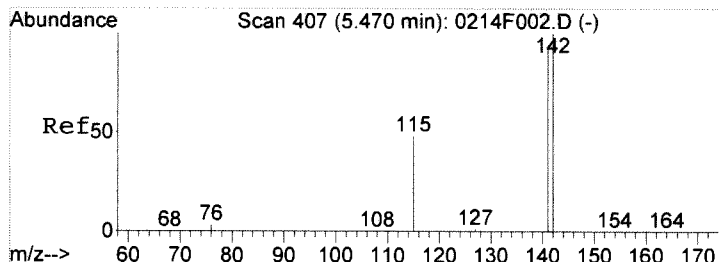
Tgt Ion	Ratio	Lower	Upper
128	100		
127	21.4	0.0	52.7
129	17.8	0.5	40.5



#4
 2-Methylnaphthalene
 Concen: 0.81 ng/ml
 RT: 5.39 min Scan# 382
 Delta R.T. -0.00 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

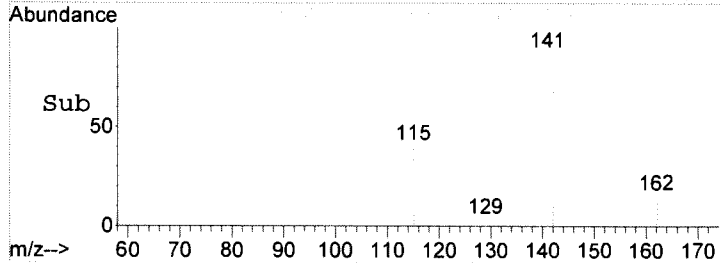
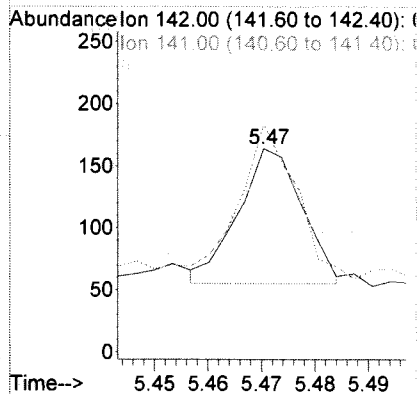
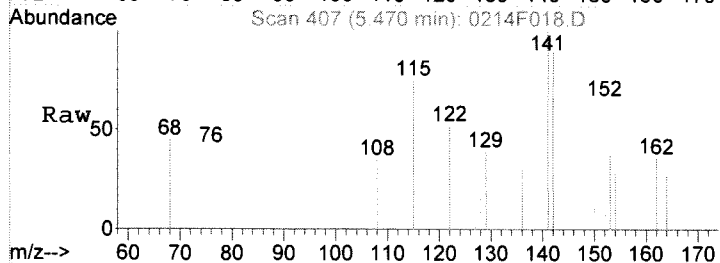
Tgt Ion	Ratio	Lower	Upper
142	100		
141	87.8	57.0	117.0
115	51.4	28.1	68.1





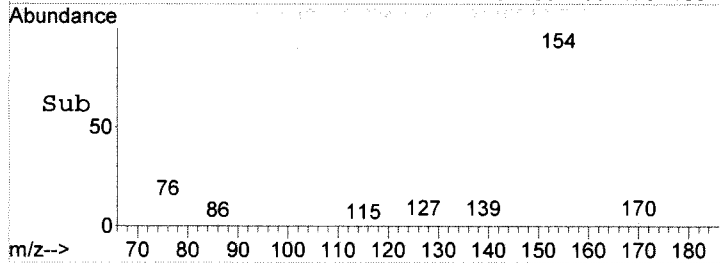
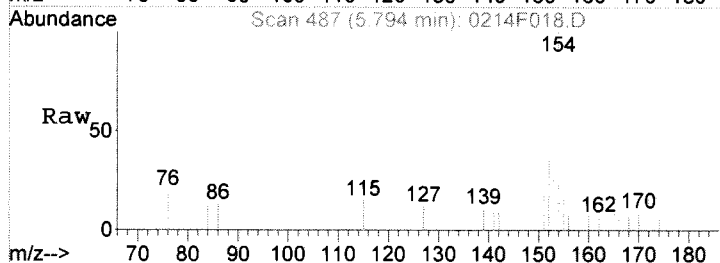
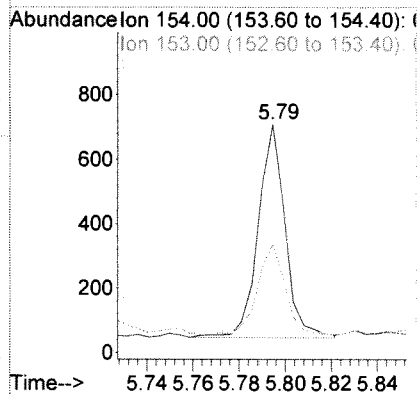
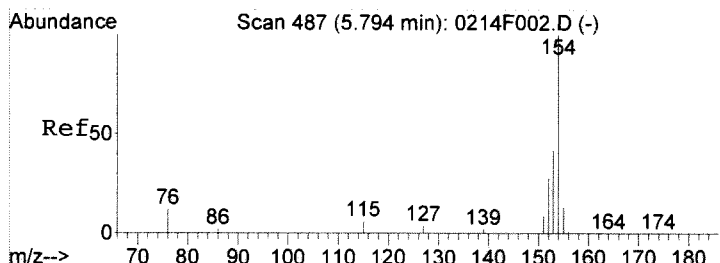
#5
 1-Methylnaphthalene
 Concen: 0.54 ng/ml m
 RT: 5.47 min Scan# 407
 Delta R.T. -0.00 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

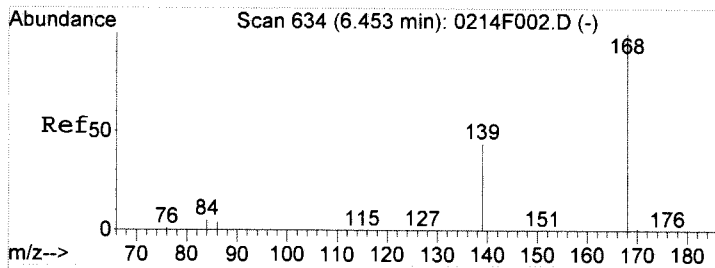
Tgt Ion	Ratio	Lower	Upper
142	100		
141	112.2	60.9	120.9
115	84.1	32.5	72.5#



#6
 Biphenyl
 Concen: 2.26 ng/ml
 RT: 5.79 min Scan# 487
 Delta R.T. -0.01 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

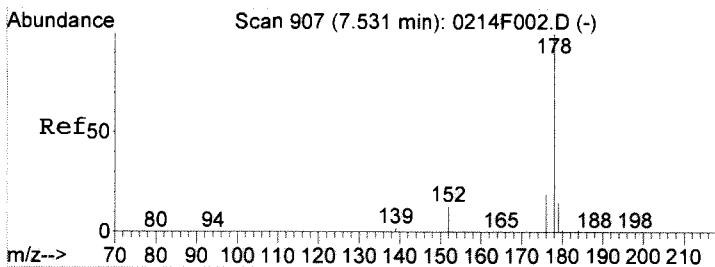
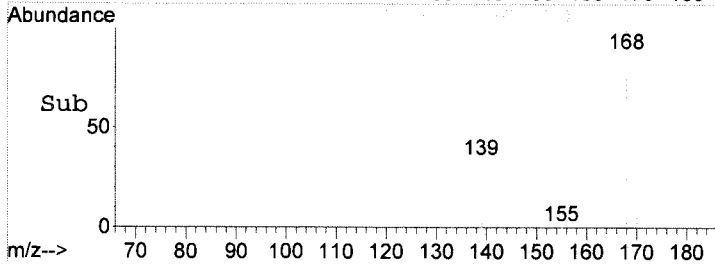
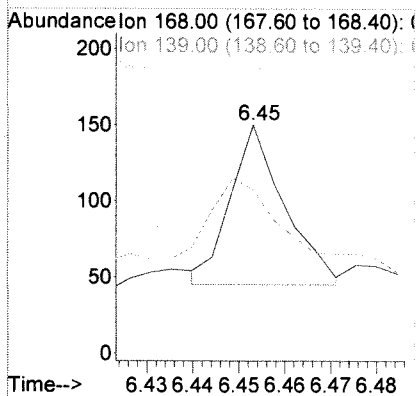
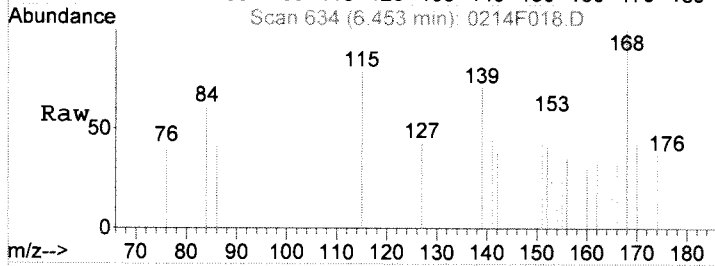
Tgt Ion	Ratio	Lower	Upper
154	100		
153	42.2	11.6	71.6
152	29.5	8.5	48.5





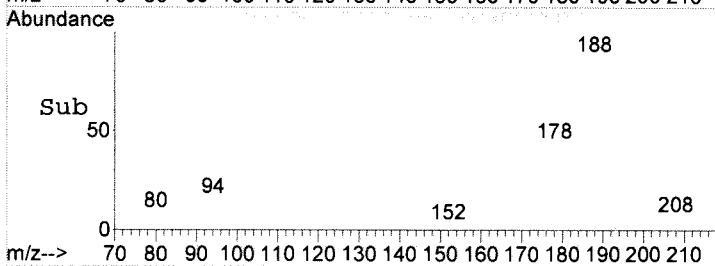
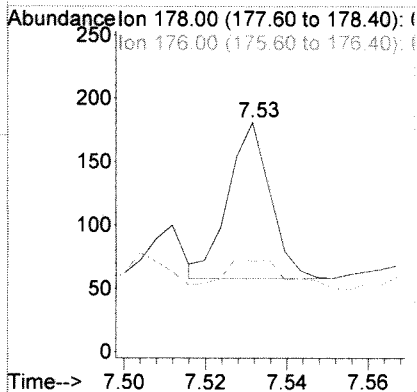
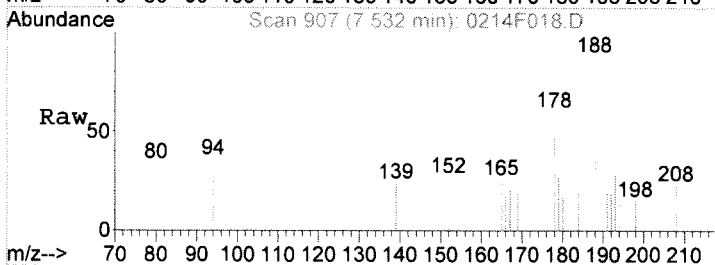
#11
 Dibenzofuran
 Concen: 0.34 ng/ml m
 RT: 6.45 min Scan# 634
 Delta R.T. -0.00 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

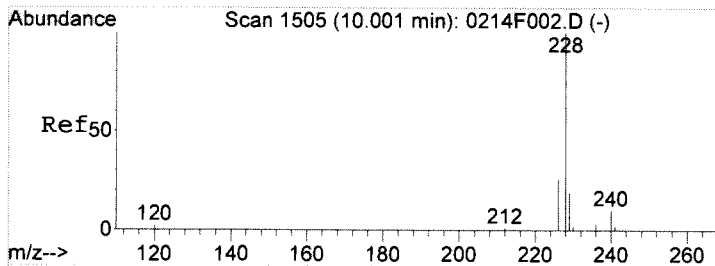
Tgt Ion	Ratio	Resp	Lower	Upper
168	100	85		
139	71.3	15.4	15.4	75.4
84	61.3	0.0	0.0	24.7#



#17
 Phenanthrene
 Concen: 0.31 ng/ml
 RT: 7.53 min Scan# 907
 Delta R.T. -0.01 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

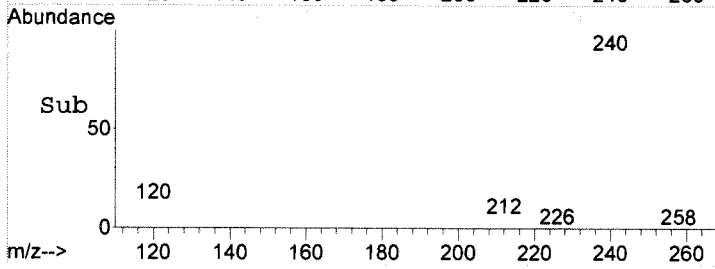
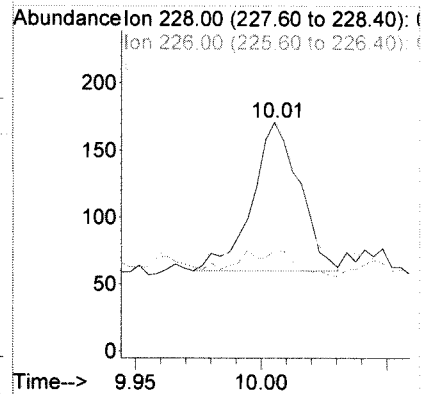
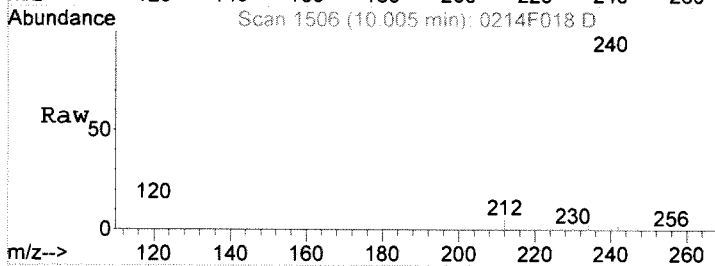
Tgt Ion	Ratio	Resp	Lower	Upper
178	100	88		
176	17.1	0.0	0.0	49.6
179	13.8	0.0	0.0	35.1





#26
 Benz(a)anthracene
 Concen: 0.52 ng/ml
 RT: 10.01 min Scan# 1506
 Delta R.T. -0.00 min
 Lab File: 0214F018.D
 Acq: 14 Feb 2018 12:18 pm

Tgt Ion	Ratio	Lower	Upper
228	100		
226	17.1	0.0	56.5
229	23.4	0.0	39.3

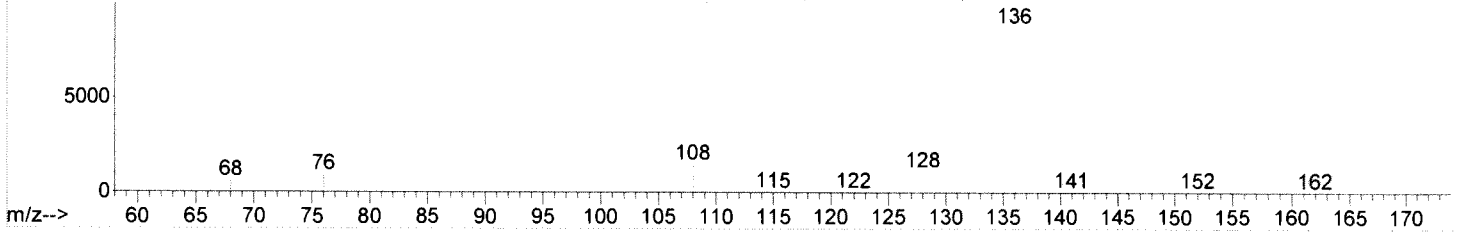
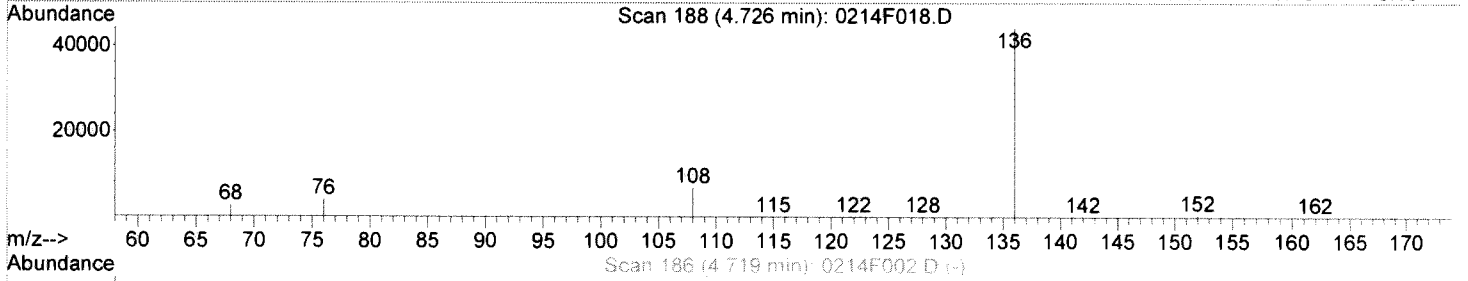
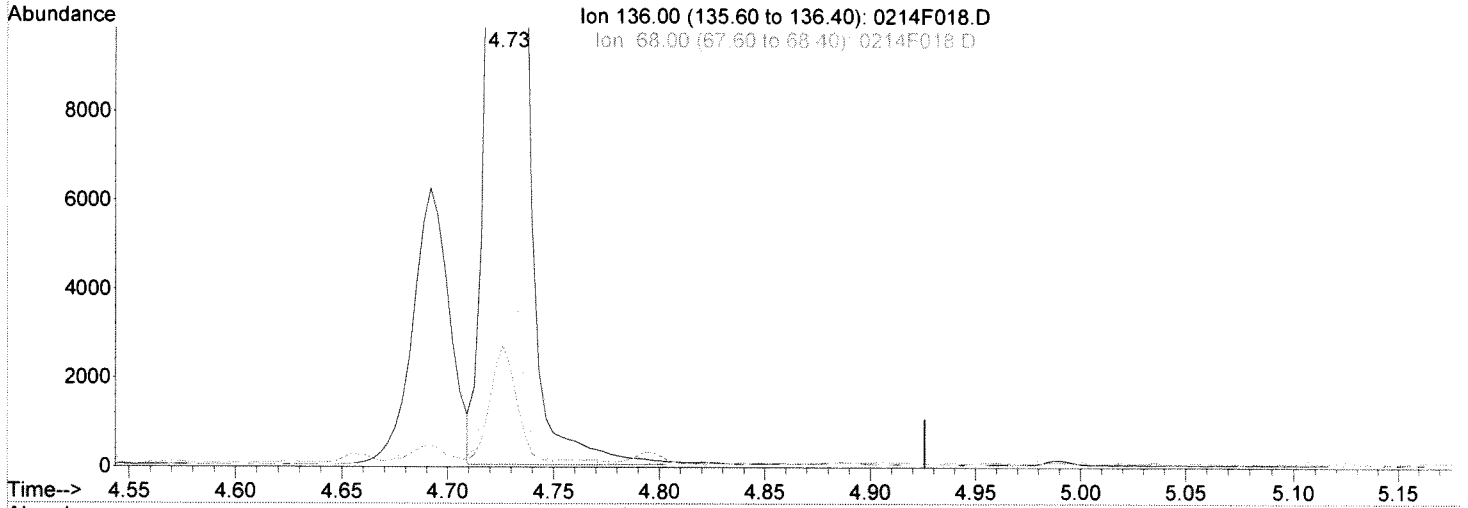


Data File : J:\MS14\DATA\021418\0214F018.D
Acq On : 14 Feb 2018 12:18 pm
Sample : K1801267-018
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 12:54 2018

Vial: 18
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F018.D

(1) Naphthalene-d8 (I)

4.73min 200.00ng/ml

response 40091

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.94
108.00	10.50	15.20
0.00	0.00	0.00

Manual Integration:

Before

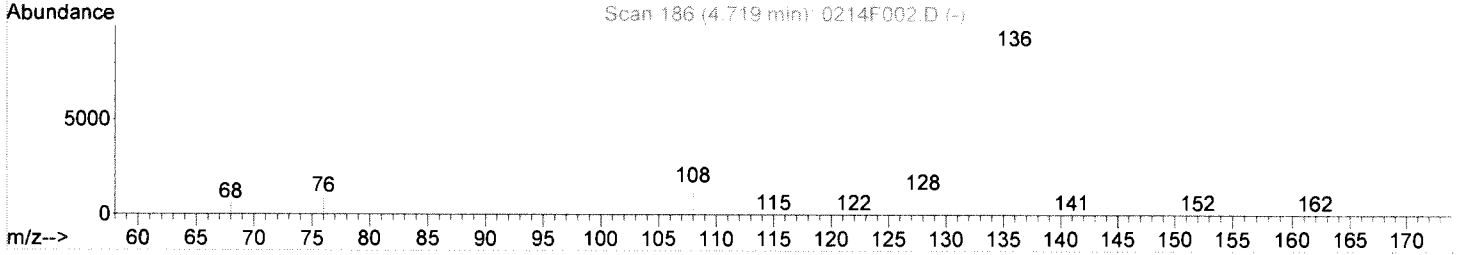
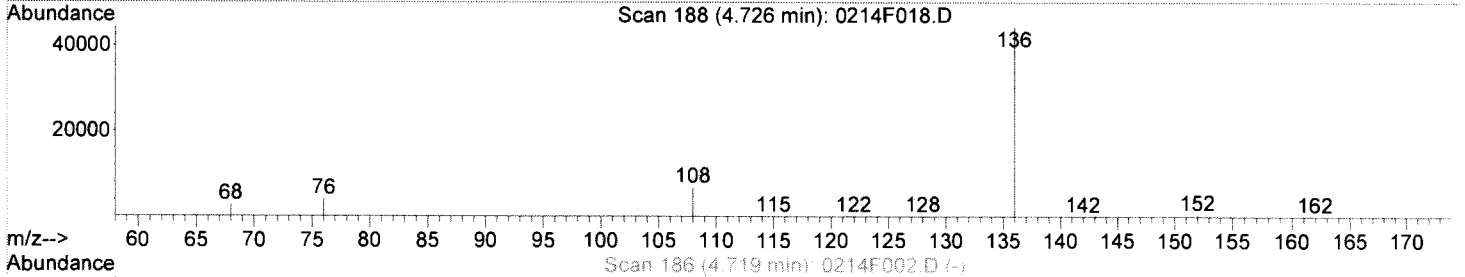
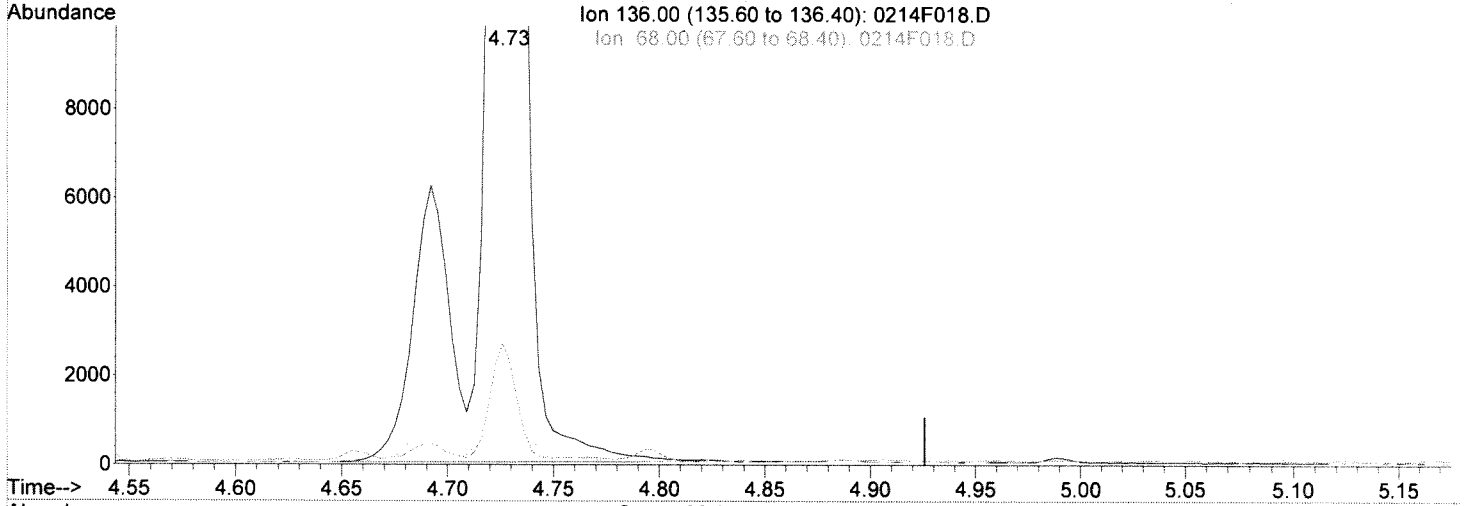
02/14/18

Data File : J:\MS14\DATA\021418\0214F018.D
Acq On : 14 Feb 2018 12:18 pm
Sample : K1801267-018
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:42 2018

Vial: 18
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F018.D

(1) Naphthalene-d8 (I)		
4.73min	200.00ng/ml m	
response	47548	
Ion	Exp%	Act%
136.00	100	100
68.00	4.70	6.14
108.00	10.50	15.32
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

02/14/18

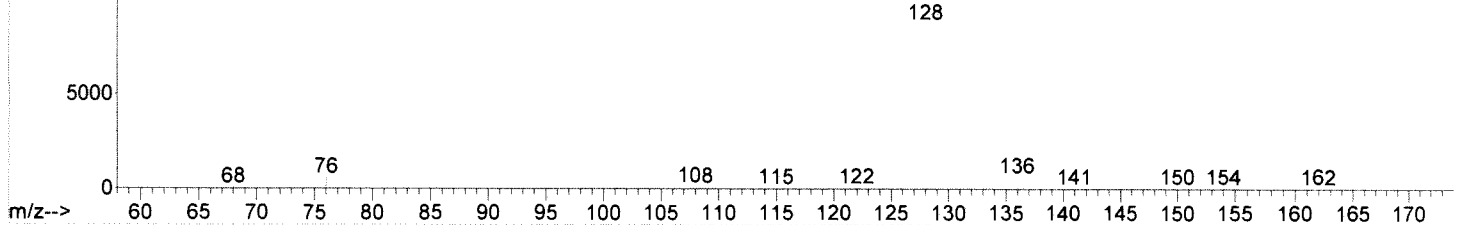
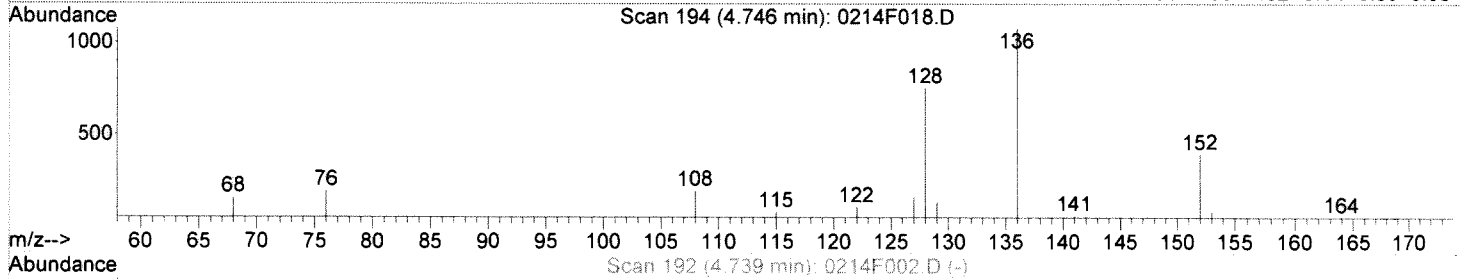
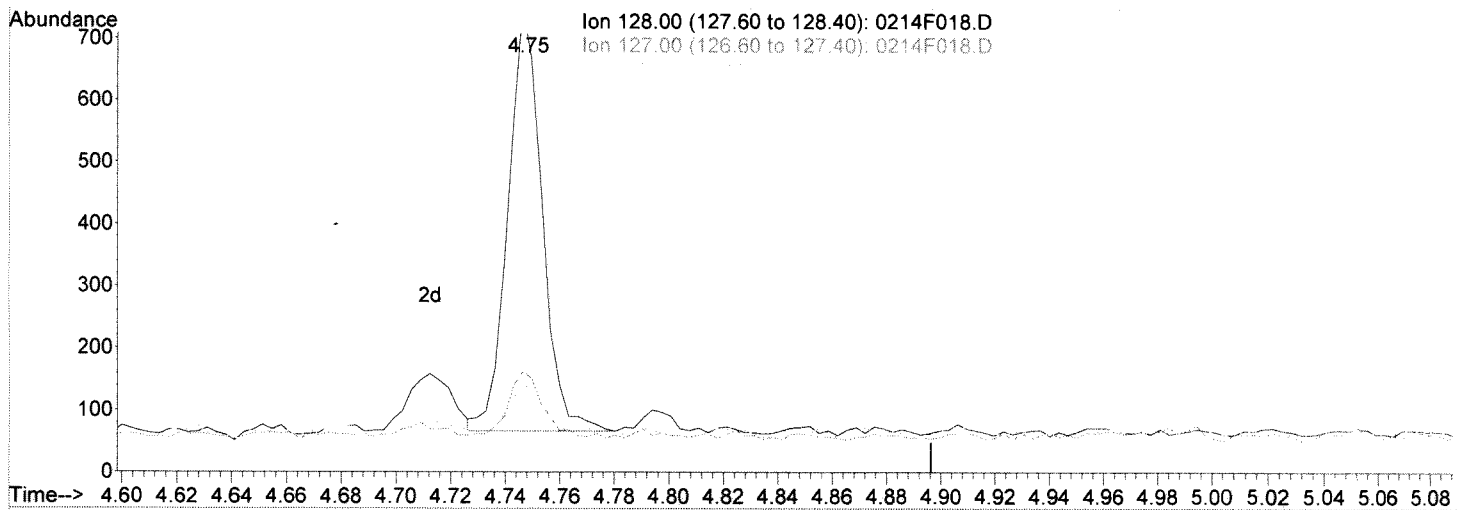
la
lp

Data File : J:\MS14\DATA\021418\0214F018.D
 Acq On : 14 Feb 2018 12:18 pm
 Sample : K1801267-018
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 13:42 2018

Vial: 18
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F018.D

(2) Naphthalene (T)

4.75min 2.20ng/ml

response 595

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	14.85
129.00	20.50	10.77
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

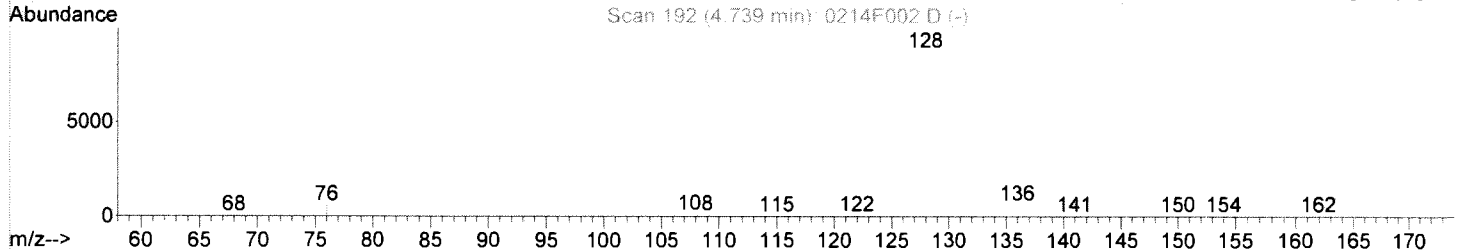
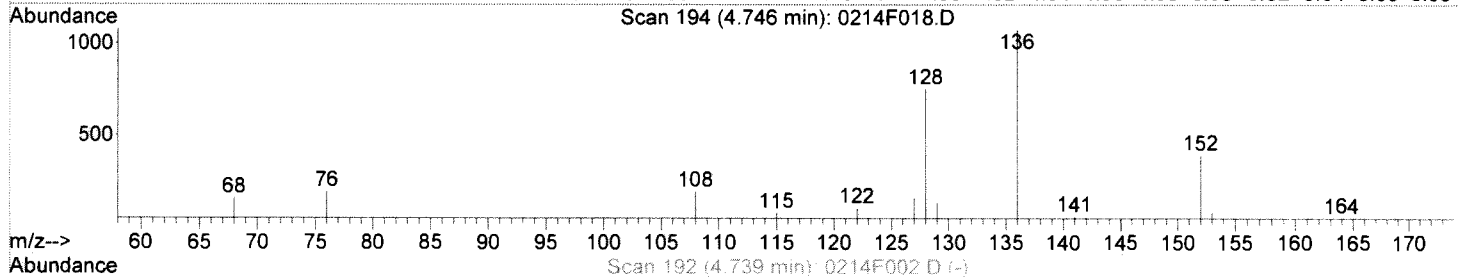
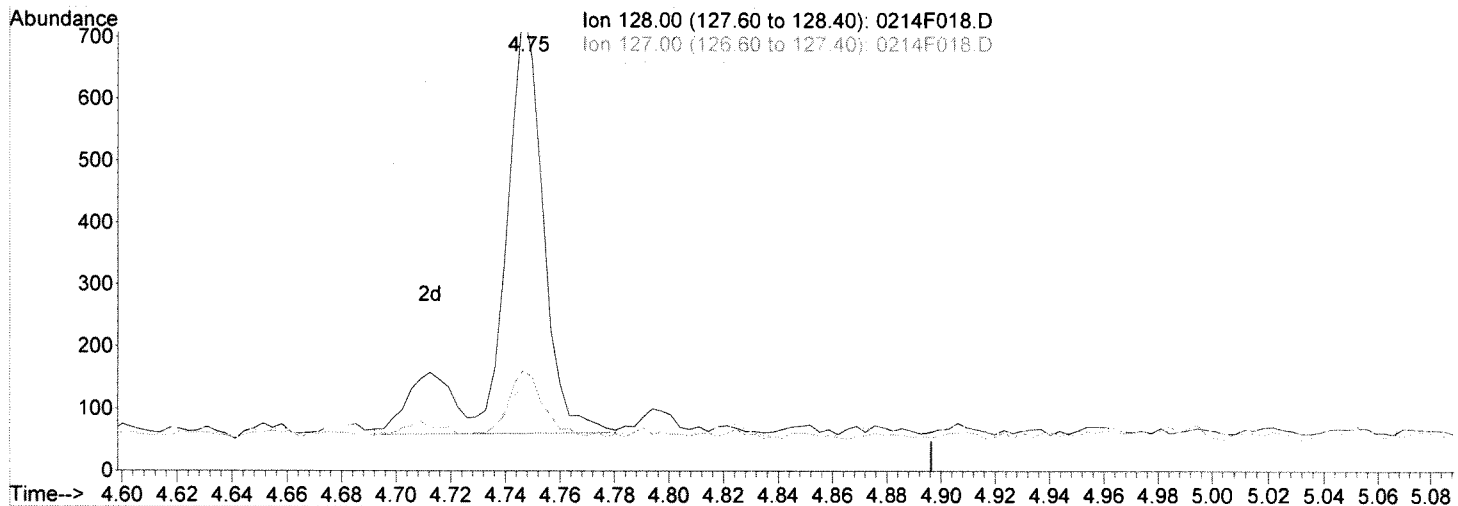
lu
lp

Data File : J:\MS14\DATA\021418\0214F018.D
Acq On : 14 Feb 2018 12:18 pm
Sample : K1801267-018
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:43 2018

Vial: 18
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F018.D

(2) Naphthalene (T)

4.75min 2.69ng/ml m

response 728

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	21.38
129.00	20.50	17.80
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

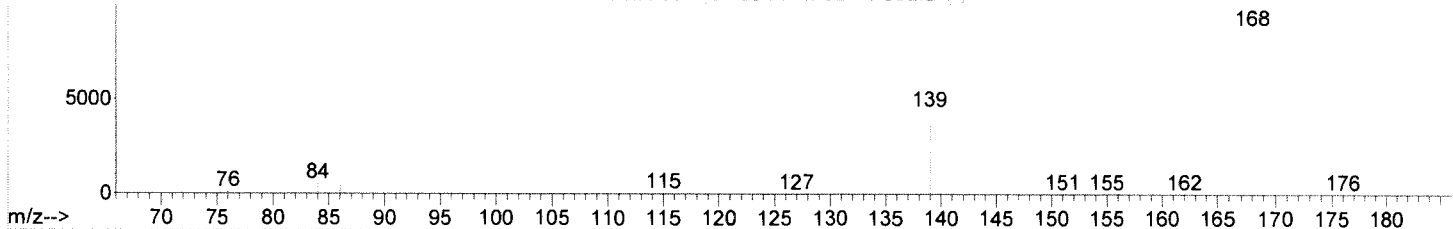
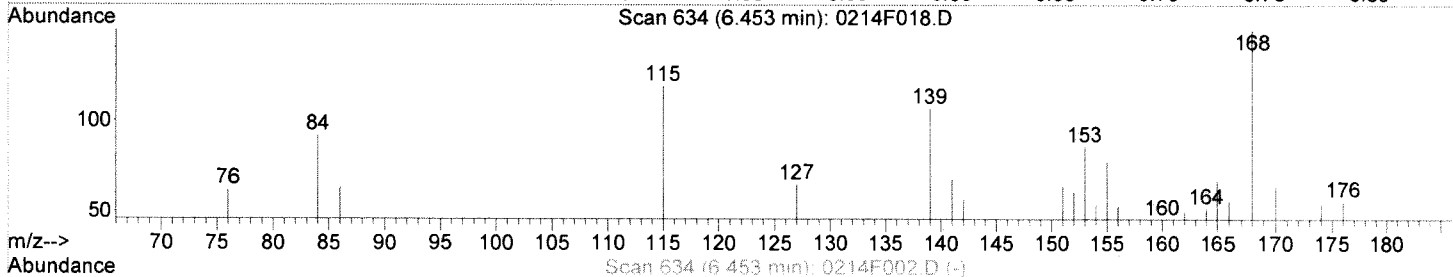
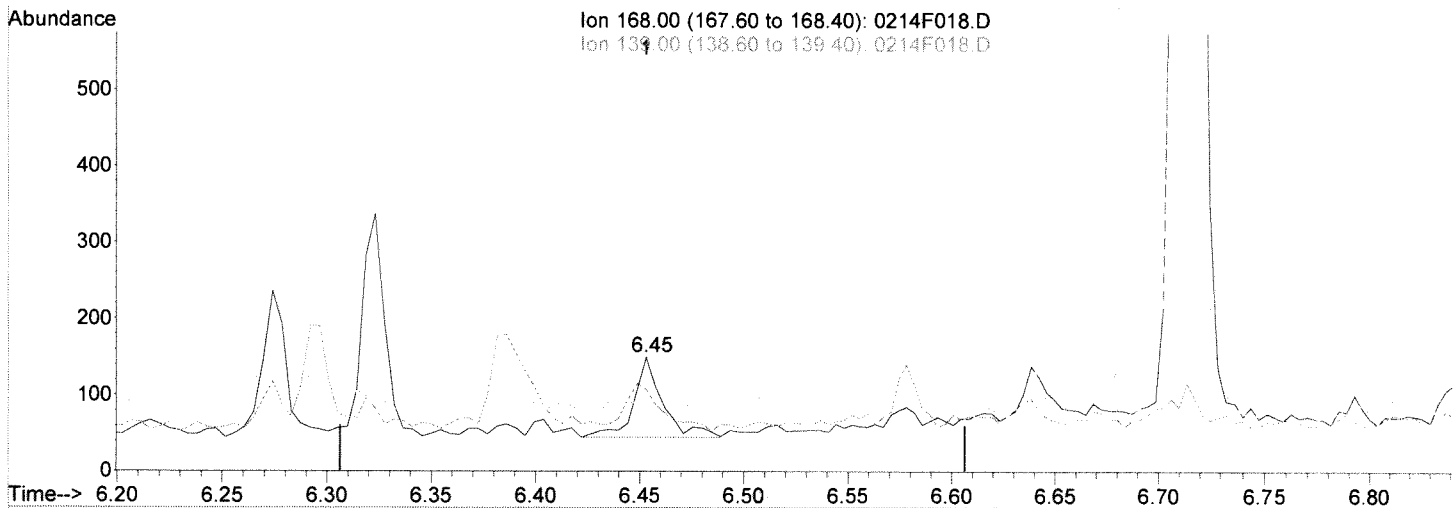
02/14/18

Data File : J:\MS14\DATA\021418\0214F018.D
Acq On : 14 Feb 2018 12:18 pm
Sample : K1801267-018
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:43 2018

Vial: 18
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F018.D

(11) Dibenzofuran (T)

6.45min 0.42ng/ml

response 103

Ion	Exp%	Act%
168.00	100	100
139.00	45.40	42.86
84.00	4.70	10.48
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

la

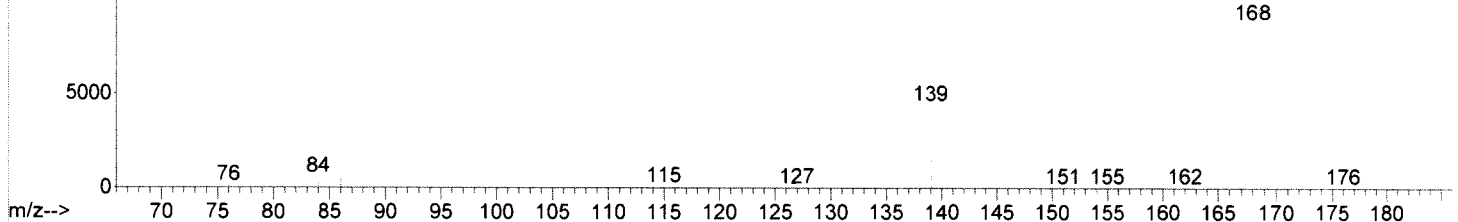
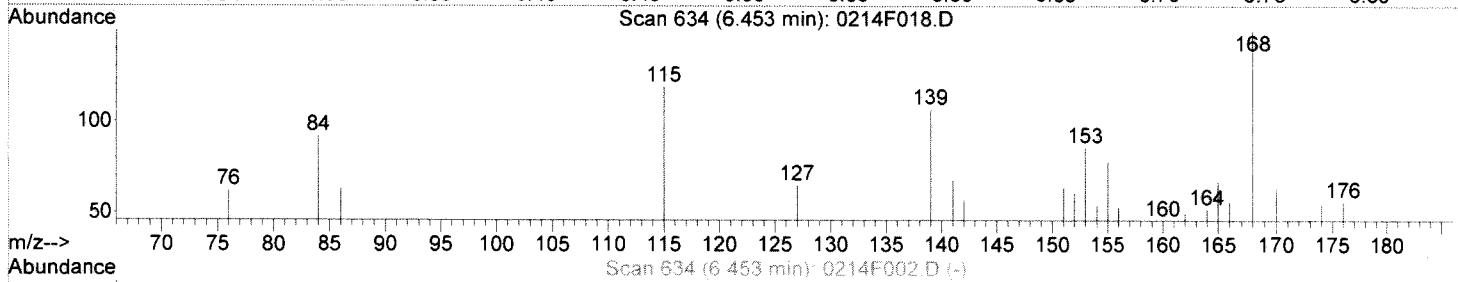
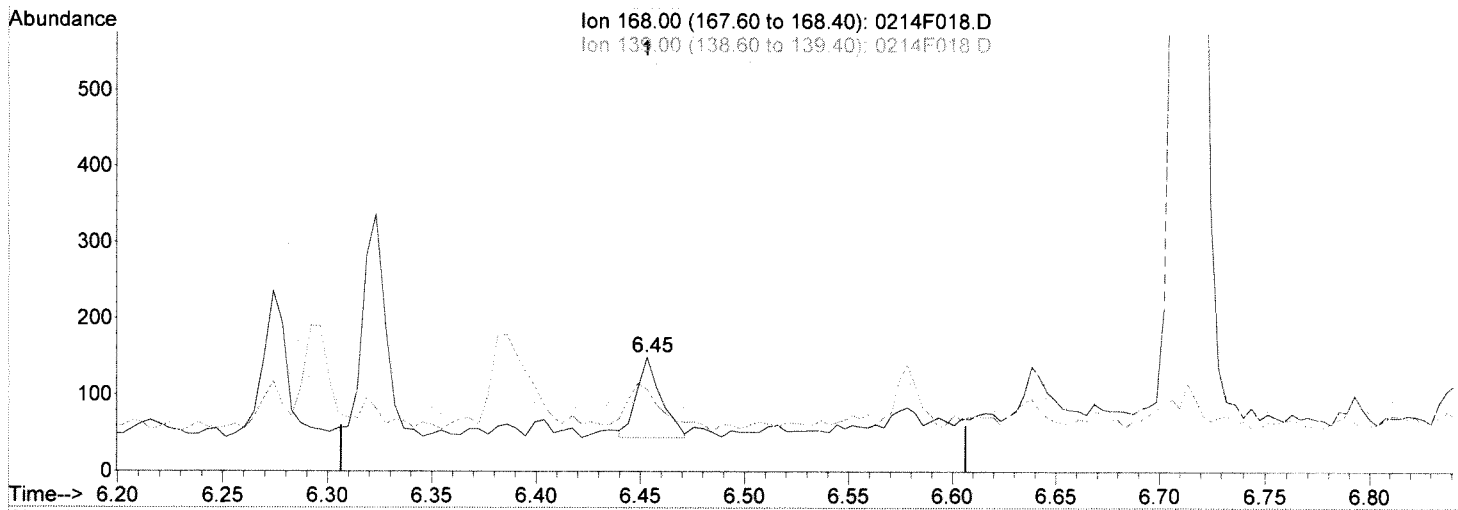
al

Data File : J:\MS14\DATA\021418\0214F018.D
 Acq On : 14 Feb 2018 12:18 pm
 Sample : K1801267-018
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 13:43 2018

Vial: 18
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F018.D

(11) Dibenzofuran (T)

6.45min 0.34ng/ml m

response 85

Ion	Exp%	Act%
168.00	100	100
139.00	45.40	71.33
84.00	4.70	61.33#
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

02/14/18

Handwritten signature

Handwritten signature

Exception Report

Data File: J:\MS14\DATA\021418\0214F006.D
Lab ID: KWG1800892-3
RunType: MB
Matrix: WATER



Date Acquired: 02/14/2018 07:41
Date Quantitated: 02/14/2018 13:16
Batch ID: KWG1800938
Analysis Method: 8270D SIM
MethodJoinID: MJ1638

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K1041 (RX)
 K1267
 K1300



Primary Review:  FEB 15 2018
 Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\021418\0214F006.D	Instrument: MS14
Acqu Date: 02/14/2018 07:41	Quant Date: 02/14/2018 13:16
Run Type: MB	Vial: 6
Lab ID: KWG1800892-3	MethodJoinID: MJ1638
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/13/2018

Analysis Lot: KWG1800938	Prep Lot: KWG1800892	Report Group:
Analysis Method: 8270D SIM	Prep Method: EPA 3511	
Prep Ref: 1663655	Prep Date: 02/13/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title:	
Tune Ref: J:\MS14\DATA\021418\0214F001.D	Method ID: MJ1638
MB Ref:	Quant based on Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.73	0.01	136	49172m	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	23137	200.00	OK
3	Phenanthrene-d10	7.51	0.00	188	47417	200.00	OK
4	Chrysene-d12	10.01	-0.01	240	47170	200.00	OK
5	Perylene-d12	13.01	-0.02	264	46670	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	141467	893.80	89	42-131	OK
3	Fluoranthene-d10	8.49	0.00	0.00	212	266702	895.16	90	42-133	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	165938	834.33	83	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.75	0.01	0.00	128	83	0.3000	0.0014	U	
1	2-Methylnaphthalene				142	0d		0.0013	U	
1	1-Methylnaphthalene				142	0d		0.0013	U	
1	Biphenyl	5.79		0.00	154	420	1.70	0.00739	J	
1	2,6-Dimethylnaphthalene				156	0		0.0016	U	
2	Acenaphthylene				152	0d		0.0011	U	
2	Acenaphthene				154	0d		0.0012	U	
2	Dibenzofuran				168	0		0.00096	U	
2	2,3,5-Trimethylnaphthalene				170	0d		0.00078	U	
2	Fluorene				166	0d		0.0011	U	
3	Dibenzothiophene				184	0d		0.00081	U	
3	Phenanthrene	7.53		0.00	178	106	0.3600	0.00157	J	
3	Anthracene				178	0d		0.00082	U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\021418\0214F006.D	Instrument:	MS14
Acqu Date:	02/14/2018 07:41	Quant Date:	02/14/2018 13:16
Run Type:	MB	MethodJoinID:	MJ1638
Lab ID:	KWG1800892-3	Vial:	6
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units: ug/L				
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole				167	0d		0.0011	U	
3	1-Methylphenanthrene				192	0		0.00084	U	
3	Fluoranthene				202	0d		0.00082	U	
4	Pyrene				202	0d		0.0010	U	
4	Benzo(a)anthracene	10.01	0.01	0.00	228	153	0.5400	0.00235	J	
4	Chrysene				228	0d		0.00076	U	
5	Benzo(b)fluoranthene				252	0		0.00083	U	
5	Benzo(k)fluoranthene				252	0		0.00094	U	
5	Benzo(e)pyrene				252	0d		0.0015	U	
5	Benzo(a)pyrene				252	0		0.0011	U	
5	Perylene				252	0d		0.00081	U	
5	Indeno(1,2,3-cd)pyrene				276	0		0.00089	U	
5	Dibenz(a,h)anthracene				278	0		0.0013	U	
5	Benzo(g,h,i)perylene				276	0d		0.00086	U	

Prep Amount: 460 ml Dilution: 1.0
 Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS14\DATA\021418\0214F006.D

Vial: 6

Acq On : 14 Feb 2018 7:41 am

Operator: LWeiskopf

Sample : KWG1800892-3 MB

Inst : MS14

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Feb 14 12:54:20 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Wed Feb 14 12:53:50 2018

Response via : Initial Calibration

DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.73	136	49172m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	23137	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.51	188	47417	200.00	ng/ml	0.00
23) Chrysene-d12	10.01	240	47170	200.00	ng/ml	0.00
28) Perylene-d12	13.01	264	46670	200.00	ng/ml	-0.01

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.36	152	119023	902.84	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	90.28%	
13) Fluorene-d10	6.72	176	141467	893.80	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	89.38%	
22) Fluoranthene-d10	8.49	212	266702	895.16	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	89.52%	
25) Terphenyl-d14	8.84	244	165938	834.33	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	83.43%	

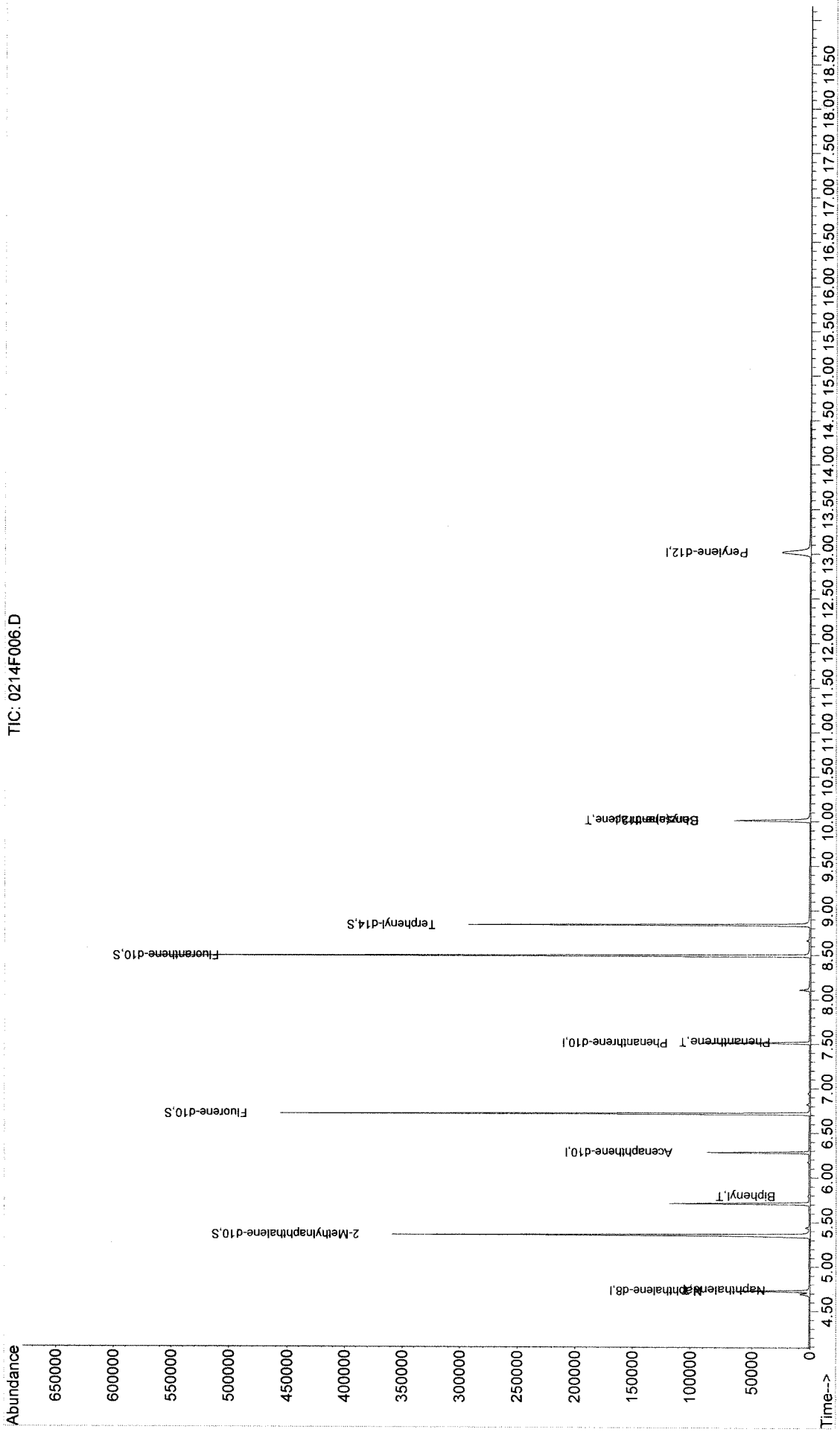
Target Compounds

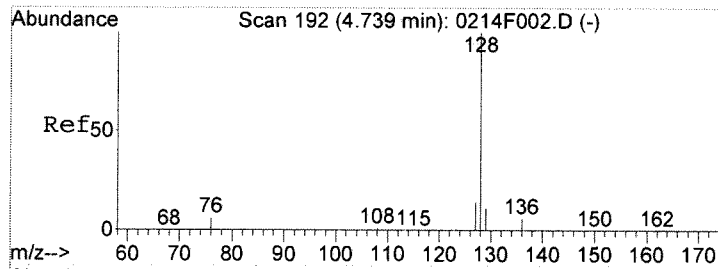
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.75	128	83	0.30	ng/ml	80
6) Biphenyl	5.79	154	420	1.70	ng/ml	96
17) Phenanthrene	7.53	178	106	0.36	ng/ml	94
26) Benz(a)anthracene	10.01	228	153	0.54	ng/ml	75

(#) = qualifier out of range (m) = manual integration
0214F006.D 101317PAH.M Wed Feb 14 13:18:15 2018

Data File : J:\MS14\DATA\021418\0214F006.D
Acq On : 14 Feb 2018 7:41 am
Sample : KWG1800892-3 MB
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:16 2018
Quant Results File: 101317PAH.RES

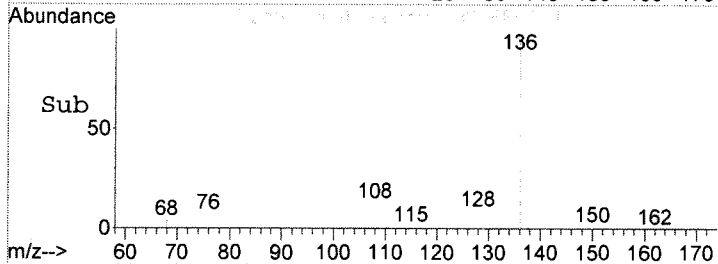
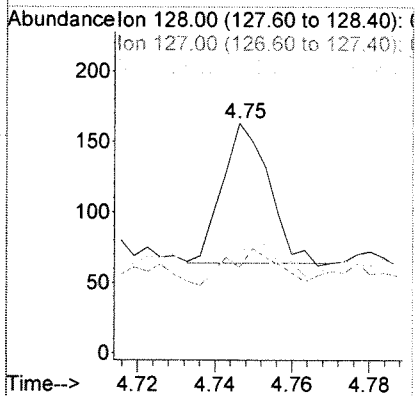
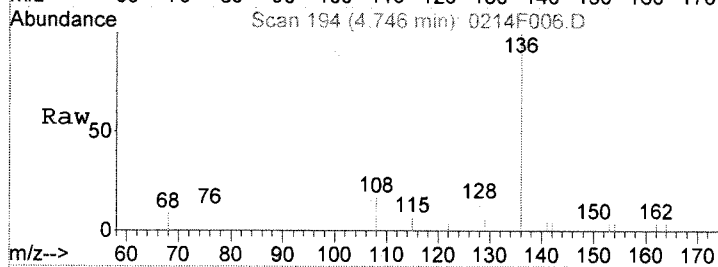
Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Initial Calibration





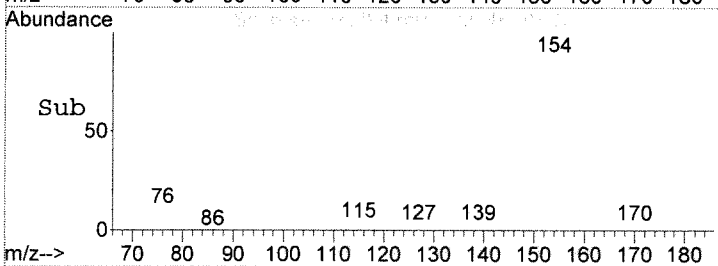
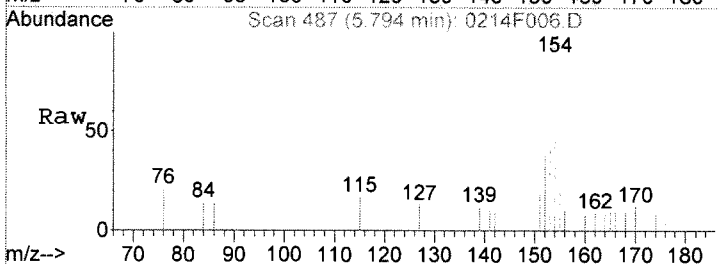
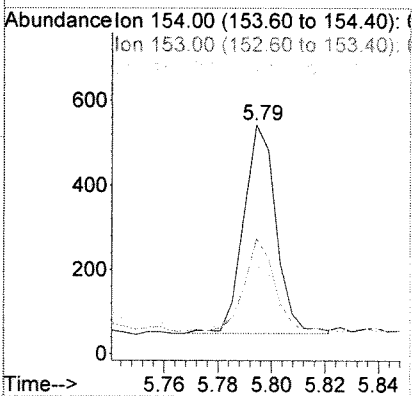
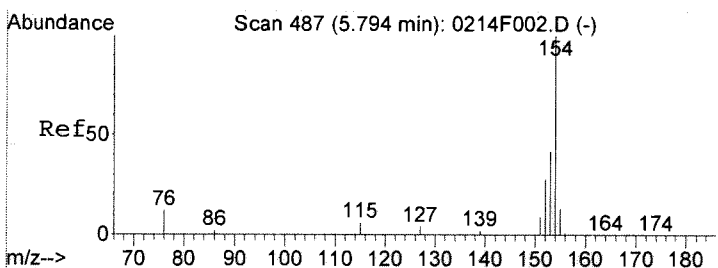
#2
 Naphthalene
 Concen: 0.30 ng/ml
 RT: 4.75 min Scan# 194
 Delta R.T. -0.00 min
 Lab File: 0214F006.D
 Acq: 14 Feb 2018 7:41 am

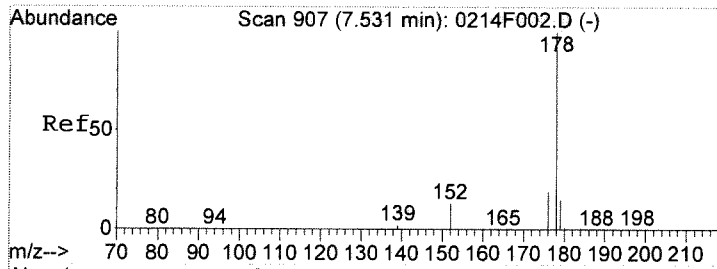
Tgt Ion	Resp	Lower	Upper
128	100		
127	10.1	0.0	52.7
129	14.1	0.5	40.5



#6
 Biphenyl
 Concen: 1.70 ng/ml
 RT: 5.79 min Scan# 487
 Delta R.T. -0.01 min
 Lab File: 0214F006.D
 Acq: 14 Feb 2018 7:41 am

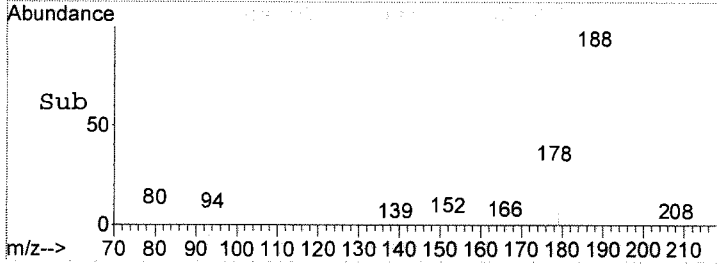
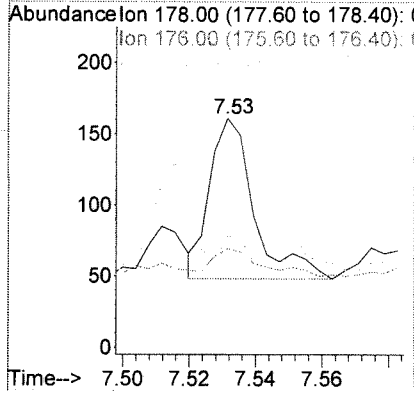
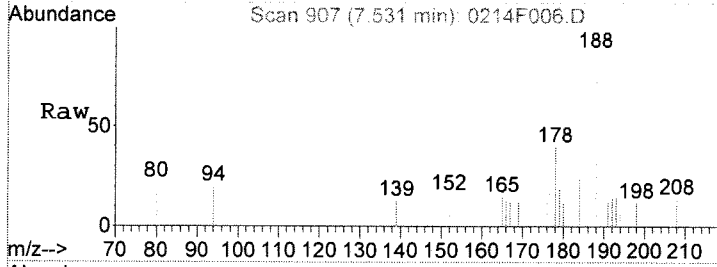
Tgt Ion	Resp	Lower	Upper
154	100		
153	44.4	11.6	71.6
152	30.7	8.5	48.5





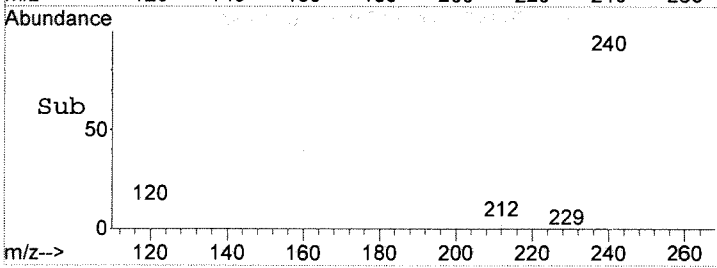
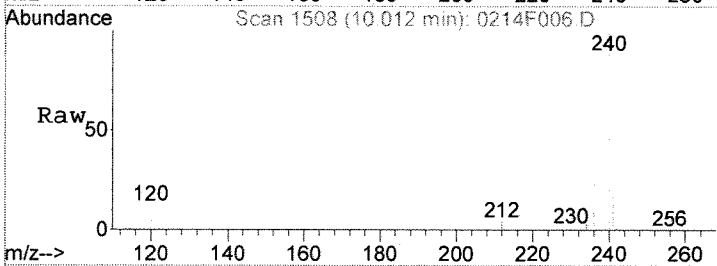
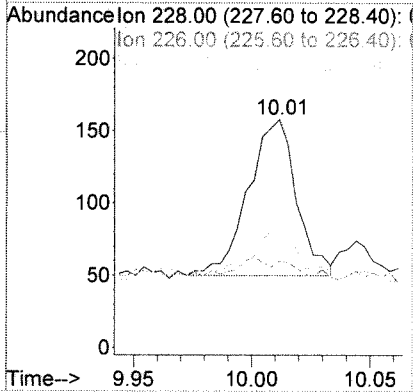
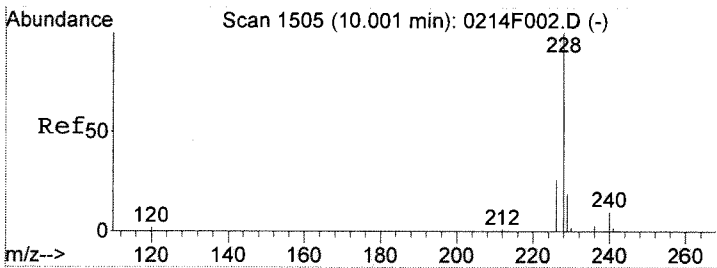
#17
 Phenanthrene
 Concen: 0.36 ng/ml
 RT: 7.53 min Scan# 907
 Delta R.T. -0.01 min
 Lab File: 0214F006.D
 Acq: 14 Feb 2018 7:41 am

Tgt Ion	Resp	Lower	Upper
178	106		
176	15.9	0.0	49.6
179	16.8	0.0	35.1



#26
 Benz(a)anthracene
 Concen: 0.54 ng/ml
 RT: 10.01 min Scan# 1508
 Delta R.T. 0.01 min
 Lab File: 0214F006.D
 Acq: 14 Feb 2018 7:41 am

Tgt Ion	Resp	Lower	Upper
228	153		
226	10.2	0.0	56.5
229	26.9	0.0	39.3

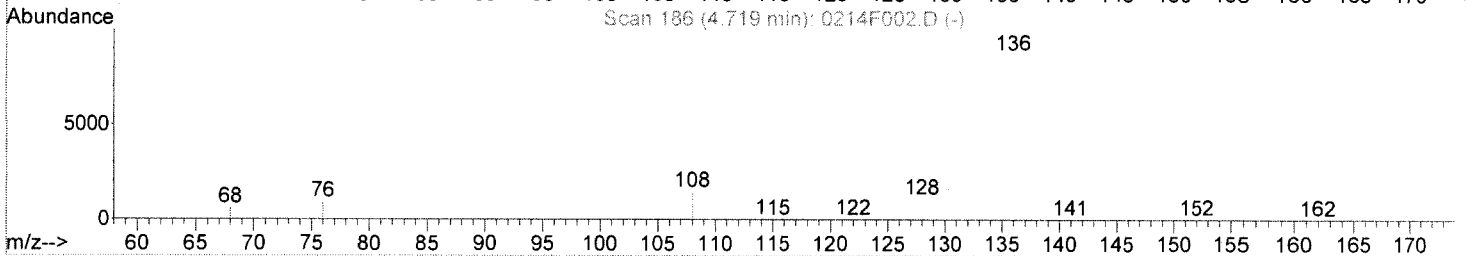
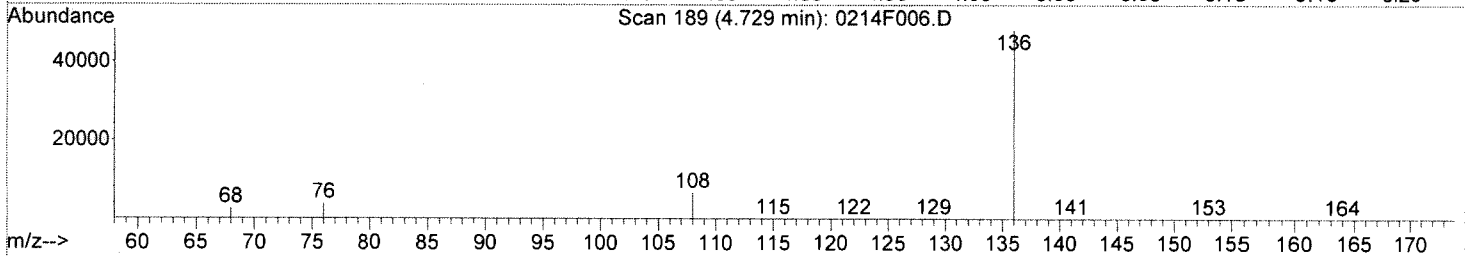
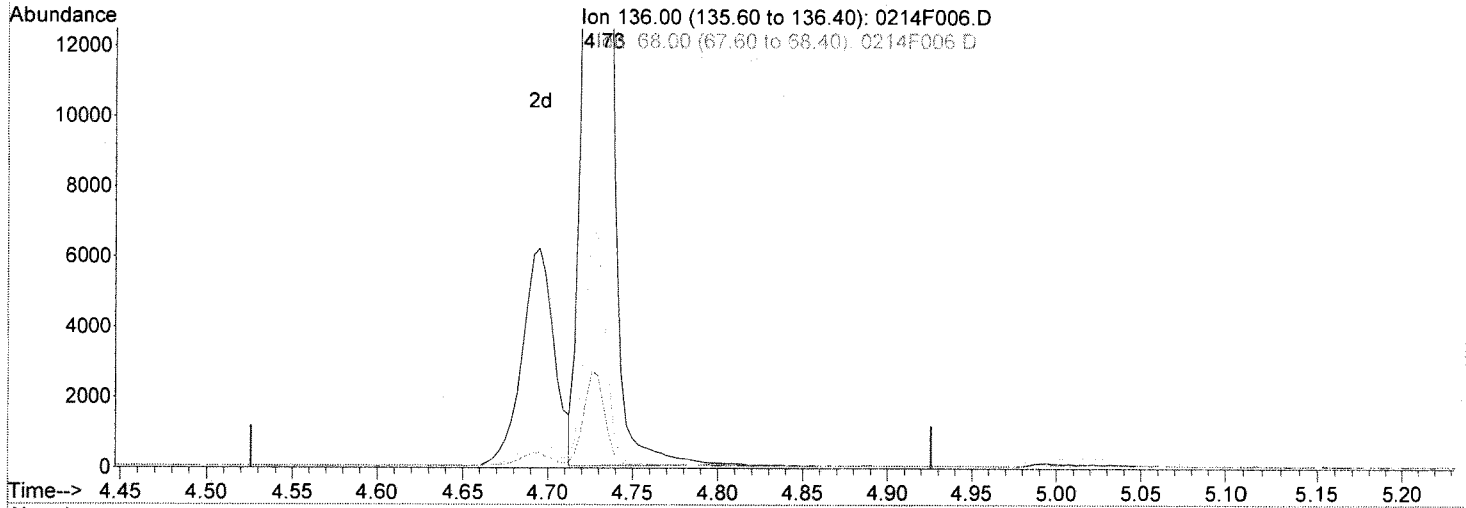


Data File : J:\MS14\DATA\021418\0214F006.D
 Acq On : 14 Feb 2018 7:41 am
 Sample : KWG1800892-3 MB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 12:54 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F006.D

(1) Naphthalene-d8 (I)

Manual Integration:

4.73min 200.00ng/ml

Before

response 40866

02/14/18

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.27
108.00	10.50	13.66
0.00	0.00	0.00

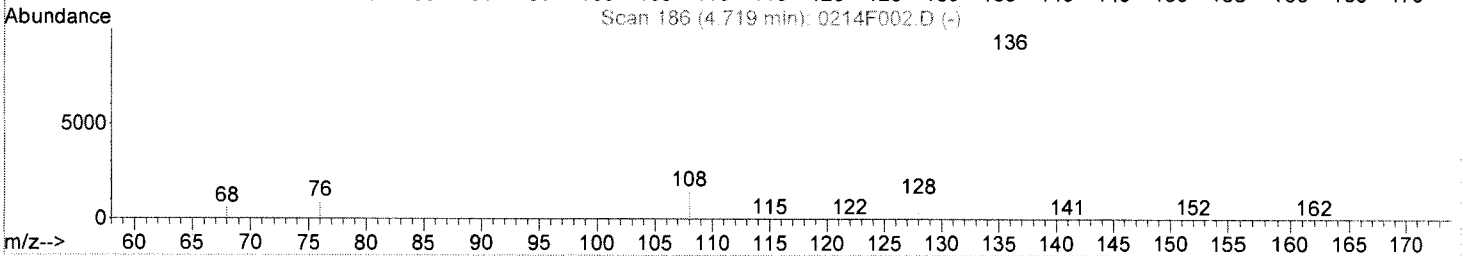
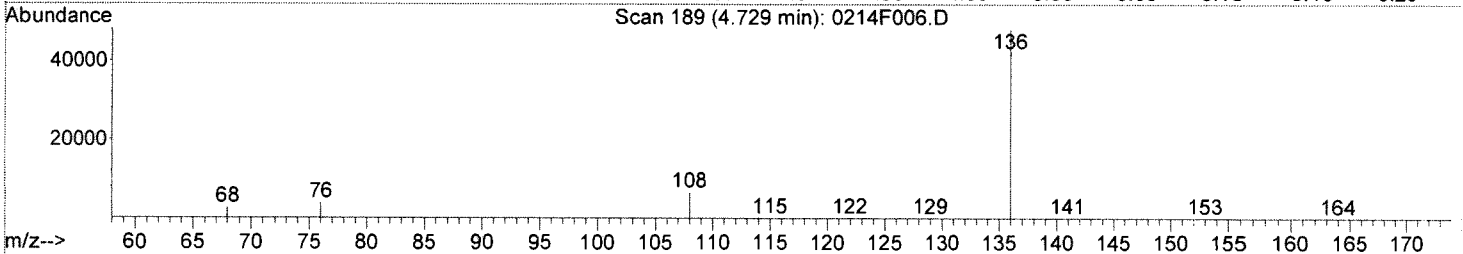
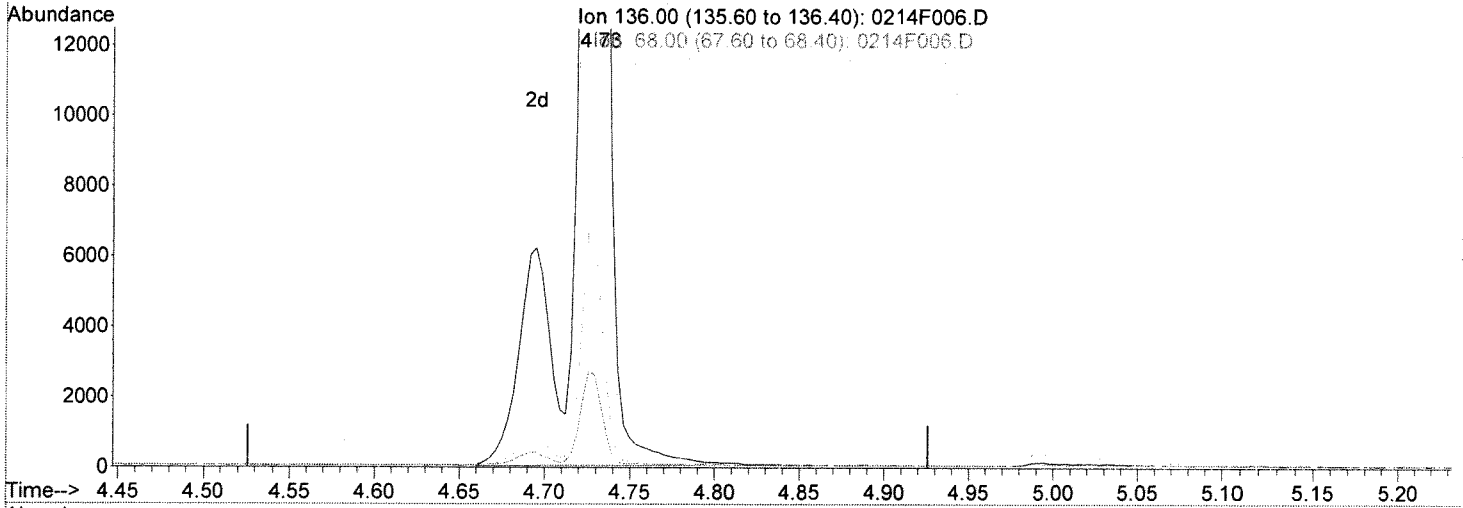
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Data File : J:\MS14\DATA\021418\0214F006.D
 Acq On : 14 Feb 2018 7:41 am
 Sample : KWG1800892-3 MB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 13:15 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F006.D

(1) Naphthalene-d8 (I)		
4.73min	200.00ng/ml m	
response	49172	
Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.42
108.00	10.50	13.75
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

02/14/18

Handwritten signature

Quantitation Report

Data File:	J:\MS14\DATA\031318\0313F003.D	Instrument:	MS14
Acqu Date:	03/13/2018 06:34	Quant Date:	03/13/2018 13:26
Run Type:	MB	MethodJoinID:	MJ1638
Lab ID:	KWG1801347-3	Vial:	3
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	GROUND WATER
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	03/09/2018

Analysis Lot:	KWG1801409	Prep Lot:	KWG1801347	Report Group:	
Analysis Method:	8270D SIM	Prep Method:	EPA 3511		
Prep Ref:	1666770	Prep Date:	03/09/2018		

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:		Method ID:	MJ1638
Tune Ref:	J:\MS14\DATA\031318\0313F001.D	Quant based on Method	
MB Ref:			

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.73	0.01	136	50638m	200.00	OK
2	Acenaphthene-d10	6.29	0.00	164	26668	200.00	OK
3	Phenanthrene-d10	7.53	0.00	188	55539	200.00	OK
4	Chrysene-d12	10.06	0.00	240	60553	200.00	OK
5	Perylene-d12	13.15	0.01	264	64608	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.73	0.00	0.00	176	170446	934.31	93	42-131	OK
3	Fluoranthene-d10	8.52	0.00	0.00	212	350601	1.005	100	42-133	OK
4	Terphenyl-d14	8.87	0.00	0.00	244	230468	902.68	90	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene				128	0d		0.0014	U	
1	2-Methylnaphthalene				142	0d		0.0013	U	
1	1-Methylnaphthalene				142	0d		0.0013	U	
1	Biphenyl	5.80		0.00	154	506	1.99	0.00865	J	
1	2,6-Dimethylnaphthalene				156	0		0.0016	U	
2	Acenaphthylene				152	0d		0.0011	U	
2	Acenaphthene				154	0d		0.0012	U	
2	Dibenzofuran				168	0d		0.00096	U	
2	2,3,5-Trimethylnaphthalene				170	0d		0.00078	U	
2	Fluorene				166	0d		0.0011	U	
3	Dibenzothiophene				184	0d		0.00081	U	
3	Phenanthrene	7.55		0.00	178	132	0.3800	0.00165	J	
3	Anthracene				178	0d		0.00082	U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\031318\0313F003.D	Instrument:	MS14
Acqu Date:	03/13/2018 06:34	Quant Date:	03/13/2018 13:26
Run Type:	MB	MethodJoinID:	MJ1638
Lab ID:	KWG1801347-3	Vial:	3
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole				167	0d		0.0011	U	
3	1-Methylphenanthrene				192	0d		0.00084	U	
3	Fluoranthene				202	0d		0.00082	U	
4	Pyrene				202	0d		0.0010	U	
4	Benz(a)anthracene	10.06	0.02	0.00	228	175	0.4800	0.00209	J	
4	Chrysene				228	0d		0.00076	U	
5	Benzo(b)fluoranthene				252	0		0.00083	U	
5	Benzo(k)fluoranthene				252	0		0.00094	U	
5	Benzo(e)pyrene				252	0		0.0015	U	
5	Benzo(a)pyrene				252	0		0.0011	U	
5	Perylene				252	0d		0.00081	U	
5	Indeno(1,2,3-cd)pyrene				276	0		0.00089	U	
5	Dibenz(a,h)anthracene				278	0		0.0013	U	
5	Benzo(g,h,i)perylene				276	0d		0.00086	U	

Prep Amount: 460 ml Dilution: 1.0
 Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

- U: Undetected at or above MDL
- J: Analyte detected above MDL, but below MRL
- B: Hit above MRL also found in Method Blank
- E: Analyte concentration above high point of ICAL
- N: Presumptive evidence of compound
- D: Result from dilution
- m: Manual integration performed
- d: Compound manually deleted
- NR: Analyte not reported from this analysis
- *: Result fails acceptance criteria
- #: Acceptance criteria not applicable
- ?: Insufficient information to determine acceptance
- e: Result >= MRL, but MRL less than low point of ICAL
- c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F003.D
 Acq On : 13 Mar 2018 6:34 am
 Sample : KWG1801347-3 MB
 Misc :

Vial: 3
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25:09 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.73	136	50638m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.29	164	26668	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.53	188	55539	200.00	ng/ml	0.00
23) Chrysene-d12	10.06	240	60553	200.00	ng/ml	0.00
28) Perylene-d12	13.15	264	64608	200.00	ng/ml	0.00
System Monitoring Compounds						
3) 2-Methylnaphthalene-d10	0.00	152	0d	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
13) Fluorene-d10	6.73	176	170446	934.31	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	93.43%	
22) Fluoranthene-d10	8.52	212	350601	1004.67	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	100.47%	
25) Terphenyl-d14	8.87	244	230468	902.68	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	90.27%	
Target Compounds						
6) Biphenyl	5.80	154	506	1.99	ng/ml	96
17) Phenanthrene	7.55	178	132	0.38	ng/ml	95
26) Benz(a)anthracene	10.06	228	175	0.48	ng/ml	59

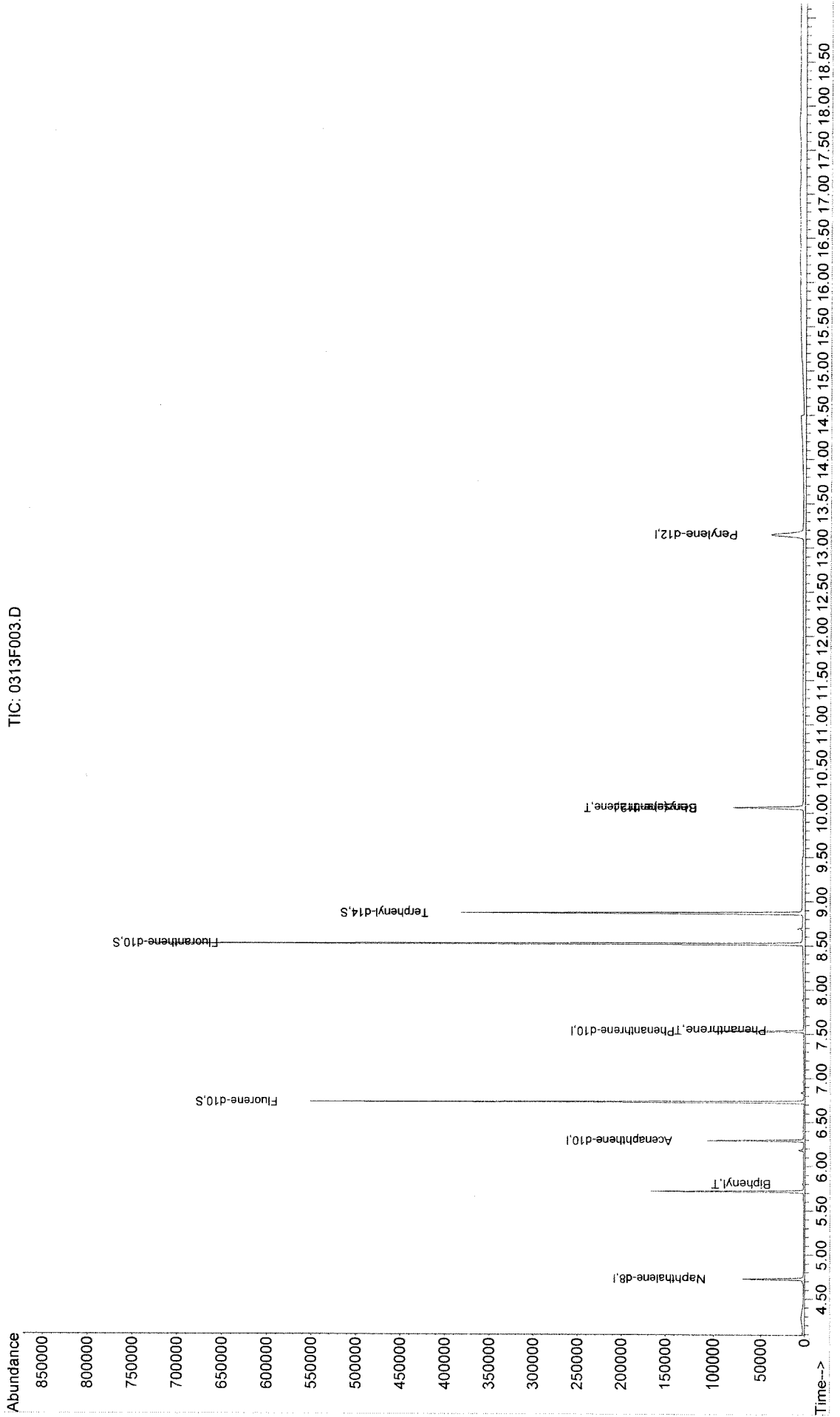
(#) = qualifier out of range (m) = manual integration
 0313F003.D 101317PAH.M Tue Mar 13 13:27:37 2018

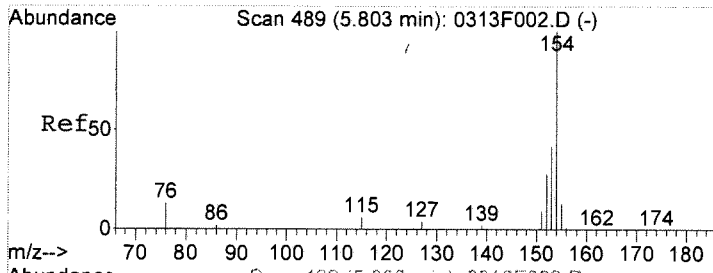
Data File : J:\MS14\DATA\031318\0313F003.D
Acq On : 13 Mar 2018 6:34 am
Sample : KWG1801347-3 MB
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:26 2018

Vial: 3
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Initial Calibration

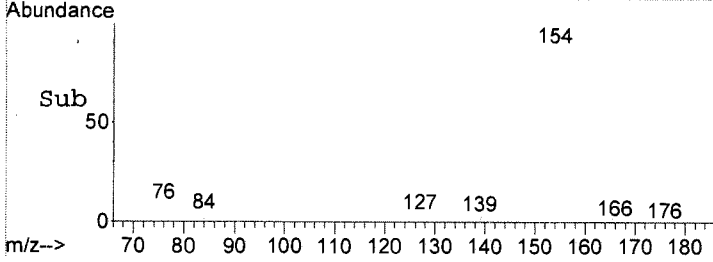
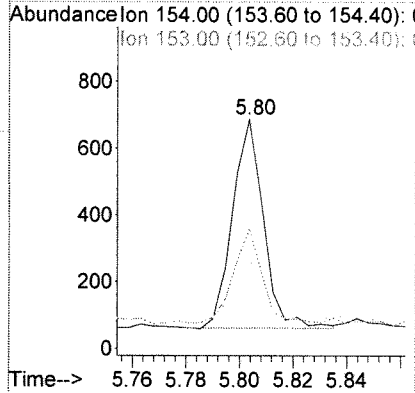
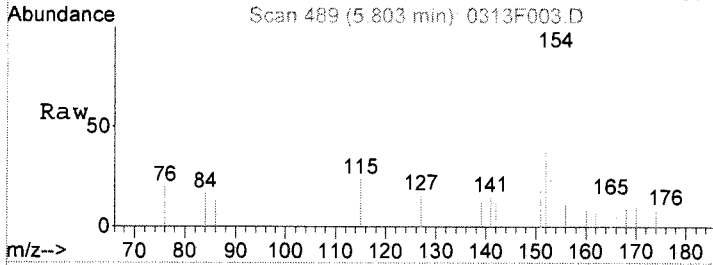
TIC: 0313F003.D





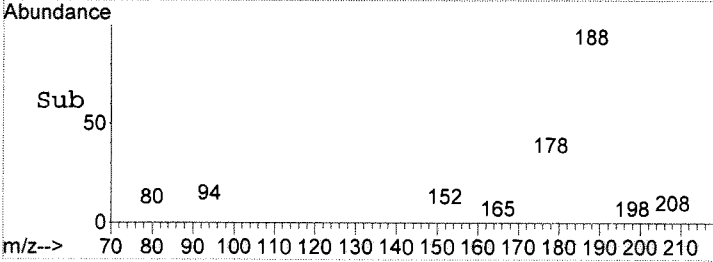
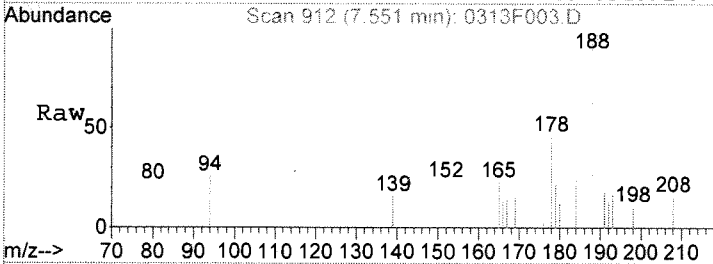
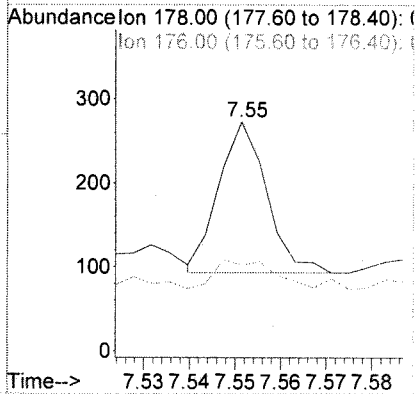
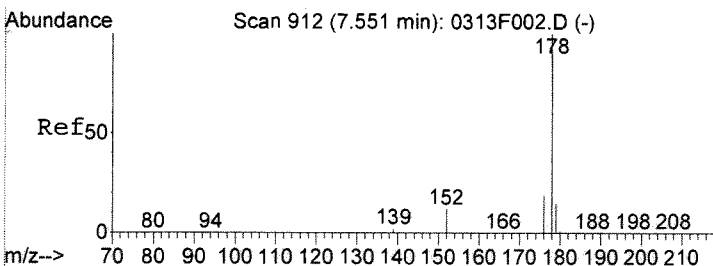
#6
 Biphenyl
 Concen: 1.99 ng/ml
 RT: 5.80 min Scan# 489
 Delta R.T. 0.00 min
 Lab File: 0313F003.D
 Acq: 13 Mar 2018 6:34 am

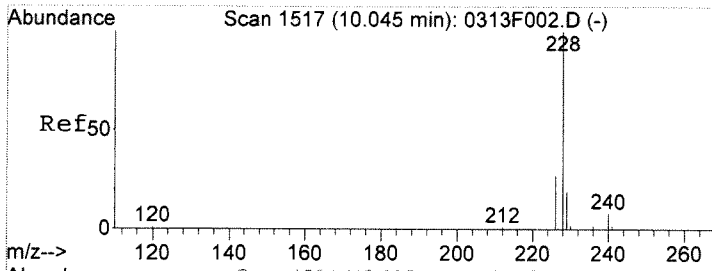
Tgt Ion	Resp	Lower	Upper
154	100		
153	45.1	11.3	71.3
152	28.9	8.5	48.5



#17
 Phenanthrene
 Concen: 0.38 ng/ml
 RT: 7.55 min Scan# 912
 Delta R.T. 0.00 min
 Lab File: 0313F003.D
 Acq: 13 Mar 2018 6:34 am

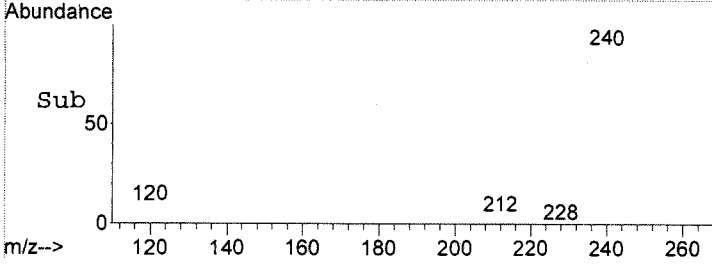
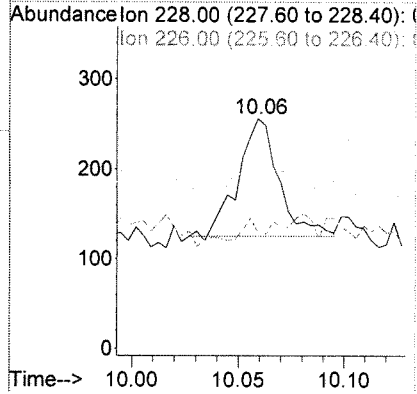
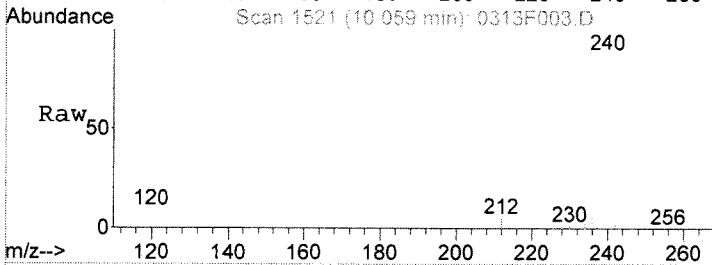
Tgt Ion	Resp	Lower	Upper
178	100		
176	15.6	0.0	49.6
179	15.6	0.0	35.1





#26
 Benz(a)anthracene
 Concen: 0.48 ng/ml
 RT: 10.06 min Scan# 1521
 Delta R.T. 0.01 min
 Lab File: 0313F003.D
 Acq: 13 Mar 2018 6:34 am

Tgt Ion	Ratio	Lower	Upper
228	100		
226	0.0	0.0	56.4
229	7.6	0.0	39.3

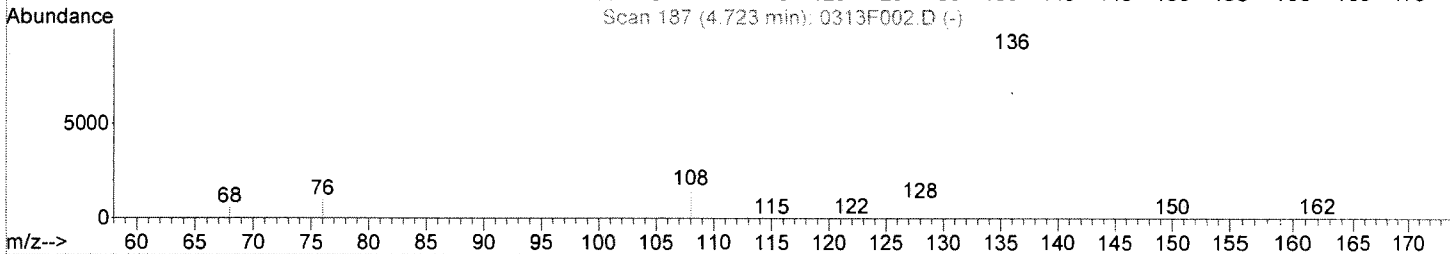
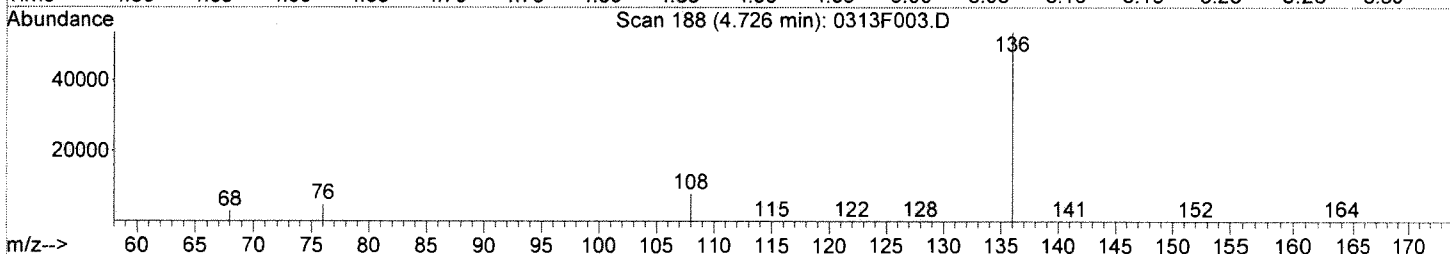
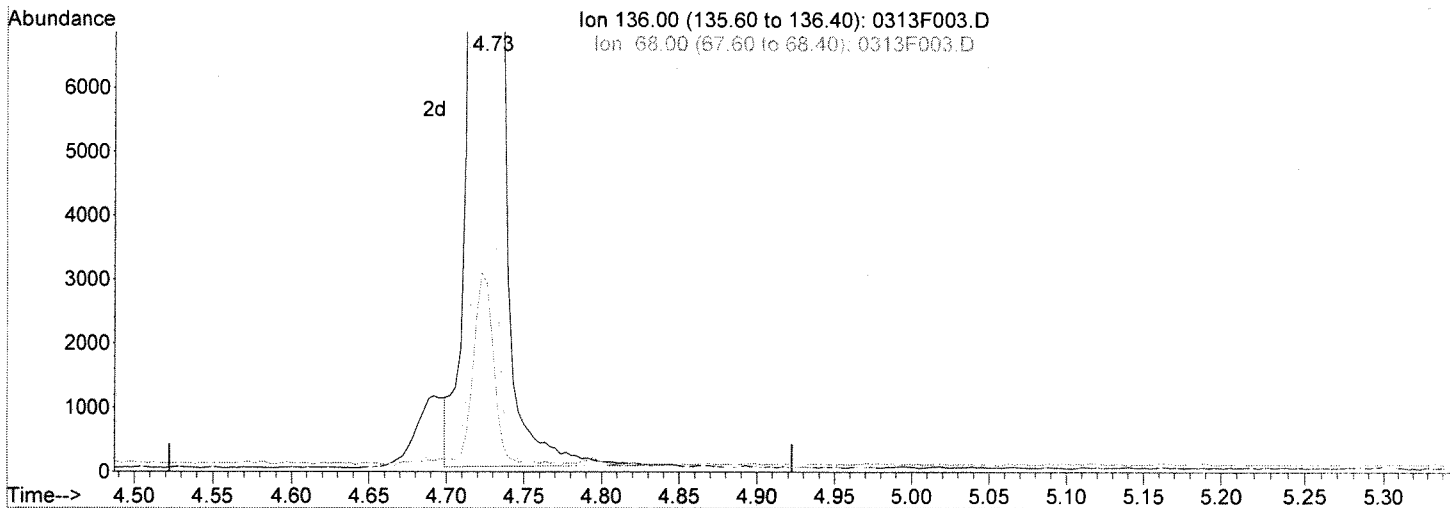


Data File : J:\MS14\DATA\031318\0313F003.D
 Acq On : 13 Mar 2018 6:34 am
 Sample : KWG1801347-3 MB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25 2018

Vial: 3
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F003.D

(1) Naphthalene-d8 (I)

4.73min 200.00ng/ml

response 48802

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.27
108.00	11.60	14.42
0.00	0.00	0.00

Manual Integration:

Before

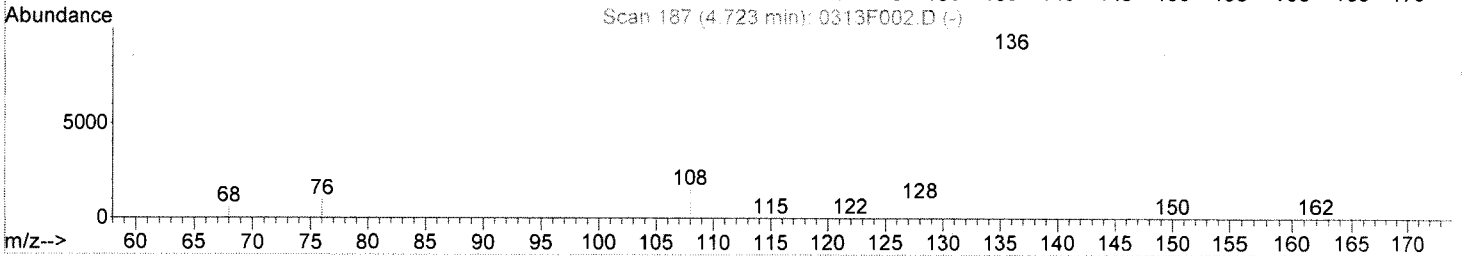
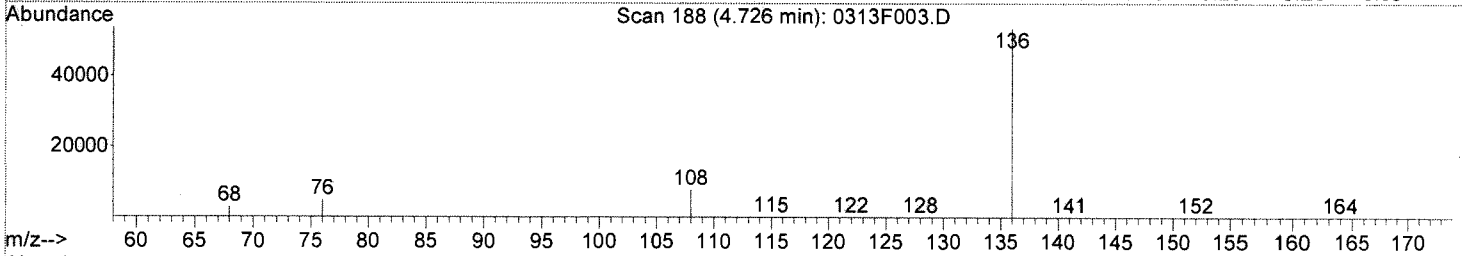
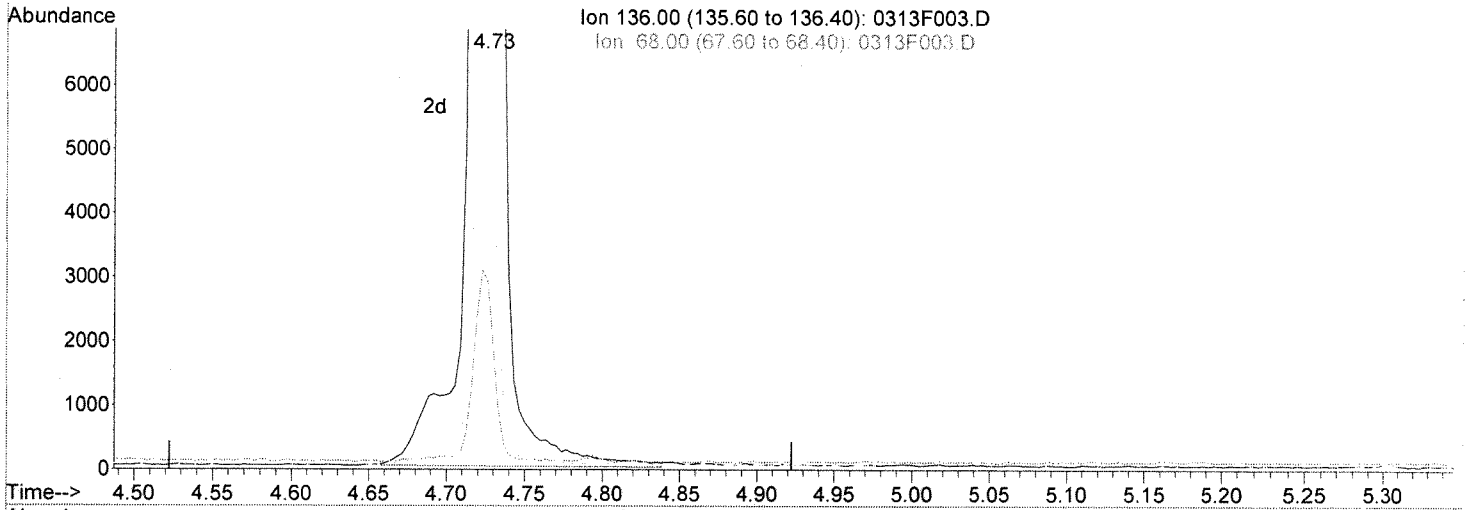
M *la*
03/13/18

Data File : J:\MS14\DATA\031318\0313F003.D
 Acq On : 13 Mar 2018 6:34 am
 Sample : KWG1801347-3 MB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25 2018

Vial: 3
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F003.D

(1) Naphthalene-d8 (l)
 4.73min 200.00ng/ml m
 response 50638

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.48
108.00	11.60	14.55
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 03/13/18

Exception Report

Data File: J:\MS20\DATA\022718\0227F010.D
Lab ID: K1801267-001
Run Type: SMPL
Matrix: SEDIMENT

Date Acquired: 02/27/2018 16:32
Date Quantitated: 02/28/2018 09:46
Batch ID: KWG1801193
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions


Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Above Highest ICAL Level	Fluoranthene	2029.52	NA	2000	see D1
	Pyrene	3337.10	NA	2000	

Primary Review: _____

Secondary Review: _____


FEB 28 2018

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F010.D	Instrument: MS20
Acqu Date: 02/27/2018 16:32	Quant Date: 02/28/2018 09:46
Run Type: SMPL	Vial: 10
Lab ID: K1801267-001	ListJoinID: LJ18598
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: SEDIMENT
Prod Code: 8270D PAH SIM	Collect Date: 02/06/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801193	Prep Lot: KWG1801007	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664502	Prep Date: 02/19/2018	

Quant Method: J:\MS20\METHODS\110217PAH.M	Calibration ID: CAL15594
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18598
Tune Ref: J:\MS20\DATA\022718\0227F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	98966	200.00	OK
2	Acenaphthene-d10	8.30	0.00	164	47749	200.00	OK
3	Phenanthrene-d10	11.51	0.01	188	93973	200.00	OK
4	Chrysene-d12	18.87	0.03	240	104332	200.00	OK
5	Perylene-d12	23.18	0.04	264	115060	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	9.31	0.00	0.00	176	33236	108.91	54	38-104	OK
3	Fluoranthene-d10	14.75	0.08	0.01	212	65936	121.55	61	39-109	OK
4	Terphenyl-d14	16.01	0.03	0.00	244	58145	130.72	65	38-113	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	31406	62.12	94		
1	2-Methylnaphthalene	6.76		0.00	142	7375	21.84	33		
2	Acenaphthylene	8.06		0.00	152	18004	37.21	56		
2	Acenaphthene	8.36		0.00	154	11950	40.06	61		
2	Dibenzofuran	8.69		0.00	168	15599	34.76	53		
2	Fluorene	9.37		0.00	166	20179	56.51	86		
3	Phenanthrene	11.56		0.00	178	135580	246.43	370		
3	Anthracene	11.69	0.01	0.00	178	132217	258.13	390		
3	Fluoranthene	14.80	0.07	0.00	202	1215417	2,030	3100	E	
4	Pyrene	15.38	0.05	0.00	202	1964751	3,337	5100	E	
4	Benz(a)anthracene	18.84	0.01	0.00	228	635876	1,123	1700		
4	Chrysene	18.95	0.03	0.00	228	755390	1,338	2000		
5	Benzo(b)fluoranthene	21.95	0.03	0.00	252	977591	1,489	2300		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS20\DATA\022718\0227F010.D	Instrument:	MS20
Acqu Date:	02/27/2018 16:32	Quant Date:	02/28/2018 09:46
Run Type:	SMPL	ListJoinID:	LJ18598
Lab ID:	K1801267-001	Vial:	10
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	22.04	0.03	0.00	252	348458	525.58	800		
5	Benzo(a)pyrene	22.98	0.04	0.00	252	546303	965.14	1500		
5	Indeno(1,2,3-cd)pyrene	27.02	0.02	0.00	276	259184	443.34	670		
5	Dibenz(a,h)anthracene	27.14	0.02	0.00	278	73786	121.84	180		
5	Benzo(g,h,i)perylene	27.58	0.01	0.00	276	243201	347.19	530		

Prep Amount: 10.372 g **Dilution:** 1.0
Prep Final Vol: 10 mL **Unit Factor:** 1
Solids: 63.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F010.D
 Acq On : 27 Feb 2018 4:32 pm
 Sample : K1801267-001
 Misc :

Vial: 10
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:22 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	98966	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.30	164	47749	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.51	188	93973	200.00	ng/ml	0.00
38) Chrysene-d12	18.87	240	104332	200.00	ng/ml	0.00
51) Perylene-d12	23.18	264	115060	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	28531	115.16	ng/ml	-0.01
Spiked Amount 1000.000			Recovery =	11.52%		
17) Fluorene-d10	9.31	176	33236	108.91	ng/ml	-0.02
Spiked Amount 1000.000			Recovery =	10.89%		
37) Fluoranthene-d10	14.75	212	65936	121.55	ng/ml	0.05
Spiked Amount 1000.000			Recovery =	12.15%		
44) Terphenyl-d14	16.01	244	58145	130.72	ng/ml	0.00
Spiked Amount 1000.000			Recovery =	13.07%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	6.00	128	31406	62.12	ng/ml	99
4) 2-Methylnaphthalene	6.76	142	7375	21.84	ng/ml	90
5) 1-Methylnaphthalene	6.89	142	4642	15.44	ng/ml	85
6) Biphenyl	7.40	154	3976	9.83	ng/ml	96
7) 2,6-Dimethylnaphthalene	7.63	156	5031	17.18	ng/ml	99
13) Acenaphthylene	8.06	152	18004	37.21	ng/ml	95
14) Acenaphthene	8.36	154	11950	40.06	ng/ml	98
15) Dibenzofuran	8.69	168	15599	34.76	ng/ml	78
16) 2,3,5-Trimethylnaphthalene	9.08	170	6669m	24.21	ng/ml	
18) Fluorene	9.37	166	20179	56.51	ng/ml	98
23) Dibenzothiophene	11.25	184	12154	24.23	ng/ml	95
28) Phenanthrene	11.56	178	135580	246.43	ng/ml	99
29) Anthracene	11.69	178	132217	258.13	ng/ml	94
30) Carbazole	12.17	167	13478m	30.11	ng/ml	
36) Fluoranthene	14.80	202	1215417	2029.52	ng/ml	100
39) Pyrene	15.38	202	1964751	3337.10	ng/ml	90
45) Benz(a)anthracene	18.84	228	635876	1122.77	ng/ml	98
46) Chrysene	18.95	228	755390	1338.21	ng/ml	100
52) Benzo(b)fluoranthene	21.95	252	977591	1489.44	ng/ml	97
53) Benzo(k)fluoranthene	22.04	252	348458	525.58	ng/ml	98
54) Benzo(e)pyrene	22.81	252	441739	693.09	ng/ml	96
55) Benzo(a)pyrene	22.98	252	546303	965.14	ng/ml	100
56) Perylene	23.27	252	151837	254.46	ng/ml	98
57) Indeno(1,2,3-cd)pyrene	27.02	276	259184	443.34	ng/ml	97
58) Dibenz(a,h)anthracene	27.14	278	73786	121.84	ng/ml	97
59) Benzo(g,h,i)perylene	27.58	276	243201	347.19	ng/ml	97

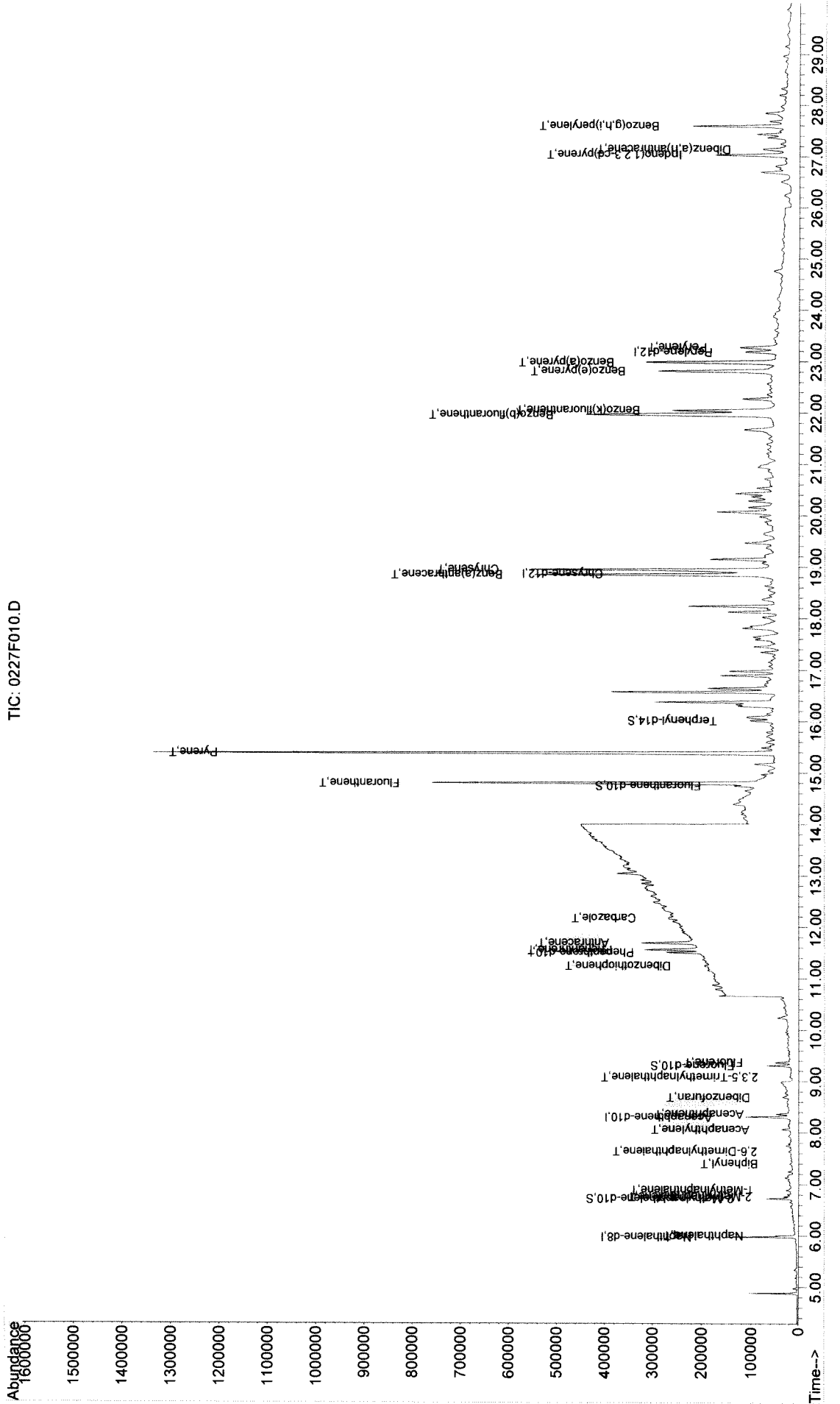
(#) = qualifier out of range (m) = manual integration
 0227F010.D 110217PAH.M Wed Feb 28 09:47:34 2018

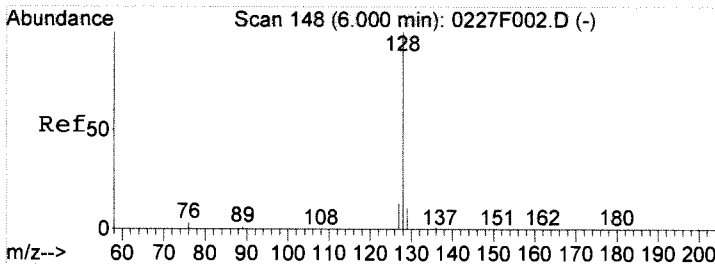
Data File : J:\MS20\DATA\022718\0227F010.D
 Acq On : 27 Feb 2018 4:32 pm
 Sample : K1801267-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:46 2018

Vial: 10
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: 110217PAH.RES

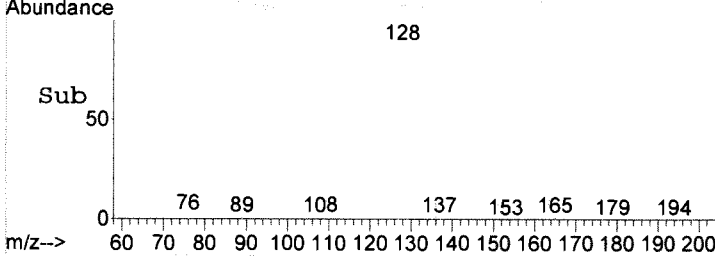
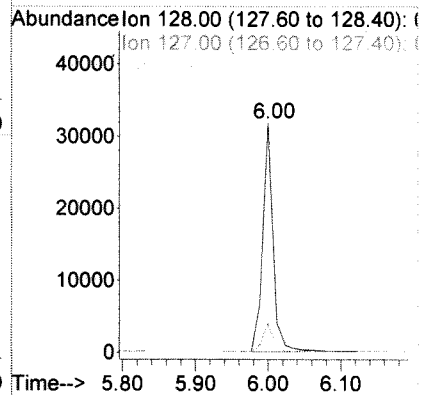
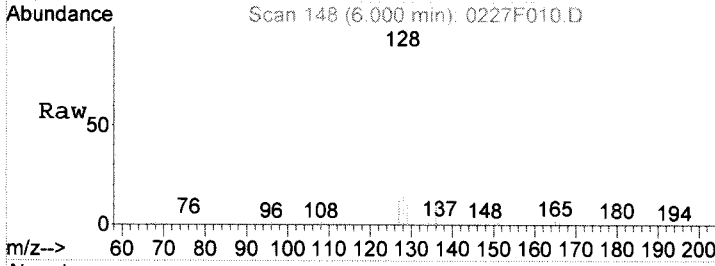
Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration





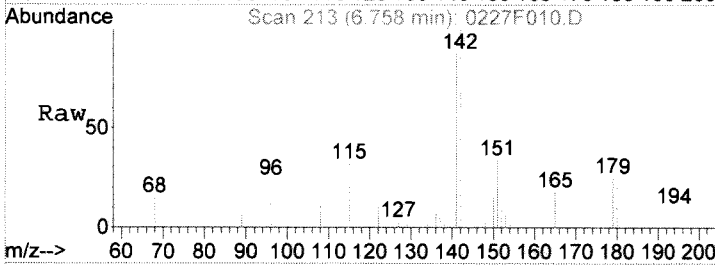
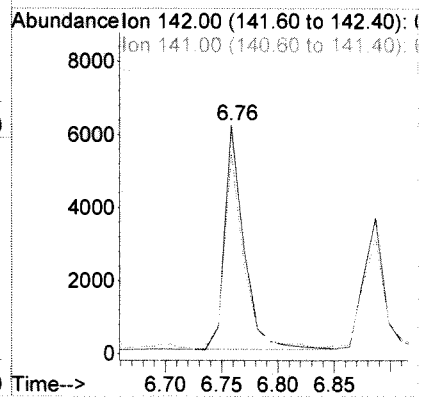
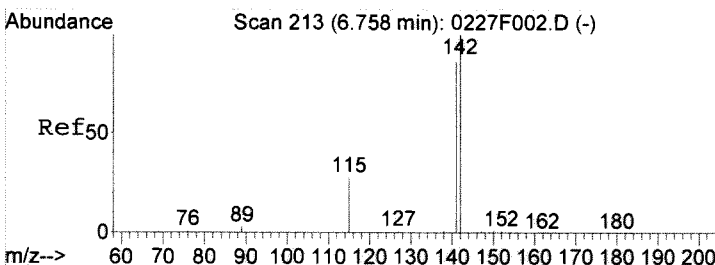
#2
 Naphthalene
 Concen: 62.12 ng/ml
 RT: 6.00 min Scan# 148
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

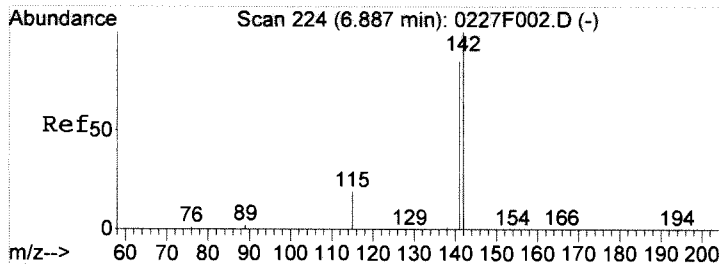
Tgt Ion	Resp	Lower	Upper
128	100		
127	12.7	0.0	42.2
129	11.1	0.0	41.2



#4
 2-Methylnaphthalene
 Concen: 21.84 ng/ml
 RT: 6.76 min Scan# 213
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

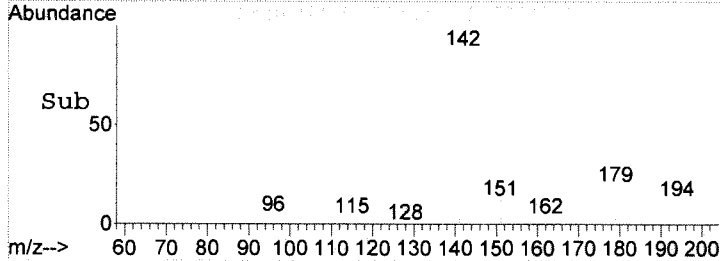
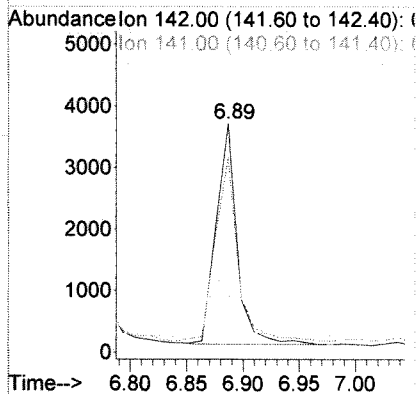
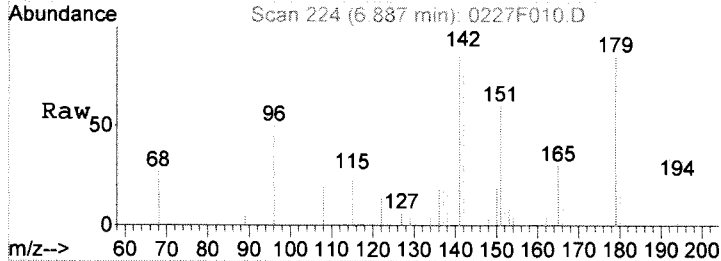
Tgt Ion	Resp	Lower	Upper
142	100		
141	86.9	52.0	112.0
115	29.5	0.0	45.6





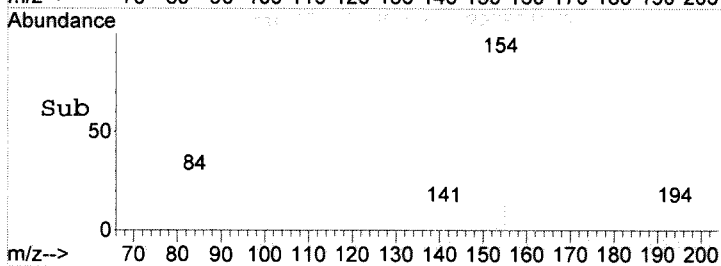
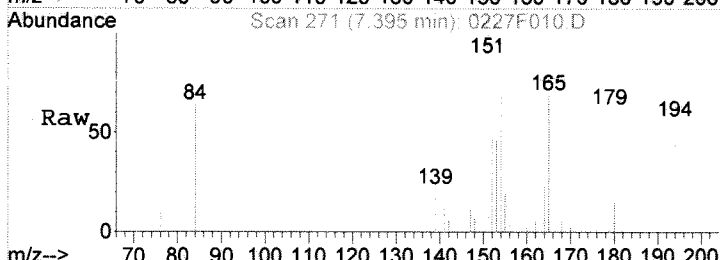
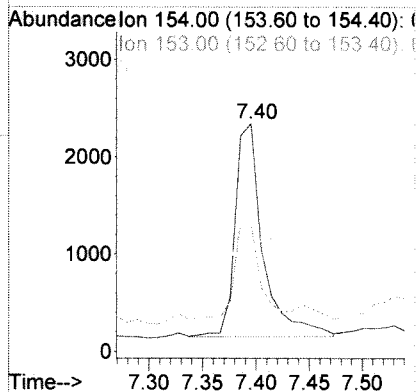
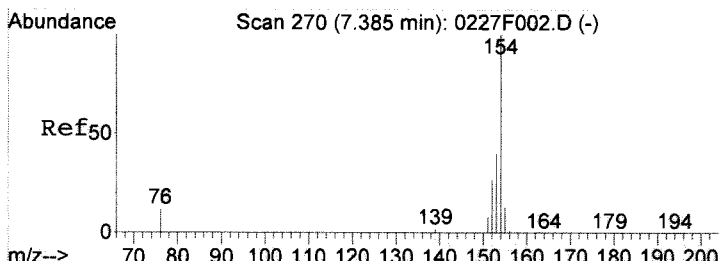
#5
 1-Methylnaphthalene
 Concen: 15.44 ng/ml
 RT: 6.89 min Scan# 224
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

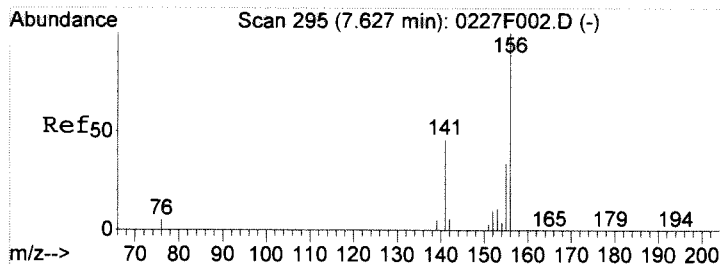
Tgt Ion	Ratio	Lower	Upper
142	100		
141	82.8	61.1	121.1
115	18.9	7.1	67.1



#6
 Biphenyl
 Concen: 9.83 ng/ml
 RT: 7.40 min Scan# 271
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

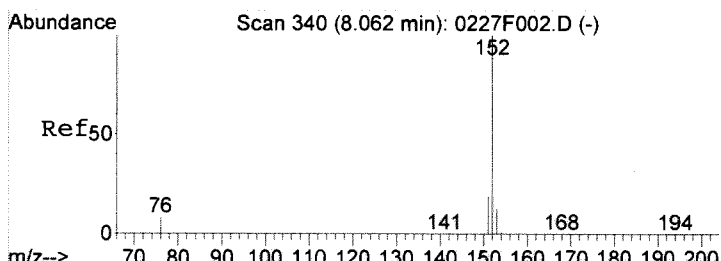
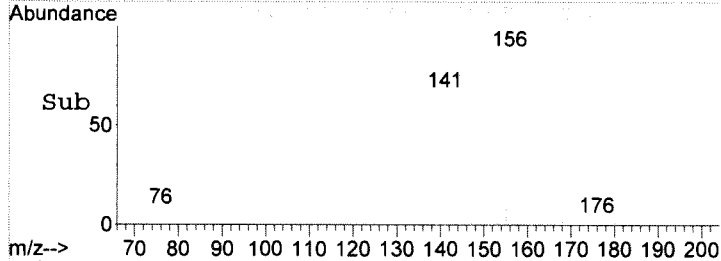
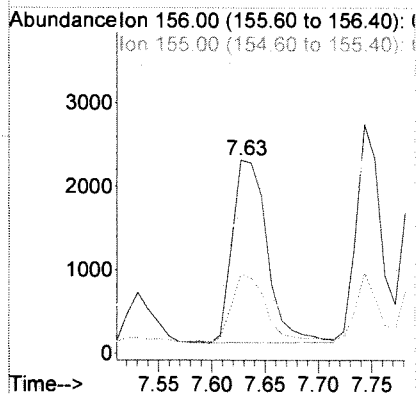
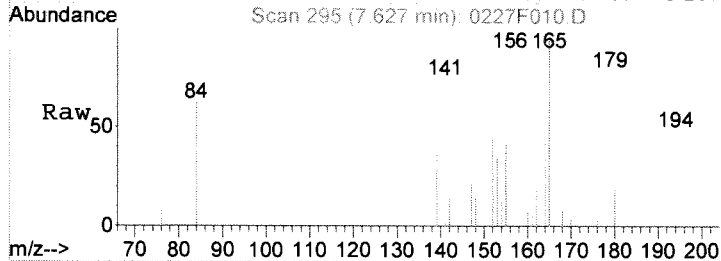
Tgt Ion	Ratio	Lower	Upper
154	100		
153	44.1	10.6	70.6
152	26.6	0.0	57.9





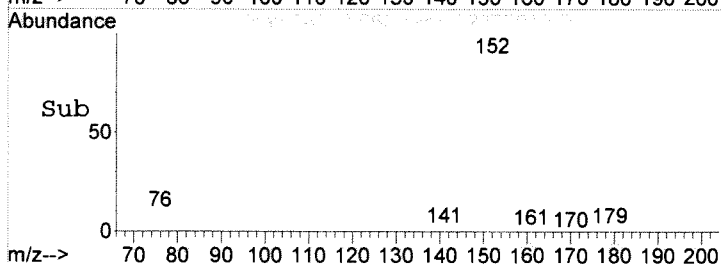
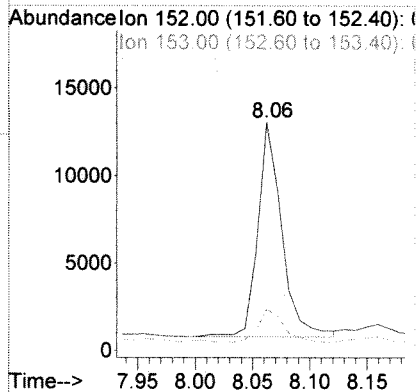
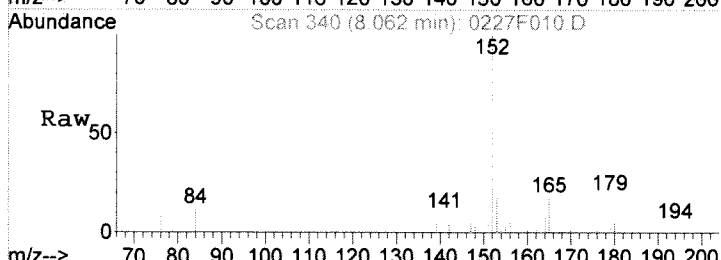
#7
 2,6-Dimethylnaphthalene
 Concen: 17.18 ng/ml
 RT: 7.63 min Scan# 295
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

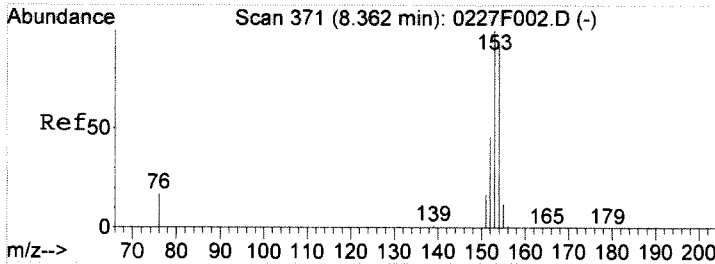
Tgt Ion	Ratio	Lower	Upper
156	100		
155	36.9	5.1	65.1
141	62.9	32.5	92.5



#13
 Acenaphthylene
 Concen: 37.21 ng/ml
 RT: 8.06 min Scan# 340
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

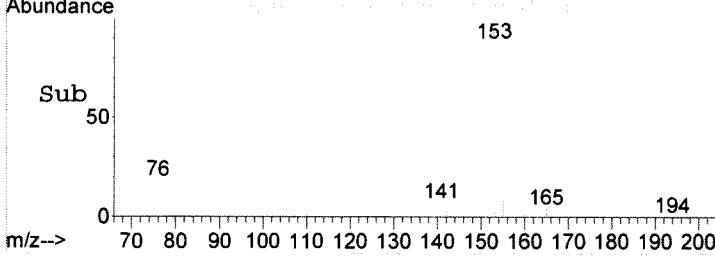
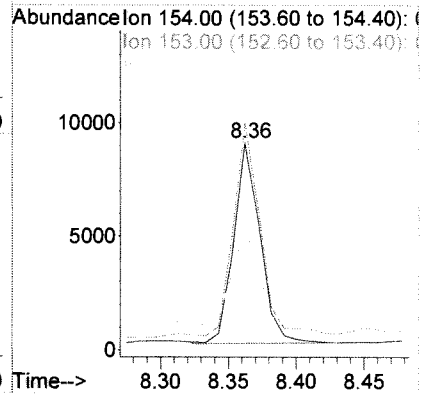
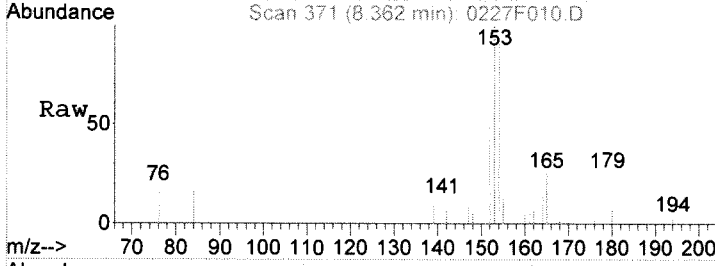
Tgt Ion	Ratio	Lower	Upper
152	100		
153	15.5	0.0	43.4
151	21.2	0.0	49.3





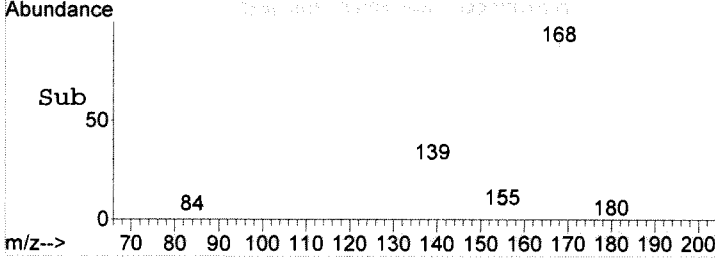
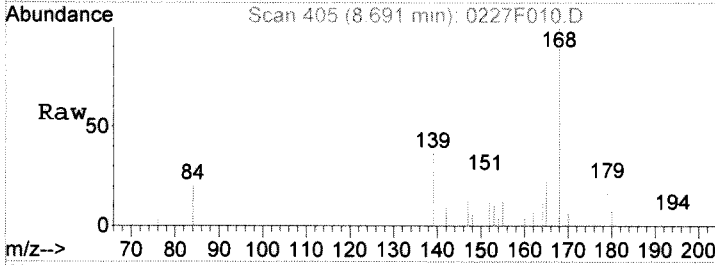
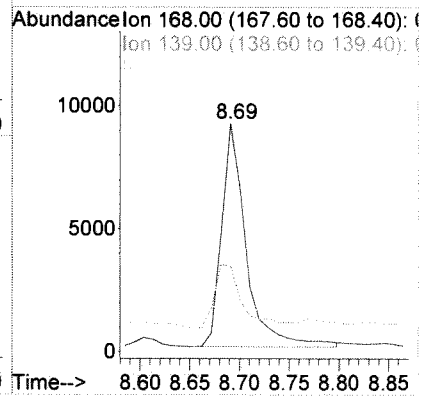
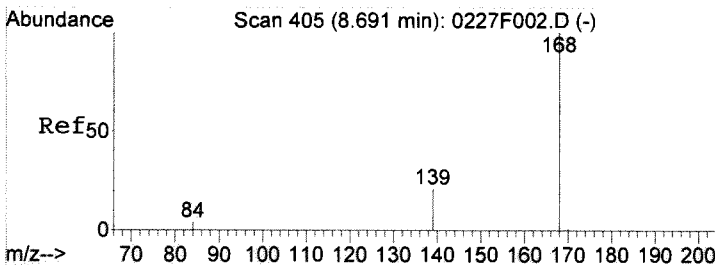
#14
 Acenaphthene
 Concen: 40.06 ng/ml
 RT: 8.36 min Scan# 371
 Delta R.T. -0.02 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

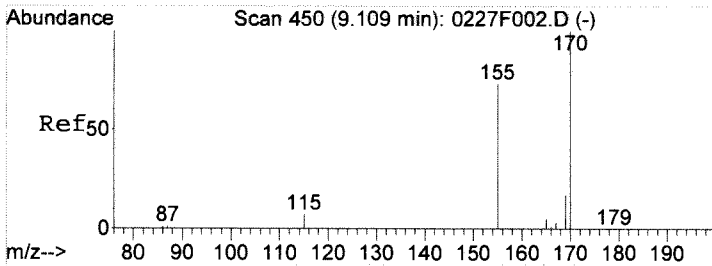
Tgt Ion	Ratio	Lower	Upper
154	100		
153	106.8	74.4	134.4
152	48.7	17.6	77.6



#15
 Dibenzofuran
 Concen: 34.76 ng/ml
 RT: 8.69 min Scan# 405
 Delta R.T. -0.02 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

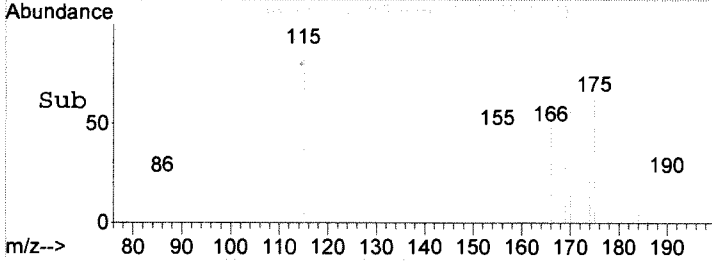
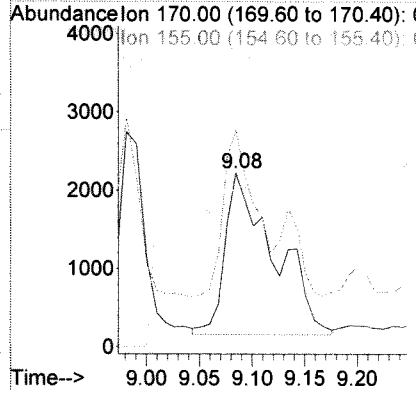
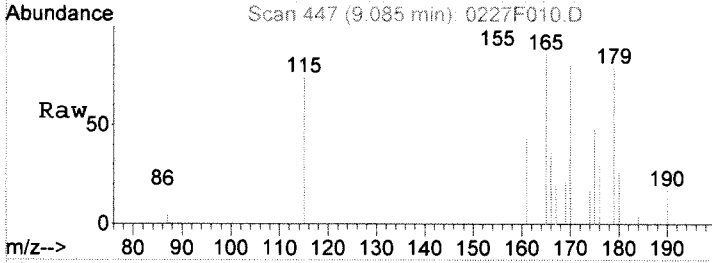
Tgt Ion	Ratio	Lower	Upper
168	100		
139	27.7	0.0	46.9
84	4.3	0.0	32.7





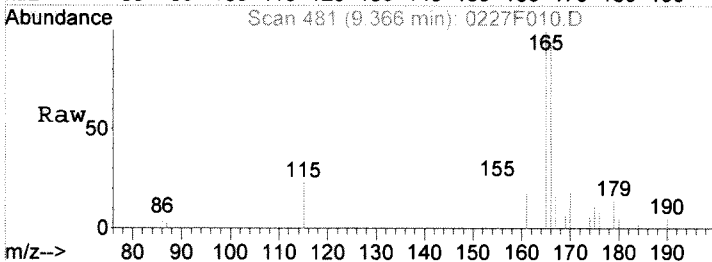
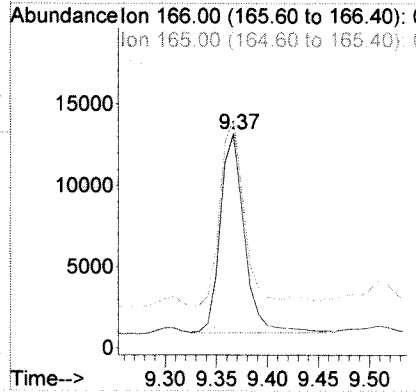
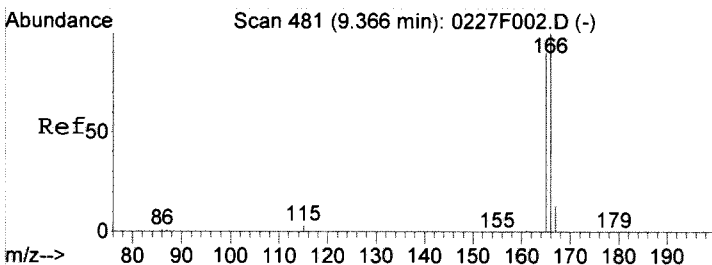
#16
 2,3,5-Trimethylnaphthalene
 Concen: 24.21 ng/ml m
 RT: 9.08 min Scan# 447
 Delta R.T. -0.04 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

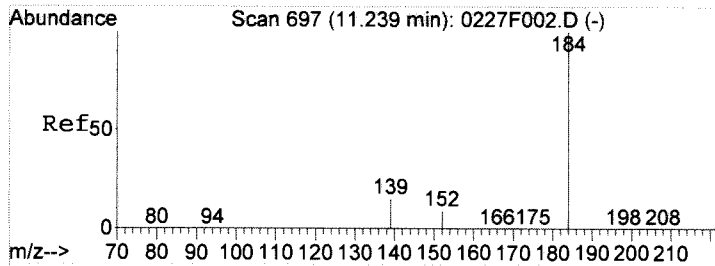
Tgt Ion	Resp	Lower	Upper
170	100		
155	124.4	36.5	96.5#
115	92.5	0.0	36.6#



#18
 Fluorene
 Concen: 56.51 ng/ml
 RT: 9.37 min Scan# 481
 Delta R.T. -0.02 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

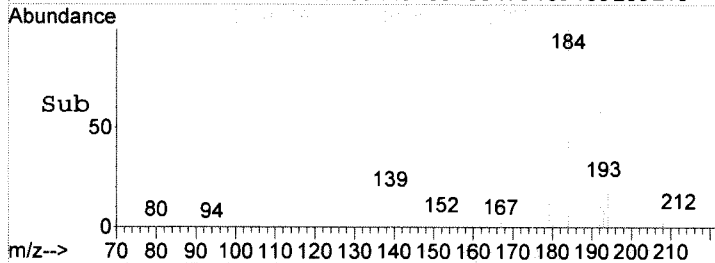
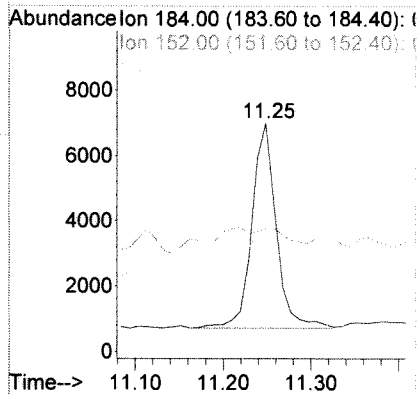
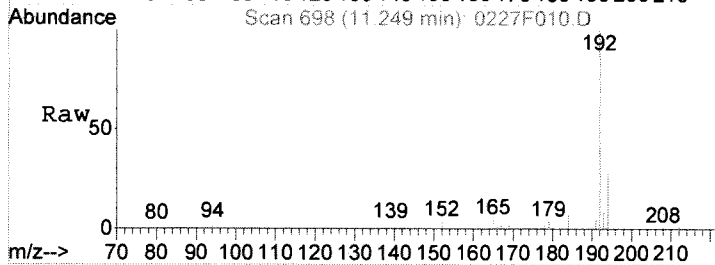
Tgt Ion	Resp	Lower	Upper
166	100		
165	94.5	62.7	122.7
167	15.4	0.0	43.3





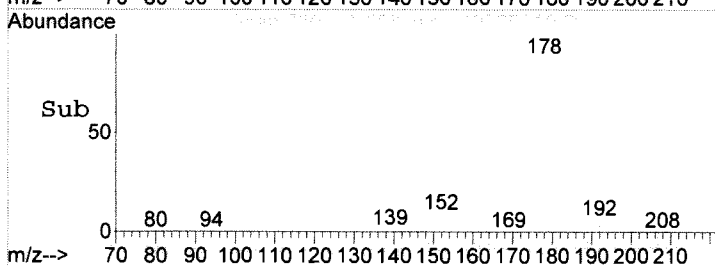
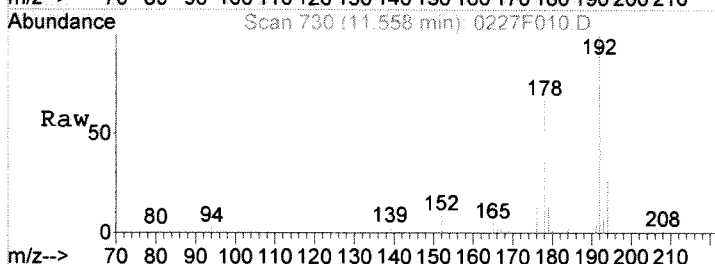
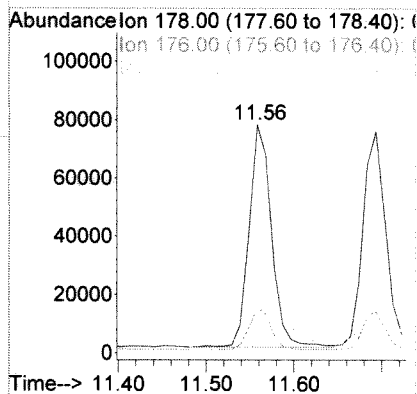
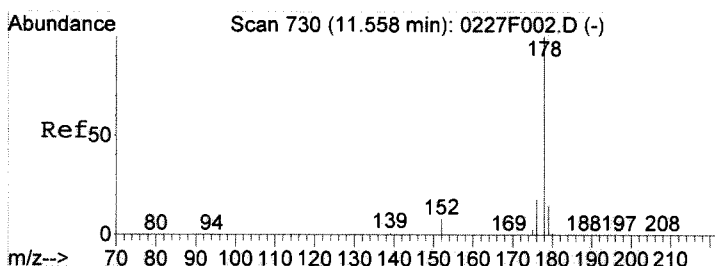
#23
 Dibenzothiophene
 Concen: 24.23 ng/ml
 RT: 11.25 min Scan# 698
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

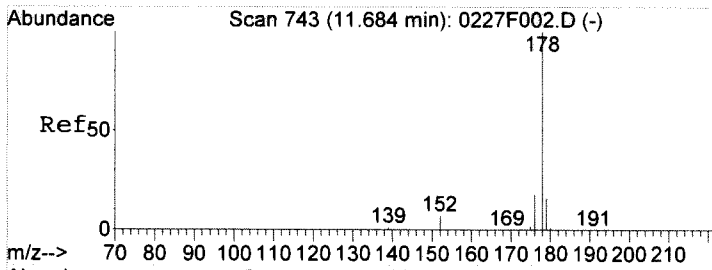
Tgt Ion	Resp	Lower	Upper
184	12154		
152	5.1	0.0	39.1
139	15.7	0.0	45.2



#28
 Phenanthrene
 Concen: 246.43 ng/ml
 RT: 11.56 min Scan# 730
 Delta R.T. -0.02 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

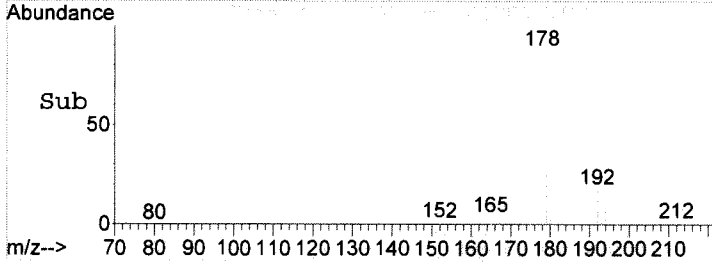
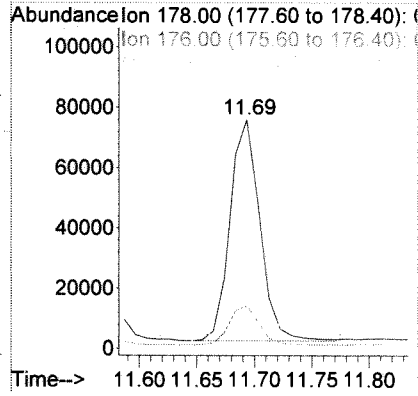
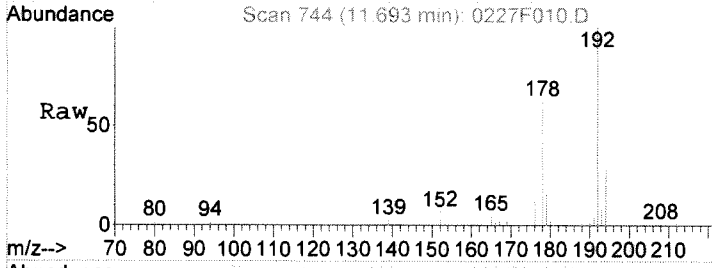
Tgt Ion	Resp	Lower	Upper
178	135580		
176	18.7	0.0	48.7
179	14.7	0.0	45.5





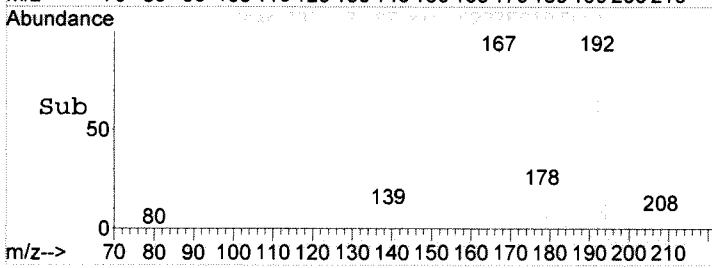
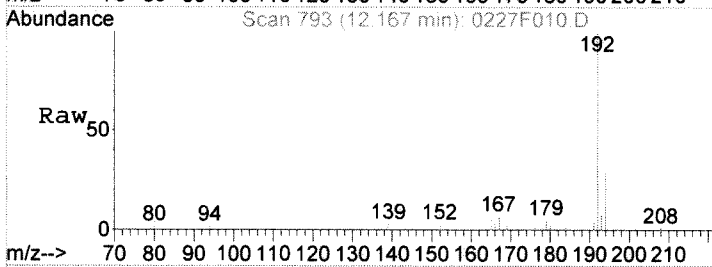
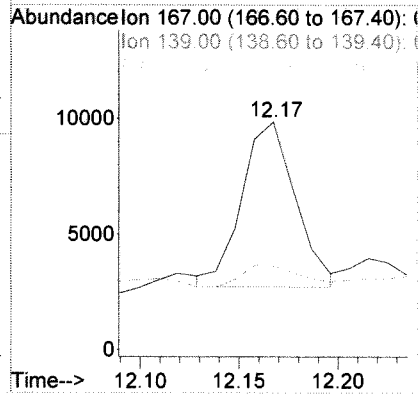
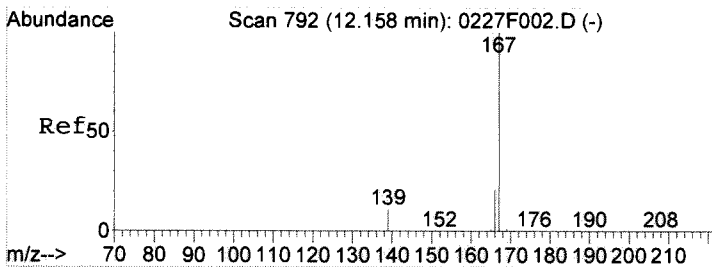
#29
 Anthracene
 Concen: 258.13 ng/ml
 RT: 11.69 min Scan# 744
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

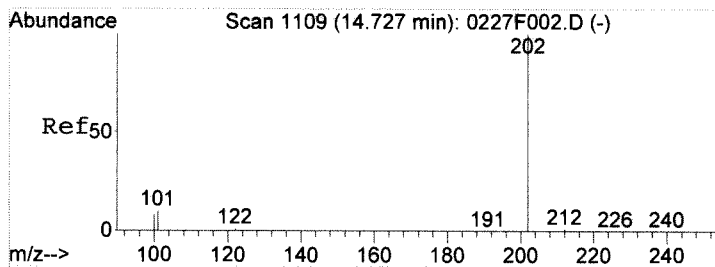
Tgt Ion	Ratio	Lower	Upper
178	100		
176	17.6	0.0	48.4
179	20.1	0.0	45.4



#30
 Carbazole
 Concen: 30.11 ng/ml m
 RT: 12.17 min Scan# 793
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

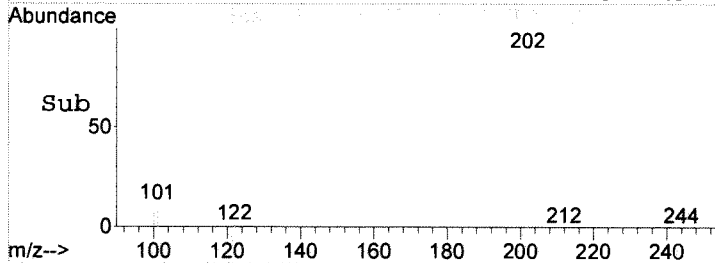
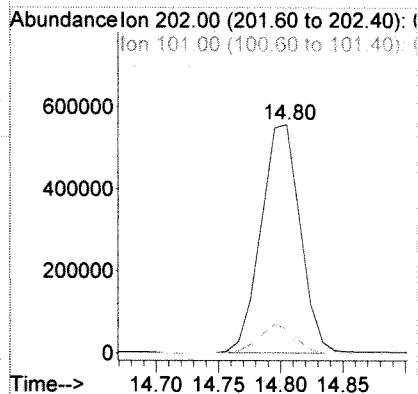
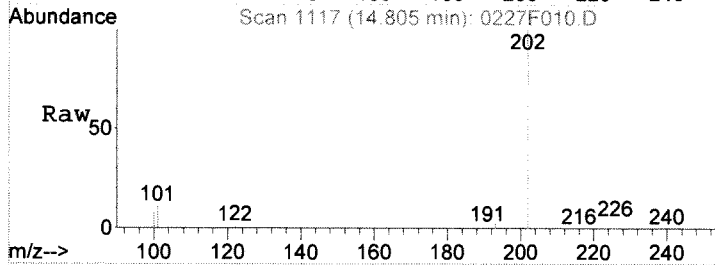
Tgt Ion	Ratio	Lower	Upper
167	100		
139	36.7	0.0	41.5
166	44.5	0.0	50.7





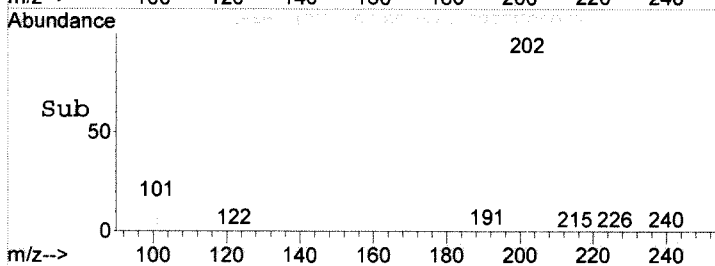
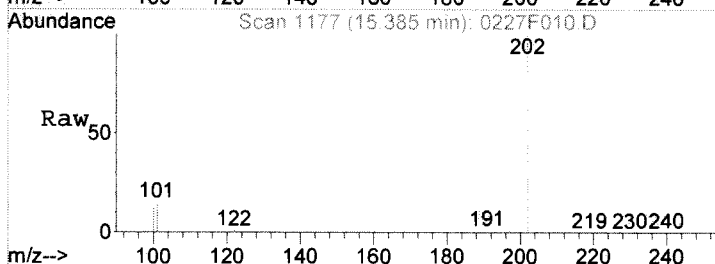
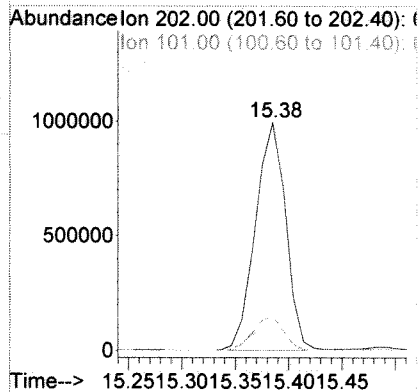
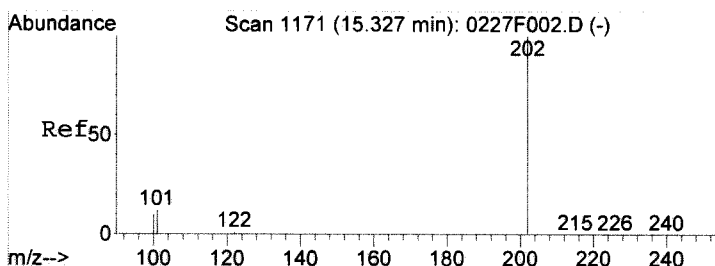
#36
 Fluoranthene
 Concen: 2029.52 ng/ml
 RT: 14.80 min Scan# 1117
 Delta R.T. 0.06 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

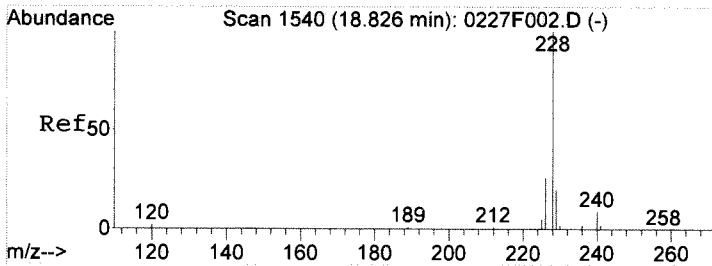
Tgt Ion	Ratio	Lower	Upper
202	100		
101	10.7	0.0	40.5
100	7.9	0.0	37.9



#39
 Pyrene
 Concen: 3337.10 ng/ml
 RT: 15.38 min Scan# 1177
 Delta R.T. 0.04 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

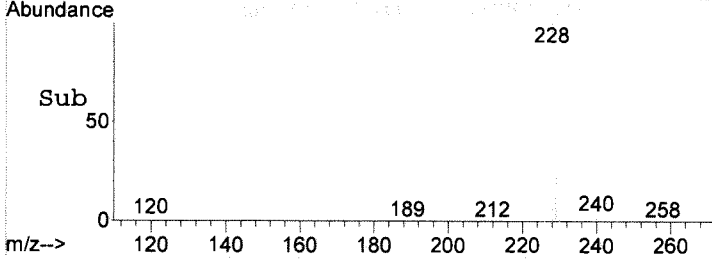
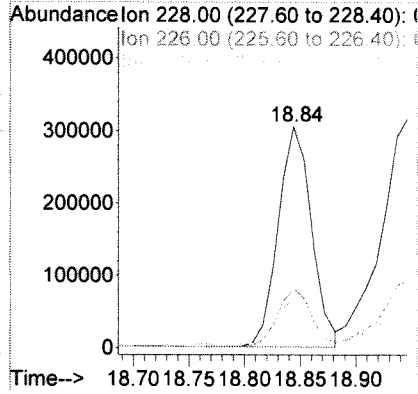
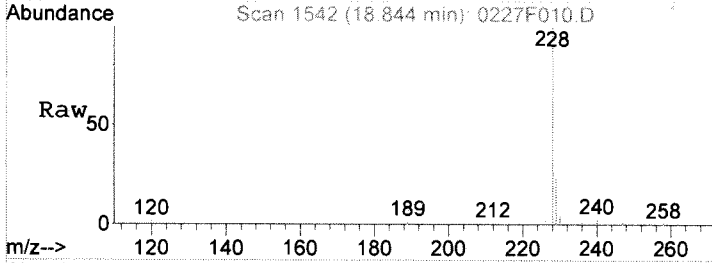
Tgt Ion	Ratio	Lower	Upper
202	100		
101	15.1	0.0	40.9
100	11.8	0.0	38.9





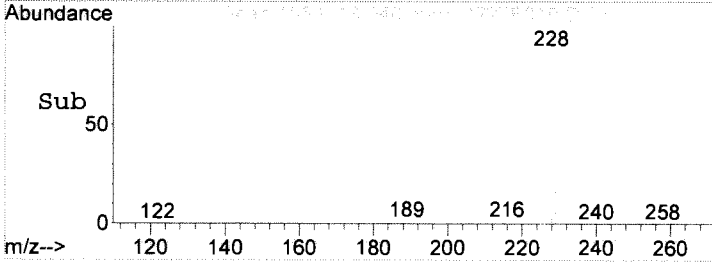
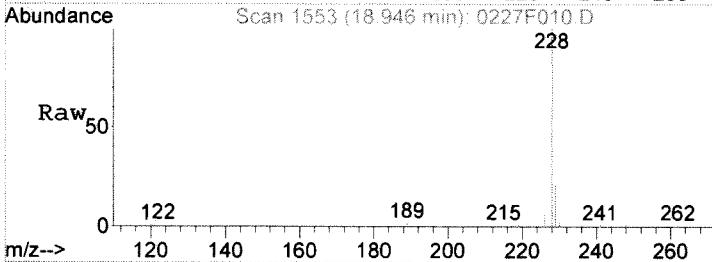
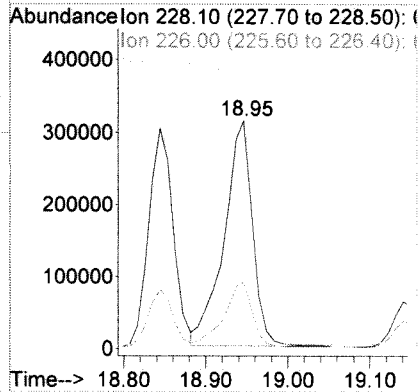
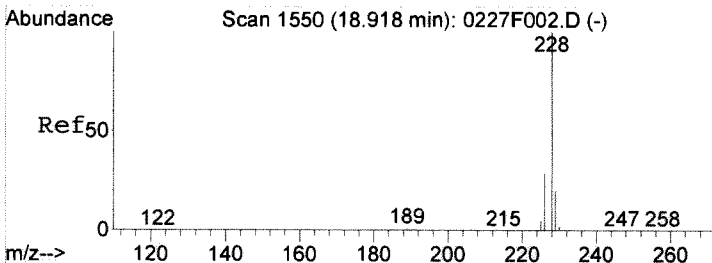
#45
 Benz (a) anthracene
 Concen: 1122.77 ng/ml
 RT: 18.84 min Scan# 1542
 Delta R.T. 0.00 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

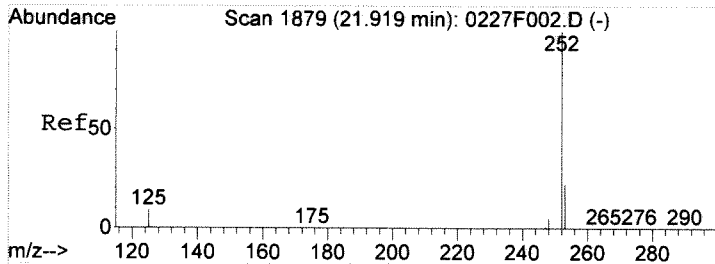
Tgt Ion	Ratio	Lower	Upper
228	100		
226	26.3	0.0	56.6
229	21.3	0.0	50.0



#46
 Chrysene
 Concen: 1338.21 ng/ml
 RT: 18.95 min Scan# 1553
 Delta R.T. 0.00 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

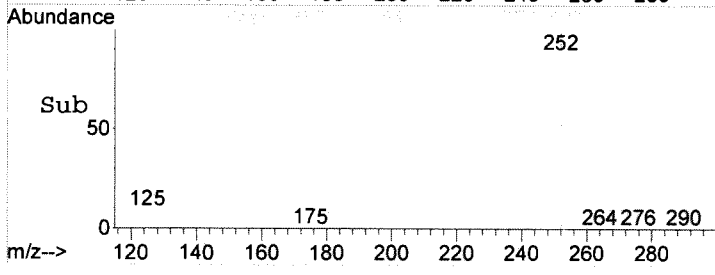
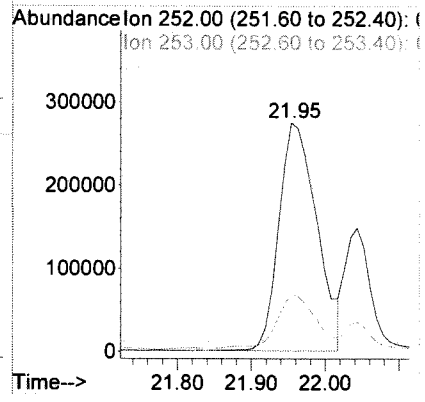
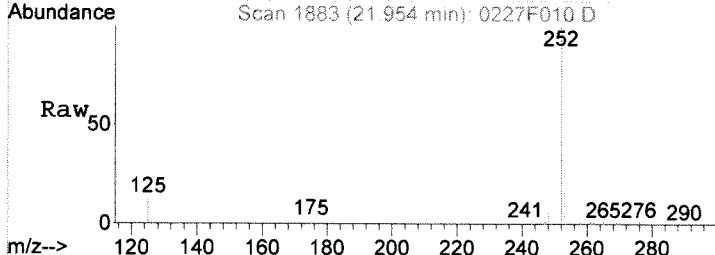
Tgt Ion	Ratio	Lower	Upper
228	100		
226	28.4	0.0	58.4
229	19.7	0.0	49.9





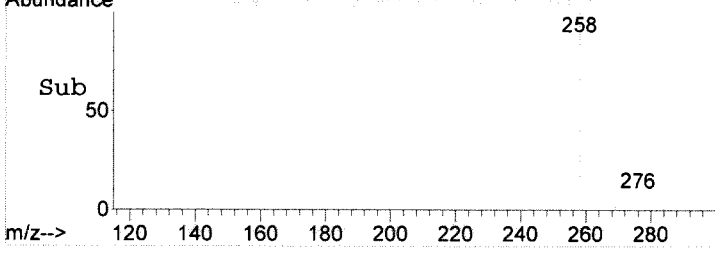
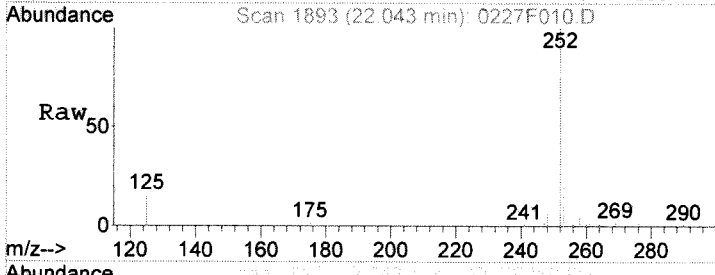
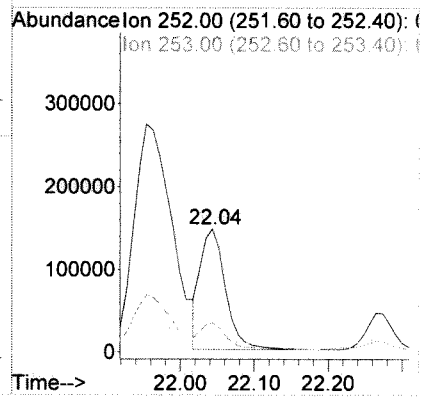
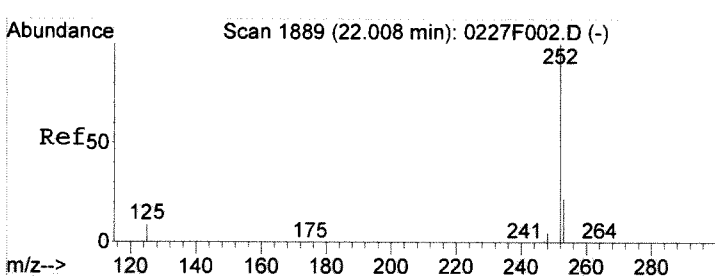
#52
 Benzo (b) fluoranthene
 Concen: 1489.44 ng/ml
 RT: 21.95 min Scan# 1883
 Delta R.T. 0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

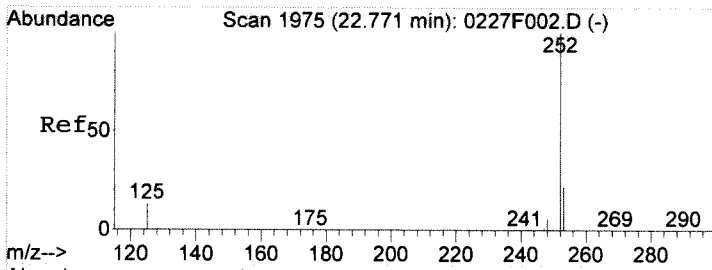
Tgt Ion	Resp	Lower	Upper
252	100		
253	23.6	0.0	51.9
125	9.0	0.0	38.2



#53
 Benzo (k) fluoranthene
 Concen: 525.58 ng/ml
 RT: 22.04 min Scan# 1893
 Delta R.T. 0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

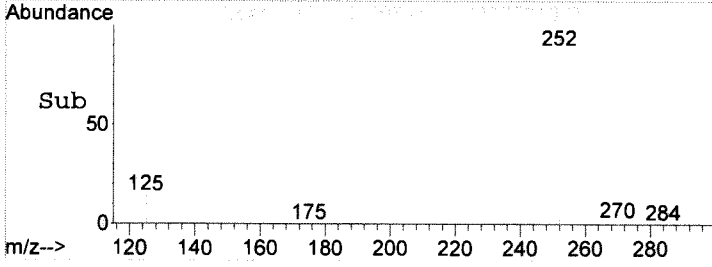
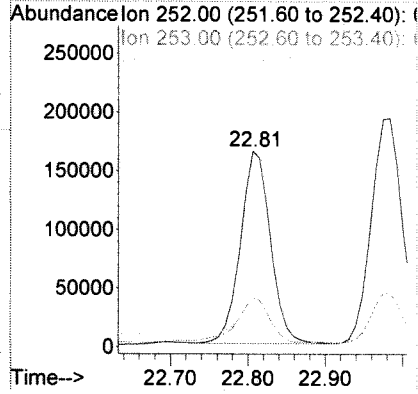
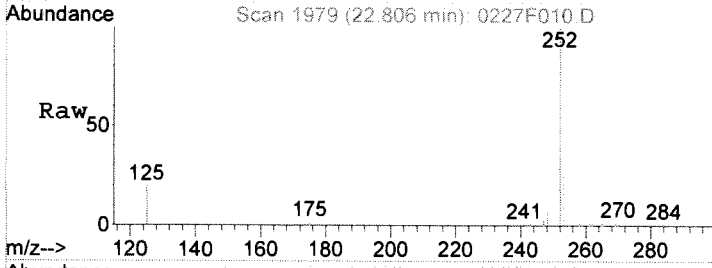
Tgt Ion	Resp	Lower	Upper
252	100		
253	20.8	0.0	51.9
125	8.8	0.0	38.7





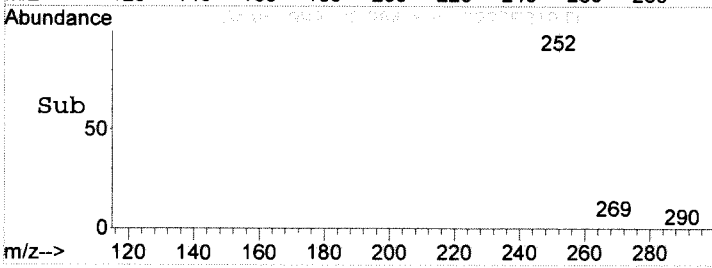
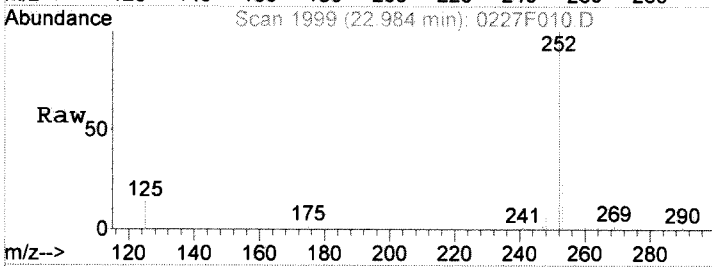
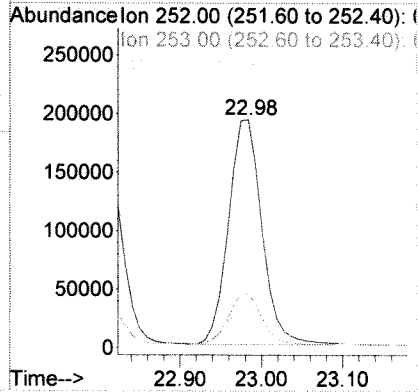
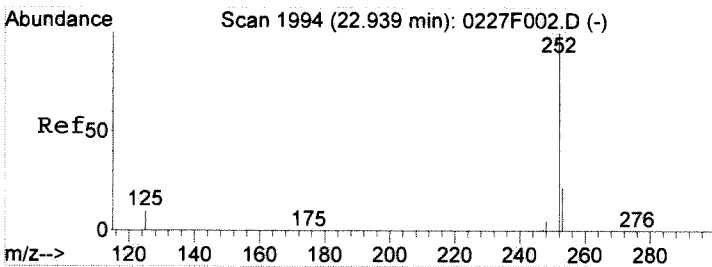
#54
 Benzo (e) pyrene
 Concen: 693.09 ng/ml
 RT: 22.81 min Scan# 1979
 Delta R.T. 0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

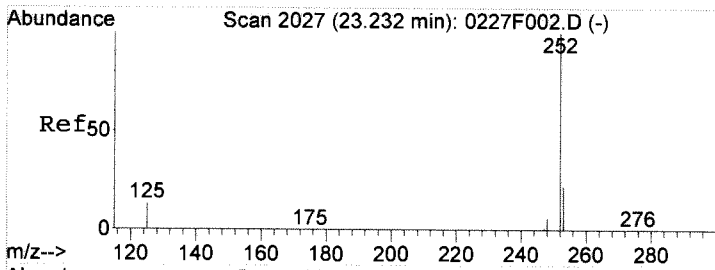
Tgt Ion	Ratio	Lower	Upper
252	100		
253	23.3	0.0	51.6
125	13.8	0.0	42.3



#55
 Benzo (a) pyrene
 Concen: 965.14 ng/ml
 RT: 22.98 min Scan# 1999
 Delta R.T. 0.02 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

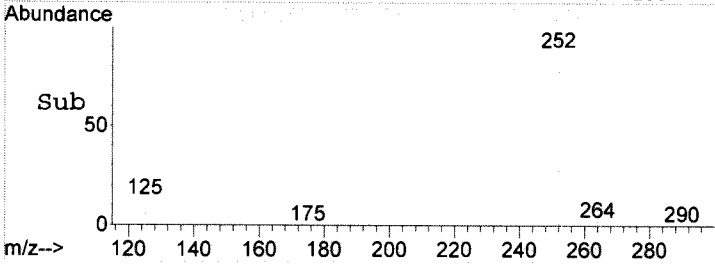
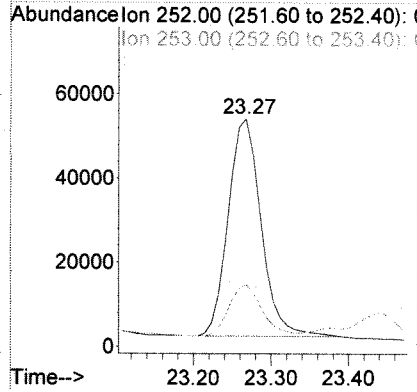
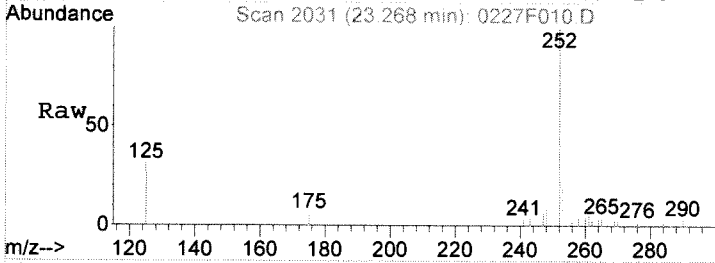
Tgt Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	52.1
125	9.2	0.0	39.5





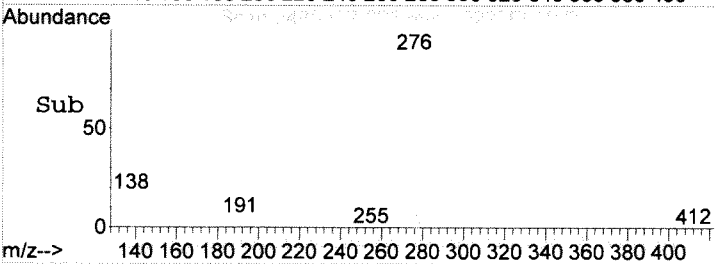
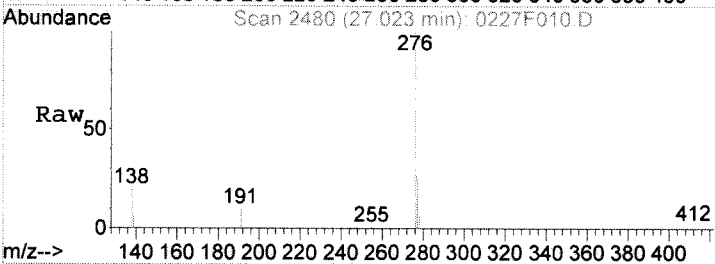
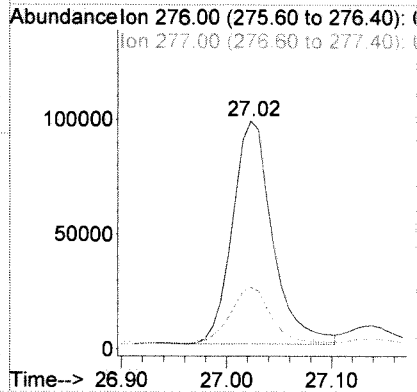
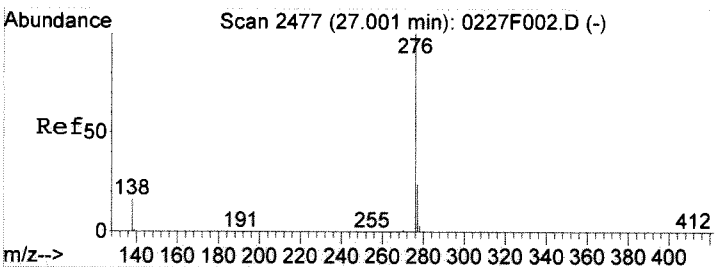
#56
 Perylene
 Concen: 254.46 ng/ml
 RT: 23.27 min Scan# 2031
 Delta R.T. 0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

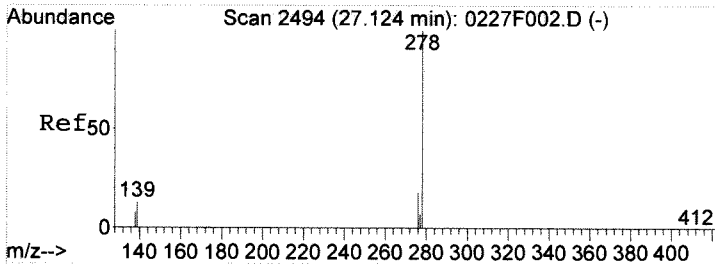
Tgt Ion	Resp	Lower	Upper
252	100		
253	23.5	0.0	51.9
125	13.3	0.0	43.0



#57
 Indeno(1,2,3-cd)pyrene
 Concen: 443.34 ng/ml
 RT: 27.02 min Scan# 2480
 Delta R.T. 0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

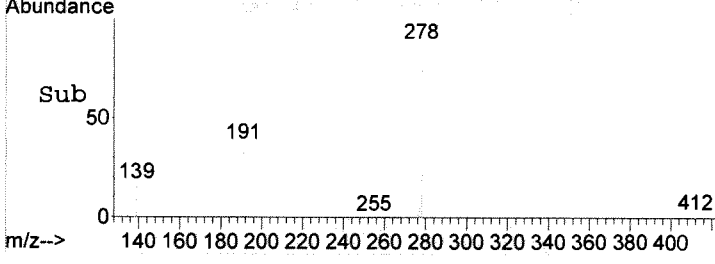
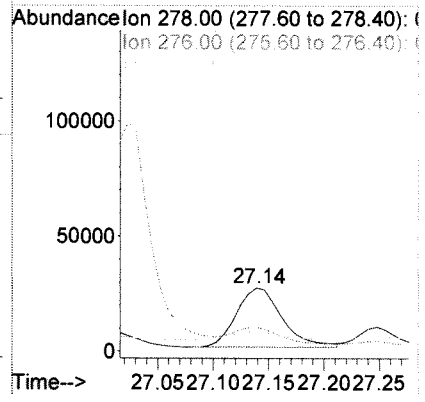
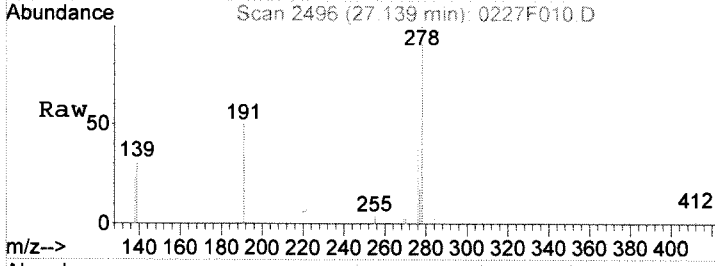
Tgt Ion	Resp	Lower	Upper
276	100		
277	25.2	0.0	54.0
138	17.2	0.0	46.0





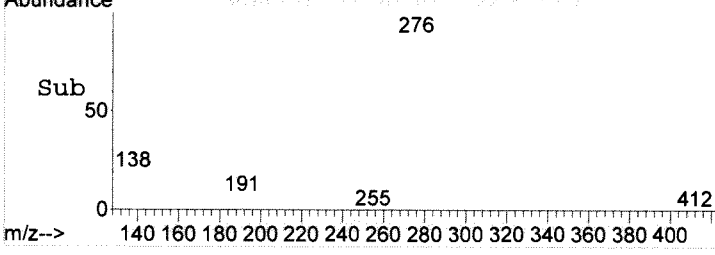
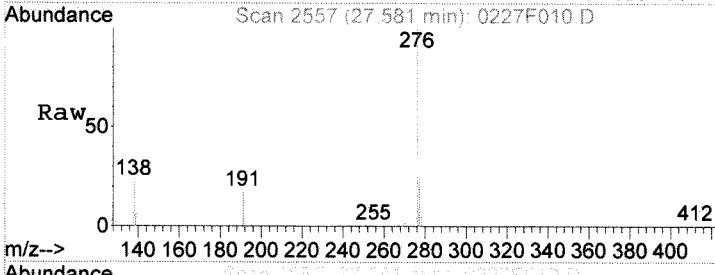
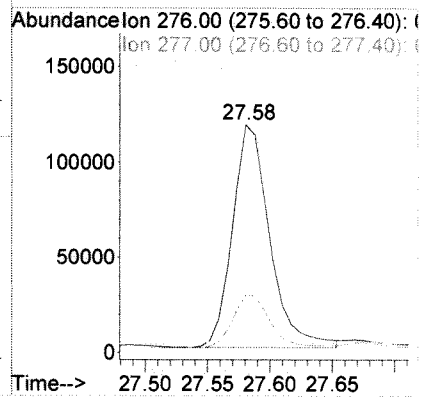
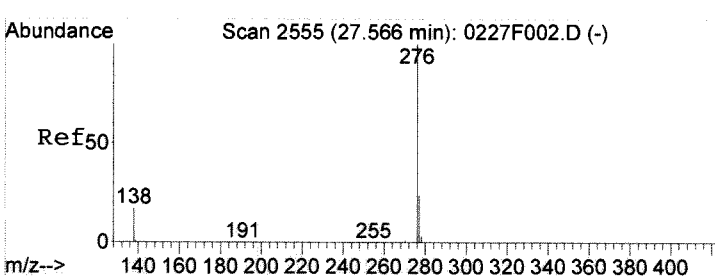
#58
 Dibenz (a,h) anthracene
 Concen: 121.84 ng/ml
 RT: 27.14 min Scan# 2496
 Delta R.T. -0.01 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

Tgt Ion	Ratio	Lower	Upper
278	100		
276	27.6	0.0	55.0
139	12.9	0.0	42.8



#59
 Benzo (g,h,i) perylene
 Concen: 347.19 ng/ml
 RT: 27.58 min Scan# 2557
 Delta R.T. 0.00 min
 Lab File: 0227F010.D
 Acq: 27 Feb 2018 4:32 pm

Tgt Ion	Ratio	Lower	Upper
276	100		
277	23.9	0.0	54.2
138	19.5	0.0	46.5



Exception Report

Data File: J:\MS14\DATA\022818\0228F004.D
Lab ID: K1801267-001
Run Type: DL
Matrix: SEDIMENT

Date Acquired: 02/28/2018 10:14
Date Quantitated: 03/01/2018 07:28
Batch ID: KWG1801214
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review: _____

MAR 01 2018

Secondary Review: _____

Quantitation Report

Data File: J:\MS14\DATA\022818\0228F004.D	Instrument: MS14
Acqu Date: 02/28/2018 10:14	Quant Date: 03/01/2018 07:28
Run Type: DL	ListJoinID: LJ18598
Lab ID: K1801267-001	Vial: 4
	Dilution: 5.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: SEDIMENT
Prod Code: 8270D PAH SIM	Collect Date: 02/06/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801214	Prep Lot: KWG1801007	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664502	Prep Date: 02/19/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18598
Tune Ref: J:\MS14\DATA\022818\0228F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.71	0.00	136	63926	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	31508	200.00	OK
3	Phenanthrene-d10	7.52	0.00	188	65781	200.00	OK
4	Chrysene-d12	10.04	0.01	240	85207	200.00	OK
5	Perylene-d12	13.09	0.02	264	91753	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	4890	22.69	57	38-104	OK NR
3	Fluoranthene-d10	8.52	0.01	0.00	212	13970	33.80	85	39-109	OK NR
4	Terphenyl-d14	8.86	0.01	0.00	244	11551	32.15	80	38-113	OK NR

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.73		0.00	128	5489	15.07	110	D	NR
1	2-Methylnaphthalene	5.38		0.00	142	1611	6.35	48	D	NR
2	Acenaphthylene	6.17	0.01	0.00	152	4804m	12.46	94	D	NR
2	Acenaphthene	6.31		0.00	154	2590	11.95	91	D	NR
2	Dibenzofuran	6.46		0.00	168	3223	9.46	72	D	NR
2	Fluorene	6.74		0.00	166	4070m	15.23	120	D	NR
3	Phenanthrene	7.54		0.00	178	23803	58.35	440	D	NR
3	Anthracene	7.58		0.00	178	21540	53.54	410	D	NR
3	Fluoranthene	8.53	0.01	0.00	202	265704	548.66	4200	D	
4	Pyrene	8.72	0.01	0.00	202	444171	863.64	6500	D	
4	Benz(a)anthracene	10.02		0.00	228	122312	238.04	1800	D	NR
4	Chrysene	10.07		0.00	228	143951	299.62	2300	D	NR
5	Benzo(b)fluoranthene	12.07	0.02	0.00	252	177013	305.59	2300	D	NR

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\022818\0228F004.D
Acqu Date: 02/28/2018 10:14
Run Type: DL
Lab ID: K1801267-001

Quant Date: 03/01/2018 07:28
ListJoinID: LJ18598

Instrument: MS14
Vial: 4
Dilution: 5.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.13	0.01	0.00	252	67452	118.56	900	D	NR
5	Benzo(a)pyrene	12.92	0.02	0.00	252	100990	199.46	1500	D	NR
5	Indeno(1,2,3-cd)pyrene	15.35		0.00	276	41700m	91.68	690	D	NR
5	Dibenz(a,h)anthracene	15.40	0.01	0.00	278	12510	27.01	200	D	NR
5	Benzo(g,h,i)perylene	15.73		0.00	276	45672	90.25	680	D	NR

Prep Amount: 10.372 g Dilution: 5.0
Prep Final Vol: 10 mL Unit Factor: 1
Solids: 63.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\022818\0228F004.D
 Acq On : 28 Feb 2018 10:14 am
 Sample : K1801267-001DIL 5X
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 10:47:09 2018

Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 06:43:32 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.71	136	63926	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	31508	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.52	188	65781	200.00	ng/ml	0.00
23) Chrysene-d12	10.04	240	85207	200.00	ng/ml	0.01
28) Perylene-d12	13.09	264	91753	200.00	ng/ml	0.03

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) 2-Methylnaphthalene-d10	5.35	152	3912	22.83	ng/ml	0.00
Spiked Amount 1000.000			Recovery =	2.28%		
13) Fluorene-d10	6.72	176	4890	22.69	ng/ml	0.00
Spiked Amount 1000.000			Recovery =	2.27%		
22) Fluoranthene-d10	8.52	212	13970	33.80	ng/ml	0.01
Spiked Amount 1000.000			Recovery =	3.38%		
25) Terphenyl-d14	8.86	244	11551	32.15	ng/ml	0.01
Spiked Amount 1000.000			Recovery =	3.21%		

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.73	128	5489	15.07	ng/ml	99
4) 2-Methylnaphthalene	5.38	142	1611	6.35	ng/ml#	86
5) 1-Methylnaphthalene	5.47	142	1024	4.57	ng/ml	94
6) Biphenyl	5.79	154	1077	3.36	ng/ml	95
7) 2,6-Dimethylnaphthalene	5.93	156	850	3.73	ng/ml	94
9) Acenaphthylene	6.17	152	4804m	12.46	ng/ml	
10) Acenaphthene	6.31	154	2590	11.95	ng/ml	98
11) Dibenzofuran	6.46	168	3223	9.46	ng/ml	91
12) 2,3,5-Trimethylnaphthalene	6.62	170	1058m	4.82	ng/ml	
14) Fluorene	6.74	166	4070m	15.23	ng/ml	
16) Dibenzothiophene	7.44	184	2202	5.28	ng/ml	88
17) Phenanthrene	7.54	178	23803	58.35	ng/ml	94
18) Anthracene	7.58	178	21540	53.54	ng/ml	99
19) Carbazole	7.72	167	3351	9.19	ng/ml	91
21) Fluoranthene	8.53	202	265704	548.66	ng/ml	99
24) Pyrene	8.72	202	444171	863.64	ng/ml	96
26) Benz(a)anthracene	10.02	228	122312	238.04	ng/ml	98
27) Chrysene	10.07	228	143951	299.62	ng/ml	99
29) Benzo(b)fluoranthene	12.07	252	177013	305.59	ng/ml	99
30) Benzo(k)fluoranthene	12.13	252	67452	118.56	ng/ml	95
31) Benzo(e)pyrene	12.78	252	81867	148.17	ng/ml	98
32) Benzo(a)pyrene	12.92	252	100990	199.46	ng/ml	98
33) Perylene	13.16	252	27368	54.87	ng/ml	92
34) Indeno(1,2,3-cd)pyrene	15.35	276	41700m	91.68	ng/ml	
35) Dibenz(a,h)anthracene	15.40	278	12510	27.01	ng/ml	94
36) Benzo(g,h,i)perylene	15.73	276	45672	90.25	ng/ml	96

(#) = qualifier out of range (m) = manual integration
 0228F004.D 101317PAH.M Thu Mar 01 07:29:13 2018

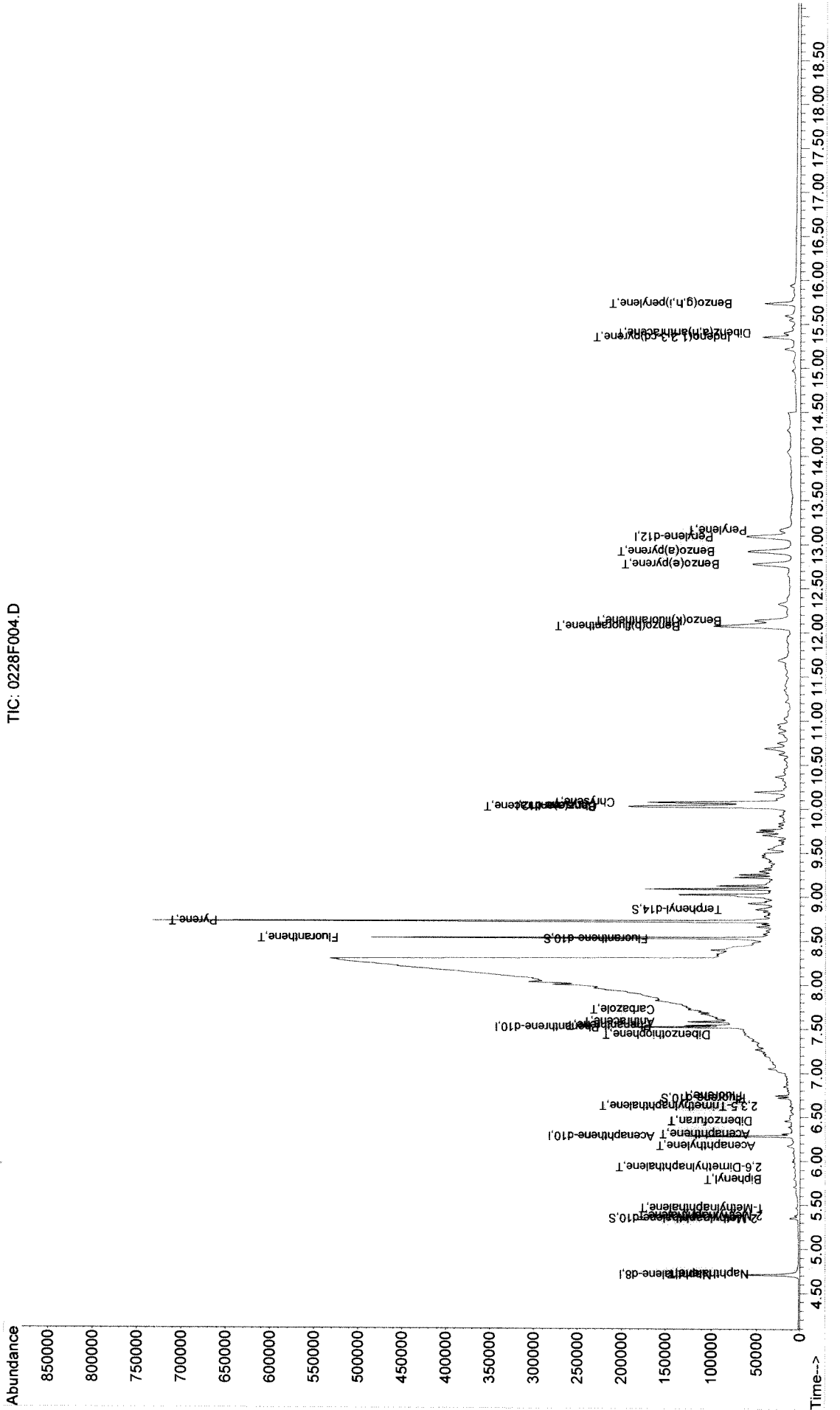
Data File : J:\MS14\DATA\022818\0228F004.D
 Acq On : 28 Feb 2018 10:14 am
 Sample : K1801267-001DIL 5X
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 1 7:28 2018

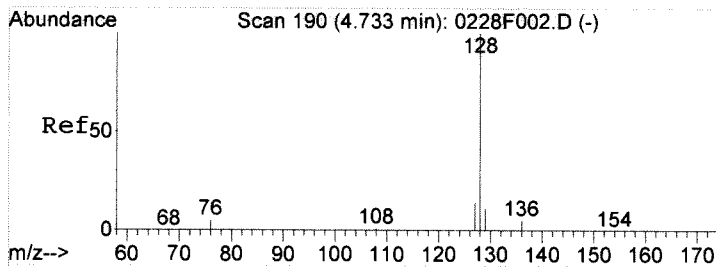
Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Thu Mar 01 07:26:50 2018
 Response via : Initial Calibration

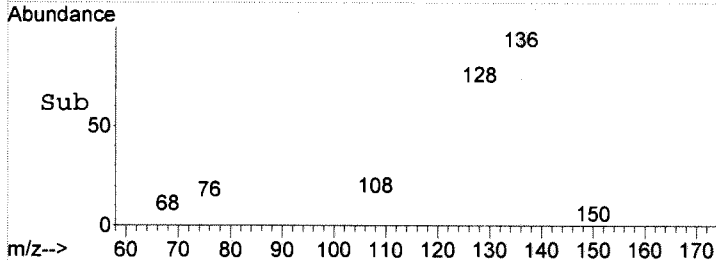
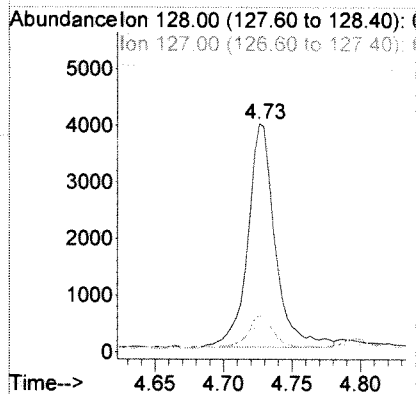
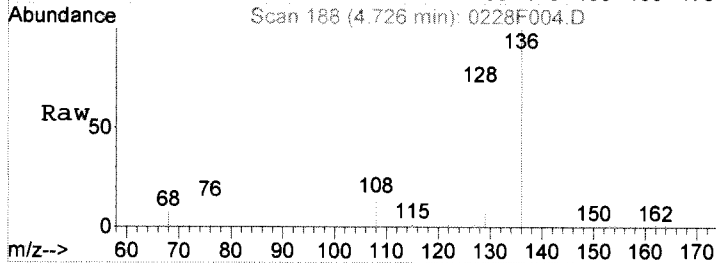
TIC: 0228F004.D





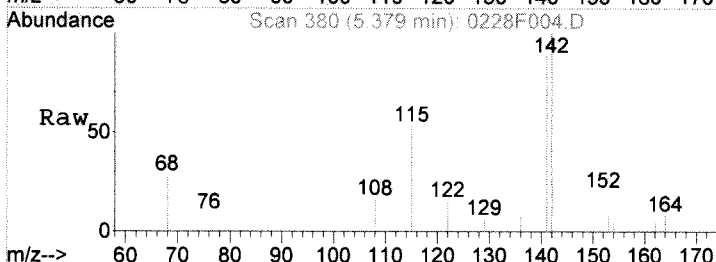
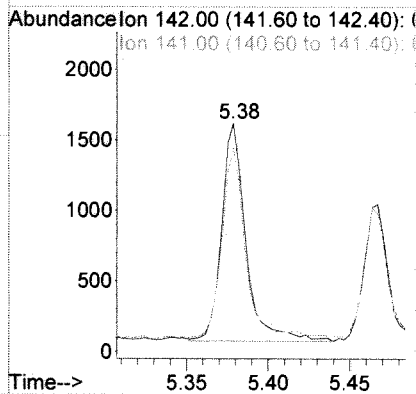
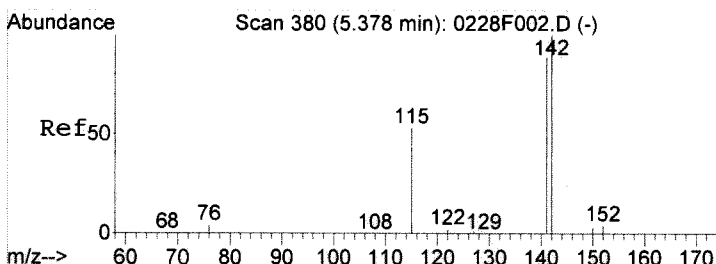
#2
 Naphthalene
 Concen: 15.07 ng/ml
 RT: 4.73 min Scan# 188
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

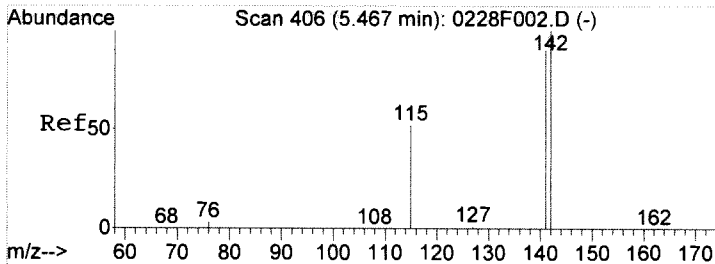
Tgt Ion	Resp	Lower	Upper
128	100		
127	14.6	0.0	44.1
129	10.6	0.0	30.4



#4
 2-Methylnaphthalene
 Concen: 6.35 ng/ml
 RT: 5.38 min Scan# 380
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

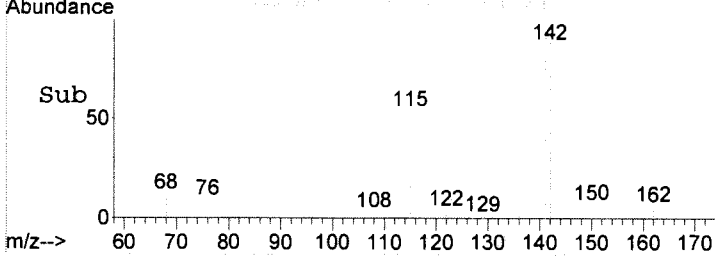
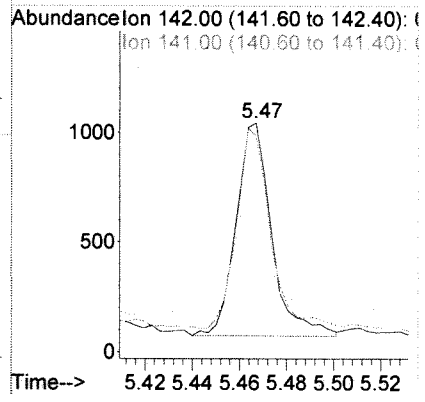
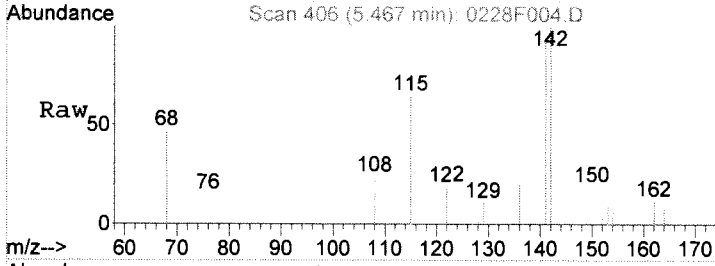
Tgt Ion	Resp	Lower	Upper
142	100		
141	86.9	51.7	111.7
115	44.2	2.0	42.0





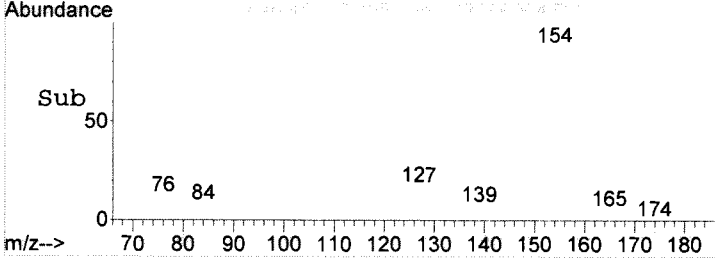
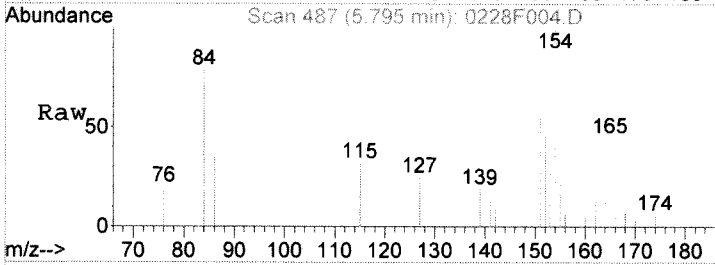
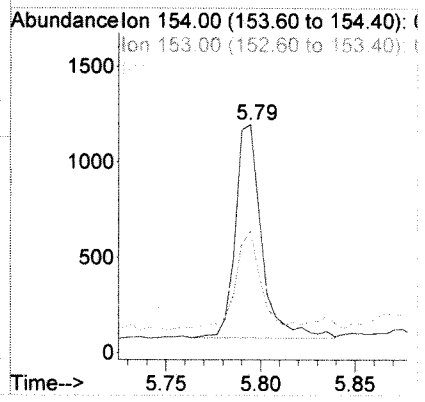
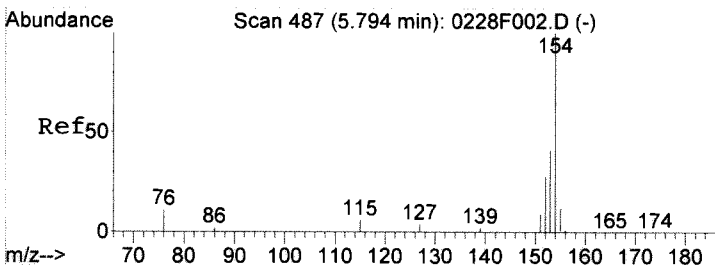
#5
 1-Methylnaphthalene
 Concen: 4.57 ng/ml
 RT: 5.47 min Scan# 406
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

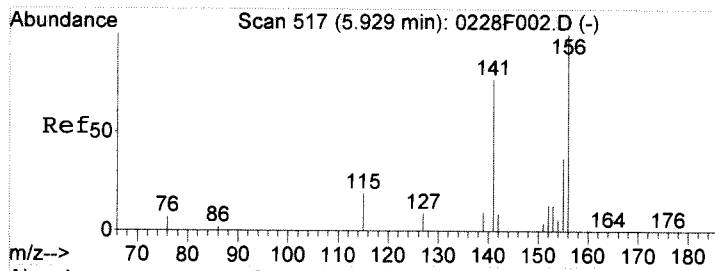
Tgt Ion	Ratio	Lower	Upper
142	100		
141	89.5	63.0	123.0
115	50.4	22.4	62.4



#6
 Biphenyl
 Concen: 3.36 ng/ml
 RT: 5.79 min Scan# 487
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

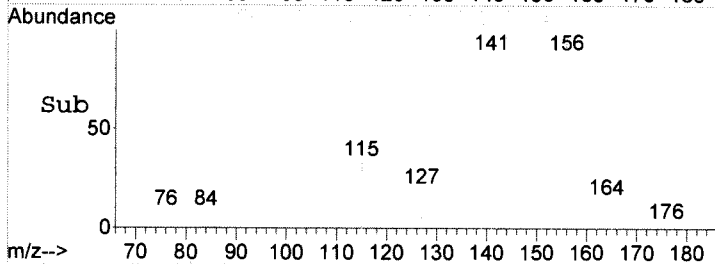
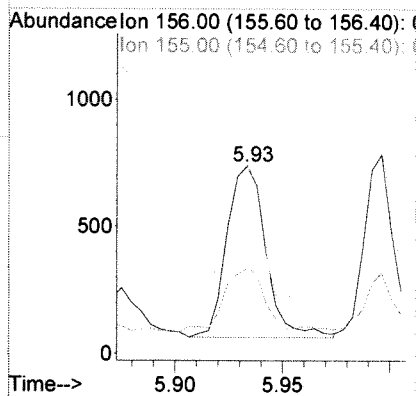
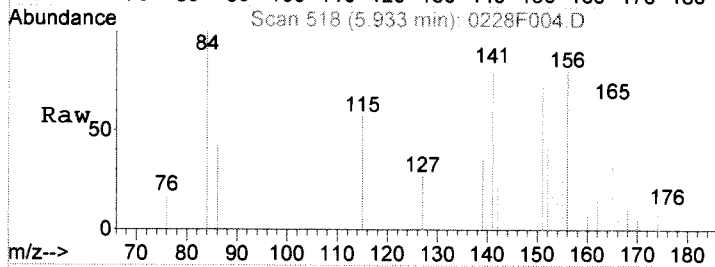
Tgt Ion	Ratio	Lower	Upper
154	100		
153	45.4	11.3	71.3
152	27.0	8.5	48.5





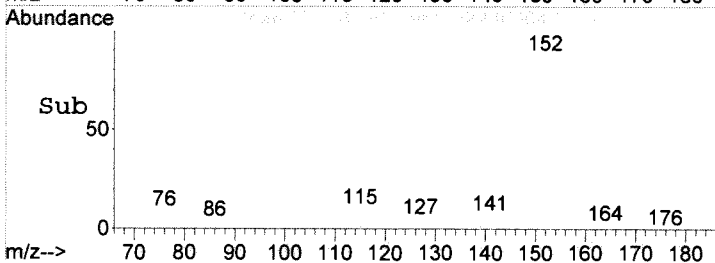
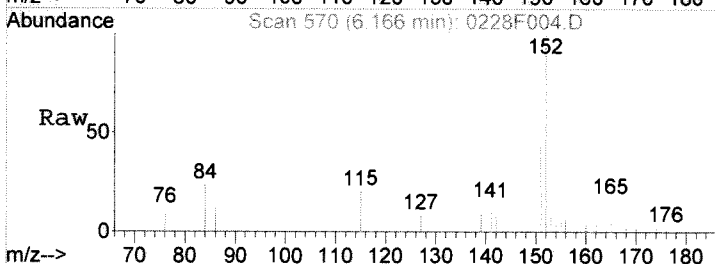
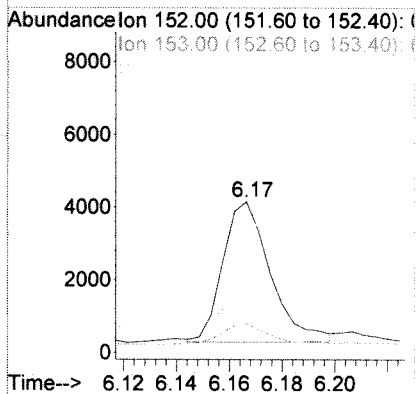
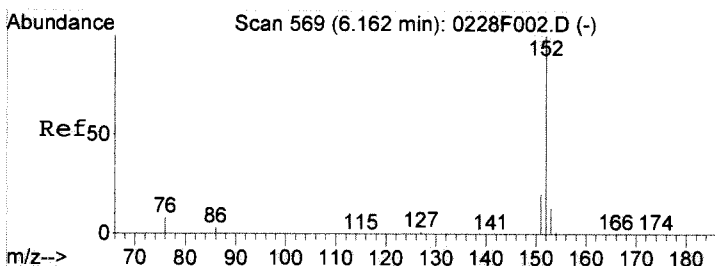
#7
 2,6-Dimethylnaphthalene
 Concen: 3.73 ng/ml
 RT: 5.93 min Scan# 518
 Delta R.T. 0.01 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

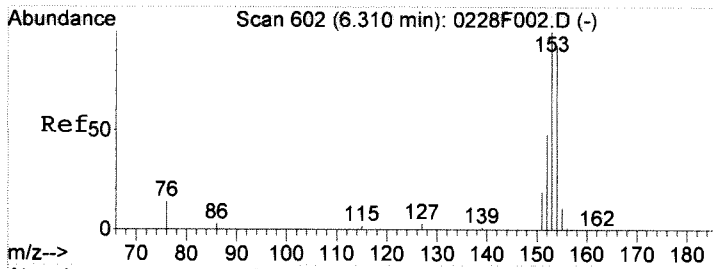
Tgt Ion	Resp	Lower	Upper
156	100		
155	35.8	8.0	68.0
141	83.1	56.4	96.4



#9
 Acenaphthylene
 Concen: 12.46 ng/ml m
 RT: 6.17 min Scan# 570
 Delta R.T. 0.01 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

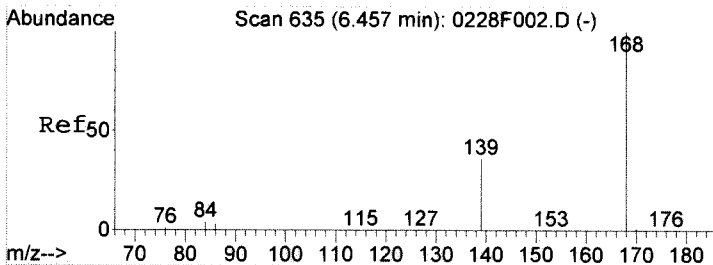
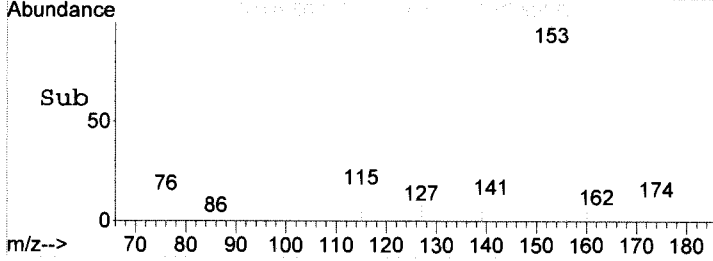
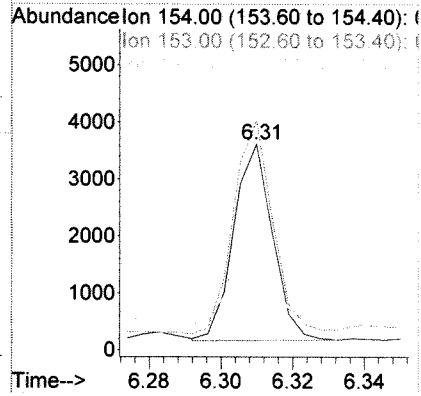
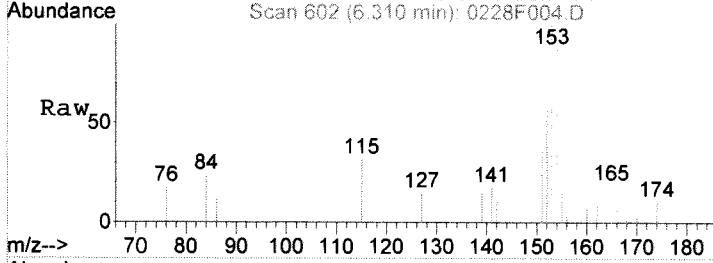
Tgt Ion	Resp	Lower	Upper
152	100		
153	19.1	0.0	42.8
151	47.9	0.3	40.3#





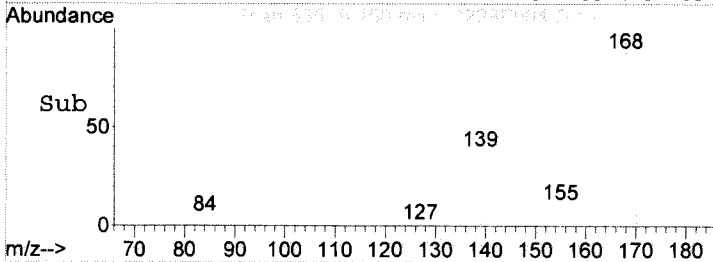
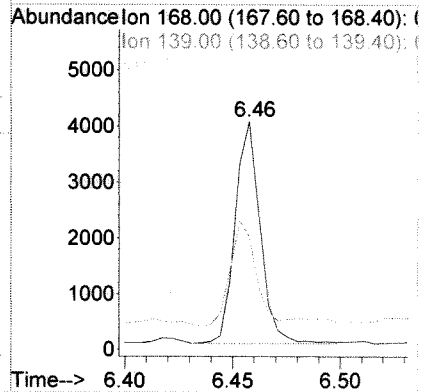
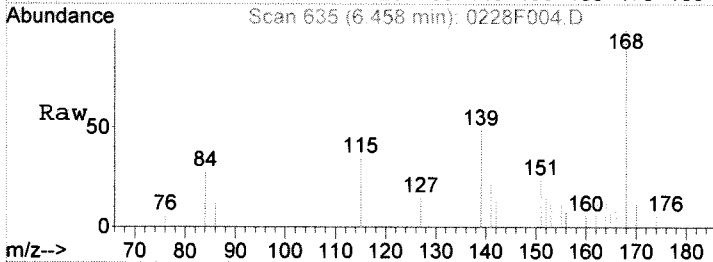
#10
 Acenaphthene
 Concen: 11.95 ng/ml
 RT: 6.31 min Scan# 602
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

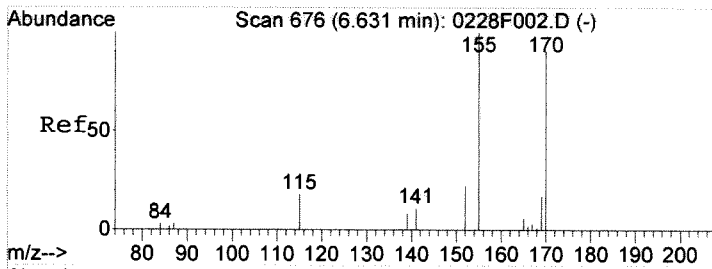
Tgt Ion	Ratio	Lower	Upper
154	100		
153	108.7	77.8	137.8
152	52.8	20.8	80.8



#11
 Dibenzofuran
 Concen: 9.46 ng/ml
 RT: 6.46 min Scan# 635
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

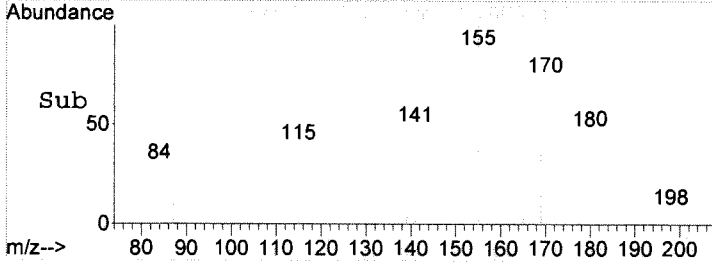
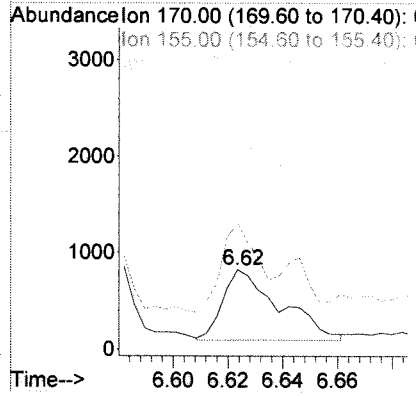
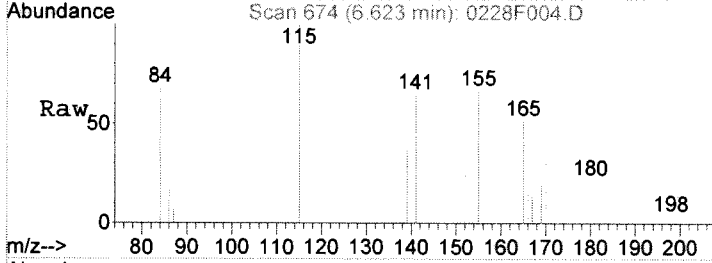
Tgt Ion	Ratio	Lower	Upper
168	100		
139	39.2	15.4	75.4
84	5.4	0.0	24.7





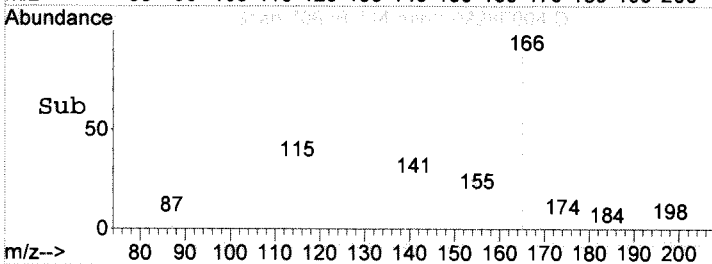
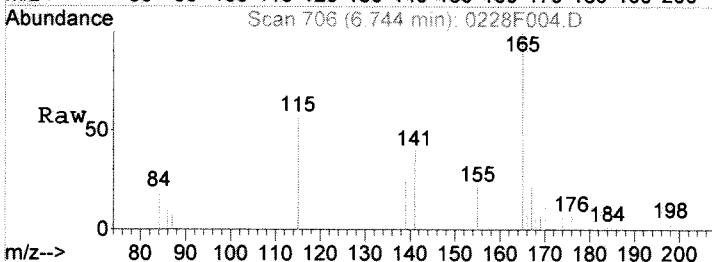
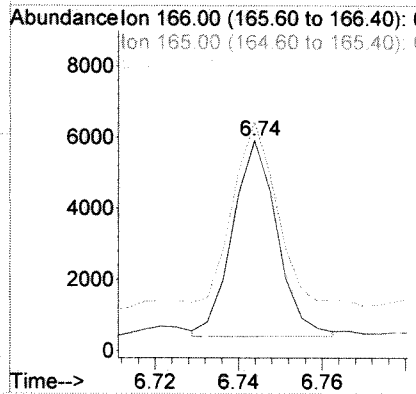
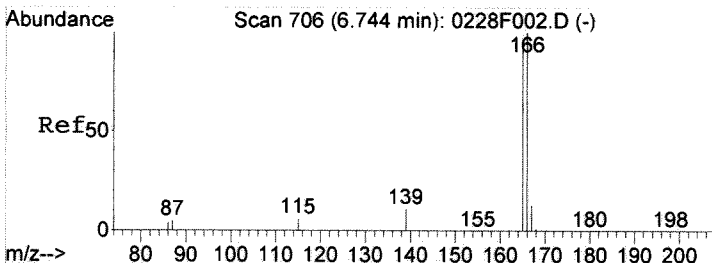
#12
 2,3,5-Trimethylnaphthalene
 Concen: 4.82 ng/ml m
 RT: 6.62 min Scan# 674
 Delta R.T. -0.01 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

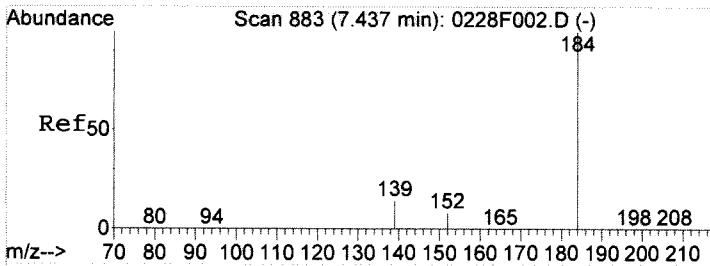
Tgt Ion	Ratio	Lower	Upper
170	100		
155	158.3	87.2	147.2#
115	236.0	0.8	40.8#



#14
 Fluorene
 Concen: 15.23 ng/ml m
 RT: 6.74 min Scan# 706
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

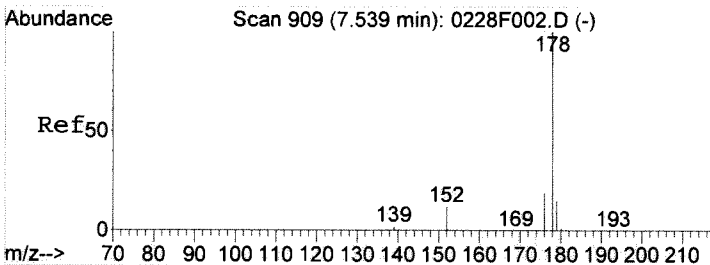
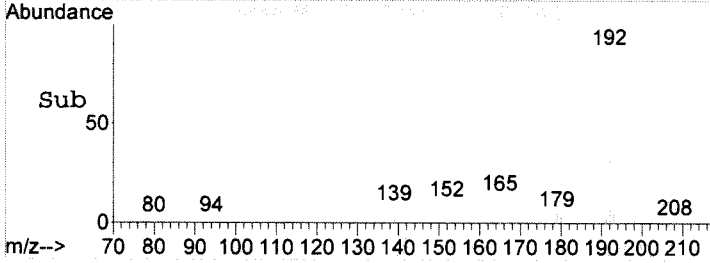
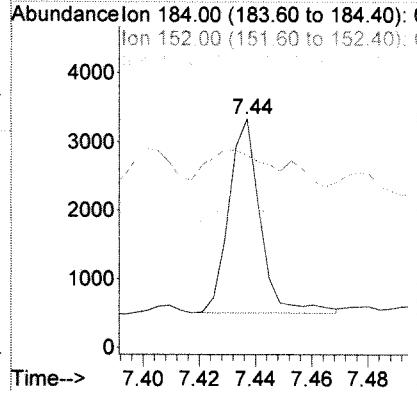
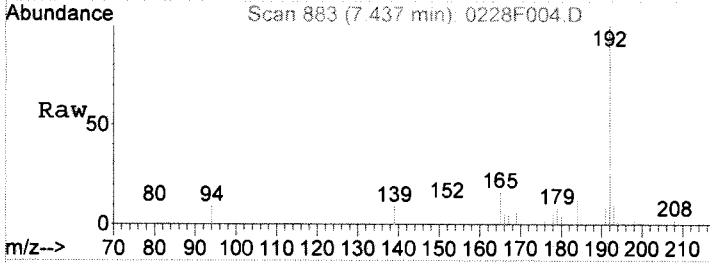
Tgt Ion	Ratio	Lower	Upper
166	100		
165	108.8	65.6	125.6
167	24.0	0.0	33.0





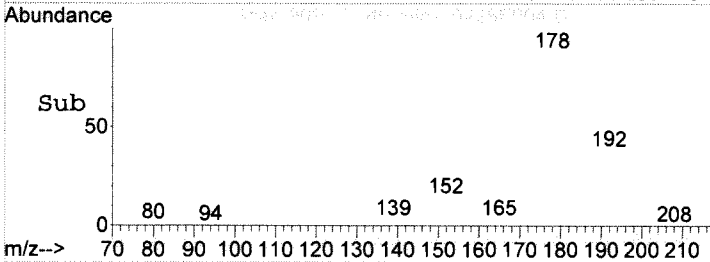
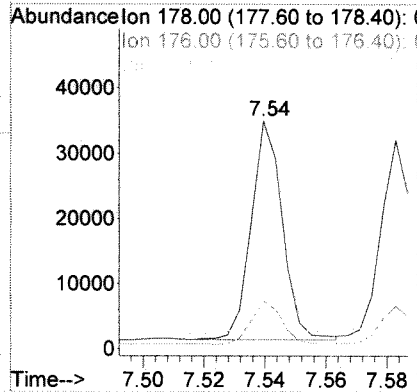
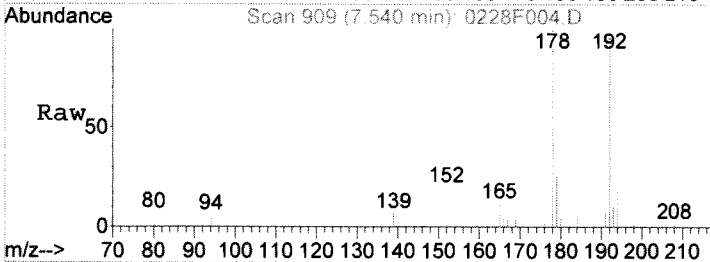
#16
 Dibenzothiophene
 Concen: 5.28 ng/ml
 RT: 7.44 min Scan# 883
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

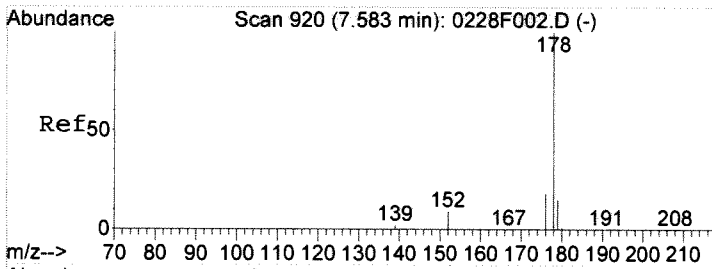
Tgt Ion	Ratio	Lower	Upper
184	100		
152	14.2	0.0	38.5
139	18.4	0.0	34.3



#17
 Phenanthrene
 Concen: 58.35 ng/ml
 RT: 7.54 min Scan# 909
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

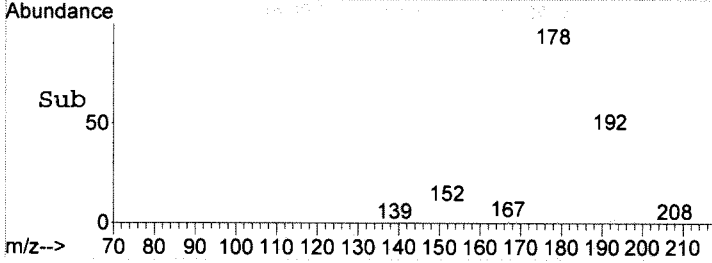
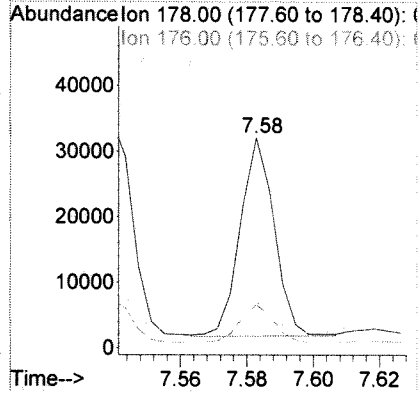
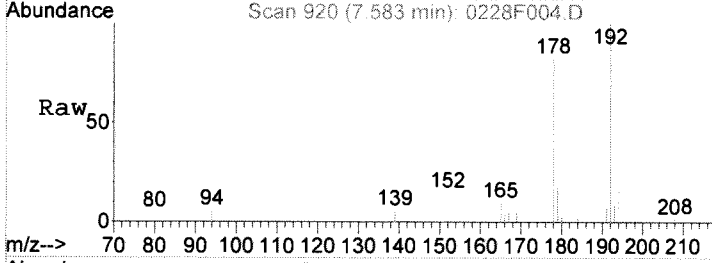
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.6	0.0	49.6
179	20.5	0.0	35.1





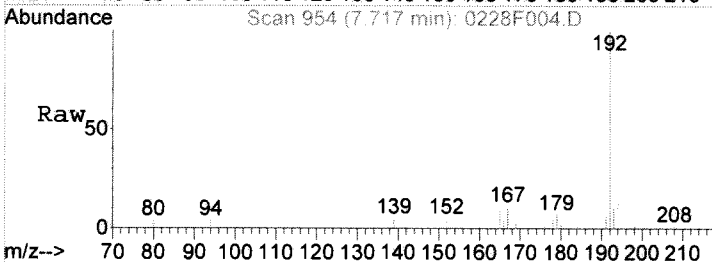
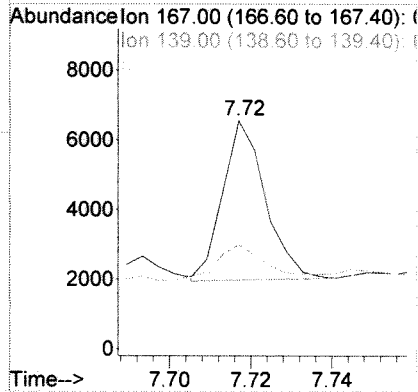
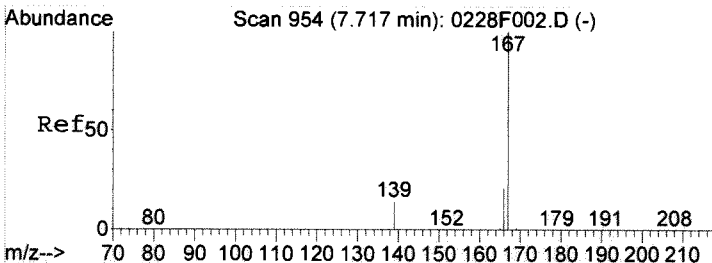
#18
 Anthracene
 Concen: 53.54 ng/ml
 RT: 7.58 min Scan# 920
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

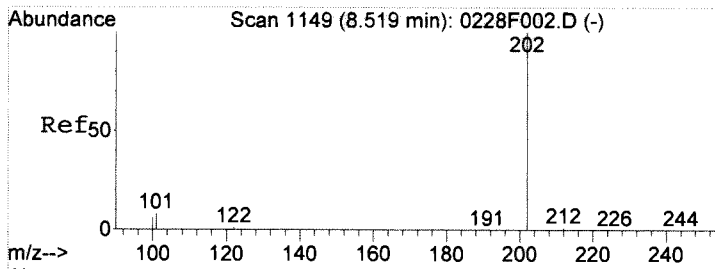
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.0	0.0	48.2
179	14.5	0.0	34.8



#19
 Carbazole
 Concen: 9.19 ng/ml
 RT: 7.72 min Scan# 954
 Delta R.T. 0.00 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

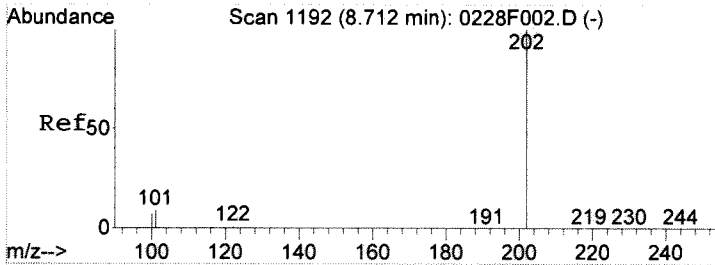
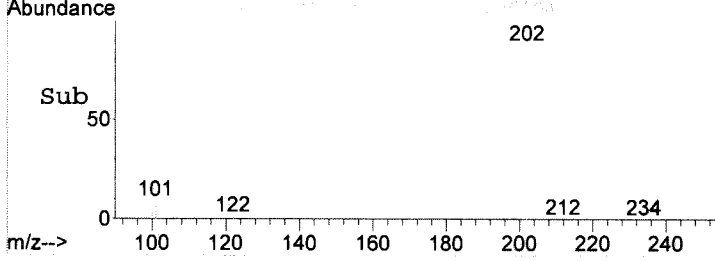
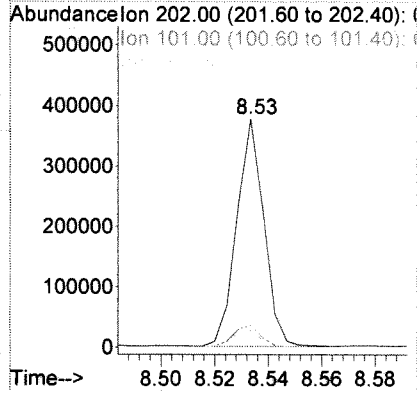
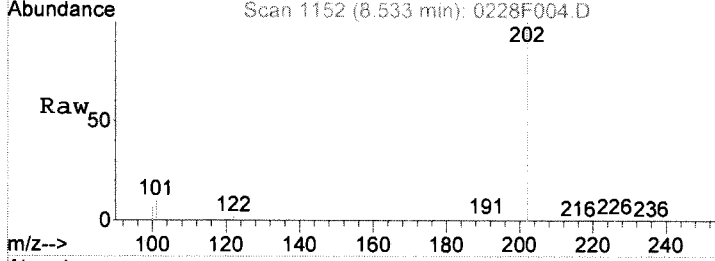
Tgt Ion	Ratio	Lower	Upper
167	100		
139	20.2	0.0	45.2
166	18.3	1.6	41.6





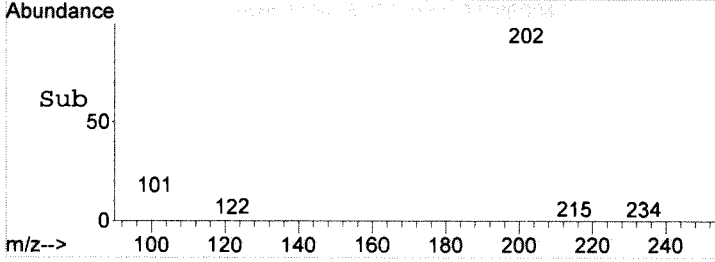
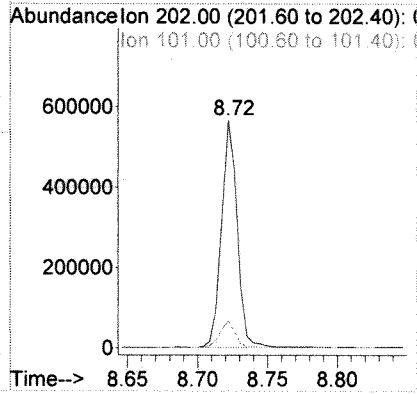
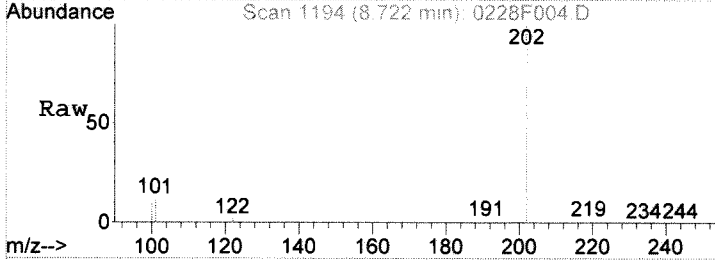
#21
 Fluoranthene
 Concen: 548.66 ng/ml
 RT: 8.53 min Scan# 1152
 Delta R.T. 0.02 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

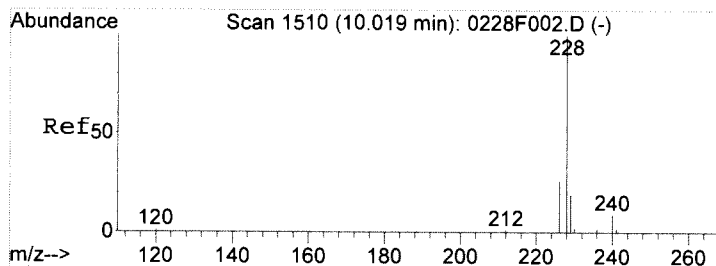
Tgt Ion	Ratio	Lower	Upper
202	100		
101	9.5	0.0	39.1
100	7.2	0.0	27.0



#24
 Pyrene
 Concen: 863.64 ng/ml
 RT: 8.72 min Scan# 1194
 Delta R.T. 0.01 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

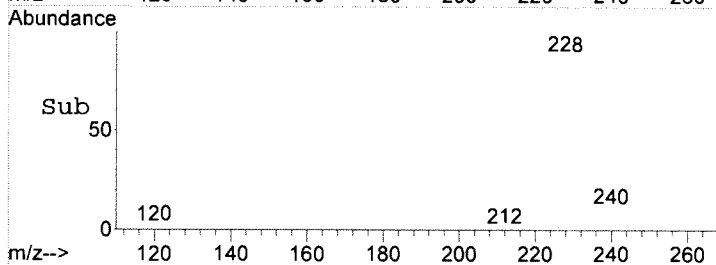
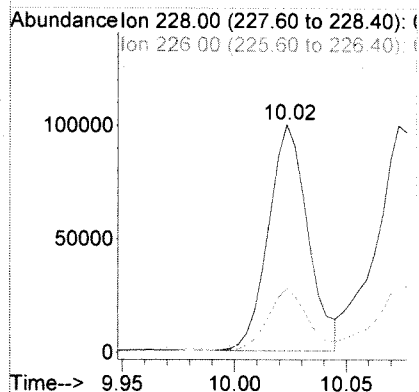
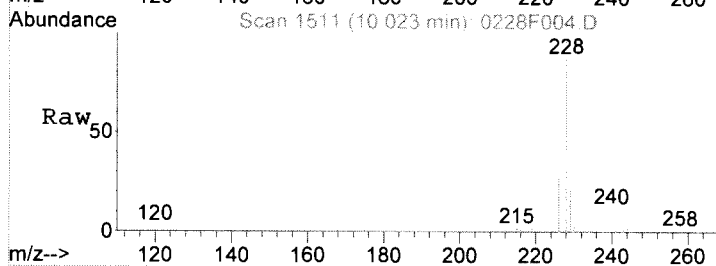
Tgt Ion	Ratio	Lower	Upper
202	100		
101	11.8	0.0	40.5
100	9.6	0.0	28.3





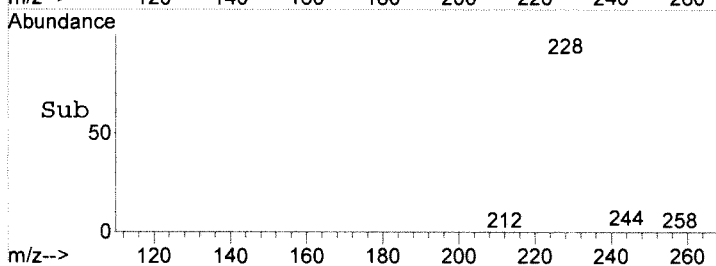
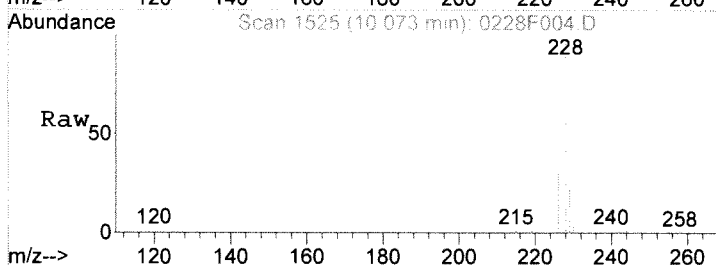
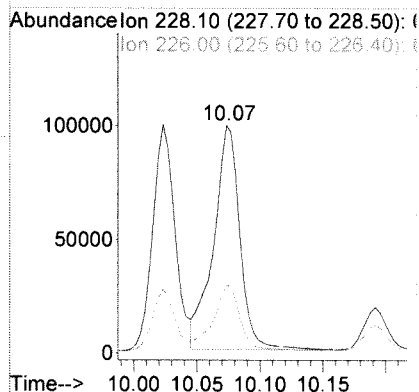
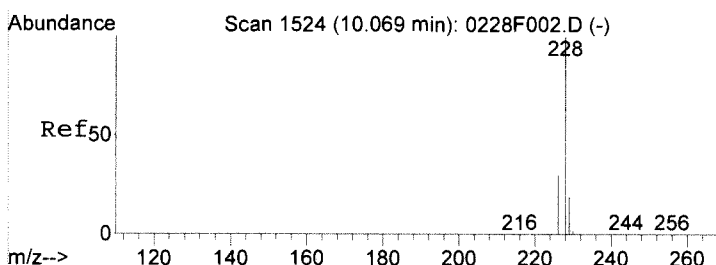
#26
Benz (a) anthracene
Concen: 238.04 ng/ml
RT: 10.02 min Scan# 1511
Delta R.T. 0.01 min
Lab File: 0228F004.D
Acq: 28 Feb 2018 10:14 am

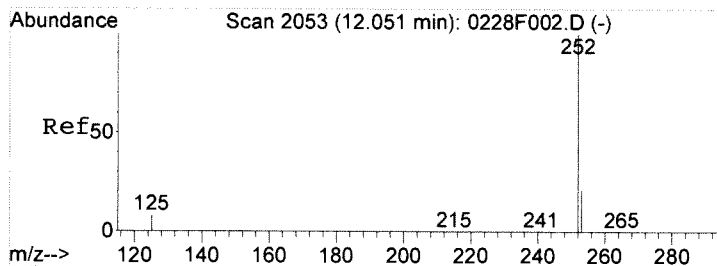
Tgt Ion	Resp	Lower	Upper
228	100		
226	27.5	0.0	56.4
229	20.3	0.0	39.3



#27
Chrysene
Concen: 299.62 ng/ml
RT: 10.07 min Scan# 1525
Delta R.T. 0.01 min
Lab File: 0228F004.D
Acq: 28 Feb 2018 10:14 am

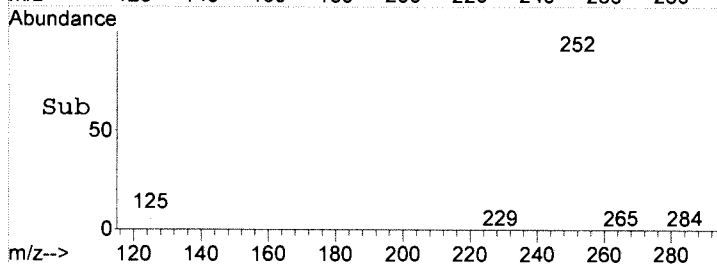
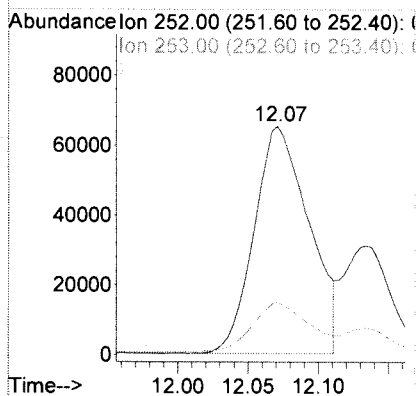
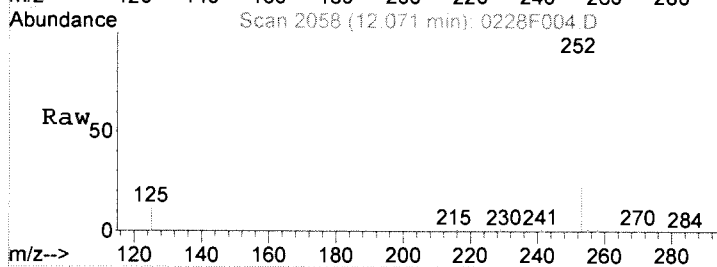
Tgt Ion	Resp	Lower	Upper
228	100		
226	29.2	0.0	59.0
229	20.3	0.0	39.2





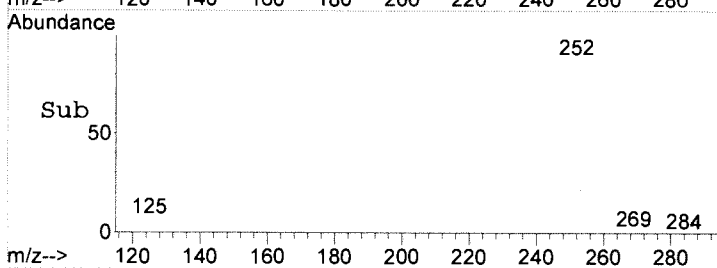
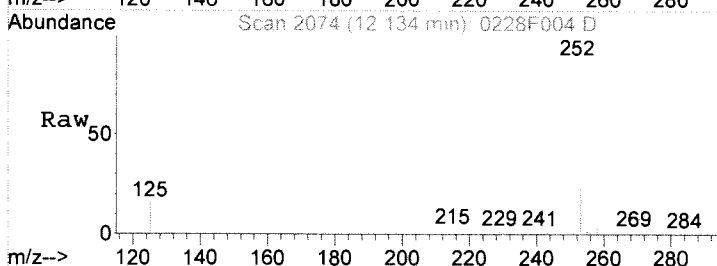
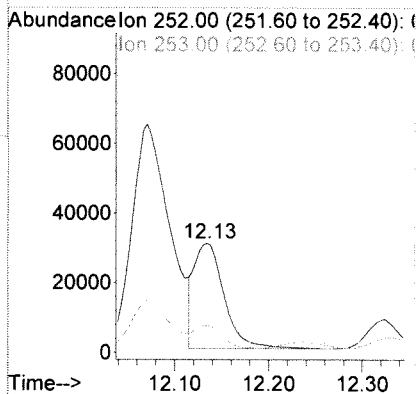
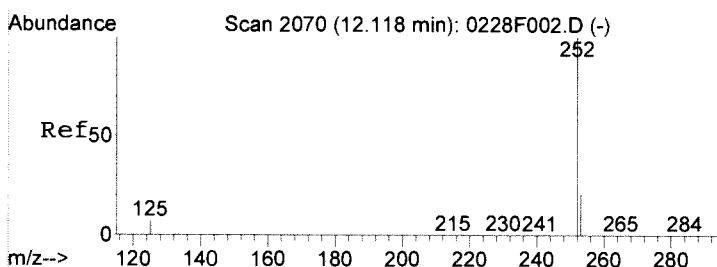
#29
 Benzo(b) fluoranthene
 Concen: 305.59 ng/ml
 RT: 12.07 min Scan# 2058
 Delta R.T. 0.04 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

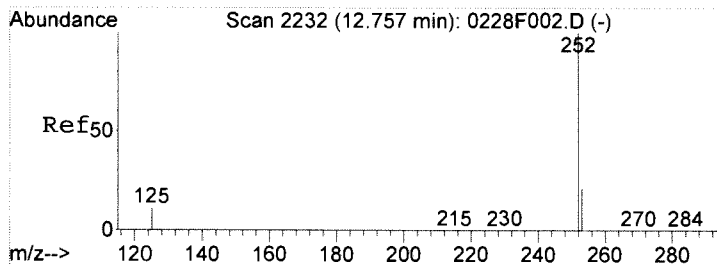
Tgt Ion	252	253	125	Resp	177013	Lower	Upper
Ion Ratio	100	21.8	8.3			0.0	51.8
						0.0	29.7



#30
 Benzo(k) fluoranthene
 Concen: 118.56 ng/ml
 RT: 12.13 min Scan# 2074
 Delta R.T. 0.03 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

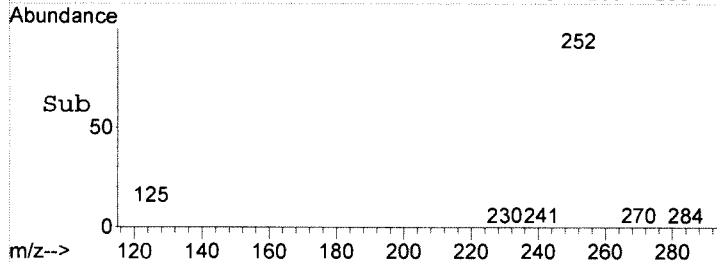
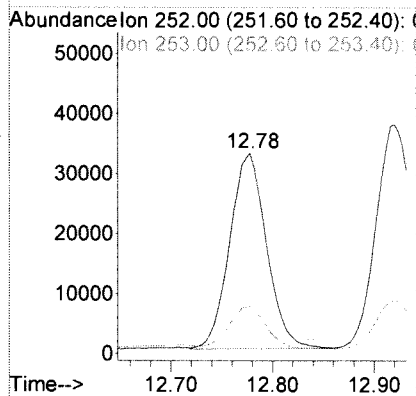
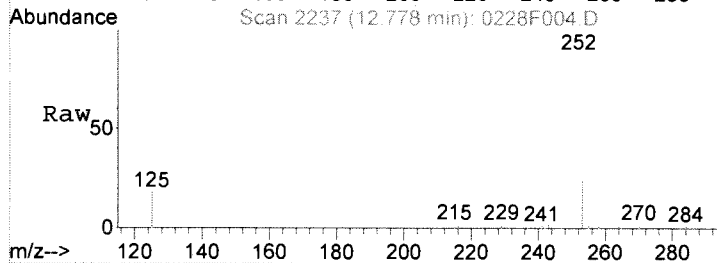
Tgt Ion	252	253	125	Resp	67452	Lower	Upper
Ion Ratio	100	19.8	7.1			0.0	51.6
						0.0	29.7





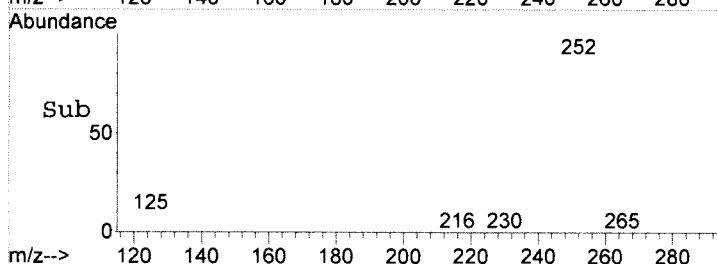
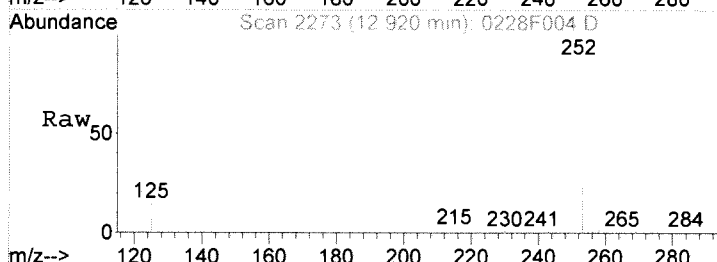
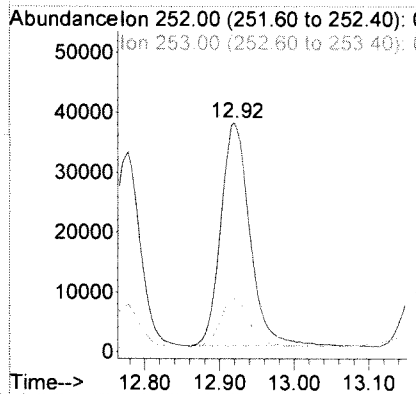
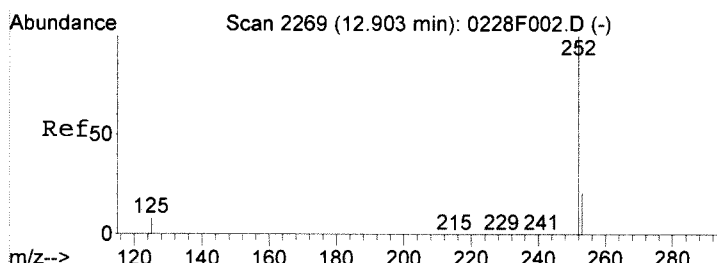
#31
 Benzo(e)pyrene
 Concen: 148.17 ng/ml
 RT: 12.78 min Scan# 2237
 Delta R.T. 0.04 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

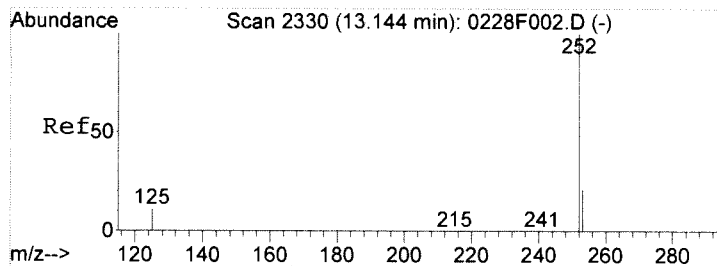
Tgt Ion	252	253	125	Resp	81867	Lower	Upper
Ion Ratio	100	21.7	11.2				
		0.0	0.0			51.6	33.5



#32
 Benzo(a)pyrene
 Concen: 199.46 ng/ml
 RT: 12.92 min Scan# 2273
 Delta R.T. 0.03 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

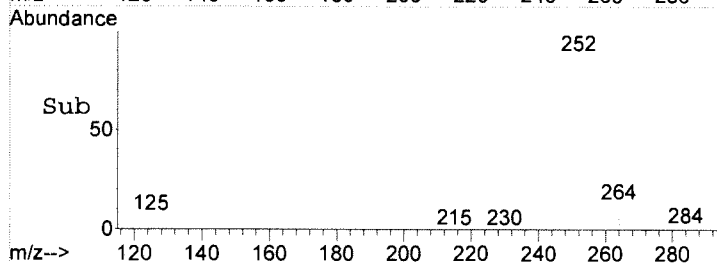
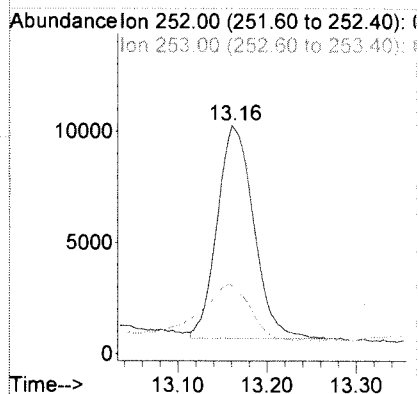
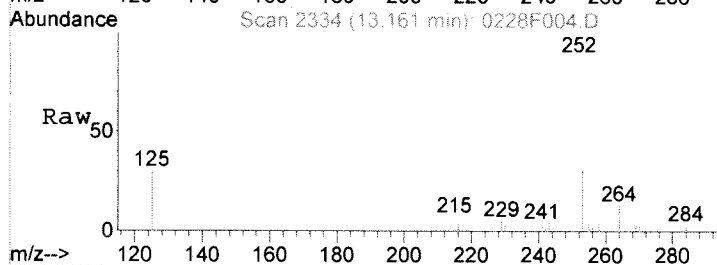
Tgt Ion	252	253	125	Resp	100990	Lower	Upper
Ion Ratio	100	21.5	9.4				
		0.0	0.0			51.8	31.1





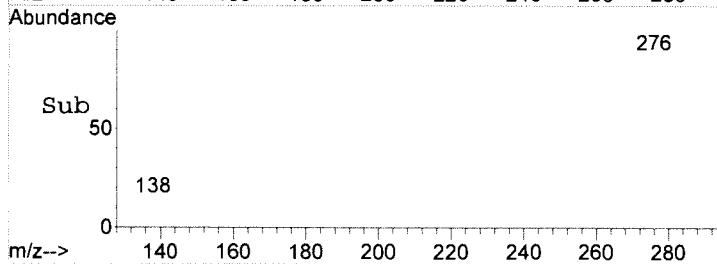
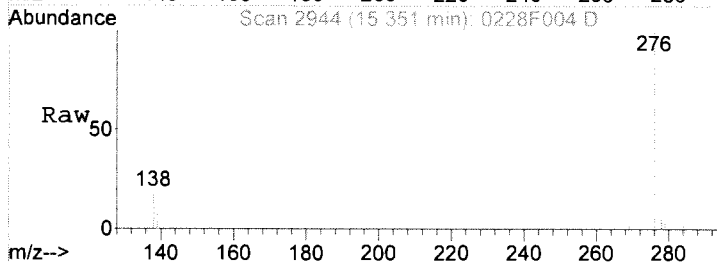
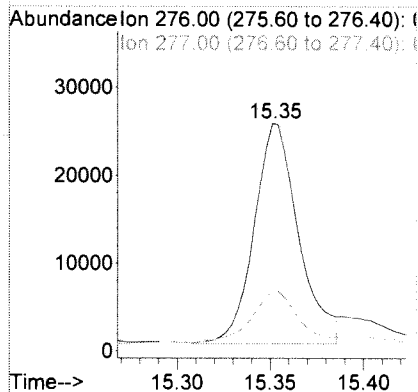
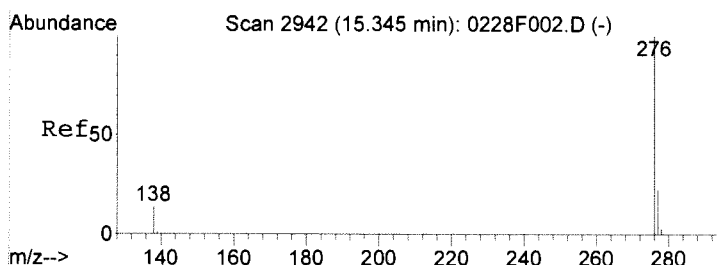
#33
 Perylene
 Concen: 54.87 ng/ml
 RT: 13.16 min Scan# 2334
 Delta R.T. 0.03 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

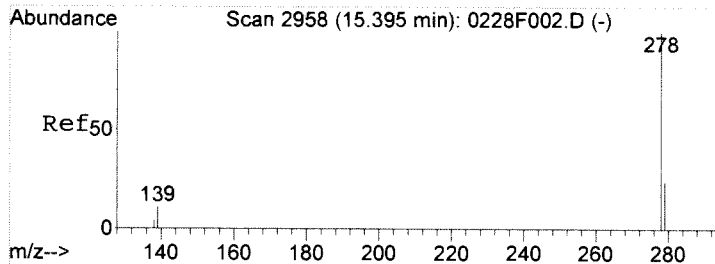
Tgt Ion	Resp	Lower	Upper
252	100		
253	25.1	0.0	51.9
125	10.5	0.0	34.4



#34
 Indeno(1,2,3-cd)pyrene
 Concen: 91.68 ng/ml m
 RT: 15.35 min Scan# 2944
 Delta R.T. 0.02 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

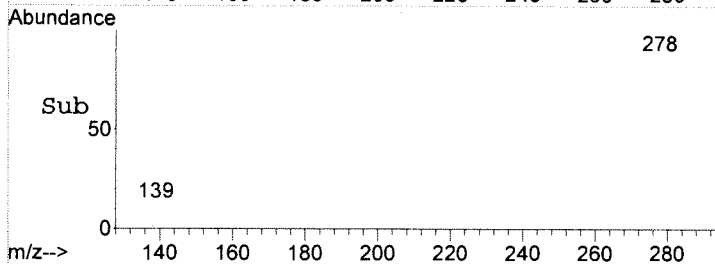
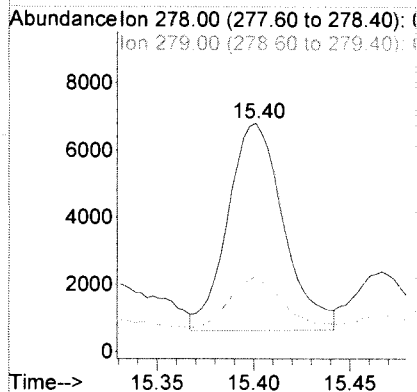
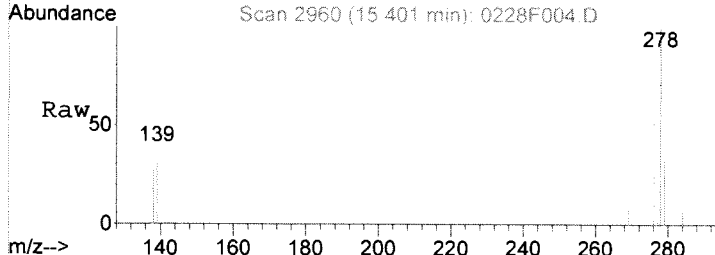
Tgt Ion	Resp	Lower	Upper
276	100		
277	26.2	0.0	53.6
138	18.8	0.0	37.2





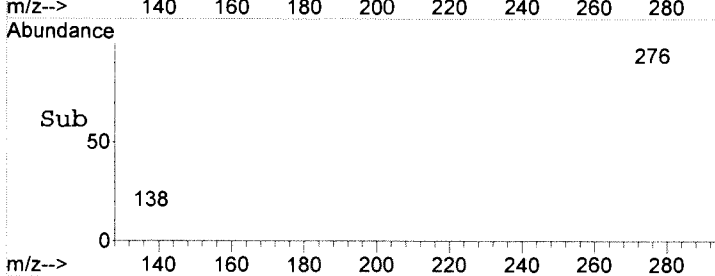
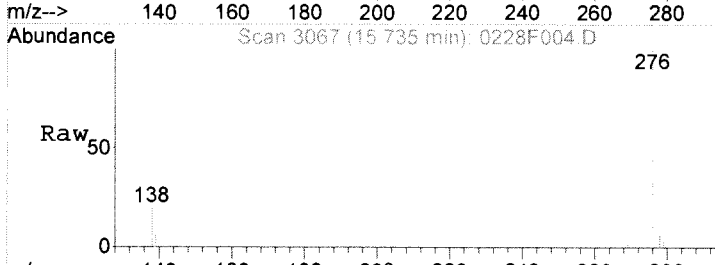
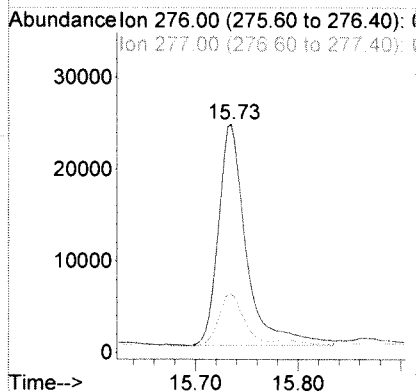
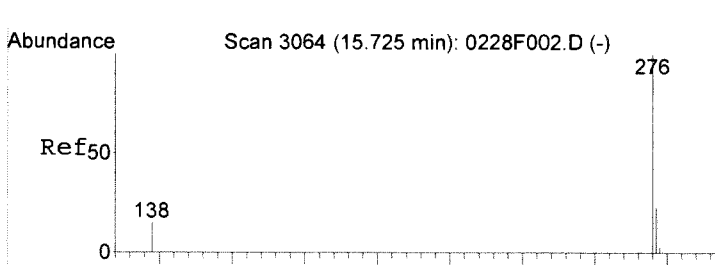
#35
 Dibenz(a,h)anthracene
 Concen: 27.01 ng/ml
 RT: 15.40 min Scan# 2960
 Delta R.T. 0.01 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

Tgt Ion	Resp	Lower	Upper
278	12510		
279	27.1	0.0	54.1
139	12.1	0.0	34.1



#36
 Benzo(g,h,i)perylene
 Concen: 90.25 ng/ml
 RT: 15.73 min Scan# 3067
 Delta R.T. 0.02 min
 Lab File: 0228F004.D
 Acq: 28 Feb 2018 10:14 am

Tgt Ion	Resp	Lower	Upper
276	45672		
277	23.6	0.0	53.4
138	15.3	0.0	38.8



Exception Report

Data File: J:\MS20\DATA\022718\0227F011.D
Lab ID: K1801267-009
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 02/27/2018 17:12
Date Quantitated: 02/28/2018 09:49
Batch ID: KWG1801193
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Above Highest ICAL Level	Anthracene	3524.84	NA	2000	see Dr
	Fluoranthene	16000.26	NA	2000	
	Pyrene	16965.28	NA	2000	
	Benz(a)anthracene	8902.15	NA	2000	
	Chrysene	9760.17	NA	2000	
	Benzo(b)fluoranthene	5116.20	NA	2000	
	Benzo(a)pyrene	2883.09	NA	2000	

Primary Review: *[Signature]* FEB 28 2018

Secondary Review: *[Signature]*

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F011.D	Instrument: MS20
Acqu Date: 02/27/2018 17:12	Quant Date: 02/28/2018 09:49
Run Type: SMPL	Vial: 11
Lab ID: K1801267-009	ListJoinID: LJ18598
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: SEDIMENT
Prod Code: 8270D PAH SIM	Collect Date: 02/07/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801193	Prep Lot: KWG1801007	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664503	Prep Date: 02/19/2018	

Quant Method: J:\MS20\METHODS\110217PAH.M	Calibration ID: CAL15594
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18598
Tune Ref: J:\MS20\DATA\022718\0227F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	83925	200.00	OK
2	Acenaphthene-d10	8.30	0.00	164	46037	200.00	OK
3	Phenanthrene-d10	11.50	0.00	188	92245	200.00	OK
4	Chrysene-d12	18.88	0.04	240	94737	200.00	OK
5	Perylene-d12	23.16	0.02	264	111877	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	9.31	0.00	0.00	176	42671	145.02	73	38-104	OK
3	Fluoranthene-d10	14.72	0.05	0.00	212	84645	158.97	79	39-109	OK
4	Terphenyl-d14	16.00	0.02	0.00	244	72514	179.53	90	38-113	OK

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	9408	21.94	28		
1	2-Methylnaphthalene	6.76		0.00	142	2832m	9.89	12		
2	Acenaphthylene	8.06		0.00	152	22862	49.01	62		
2	Acenaphthene	8.36		0.00	154	18882	65.65	83		
2	Dibenzofuran	8.69		0.00	168	11737	27.12	34		
2	Fluorene	9.37		0.00	166	70187	203.88	260		
3	Phenanthrene	11.56		0.00	178	653924	1,211	1500		
3	Anthracene	11.69	0.01	0.00	178	1772235	3,525	4500	E	
3	Fluoranthene	14.80	0.07	0.01	202	9405849	16,000	20000	E	
4	Pyrene	15.38	0.05	0.00	202	9069880	16,965	21000	E	
4	Benz(a)anthracene	18.86	0.03	0.00	228	4578030	8,902	11000	E	
4	Chrysene	18.97	0.05	0.00	228	5002708	9,760	12000	E	
5	Benzo(b)fluoranthene	21.96	0.04	0.00	252	3265105	5,116	6500	E	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS20\DATA\022718\0227F011.D	Instrument:	MS20
Acqu Date:	02/27/2018 17:12	Quant Date:	02/28/2018 09:49
Run Type:	SMPL	ListJoinID:	LJ18598
Lab ID:	K1801267-009	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	22.03	0.02	0.00	252	1226206	1,902	2400		
5	Benzo(a)pyrene	22.97	0.03	0.00	252	1586775	2,883	3600	E	
5	Indeno(1,2,3-cd)pyrene	27.02	0.02	0.00	276	567902	999.04	1300		
5	Dibenz(a,h)anthracene	27.12		0.00	278	202510	343.92	430		
5	Benzo(g,h,i)perylene	27.57		0.00	276	475022	697.42	880		

Prep Amount: 10.433 g **Dilution:** 1.0
Prep Final Vol: 10 mL **Unit Factor:** 1
Solids: 75.9 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F011.D
 Acq On : 27 Feb 2018 5:12 pm
 Sample : K1801267-009
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:22 2018

Vial: 11
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	83925	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.30	164	46037	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.50	188	92245	200.00	ng/ml	-0.02
38) Chrysene-d12	18.88	240	94737	200.00	ng/ml	0.00
51) Perylene-d12	23.16	264	111877	200.00	ng/ml	0.00

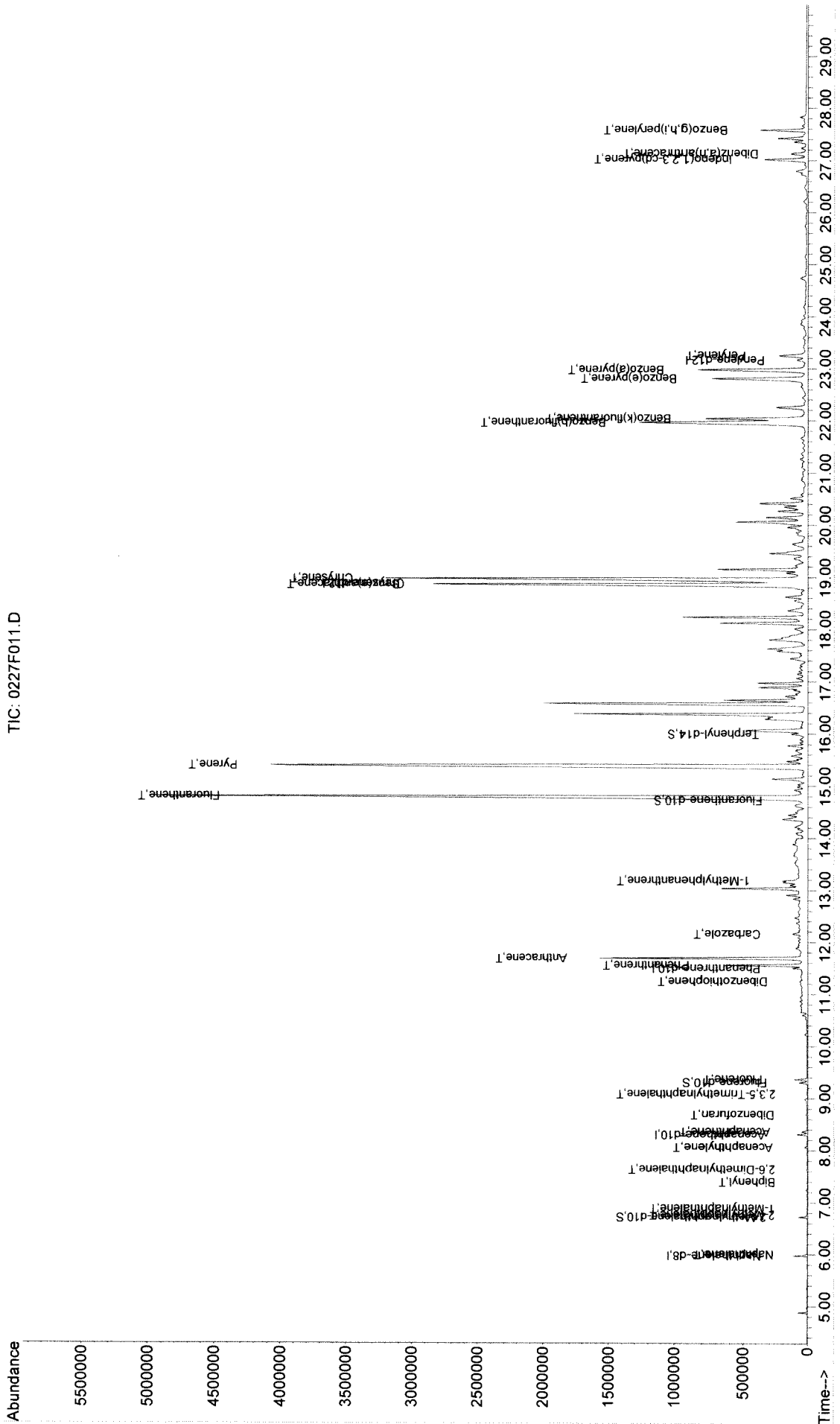
System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) 2-Methylnaphthalene-d10	6.72	152	34333	163.42	ng/ml	-0.01
Spiked Amount 1000.000			Recovery =	16.34%		
17) Fluorene-d10	9.31	176	42671	145.02	ng/ml	-0.02
Spiked Amount 1000.000			Recovery =	14.50%		
37) Fluoranthene-d10	14.72	212	84645	158.97	ng/ml	0.02
Spiked Amount 1000.000			Recovery =	15.90%		
44) Terphenyl-d14	16.00	244	72514	179.53	ng/ml	0.00
Spiked Amount 1000.000			Recovery =	17.95%		

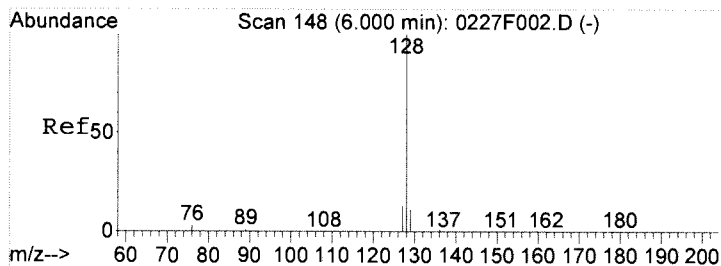
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	6.00	128	9408	21.94	ng/ml	99
4) 2-Methylnaphthalene	6.76	142	2832m	9.89	ng/ml	
5) 1-Methylnaphthalene	6.89	142	2080	8.16	ng/ml	93
6) Biphenyl	7.40	154	1860	5.42	ng/ml	96
7) 2,6-Dimethylnaphthalene	7.64	156	3669	14.77	ng/ml	96
13) Acenaphthylene	8.06	152	22862	49.01	ng/ml	99
14) Acenaphthene	8.36	154	18882	65.65	ng/ml	96
15) Dibenzofuran	8.69	168	11737	27.12	ng/ml	64
16) 2,3,5-Trimethylnaphthalene	9.08	170	3283m	12.36	ng/ml	
18) Fluorene	9.37	166	70187	203.88	ng/ml	100
23) Dibenzothiophene	11.25	184	21804	44.28	ng/ml	92
28) Phenanthrene	11.56	178	653924	1210.82	ng/ml	99
29) Anthracene	11.69	178	1772235	3524.84	ng/ml	97
30) Carbazole	12.16	167	68564	156.04	ng/ml	97
31) 1-Methylphenanthrene	13.18	192	92997	242.42	ng/ml	96
36) Fluoranthene	14.80	202	9405849	16000.26	ng/ml	87
39) Pyrene	15.38	202	9069880	16965.28	ng/ml	80
45) Benz(a)anthracene	18.86	228	4578030	8902.15	ng/ml	93
46) Chrysene	18.97	228	5002708	9760.17	ng/ml	93
52) Benzo(b)fluoranthene	21.96	252	3265105	5116.20	ng/ml	94
53) Benzo(k)fluoranthene	22.03	252	1226206	1902.10	ng/ml	97
54) Benzo(e)pyrene	22.81	252	1415776	2284.56	ng/ml	97
55) Benzo(a)pyrene	22.97	252	1586775	2883.09	ng/ml	97
56) Perylene	23.25	252	397769	685.58	ng/ml	99
57) Indeno(1,2,3-cd)pyrene	27.02	276	567902	999.04	ng/ml	99
58) Dibenz(a,h)anthracene	27.12	278	202510	343.92	ng/ml	97
59) Benzo(g,h,i)perylene	27.57	276	475022	697.42	ng/ml	97

(#) = qualifier out of range (m) = manual integration
 0227F011.D 110217PAH.M Wed Feb 28 09:50:25 2018

Data File : J:\MS20\DATA\022718\0227F011.D
 Acq On : 27 Feb 2018 5:12 pm
 Sample : K1801267-009
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:49 2018
 Vial: 11
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00
 Quant Results File: 110217PAH.RES

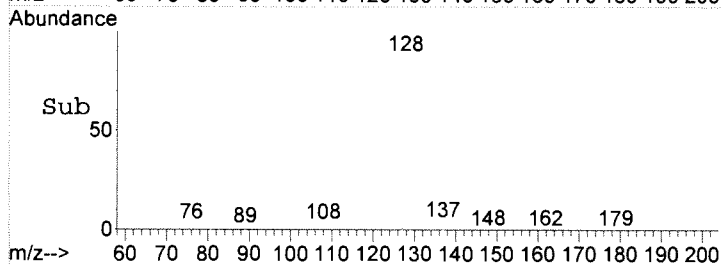
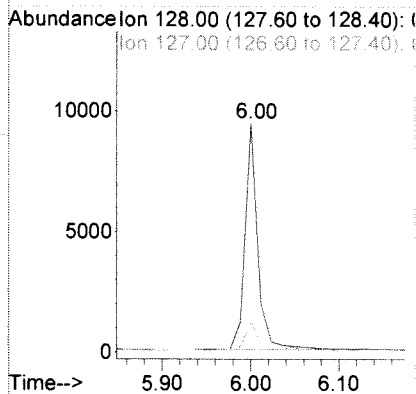
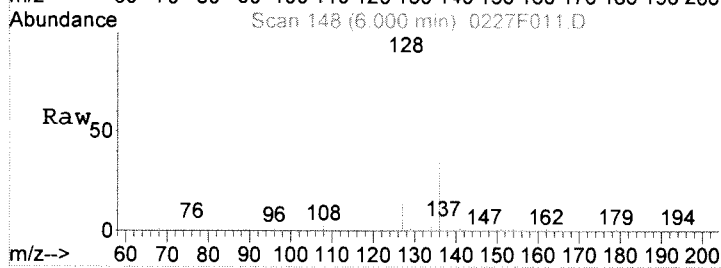
Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration





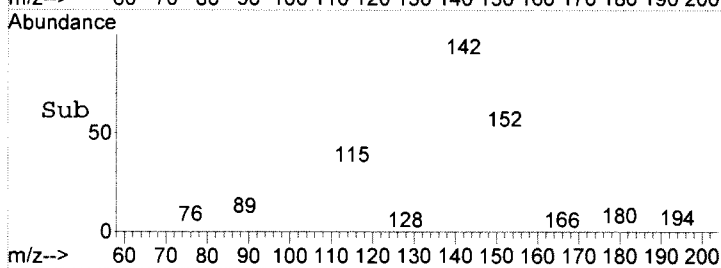
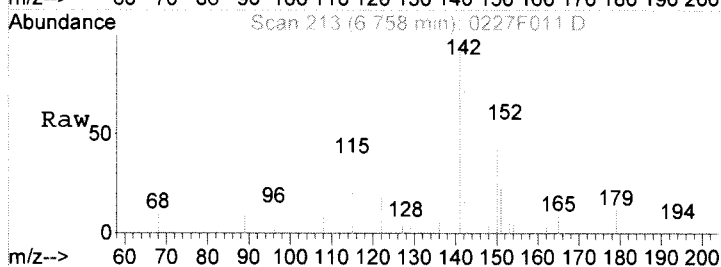
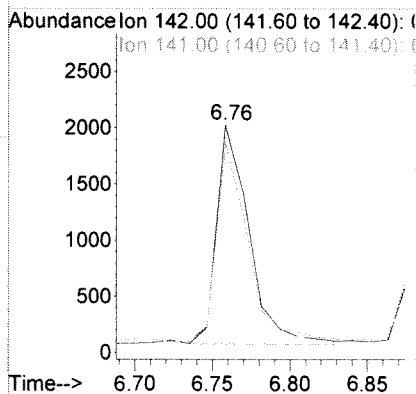
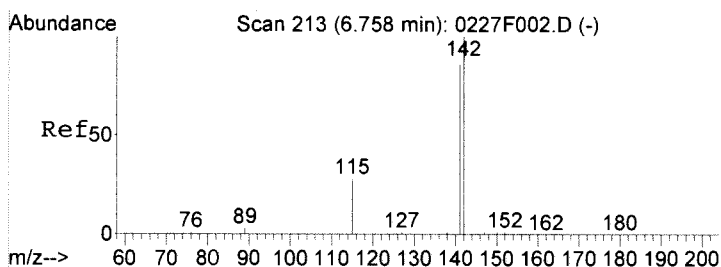
#2
 Naphthalene
 Concen: 21.94 ng/ml
 RT: 6.00 min Scan# 148
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

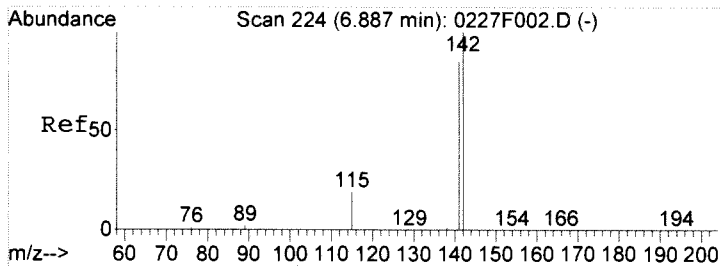
Tgt Ion	Ratio	Resp	Lower	Upper
128	100	9408		
127	12.8	0.0	42.2	
129	10.9	0.0	41.2	



#4
 2-Methylnaphthalene
 Concen: 9.89 ng/ml m
 RT: 6.76 min Scan# 213
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

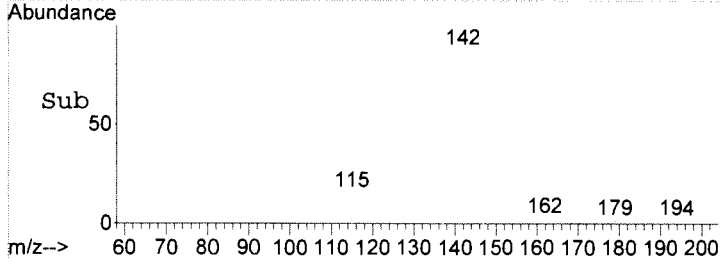
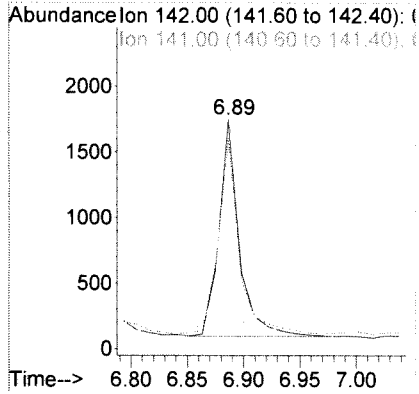
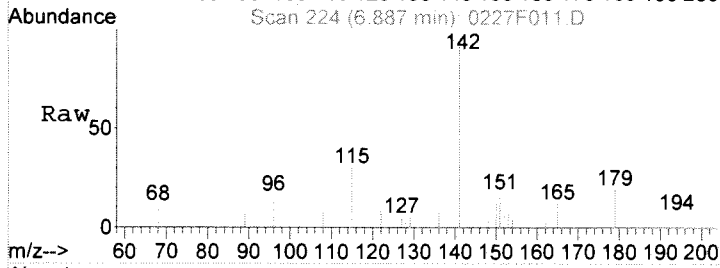
Tgt Ion	Ratio	Resp	Lower	Upper
142	100	2832		
141	92.4	52.0	112.0	
115	38.5	0.0	45.6	





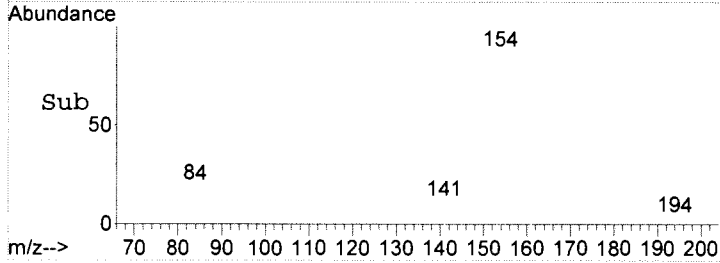
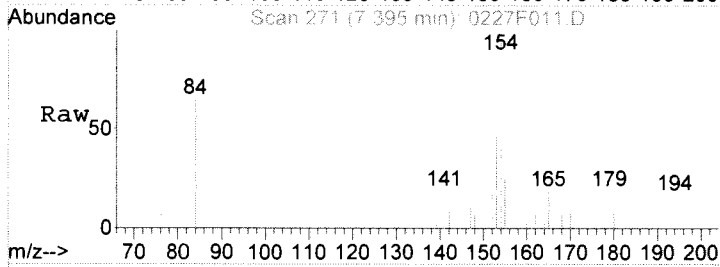
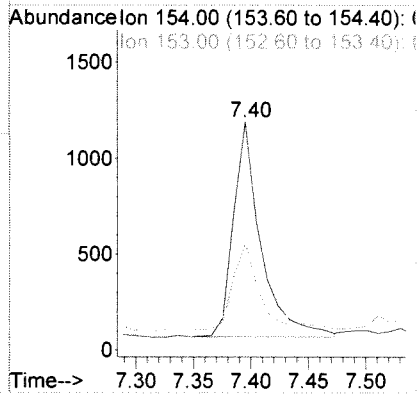
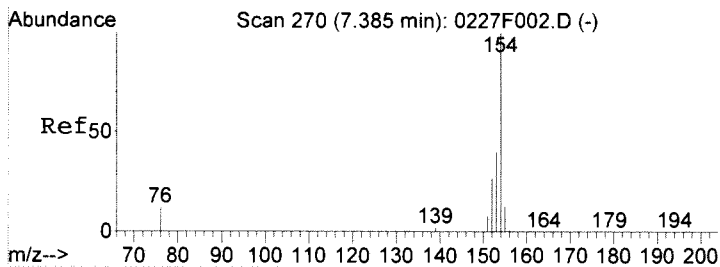
#5
 1-Methylnaphthalene
 Concen: 8.16 ng/ml
 RT: 6.89 min Scan# 224
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

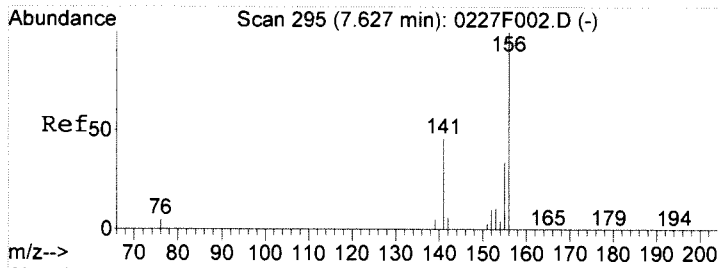
Tgt Ion	Resp	Lower	Upper
142	2080		
141	89.9	61.1	121.1
115	23.7	7.1	67.1



#6
 Biphenyl
 Concen: 5.42 ng/ml
 RT: 7.40 min Scan# 271
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

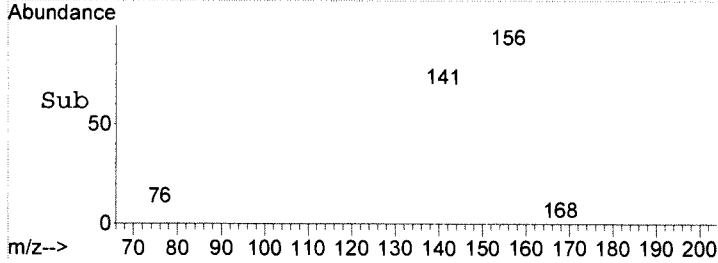
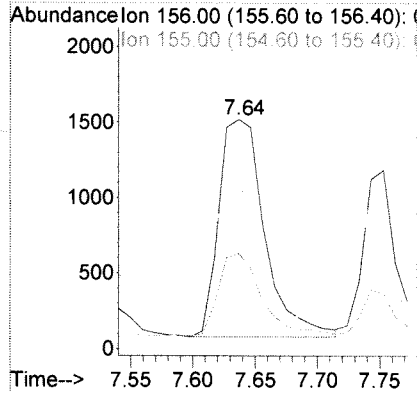
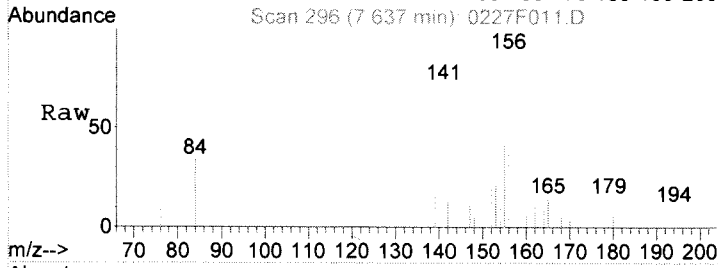
Tgt Ion	Resp	Lower	Upper
154	1860		
153	40.0	10.6	70.6
152	23.6	0.0	57.9





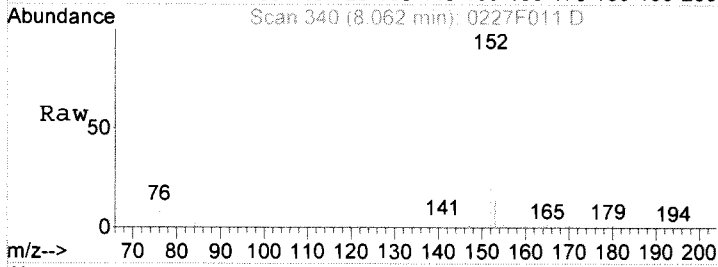
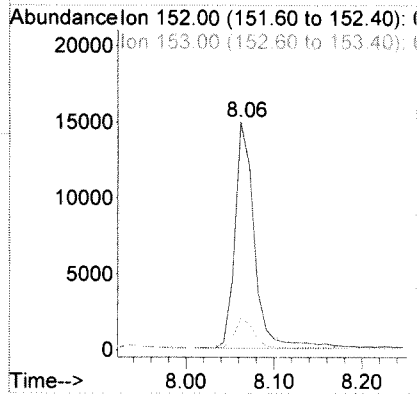
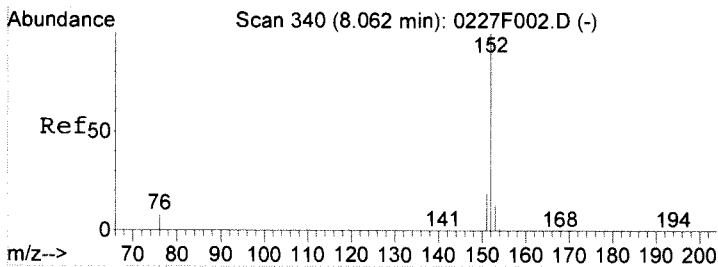
#7
 2,6-Dimethylnaphthalene
 Concen: 14.77 ng/ml
 RT: 7.64 min Scan# 296
 Delta R.T. 0.00 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

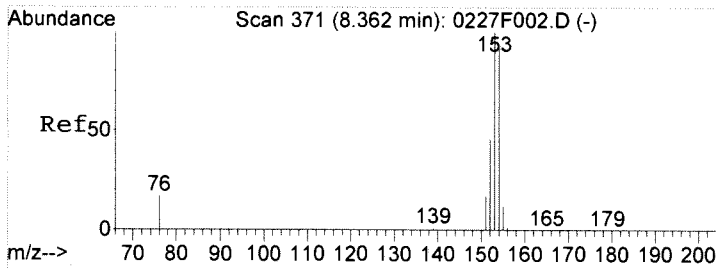
Tgt Ion	Resp	Lower	Upper
156	3669		
155	37.8	5.1	65.1
141	65.3	32.5	92.5



#13
 Acenaphthylene
 Concen: 49.01 ng/ml
 RT: 8.06 min Scan# 340
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

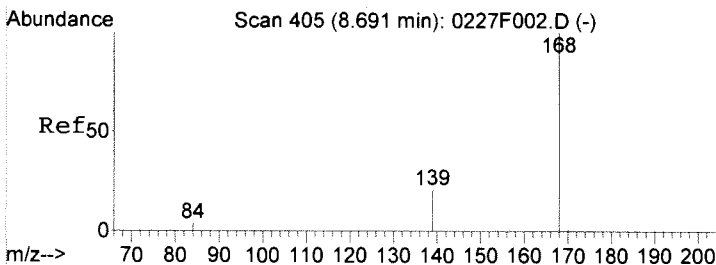
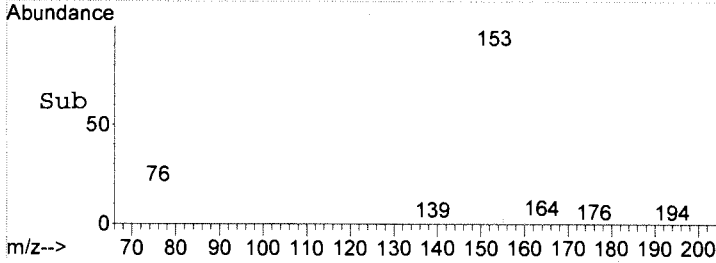
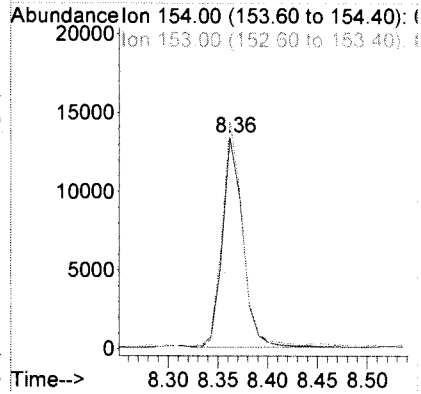
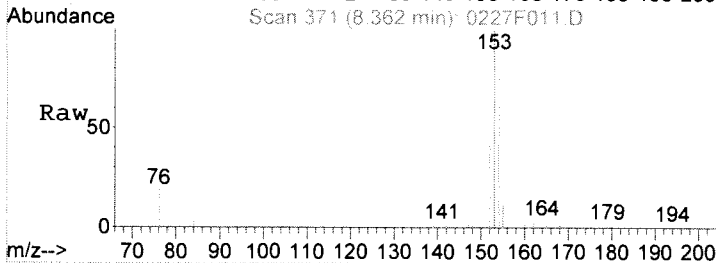
Tgt Ion	Resp	Lower	Upper
152	22862		
153	13.3	0.0	43.4
151	20.4	0.0	49.3





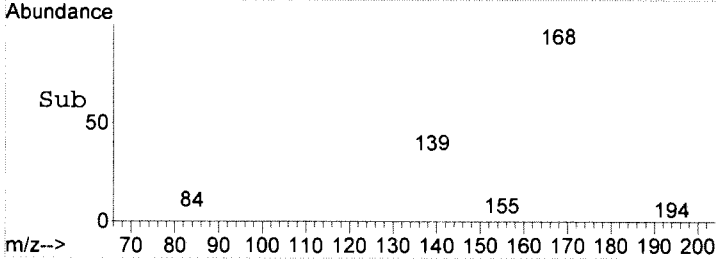
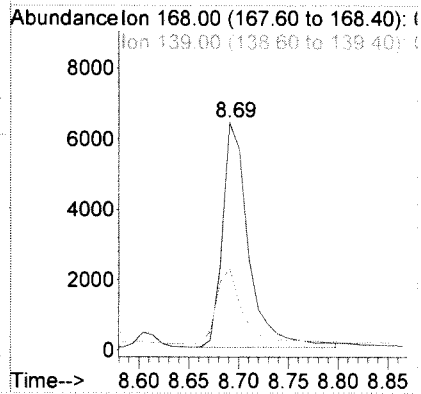
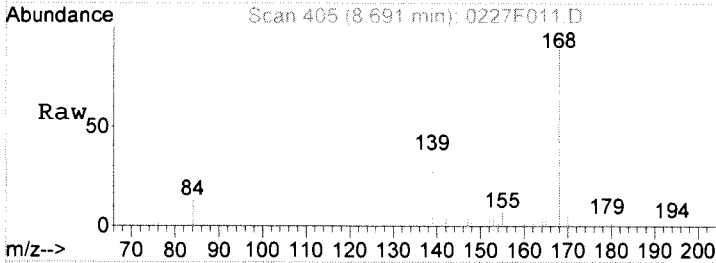
#14
 Acenaphthene
 Concen: 65.65 ng/ml
 RT: 8.36 min Scan# 371
 Delta R.T. -0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

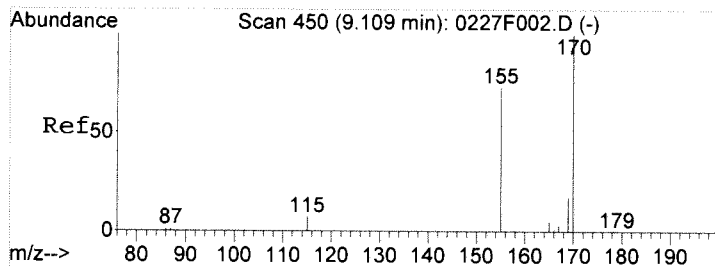
Tgt Ion	Ratio	Lower	Upper
154	100		
153	107.6	74.4	134.4
152	50.6	17.6	77.6



#15
 Dibenzofuran
 Concen: 27.12 ng/ml
 RT: 8.69 min Scan# 405
 Delta R.T. -0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

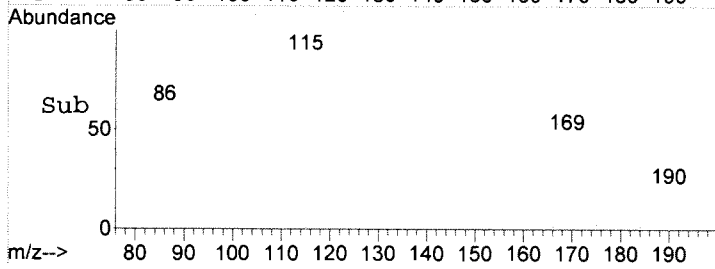
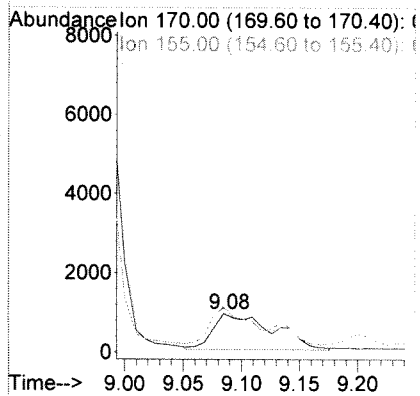
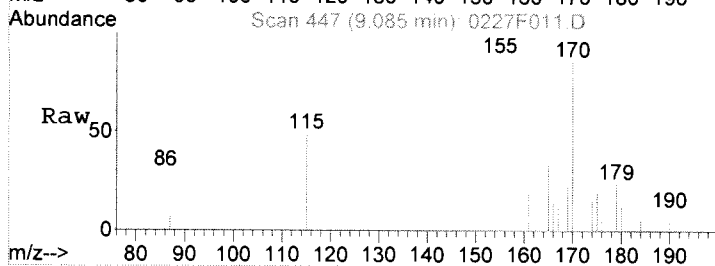
Tgt Ion	Ratio	Lower	Upper
168	100		
139	34.1	0.0	46.9
84	6.3	0.0	32.7





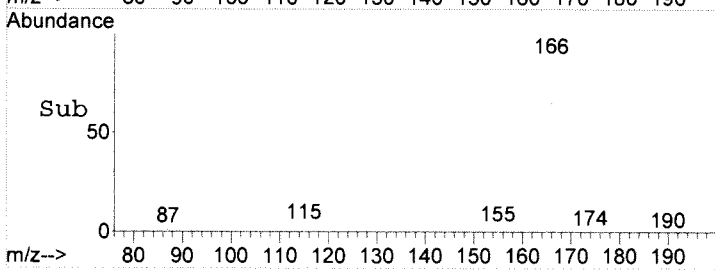
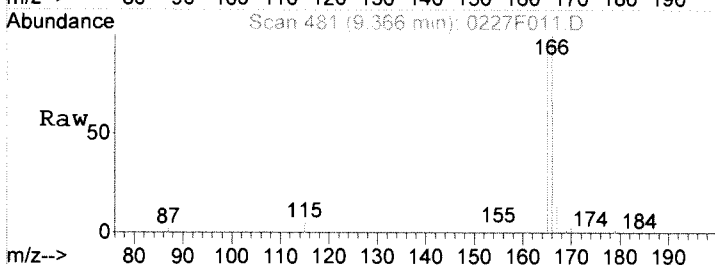
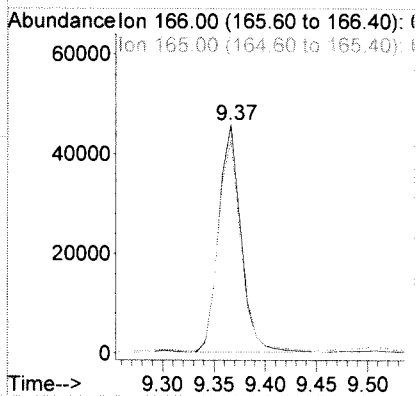
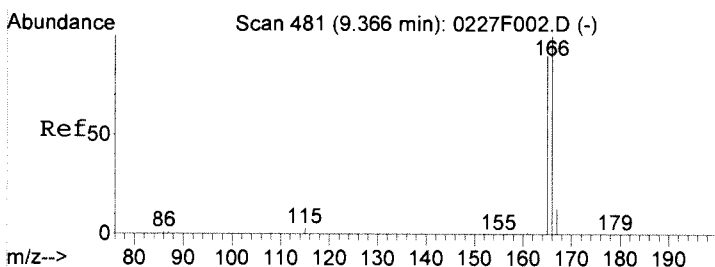
#16
 2,3,5-Trimethylnaphthalene
 Concen: 12.36 ng/ml m
 RT: 9.08 min Scan# 447
 Delta R.T. -0.04 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

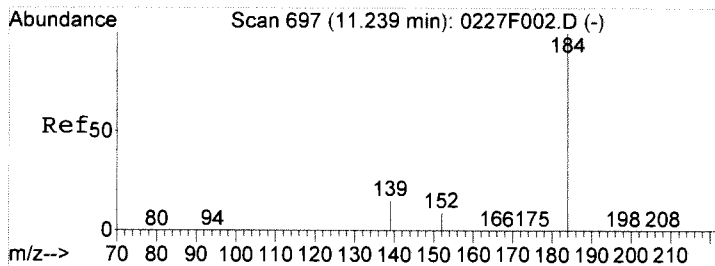
Tgt Ion	Ratio	Resp	Lower	Upper
170	100	3283		
155	115.8	36.5	96.5#	
115	56.3	0.0	36.6#	



#18
 Fluorene
 Concen: 203.88 ng/ml
 RT: 9.37 min Scan# 481
 Delta R.T. -0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

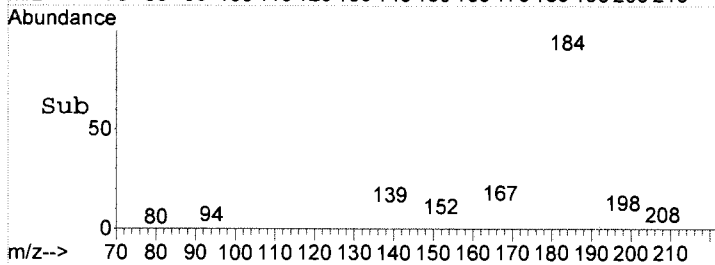
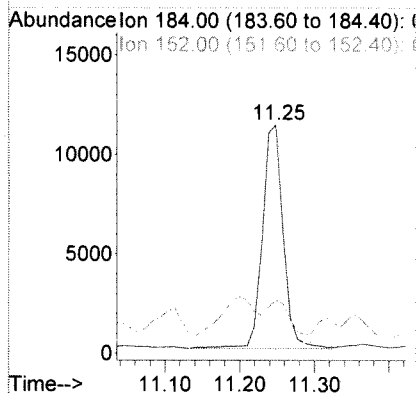
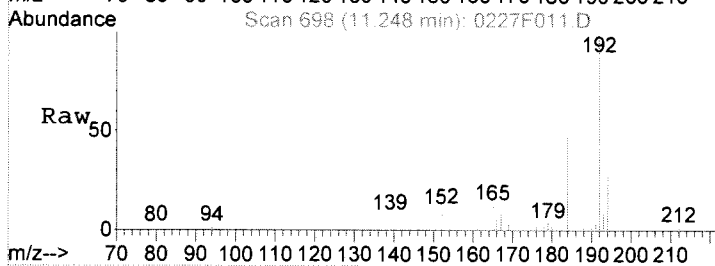
Tgt Ion	Ratio	Resp	Lower	Upper
166	100	70187		
165	92.9	62.7	122.7	
167	13.5	0.0	43.3	





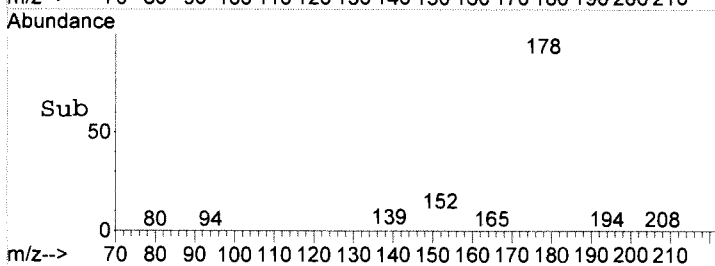
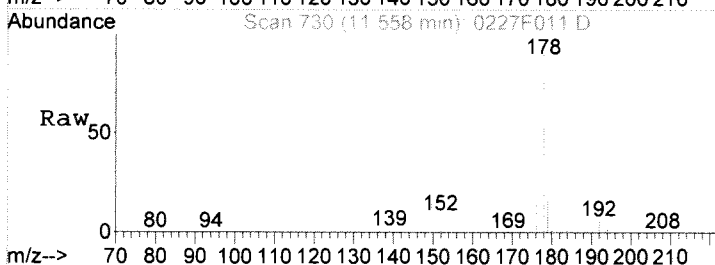
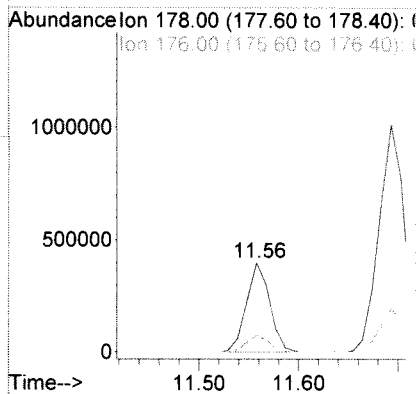
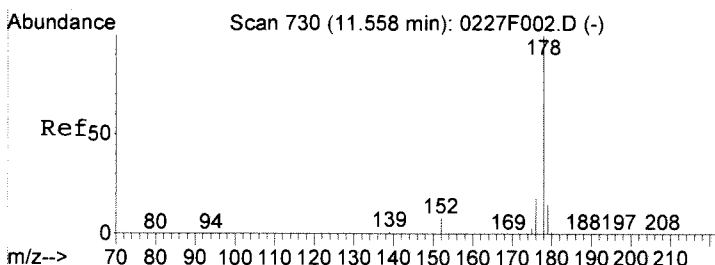
#23
 Dibenzothiophene
 Concen: 44.28 ng/ml
 RT: 11.25 min Scan# 698
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

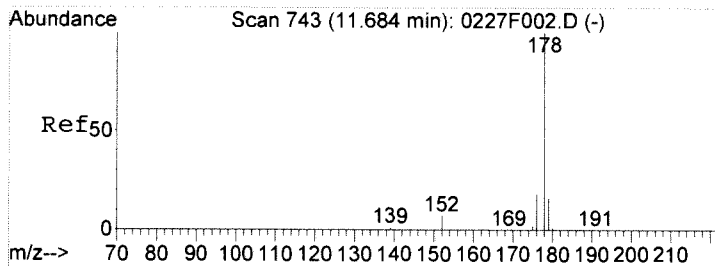
Tgt Ion	Ratio	Lower	Upper
184	100		
152	15.5	0.0	39.1
139	14.5	0.0	45.2



#28
 Phenanthrene
 Concen: 1210.82 ng/ml
 RT: 11.56 min Scan# 730
 Delta R.T. -0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

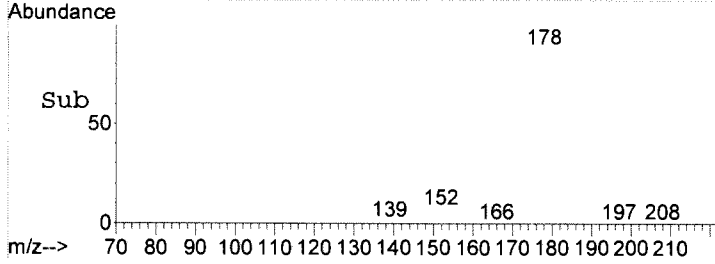
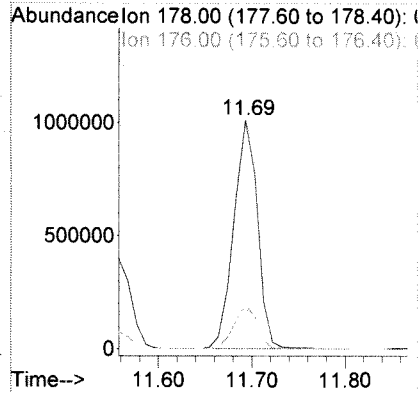
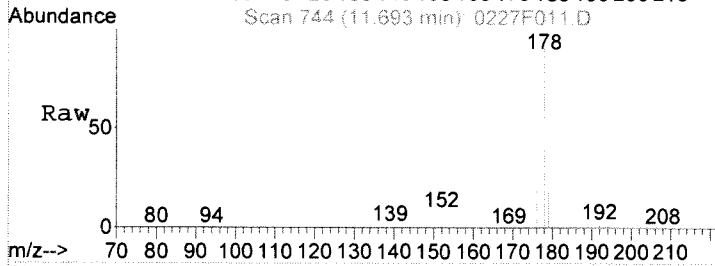
Tgt Ion	Ratio	Lower	Upper
178	100		
176	18.9	0.0	48.7
179	16.1	0.0	45.5





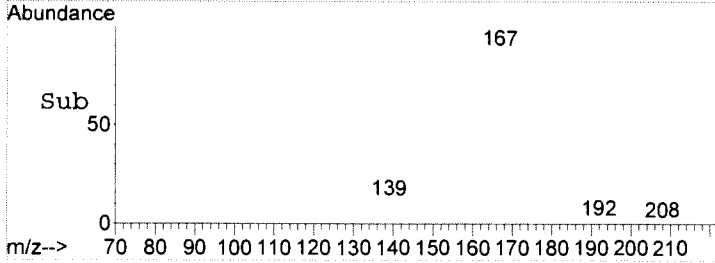
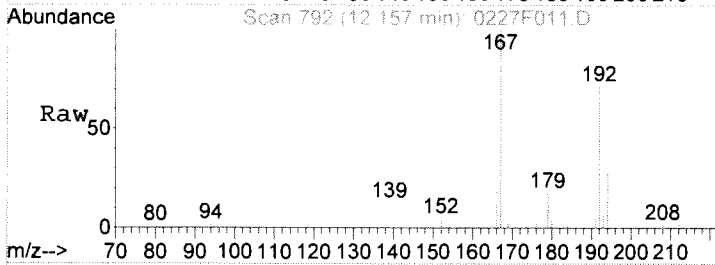
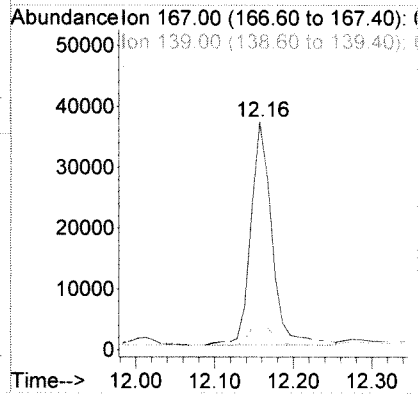
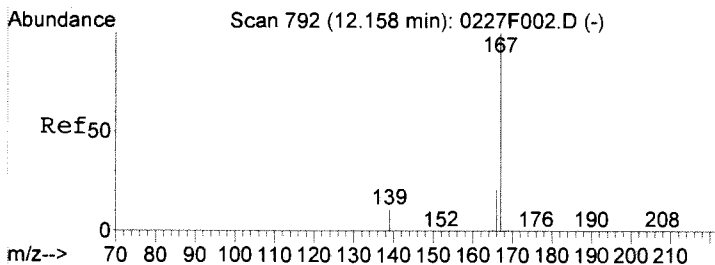
#29
 Anthracene
 Concen: 3524.84 ng/ml
 RT: 11.69 min Scan# 744
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

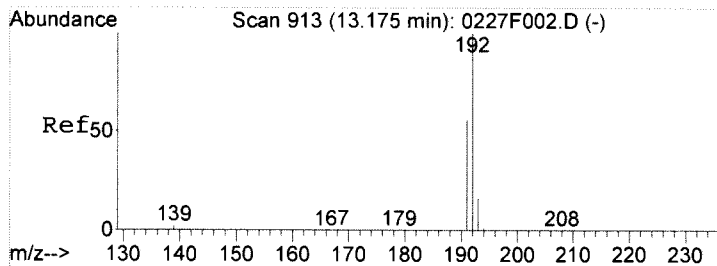
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.2	0.0	48.4
179	17.4	0.0	45.4



#30
 Carbazole
 Concen: 156.04 ng/ml
 RT: 12.16 min Scan# 792
 Delta R.T. -0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

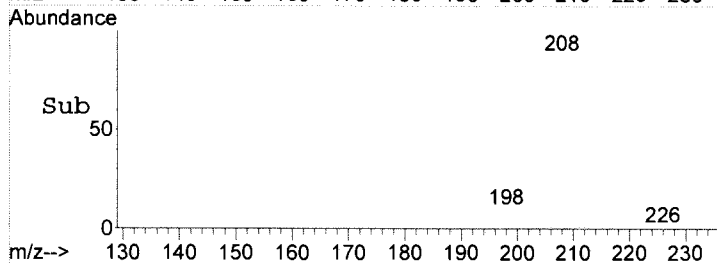
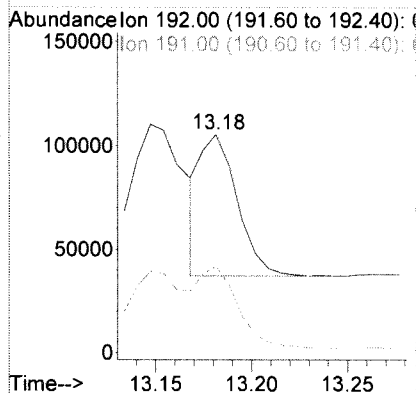
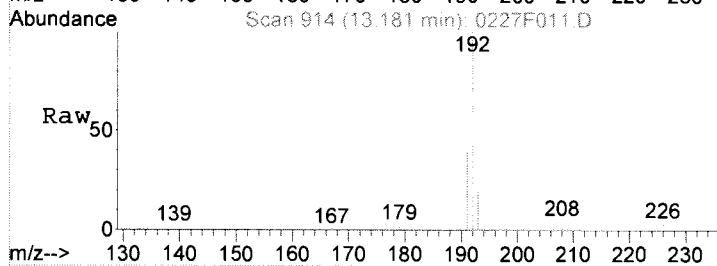
Tgt Ion	Ratio	Lower	Upper
167	100		
139	11.9	0.0	41.5
166	22.6	0.0	50.7





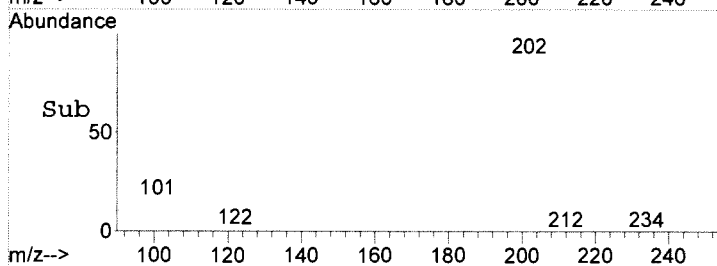
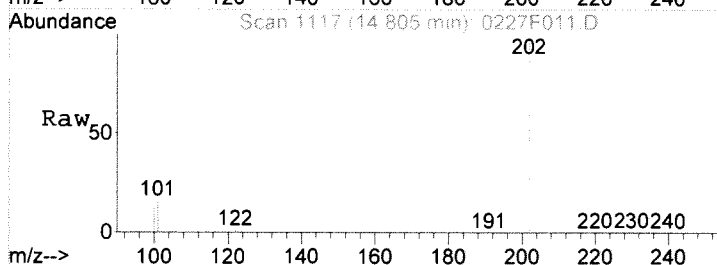
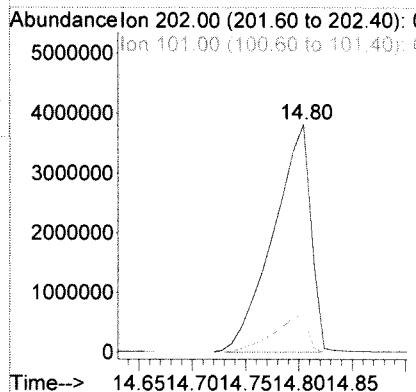
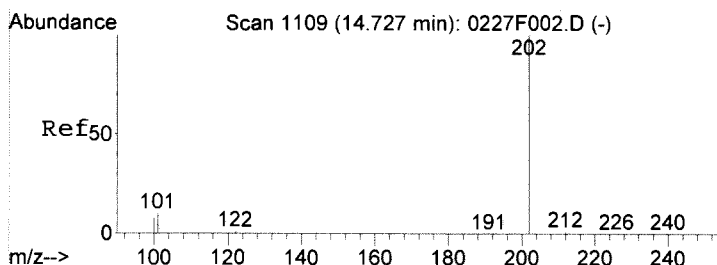
#31
 1-Methylphenanthrene
 Concen: 242.42 ng/ml
 RT: 13.18 min Scan# 914
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

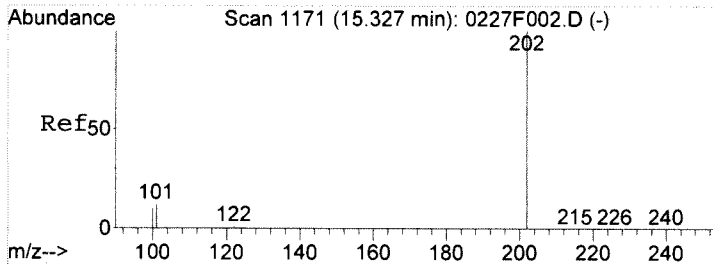
Tgt Ion	Resp	Lower	Upper
192	100		
191	58.1	27.7	87.7
193	22.8	0.0	45.6



#36
 Fluoranthene
 Concen: 16000.26 ng/ml
 RT: 14.80 min Scan# 1117
 Delta R.T. 0.06 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

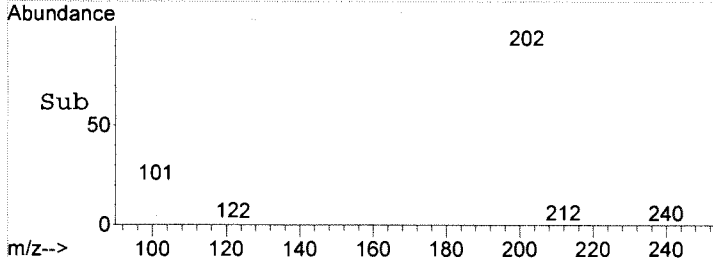
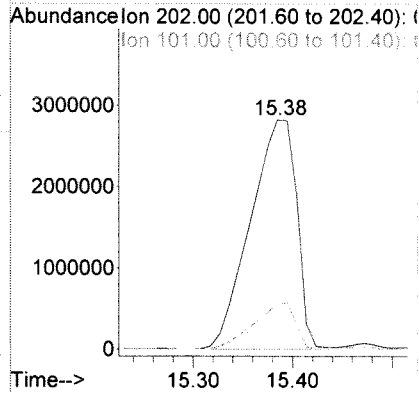
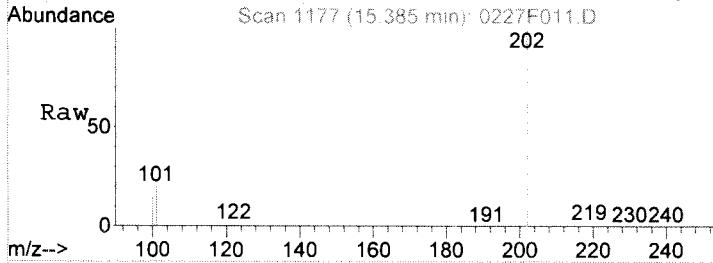
Tgt Ion	Resp	Lower	Upper
202	100		
101	15.9	0.0	40.5
100	11.5	0.0	37.9





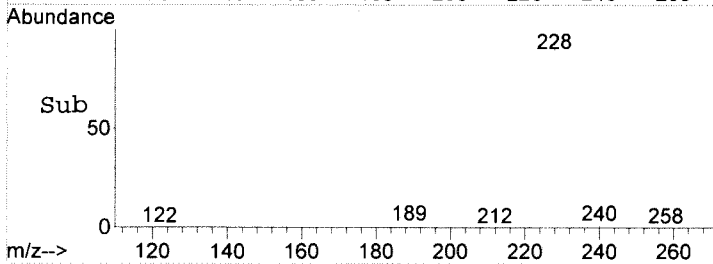
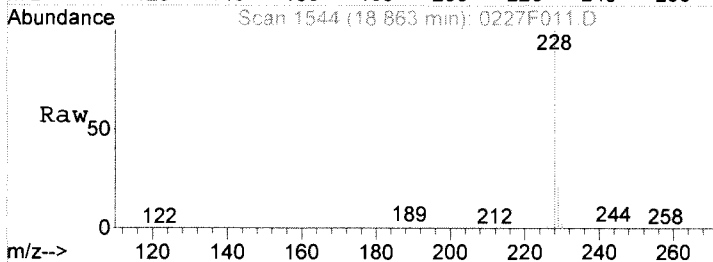
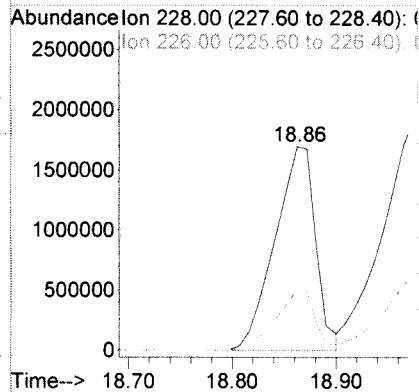
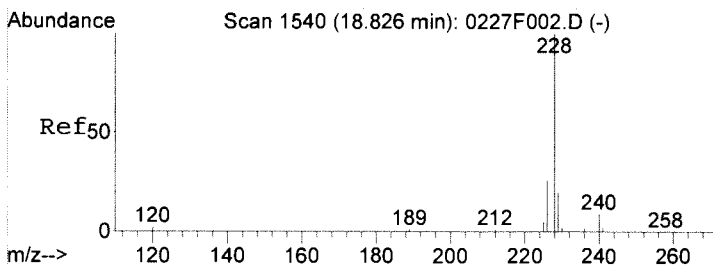
#39
 Pyrene
 Concen: 16965.28 ng/ml
 RT: 15.38 min Scan# 1177
 Delta R.T. 0.04 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

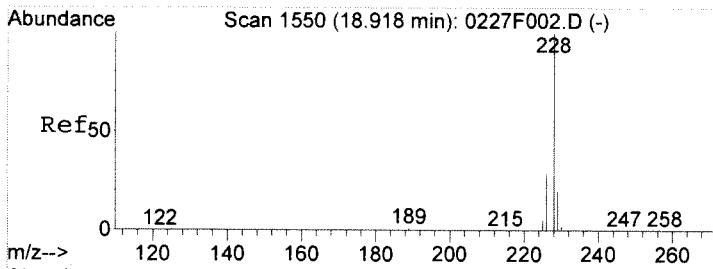
Tgt Ion	202	101	100	Resp	9069880	Lower	Upper
Ion Ratio	100	19.7	14.7			0.0	40.9
						0.0	38.9



#45
 Benz (a) anthracene
 Concen: 8902.15 ng/ml
 RT: 18.86 min Scan# 1544
 Delta R.T. 0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

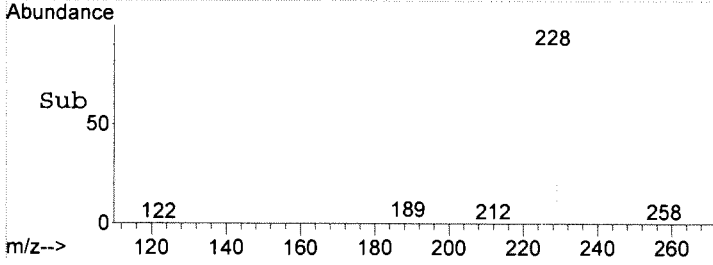
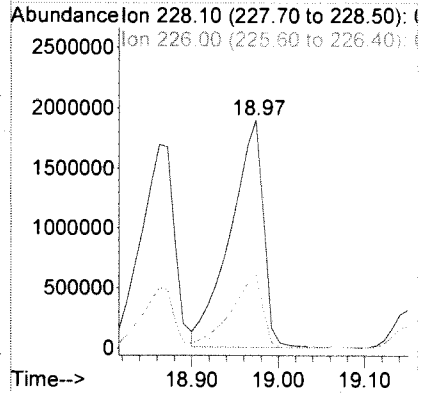
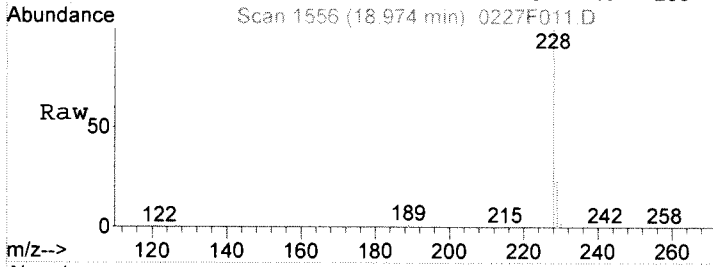
Tgt Ion	228	226	229	Resp	4578030	Lower	Upper
Ion Ratio	100	29.7	24.1			0.0	56.6
						0.0	50.0





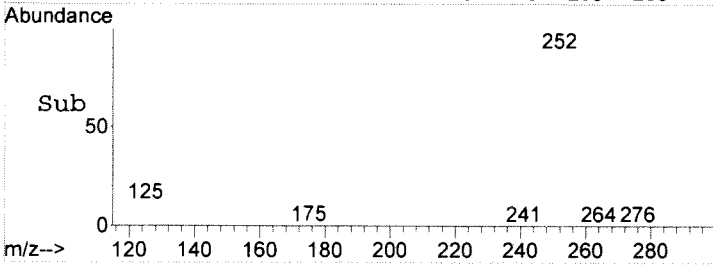
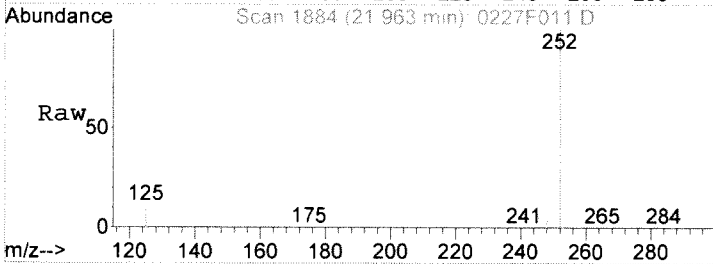
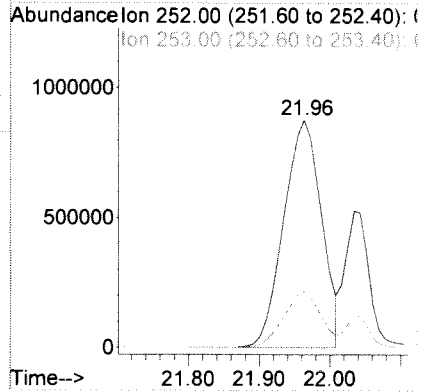
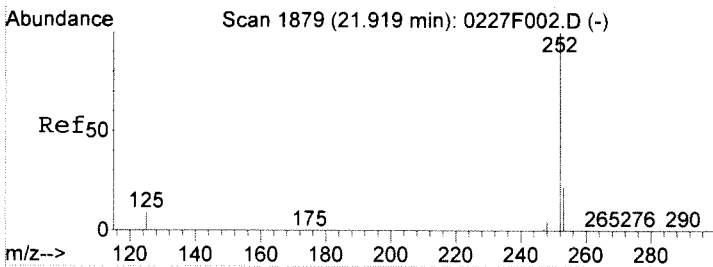
#46
Chrysene
 Concen: 9760.17 ng/ml
 RT: 18.97 min Scan# 1556
 Delta R.T. 0.03 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

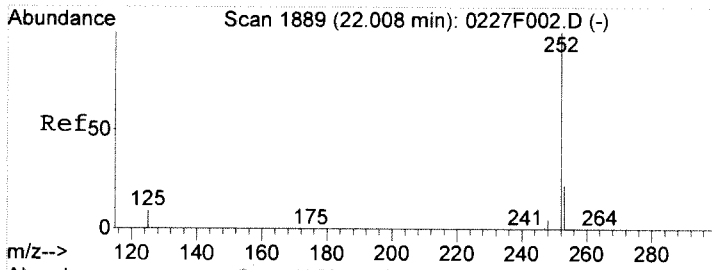
Tgt Ion	Ratio	Lower	Upper
228	100		
226	32.1	0.0	58.4
229	23.7	0.0	49.9



#52
Benzo(b)fluoranthene
 Concen: 5116.20 ng/ml
 RT: 21.96 min Scan# 1884
 Delta R.T. 0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

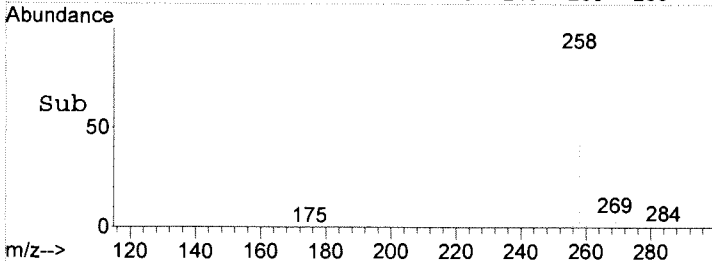
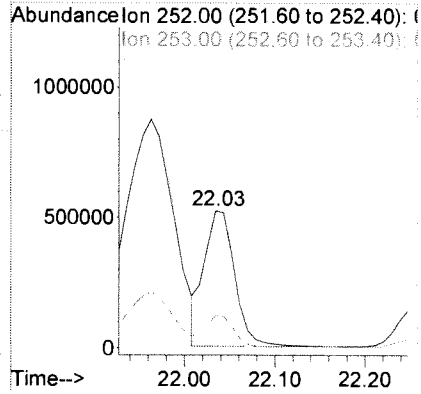
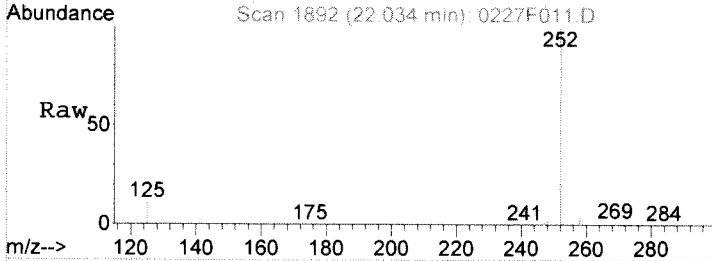
Tgt Ion	Ratio	Lower	Upper
252	100		
253	24.4	0.0	51.9
125	10.8	0.0	38.2





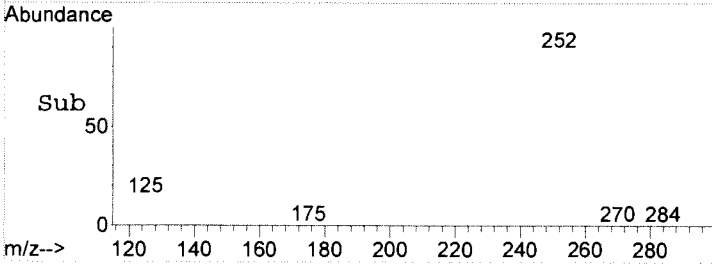
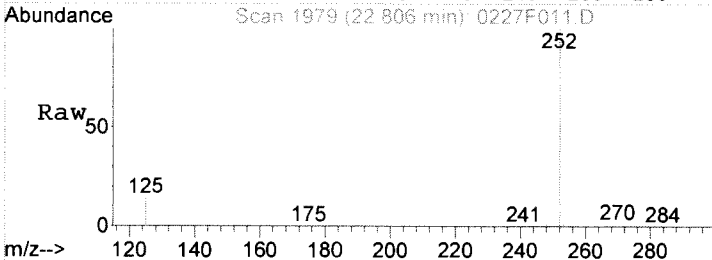
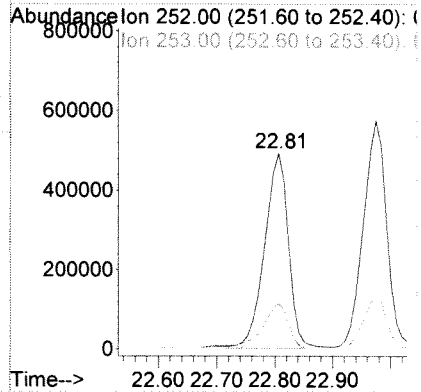
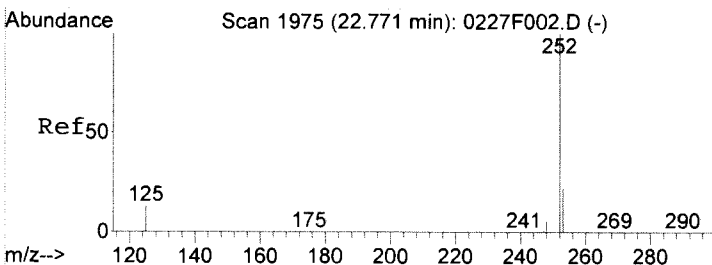
#53
 Benzo(k) fluoranthene
 Concen: 1902.10 ng/ml
 RT: 22.03 min Scan# 1892
 Delta R.T. 0.00 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

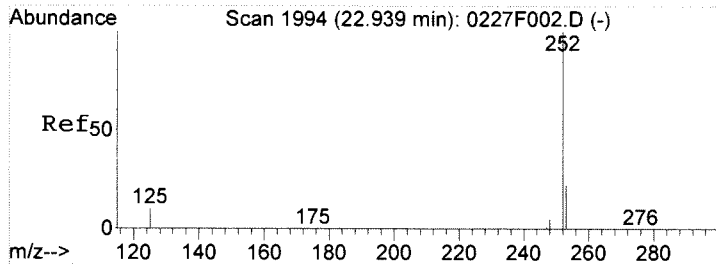
Tgt Ion	252	253	125	Resp	1226206	Lower	Upper
Ion Ratio	100	23.1	10.0			0.0	51.9
						0.0	38.7



#54
 Benzo(e) pyrene
 Concen: 2284.56 ng/ml
 RT: 22.81 min Scan# 1979
 Delta R.T. 0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

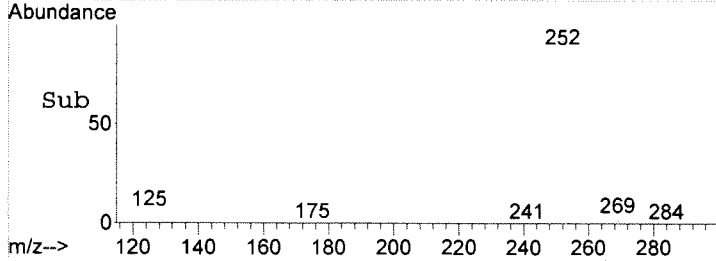
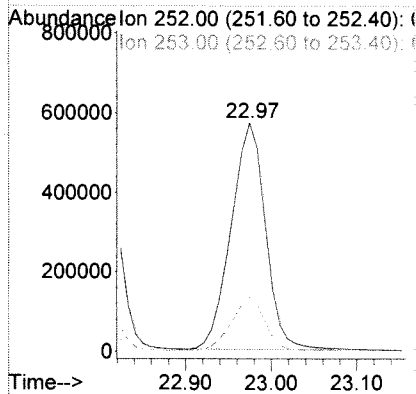
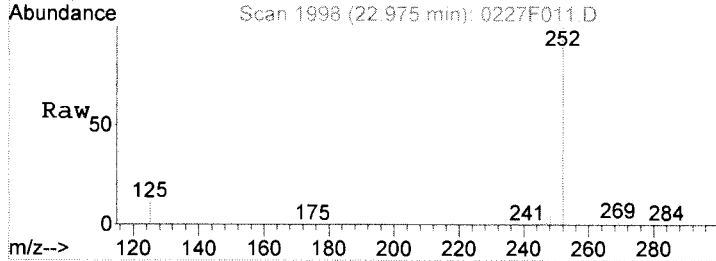
Tgt Ion	252	253	125	Resp	1415776	Lower	Upper
Ion Ratio	100	22.9	14.0			0.0	51.6
						0.0	42.3





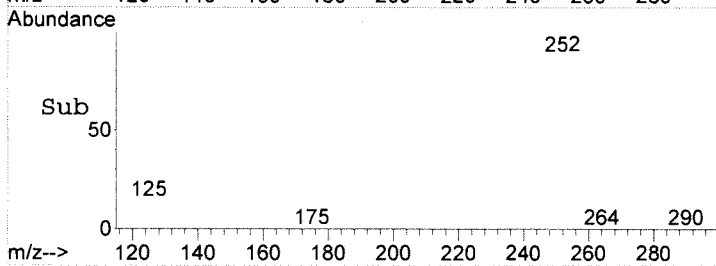
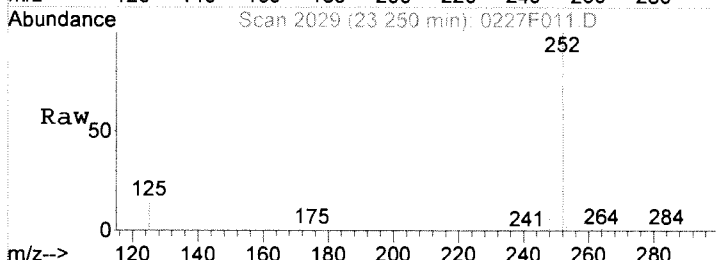
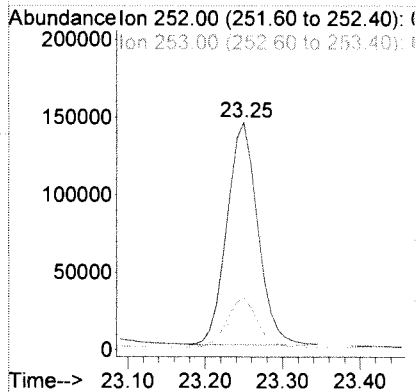
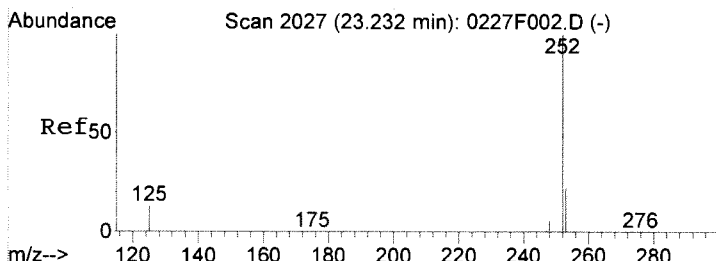
#55
 Benzo(a)pyrene
 Concen: 2883.09 ng/ml
 RT: 22.97 min Scan# 1998
 Delta R.T. 0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

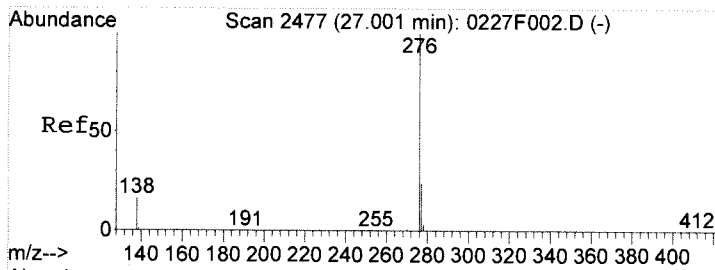
Tgt Ion	Ratio	Lower	Upper
252	100		
253	23.5	0.0	52.1
125	10.5	0.0	39.5



#56
 Perylene
 Concen: 685.58 ng/ml
 RT: 23.25 min Scan# 2029
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

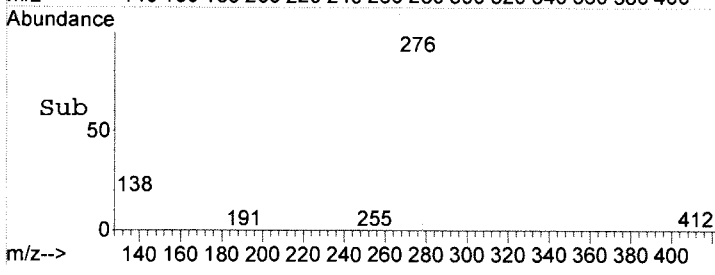
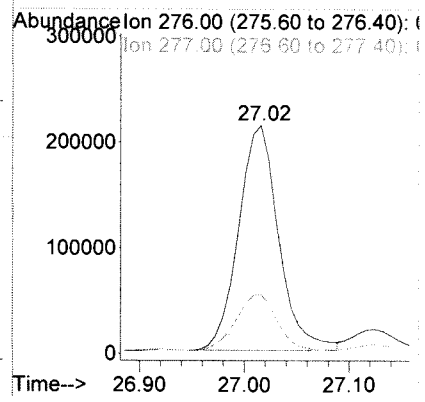
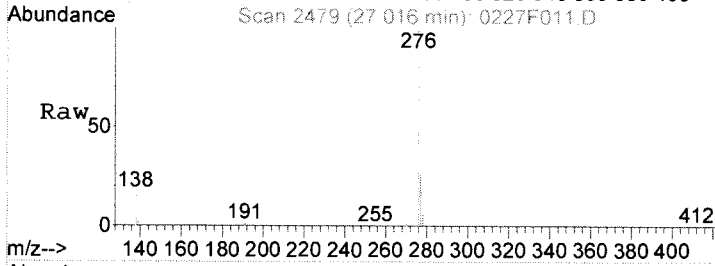
Tgt Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	51.9
125	13.7	0.0	43.0





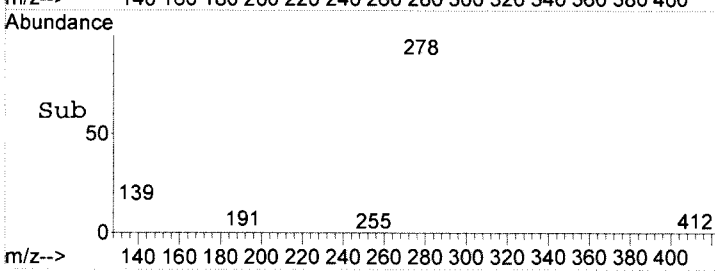
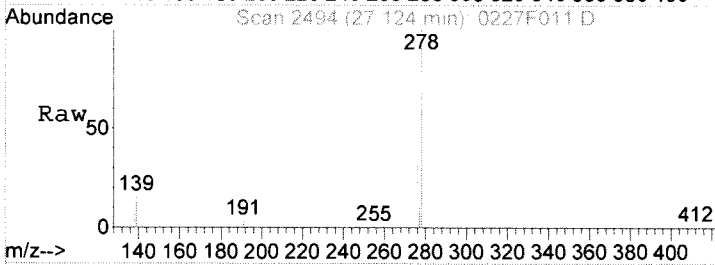
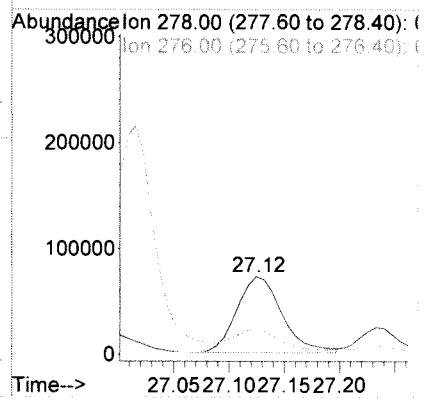
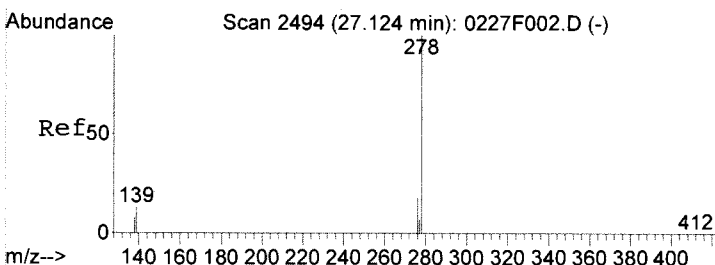
#57
 Indeno(1,2,3-cd)pyrene
 Concen: 999.04 ng/ml
 RT: 27.02 min Scan# 2479
 Delta R.T. 0.00 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

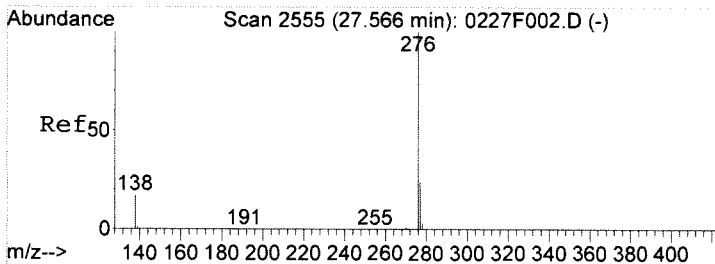
Tgt Ion	Resp	Lower	Upper
276	100		
277	24.8	0.0	54.0
138	16.3	0.0	46.0



#58
 Dibenz(a,h)anthracene
 Concen: 343.92 ng/ml
 RT: 27.12 min Scan# 2494
 Delta R.T. -0.02 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

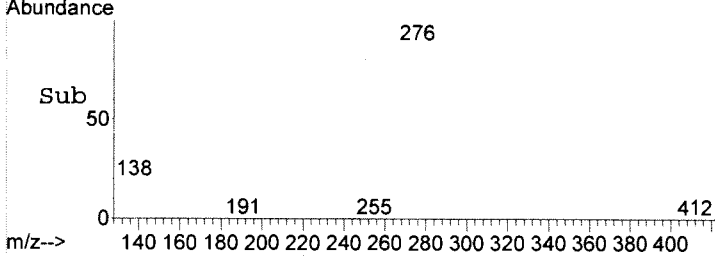
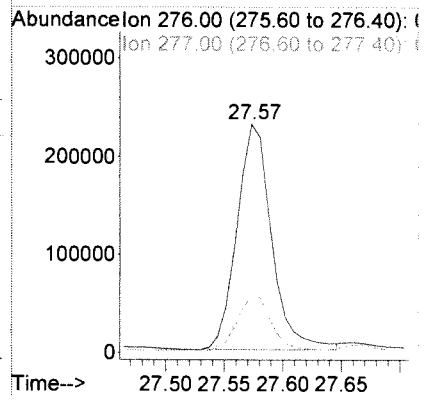
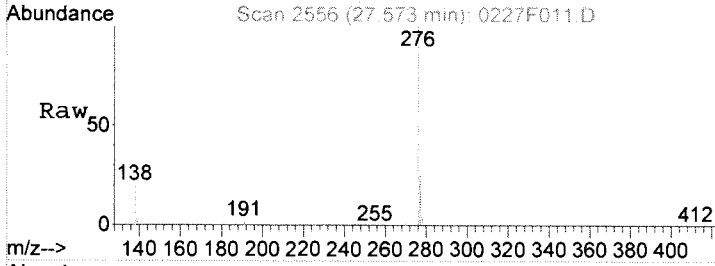
Tgt Ion	Resp	Lower	Upper
278	100		
276	26.7	0.0	55.0
139	13.1	0.0	42.8





#59
 Benzo(g,h,i)perylene
 Concen: 697.42 ng/ml
 RT: 27.57 min Scan# 2556
 Delta R.T. -0.01 min
 Lab File: 0227F011.D
 Acq: 27 Feb 2018 5:12 pm

Tgt Ion	Ratio	Lower	Upper
276	100		
277	24.4	0.0	54.2
138	19.2	0.0	46.5

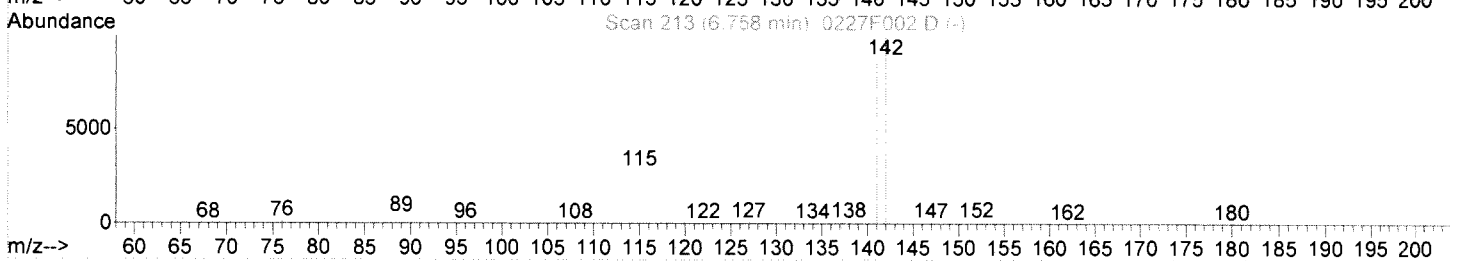
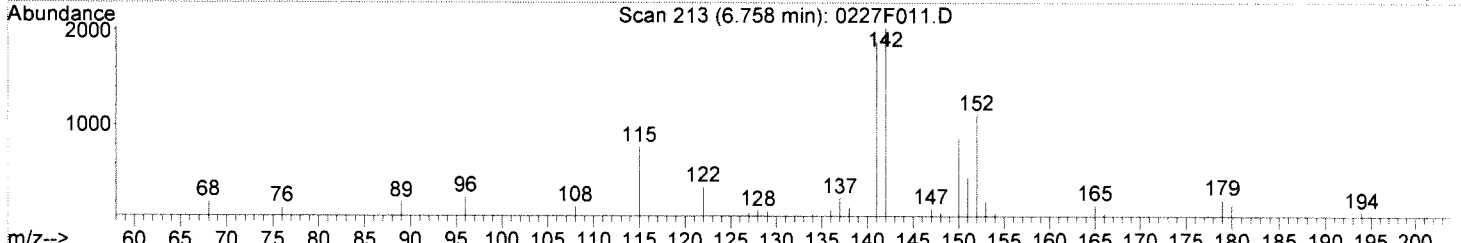
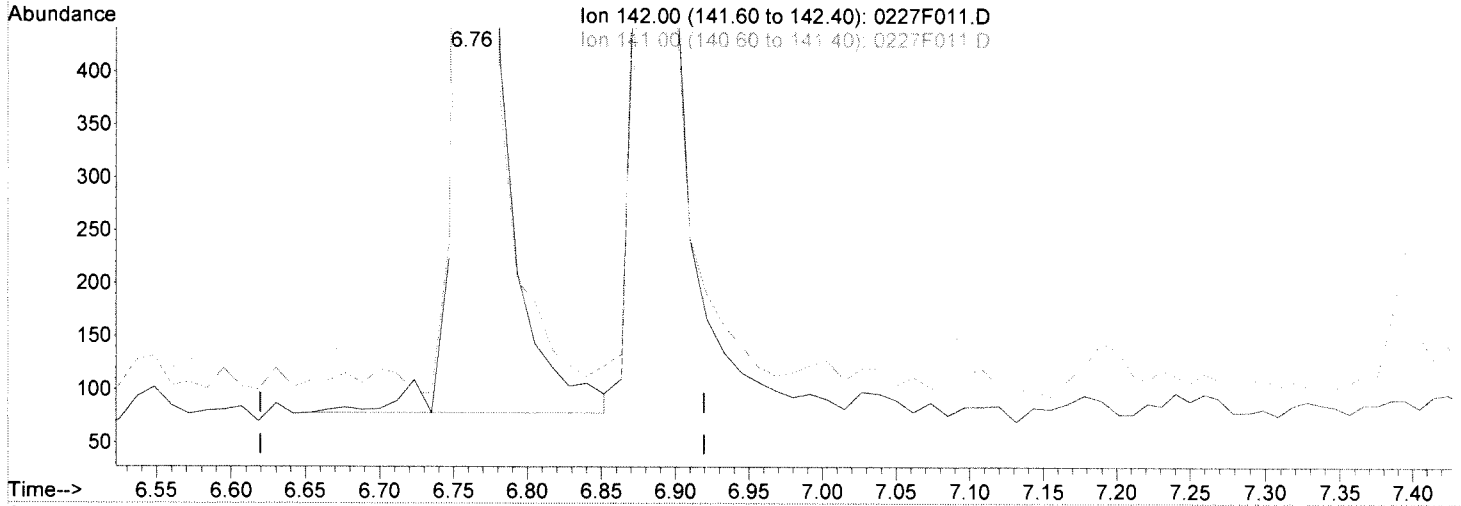


Data File : J:\MS20\DATA\022718\0227F011.D
 Acq On : 27 Feb 2018 5:12 pm
 Sample : K1801267-009
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:53 2018

Vial: 11
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F011.D

(4) 2-Methylnaphthalene (T)

6.76min 10.08ng/ml

response 2887

Ion	Exp%	Act%
142.00	100	100
141.00	82.00	90.51
115.00	15.60	32.73
0.00	0.00	0.00

Manual Integration:

Before

02/28/18

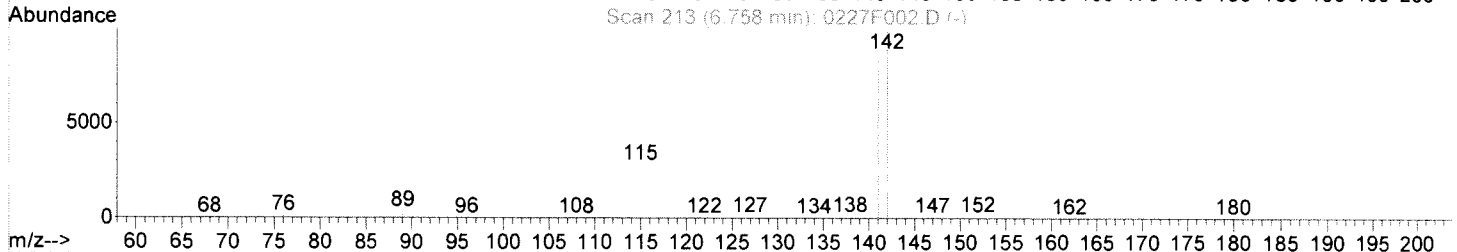
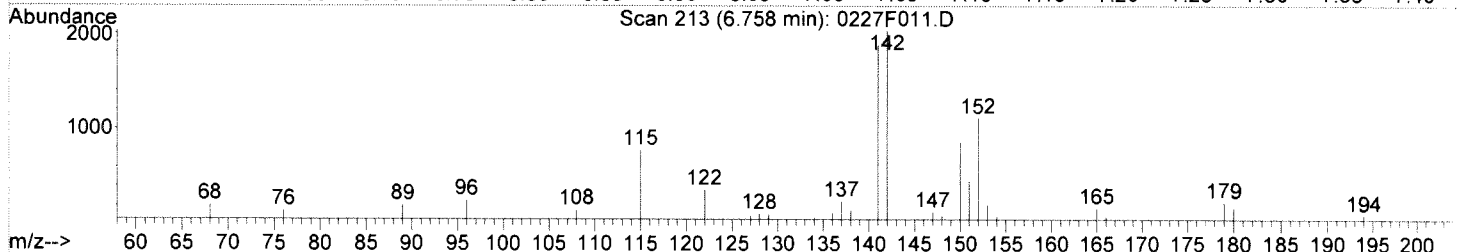
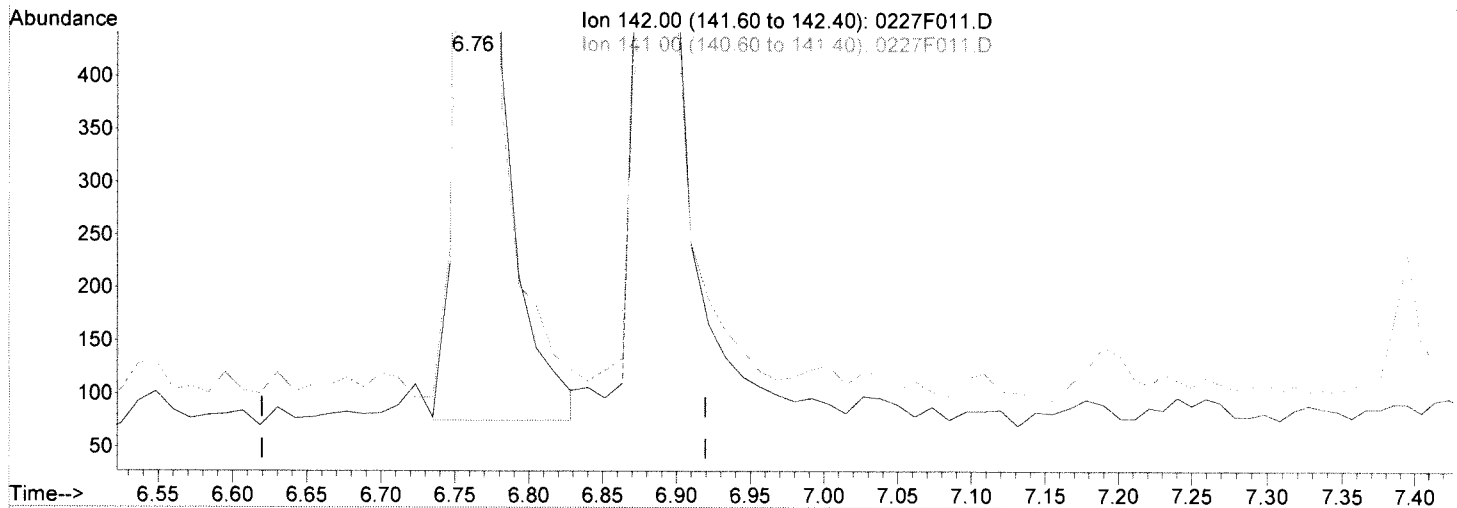
Handwritten signatures and initials, including a signature that appears to be 'LW' and another that appears to be 'MJ'.

Data File : J:\MS20\DATA\022718\0227F011.D
Acq On : 27 Feb 2018 5:12 pm
Sample : K1801267-009
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 28 9:49 2018

Vial: 11
Operator: LWeiskopf
Inst : MS20
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 28 08:52:31 2018
Response via : Multiple Level Calibration



TIC: 0227F011.D

(4) 2-Methylnaphthalene (T)

6.76min 9.89ng/ml m

response 2832

Ion	Exp%	Act%
142.00	100	100
141.00	82.00	92.35
115.00	15.60	38.48
0.00	0.00	0.00

Manual Integration:

After

BLC

02/28/18

Handwritten signatures and initials: 'a' and 'M'

Exception Report

Data File: J:\MS14\DATA\022818\0228F005.D
Lab ID: K1801267-009
Run Type: DL
Matrix: SEDIMENT

Date Acquired: 02/28/2018 10:37
Date Quantitated: 03/01/2018 07:30
Batch ID: KWG1801214
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA		x
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Surrogates	Terphenyl-d14	169	38	113	See IX

Primary Review: _____

MAR 01 2018

Secondary Review: _____

wp

Quantitation Report

Data File: J:\MS14\DATA\022818\0228F005.D	Instrument: MS14
Acqu Date: 02/28/2018 10:37	Quant Date: 03/01/2018 07:30
Run Type: DL	ListJoinID: LJ18598
Lab ID: K1801267-009	Vial: 5
	Dilution: 20.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: SEDIMENT
Prod Code: 8270D PAH SIM	Collect Date: 02/07/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801214	Prep Lot: KWG1801007	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664503	Prep Date: 02/19/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18598
Tune Ref: J:\MS14\DATA\022818\0228F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.71	0.00	136	61130	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	31561	200.00	OK
3	Phenanthrene-d10	7.52	0.00	188	64515	200.00	OK
4	Chrysene-d12	10.03	0.00	240	74923	200.00	OK
5	Perylene-d12	13.07	0.00	264	87204	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	1867	8.65	87	38-104	OK NR
3	Fluoranthene-d10	8.51	0.00	0.00	212	4056	10.01	100	39-109	OK NR
4	Terphenyl-d14	8.85	0.00	0.00	244	5348	16.93	169	38-113	* NR

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.73		0.00	128	1347	3.87	98	JD	NR
1	2-Methylnaphthalene	5.38		0.00	142	539	2.22	56	JD	NR
2	Acenaphthylene	6.16		0.00	152	3149	8.15	210	D	NR
2	Acenaphthene	6.31		0.00	154	1708	7.86	200	D	NR
2	Dibenzofuran	6.46		0.00	168	1253	3.67	93	JD	NR
2	Fluorene	6.74		0.00	166	4097	15.31	390	D	NR
3	Phenanthrene	7.54		0.00	178	29326	73.30	1900	D	NR
3	Anthracene	7.58		0.00	178	83885	212.60	5400	D	
3	Fluoranthene	8.52		0.00	202	647725	1,364	34000	D	
4	Pyrene	8.71		0.00	202	598820	1,324	33000	D	
4	Benz(a)anthracene	10.02		0.00	228	246851	546.37	14000	D	
4	Chrysene	10.07		0.00	228	275849	652.96	16000	D	
5	Benzo(b)fluoranthene	12.05		0.00	252	165007	299.72	7600	D	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\022818\0228F005.D	Instrument:	MS14
Acqu Date:	02/28/2018 10:37	Quant Date:	03/01/2018 07:30
Run Type:	DL	ListJoinID:	LJ18598
Lab ID:	K1801267-009	Vial:	5
		Dilution:	20.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.12		0.00	252	61276	113.32	2900	D	NR
5	Benzo(a)pyrene	12.90		0.00	252	75868	157.66	4000	D	
5	Indeno(1,2,3-cd)pyrene	15.34	-0.01	0.00	276	23038	53.29	1300	D	NR
5	Dibenz(a,h)anthracene	15.39		0.00	278	8730	19.83	500	D	NR
5	Benzo(g,h,i)perylene	15.72	-0.01	0.00	276	22543	46.87	1200	D	NR

Prep Amount: 10.433 g **Dilution:** 20.0
Prep Final Vol: 10 mL **Unit Factor:** 1
Solids: 75.9 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\022818\0228F005.D
 Acq On : 28 Feb 2018 10:37 am
 Sample : K1801267-009DIL 20X
 Misc :

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 12:08:16 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 06:43:32 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.71	136	61130	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	31561	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.52	188	64515	200.00	ng/ml	0.00
23) Chrysene-d12	10.03	240	74923	200.00	ng/ml	0.00
28) Perylene-d12	13.07	264	87204	200.00	ng/ml	0.01

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.35	152	1257	7.67	ng/ml	0.00
Spiked Amount 1000.000			Recovery =			0.77%
13) Fluorene-d10	6.72	176	1867	8.65	ng/ml	0.00
Spiked Amount 1000.000			Recovery =			0.86%
22) Fluoranthene-d10	8.51	212	4056	10.01	ng/ml	0.00
Spiked Amount 1000.000			Recovery =			1.00%
25) Terphenyl-d14	8.85	244	5348	16.93	ng/ml	0.00
Spiked Amount 1000.000			Recovery =			1.69%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.73	128	1347	3.87	ng/ml	97
4) 2-Methylnaphthalene	5.38	142	539	2.22	ng/ml#	89
5) 1-Methylnaphthalene	5.47	142	372	1.74	ng/ml	93
6) Biphenyl	5.79	154	557m	1.82	ng/ml	
7) 2,6-Dimethylnaphthalene	5.93	156	209	0.96	ng/ml	94
9) Acenaphthylene	6.16	152	3149	8.15	ng/ml	96
10) Acenaphthene	6.31	154	1708	7.86	ng/ml	99
11) Dibenzofuran	6.46	168	1253	3.67	ng/ml	96
12) 2,3,5-Trimethylnaphthalene	6.63	170	129m	0.59	ng/ml	
14) Fluorene	6.74	166	4097	15.31	ng/ml	100
16) Dibenzothiophene	7.44	184	976	2.39	ng/ml	93
17) Phenanthrene	7.54	178	29326	73.30	ng/ml	99
18) Anthracene	7.58	178	83885	212.60	ng/ml	100
19) Carbazole	7.72	167	3604	10.08	ng/ml	97
20) 1-Methylphenanthrene	8.05	192	2984m	9.81	ng/ml	
21) Fluoranthene	8.52	202	647725	1363.76	ng/ml	96
24) Pyrene	8.71	202	598820	1324.16	ng/ml	98
26) Benz(a)anthracene	10.02	228	246851	546.37	ng/ml	99
27) Chrysene	10.07	228	275849	652.96	ng/ml	99
29) Benzo(b)fluoranthene	12.05	252	165007	299.72	ng/ml	98
30) Benzo(k)fluoranthene	12.12	252	61276	113.32	ng/ml	97
31) Benzo(e)pyrene	12.75	252	65895	125.48	ng/ml	97
32) Benzo(a)pyrene	12.90	252	75868	157.66	ng/ml	98
33) Perylene	13.14	252	17488	36.89	ng/ml	96
34) Indeno(1,2,3-cd)pyrene	15.34	276	23038	53.29	ng/ml	97
35) Dibenz(a,h)anthracene	15.39	278	8730	19.83	ng/ml	98
36) Benzo(g,h,i)perylene	15.72	276	22543	46.87	ng/ml	96

(#) = qualifier out of range (m) = manual integration
 0228F005.D 101317PAH.M Thu Mar 01 07:30:32 2018

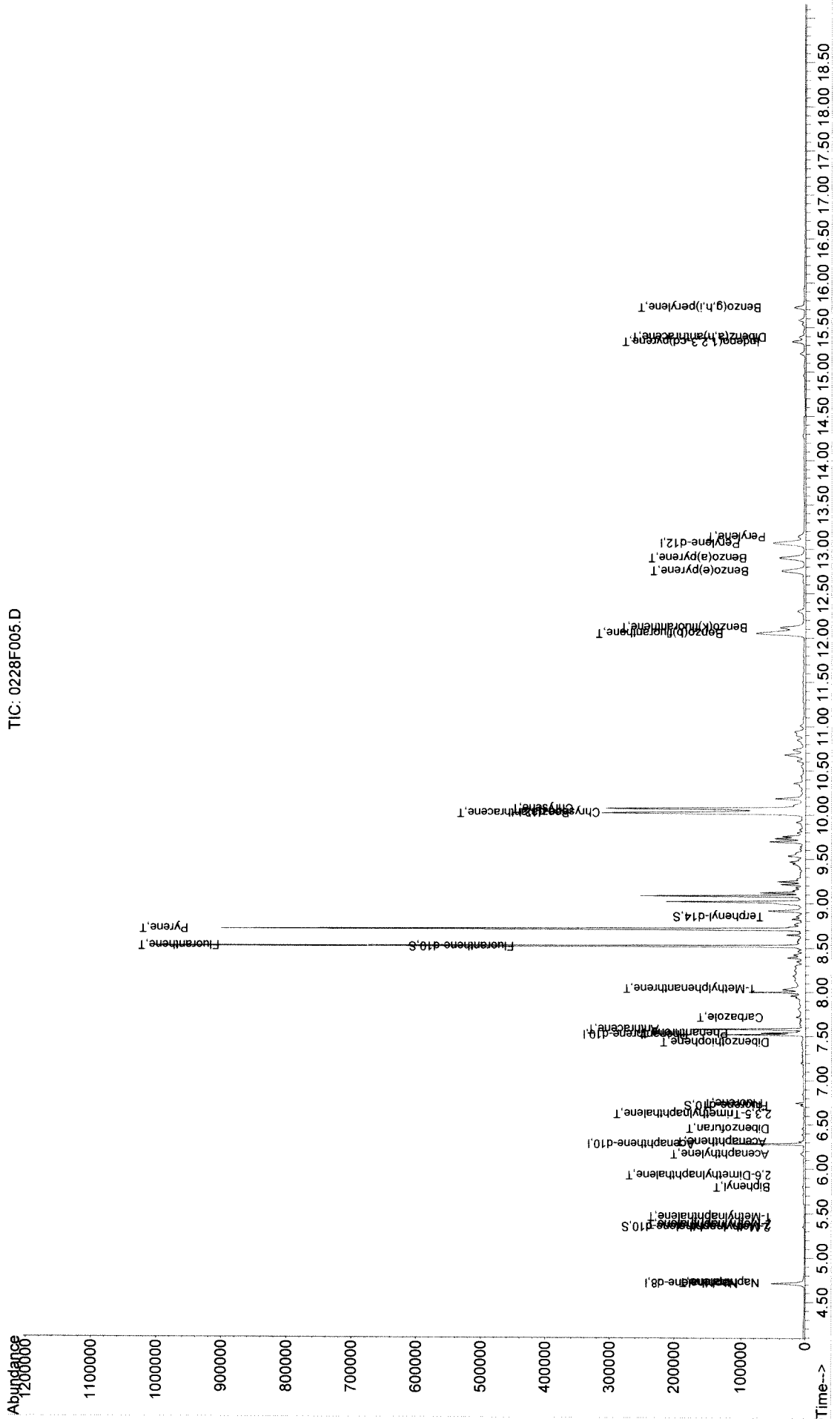
Data File : J:\MS14\DATA\022818\0228F005.D
 Acq On : 28 Feb 2018 10:37 am
 Sample : K1801267-009DIL 20X
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 1 7:30 2018

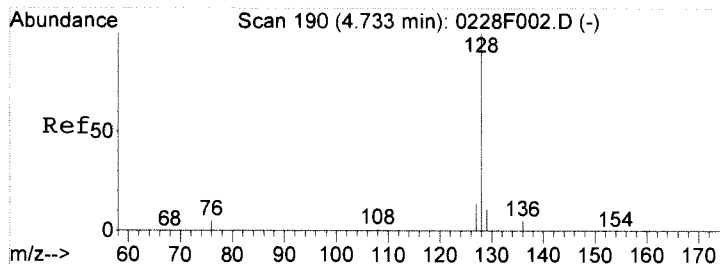
Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Thu Mar 01 07:26:50 2018
 Response via : Initial Calibration

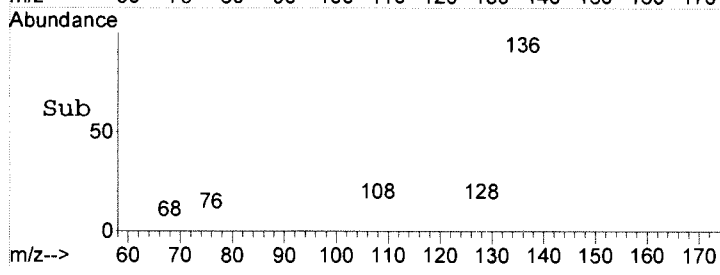
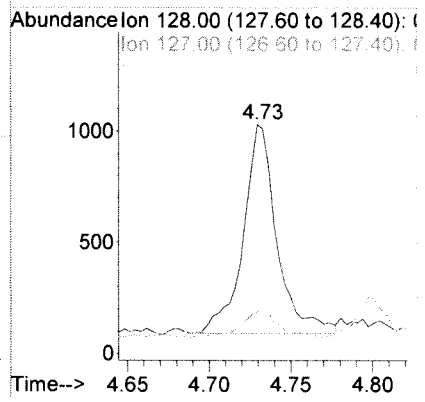
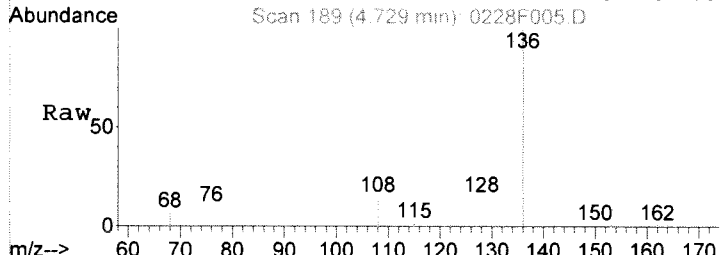
TIC: 0228F005.D





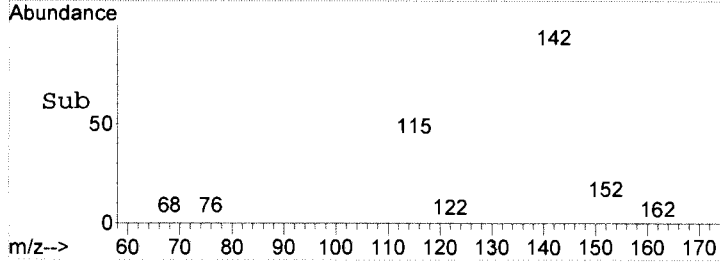
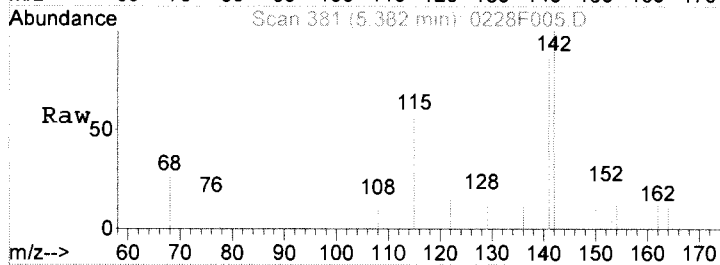
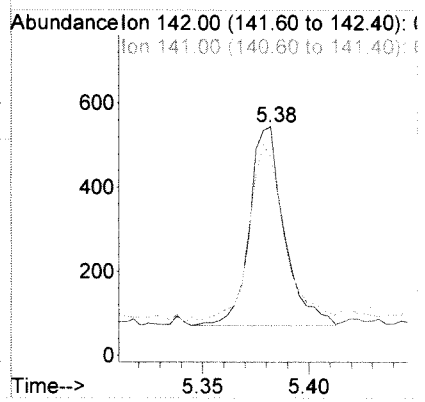
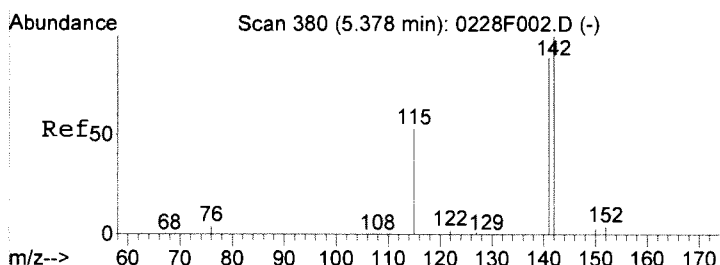
#2
 Naphthalene
 Concen: 3.87 ng/ml
 RT: 4.73 min Scan# 189
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

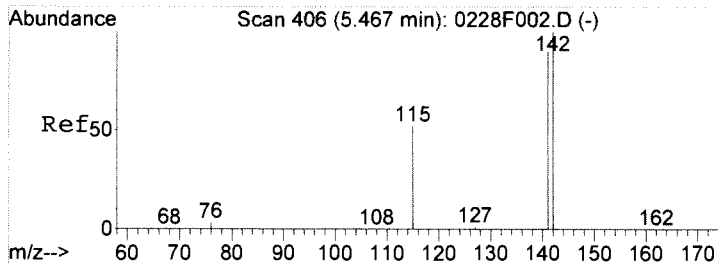
Tgt Ion	128	127	129	Resp	Lower	Upper
Ion Ratio	100	12.4	10.7		0.0	44.1
					0.0	30.4



#4
 2-Methylnaphthalene
 Concen: 2.22 ng/ml
 RT: 5.38 min Scan# 381
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

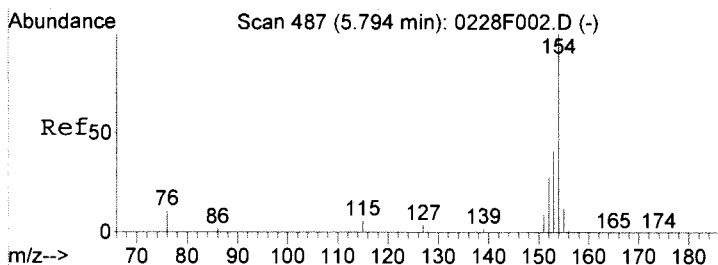
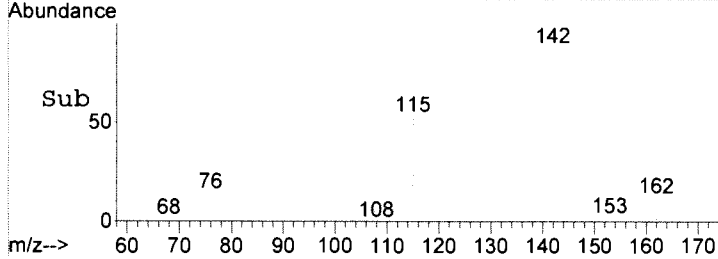
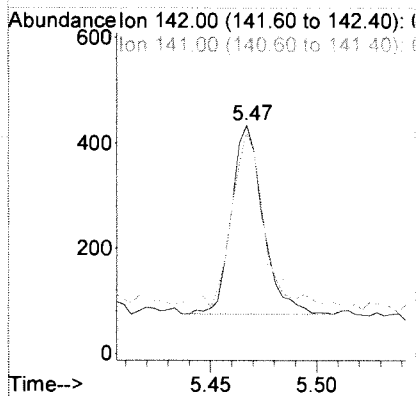
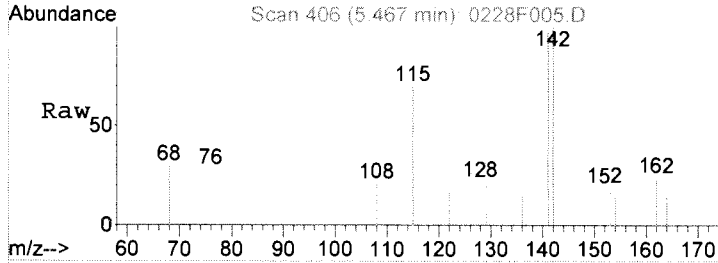
Tgt Ion	142	141	115	Resp	Lower	Upper
Ion Ratio	100	80.1	43.3		51.7	111.7
					2.0	42.0#





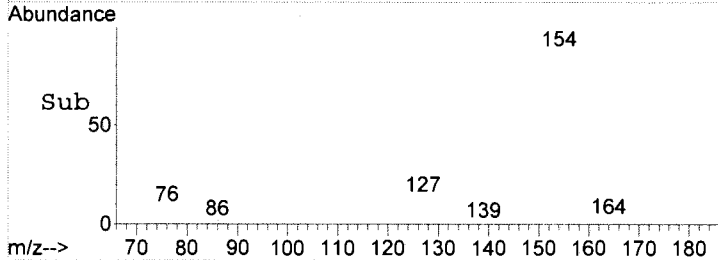
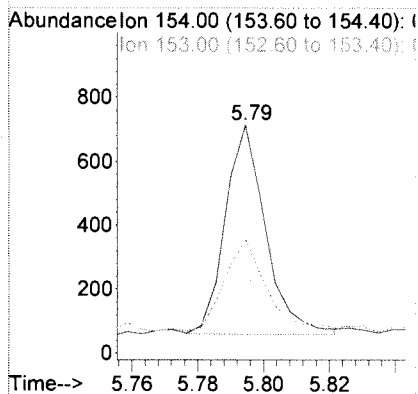
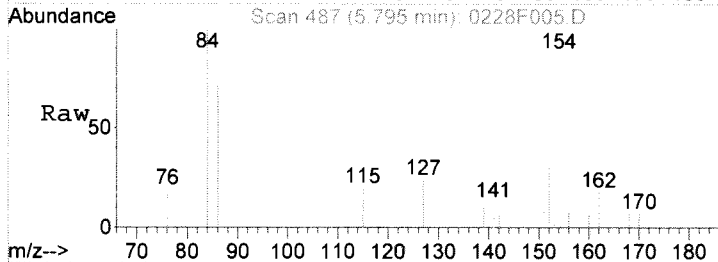
#5
 1-Methylnaphthalene
 Concen: 1.74 ng/ml
 RT: 5.47 min Scan# 406
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

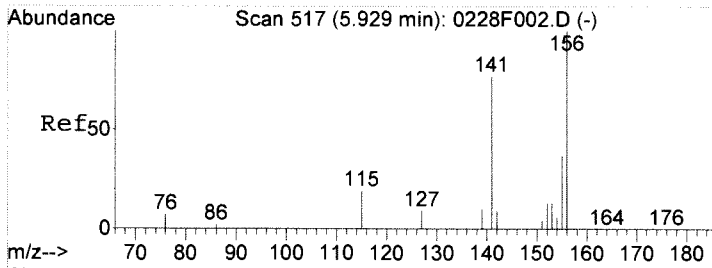
Tgt Ion	Ratio	Lower	Upper
142	100		
141	90.3	63.0	123.0
115	53.3	22.4	62.4



#6
 Biphenyl
 Concen: 1.82 ng/ml m
 RT: 5.79 min Scan# 487
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

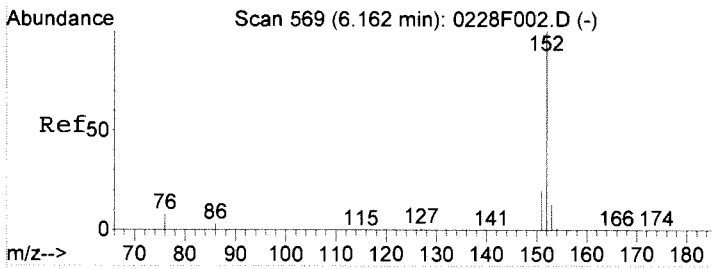
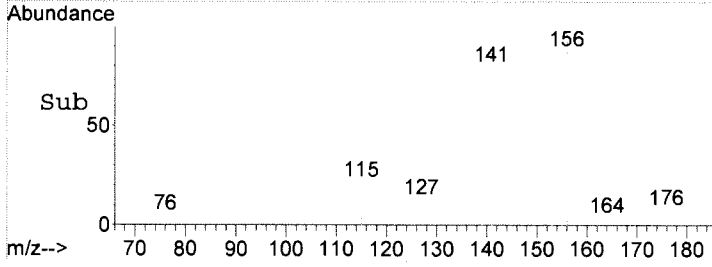
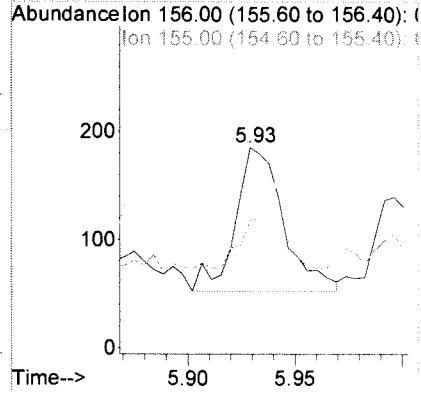
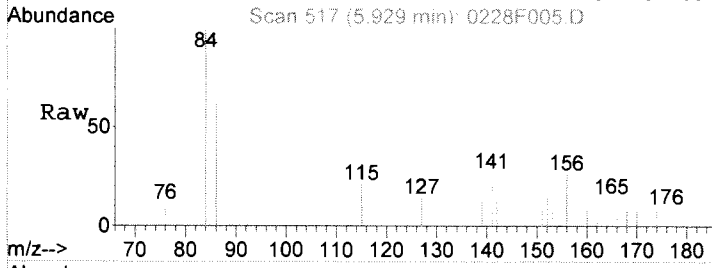
Tgt Ion	Ratio	Lower	Upper
154	100		
153	49.7	11.3	71.3
152	34.5	8.5	48.5





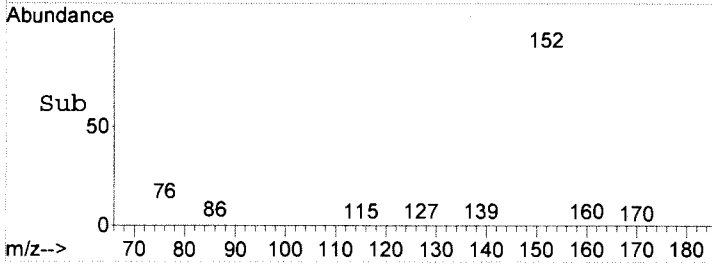
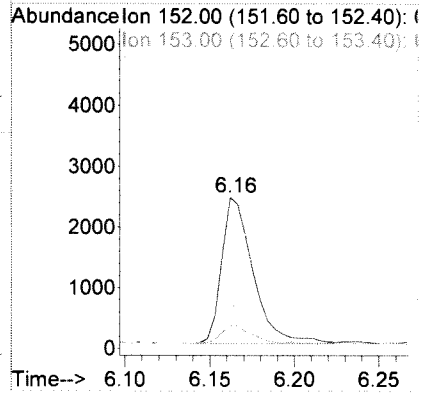
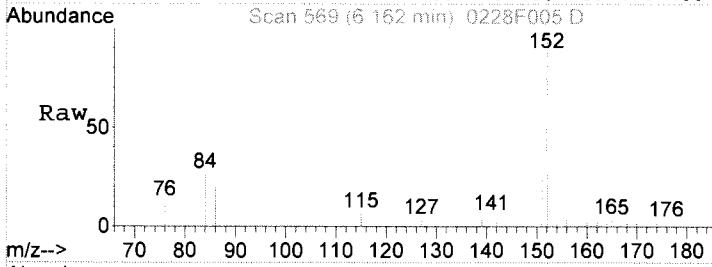
#7
 2,6-Dimethylnaphthalene
 Concen: 0.96 ng/ml
 RT: 5.93 min Scan# 517
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

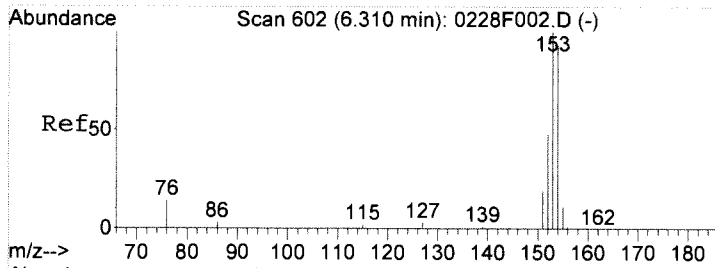
Tgt Ion	Ratio	Lower	Upper
156	100		
155	33.8	8.0	68.0
141	72.2	56.4	96.4



#9
 Acenaphthylene
 Concen: 8.15 ng/ml
 RT: 6.16 min Scan# 569
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

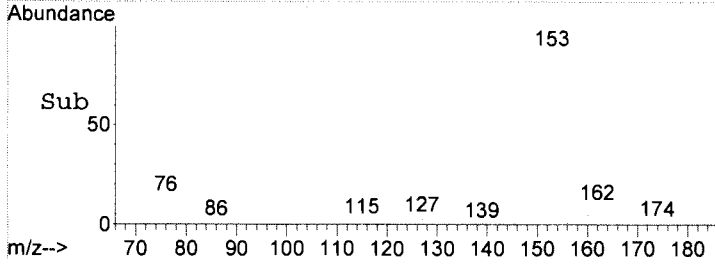
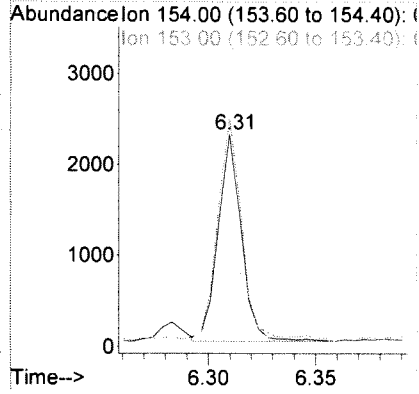
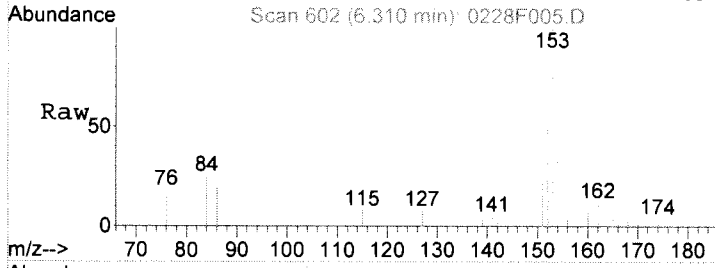
Tgt Ion	Ratio	Lower	Upper
152	100		
153	12.2	0.0	42.8
151	23.0	0.3	40.3





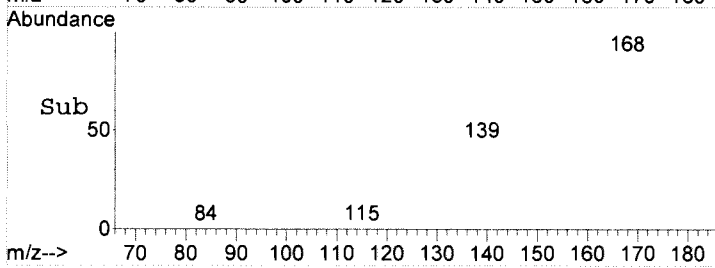
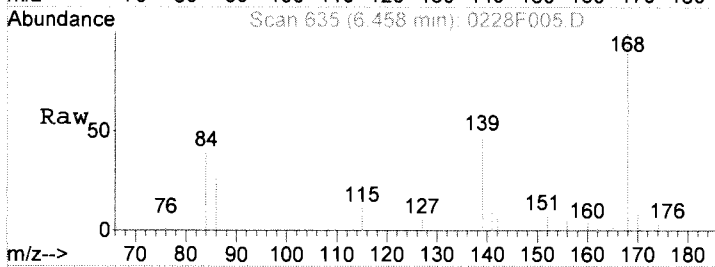
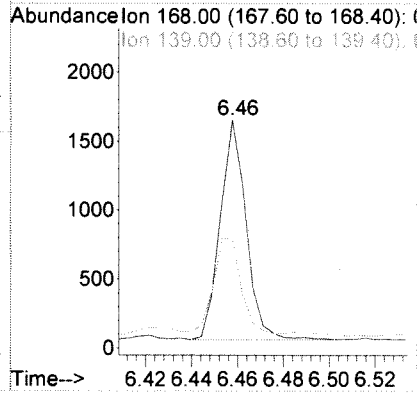
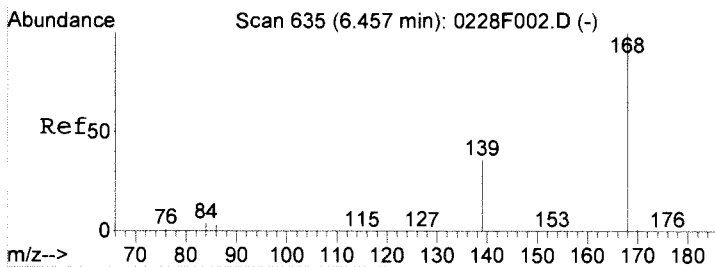
#10
 Acenaphthene
 Concen: 7.86 ng/ml
 RT: 6.31 min Scan# 602
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

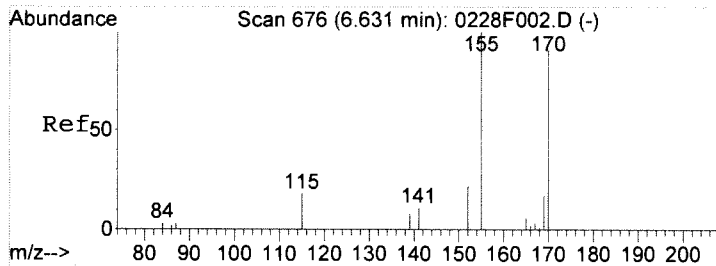
Tgt Ion	154	153	152	Resp	1708	Lower	Upper
Ion Ratio	100	106.6	50.6			77.8	137.8
						20.8	80.8



#11
 Dibenzofuran
 Concen: 3.67 ng/ml
 RT: 6.46 min Scan# 635
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

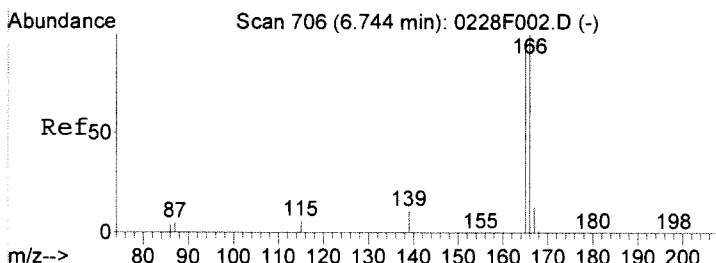
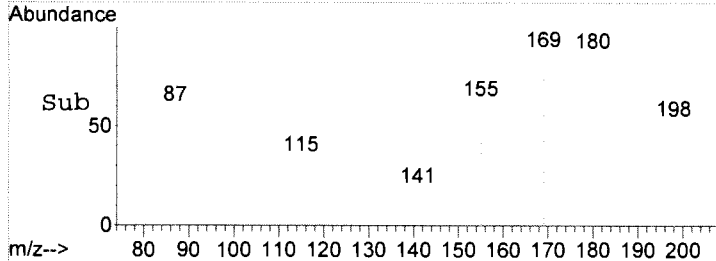
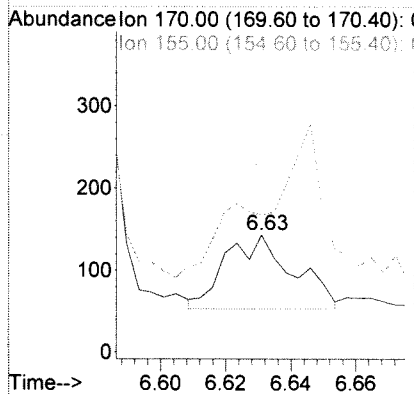
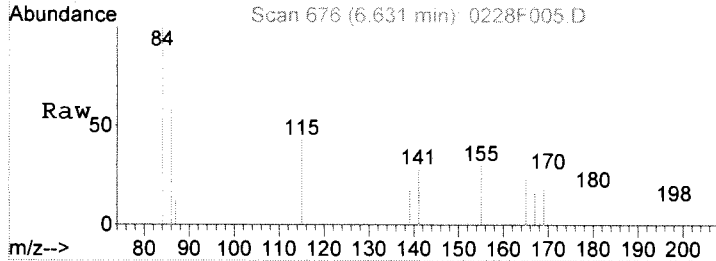
Tgt Ion	168	139	84	Resp	1253	Lower	Upper
Ion Ratio	100	43.0	6.7			15.4	75.4
						0.0	24.7





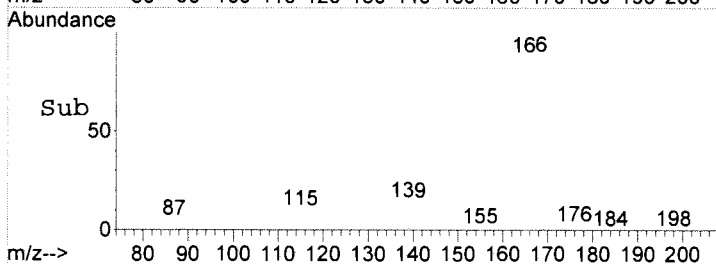
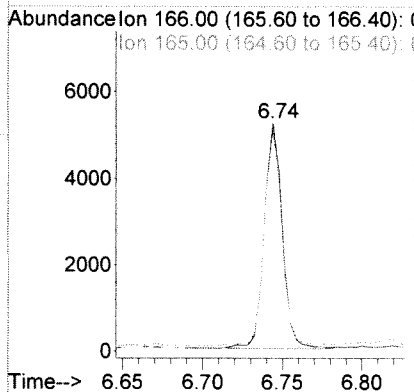
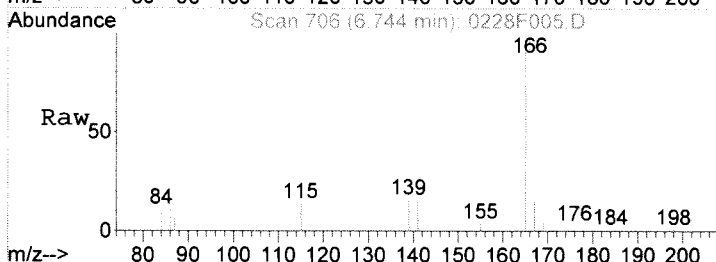
#12
 2,3,5-Trimethylnaphthalene
 Concen: 0.59 ng/ml m
 RT: 6.63 min Scan# 676
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

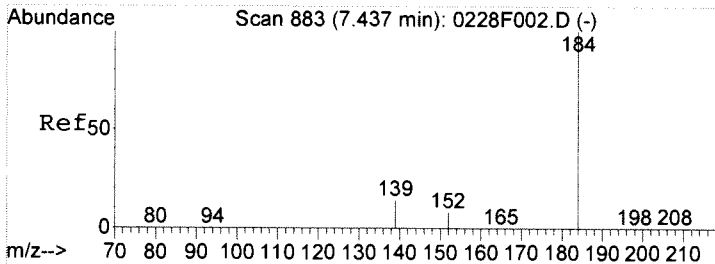
Tgt Ion	Resp	Lower	Upper
170	100		
155	116.8	87.2	147.2
115	166.4	0.8	40.8#



#14
 Fluorene
 Concen: 15.31 ng/ml
 RT: 6.74 min Scan# 706
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

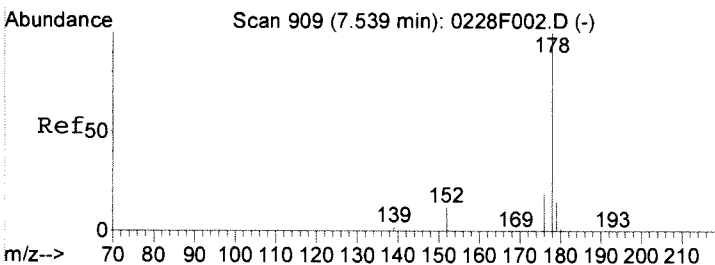
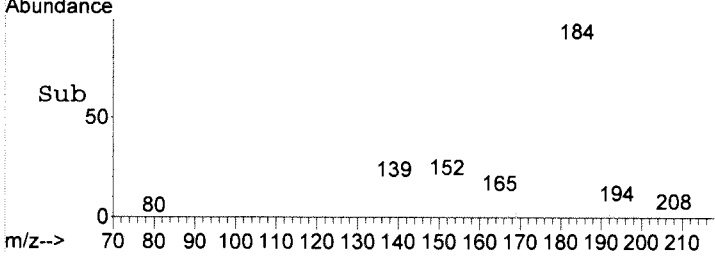
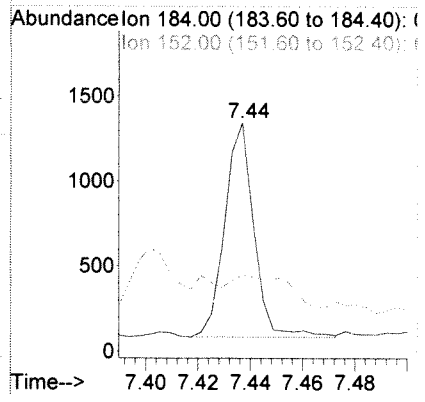
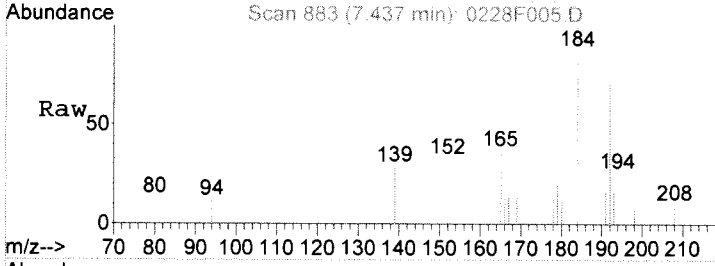
Tgt Ion	Resp	Lower	Upper
166	100		
165	95.8	65.6	125.6
167	13.9	0.0	33.0





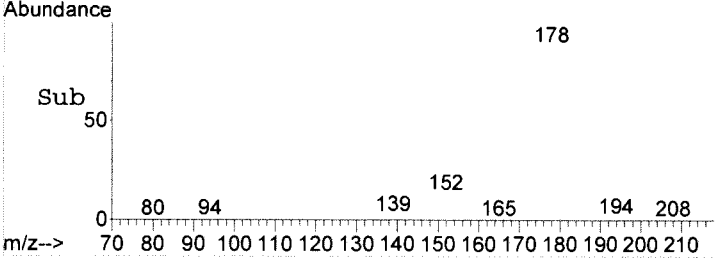
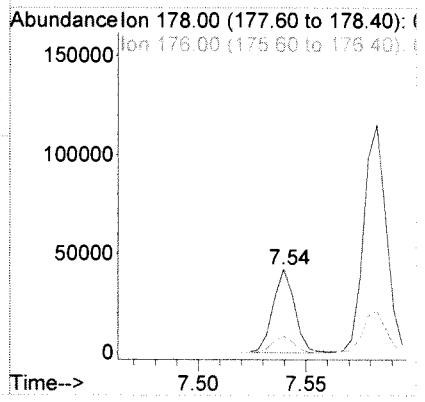
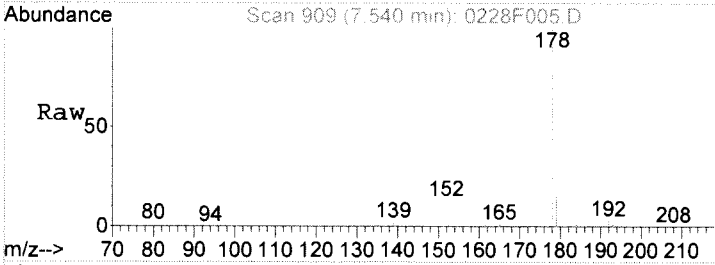
#16
 Dibenzothiophene
 Concen: 2.39 ng/ml
 RT: 7.44 min Scan# 883
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

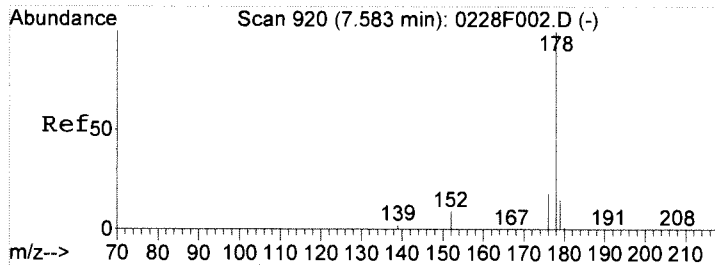
Tgt Ion	Ratio	Lower	Upper
184	100		
152	12.4	0.0	38.5
139	16.2	0.0	34.3



#17
 Phenanthrene
 Concen: 73.30 ng/ml
 RT: 7.54 min Scan# 909
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

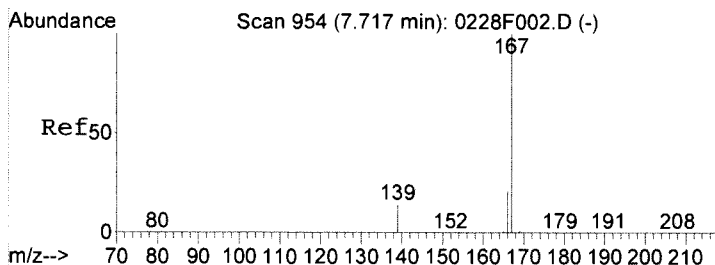
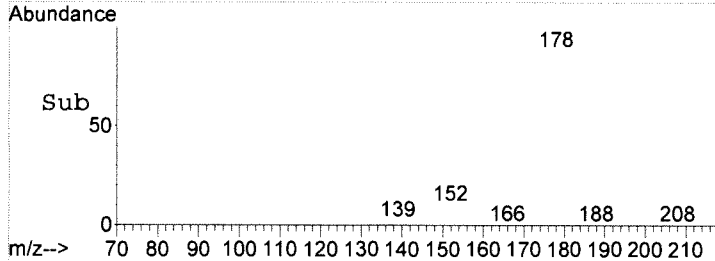
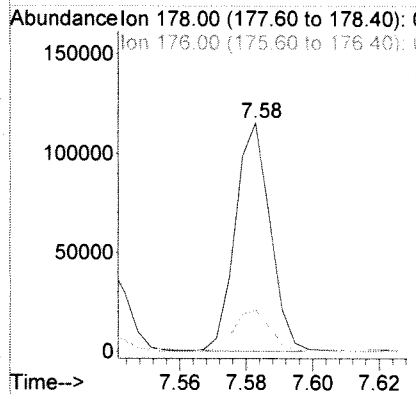
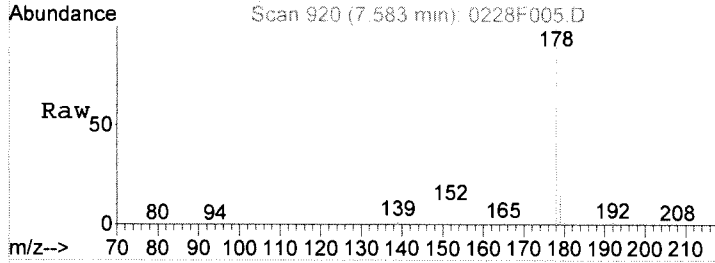
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.2	0.0	49.6
179	14.9	0.0	35.1





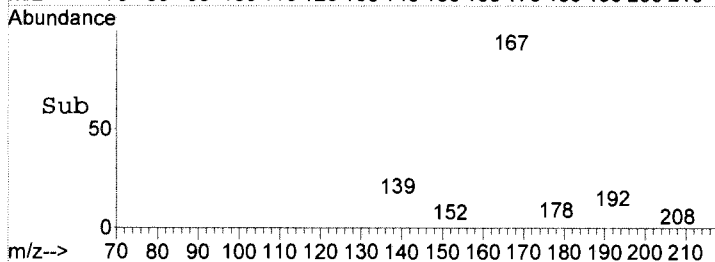
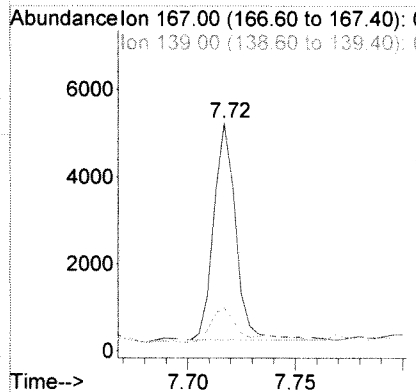
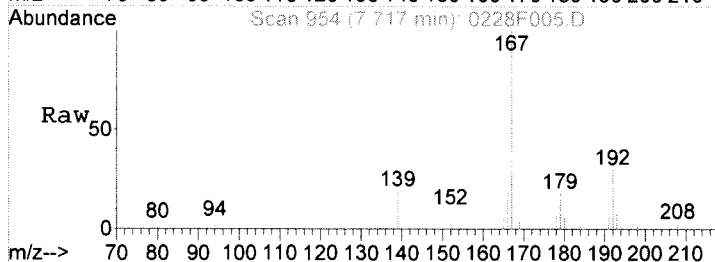
#18
 Anthracene
 Concen: 212.60 ng/ml
 RT: 7.58 min Scan# 920
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

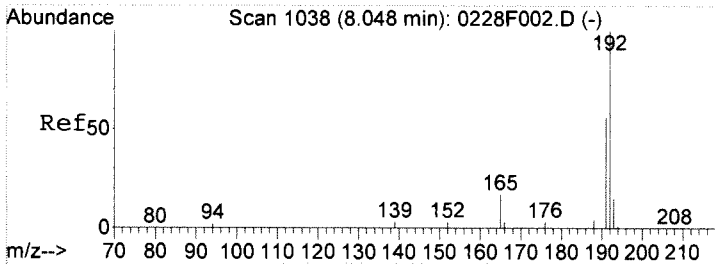
Tgt Ion	Resp	Lower	Upper
178	100		
176	18.1	0.0	48.2
179	14.9	0.0	34.8



#19
 Carbazole
 Concen: 10.08 ng/ml
 RT: 7.72 min Scan# 954
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

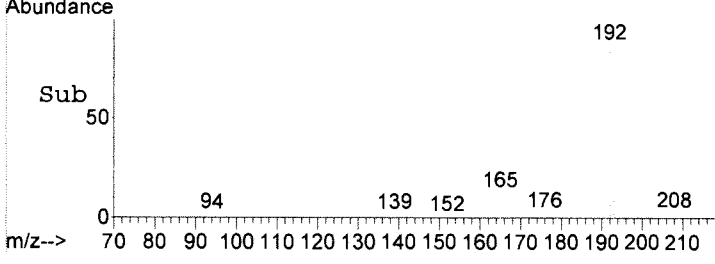
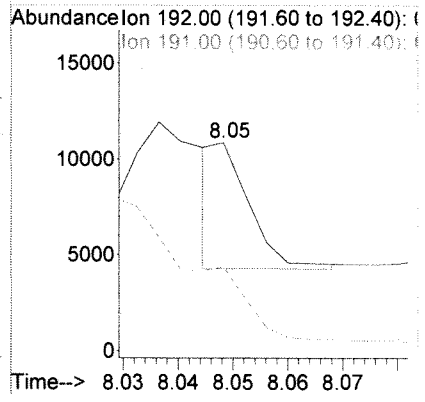
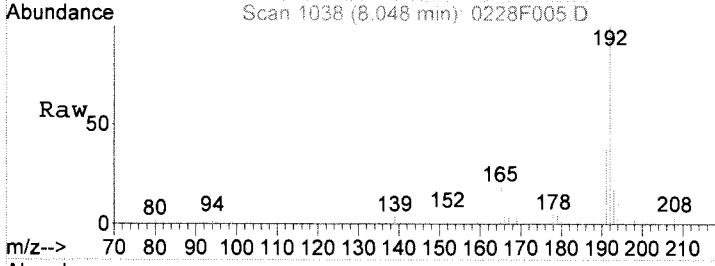
Tgt Ion	Resp	Lower	Upper
167	100		
139	15.9	0.0	45.2
166	23.8	1.6	41.6





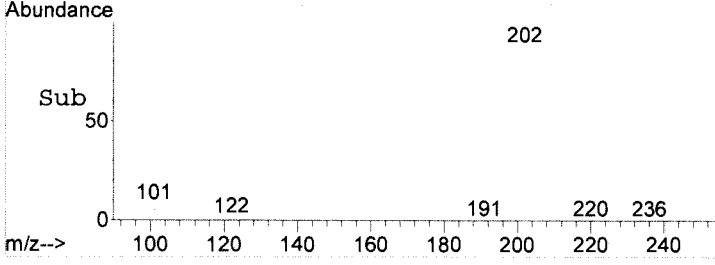
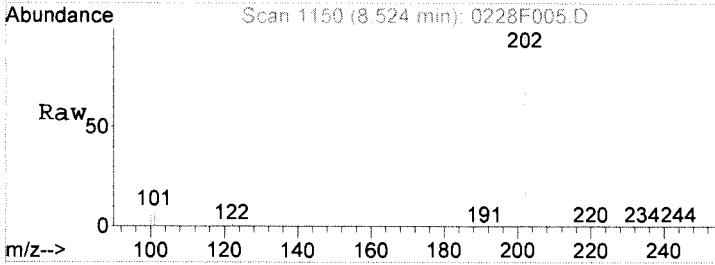
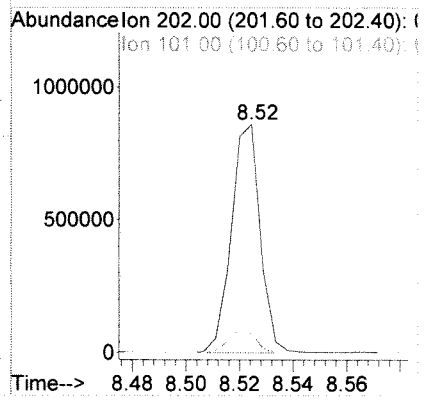
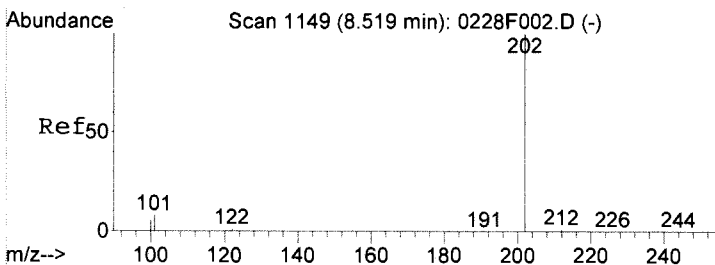
#20
 1-Methylphenanthrene
 Concen: 9.81 ng/ml m
 RT: 8.05 min Scan# 1038
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

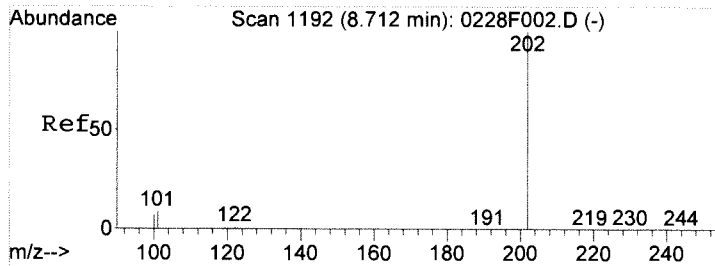
Tgt Ion	Resp	Lower	Upper
192	100		
191	40.3	26.8	86.8
193	17.5	0.0	45.3



#21
 Fluoranthene
 Concen: 1363.76 ng/ml
 RT: 8.52 min Scan# 1150
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

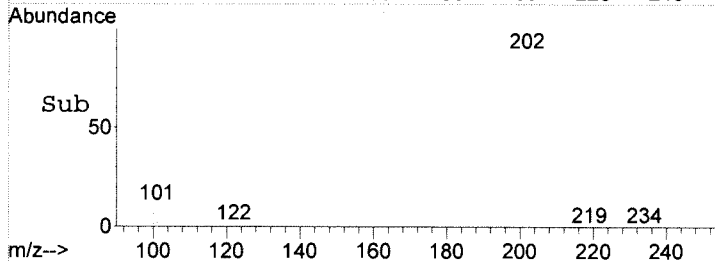
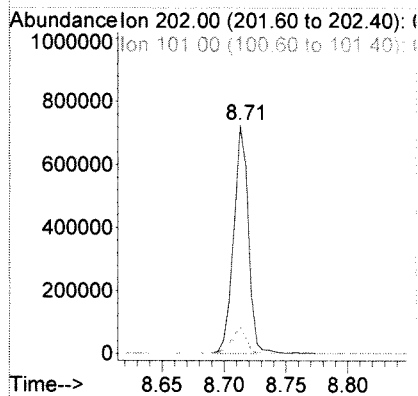
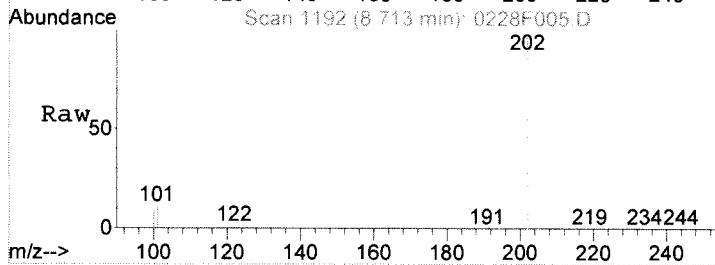
Tgt Ion	Resp	Lower	Upper
202	100		
101	7.9	0.0	39.1
100	5.6	0.0	27.0





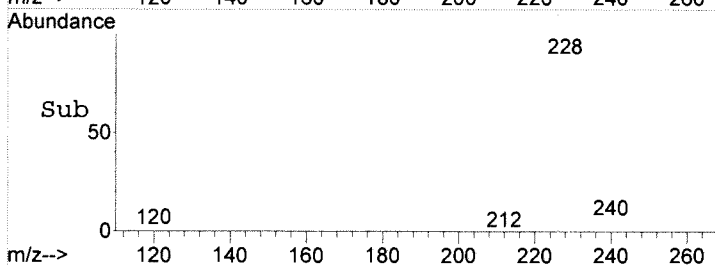
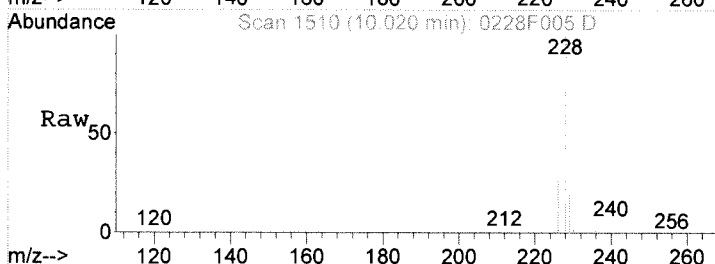
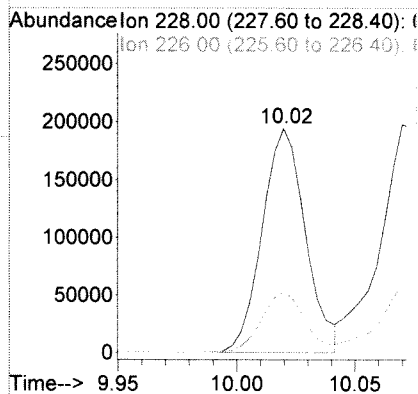
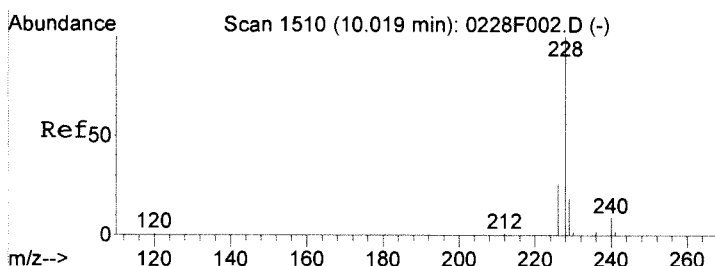
#24
 Pyrene
 Concen: 1324.16 ng/ml
 RT: 8.71 min Scan# 1192
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

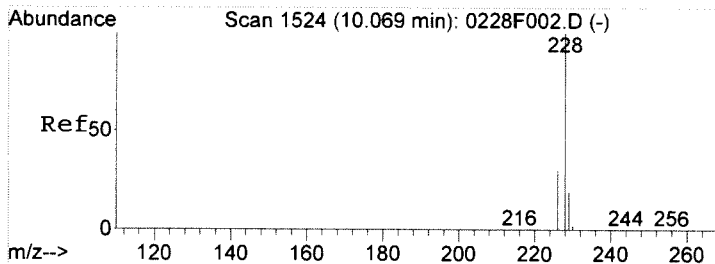
Tgt Ion	202	Resp	598820	Lower	Upper
Ion Ratio	100				
	101	11.4		0.0	40.5
	100	9.1		0.0	28.3



#26
 Benz (a) anthracene
 Concen: 546.37 ng/ml
 RT: 10.02 min Scan# 1510
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

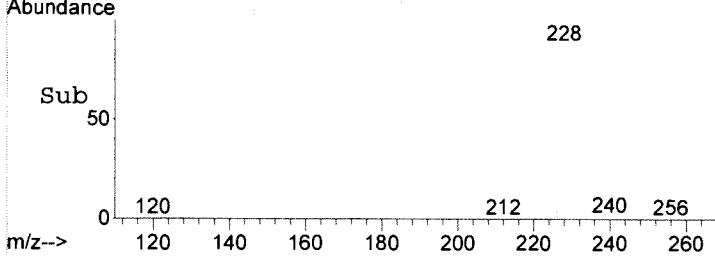
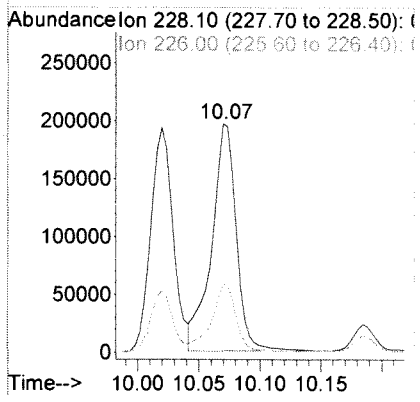
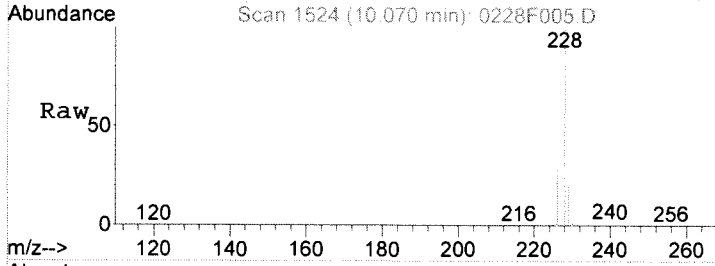
Tgt Ion	228	Resp	246851	Lower	Upper
Ion Ratio	100				
	226	26.9		0.0	56.4
	229	19.4		0.0	39.3





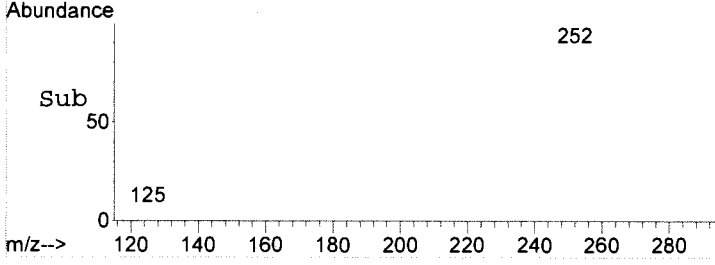
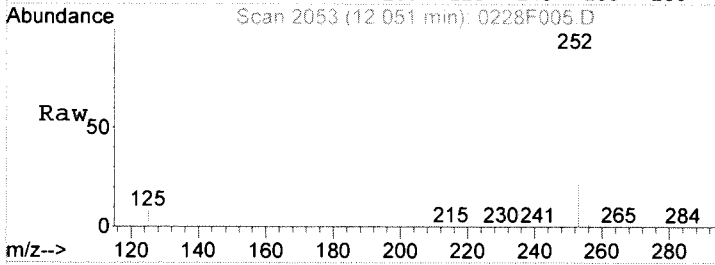
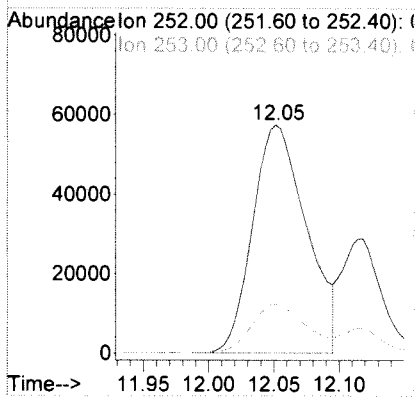
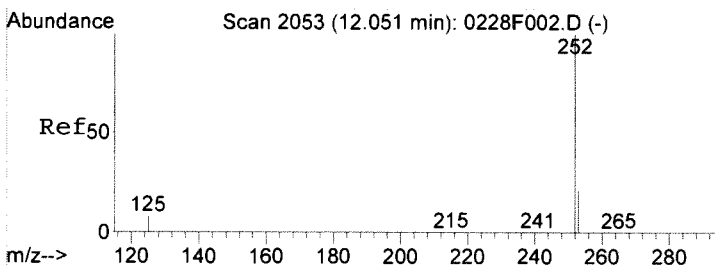
#27
 Chrysene
 Concen: 652.96 ng/ml
 RT: 10.07 min Scan# 1524
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

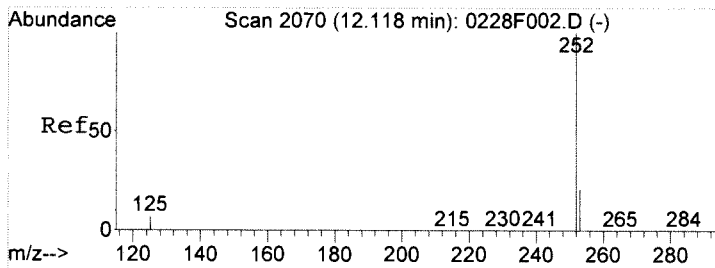
Tgt Ion	228	226	229	Resp	Lower	Upper
Ion Ratio	100	29.4	19.7	275849	0.0	59.0
					0.0	39.2



#29
 Benzo(b)fluoranthene
 Concen: 299.72 ng/ml
 RT: 12.05 min Scan# 2053
 Delta R.T. 0.02 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

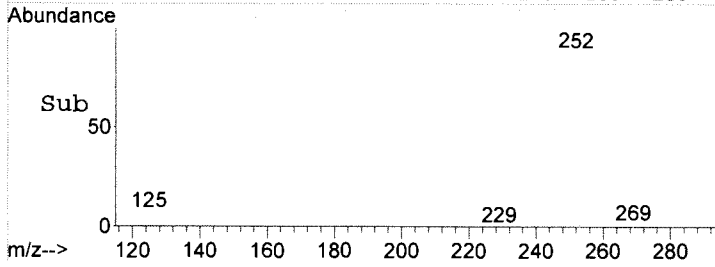
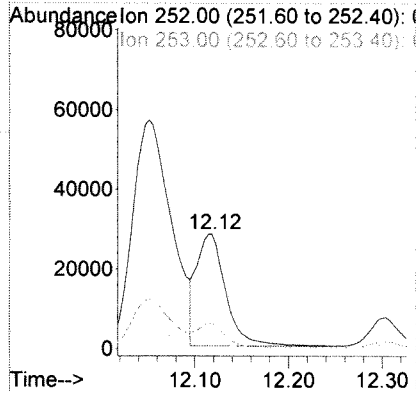
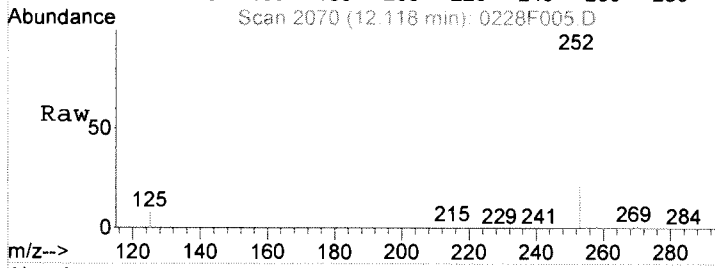
Tgt Ion	252	253	125	Resp	Lower	Upper
Ion Ratio	100	21.6	7.7	165007	0.0	51.8
					0.0	29.7





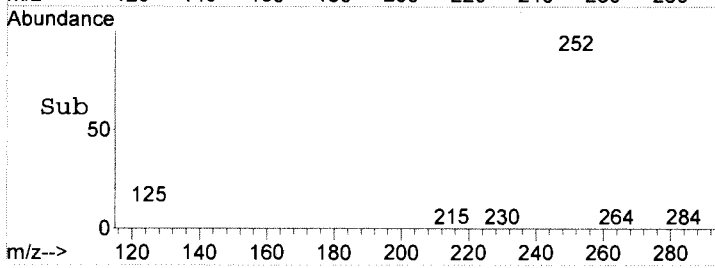
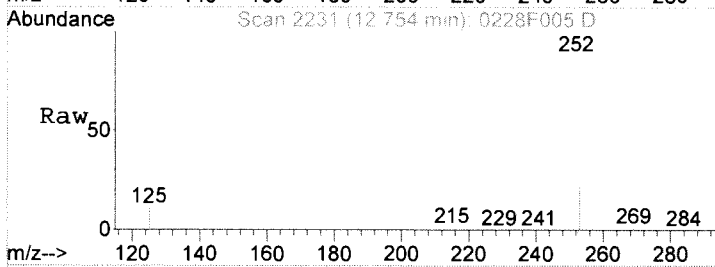
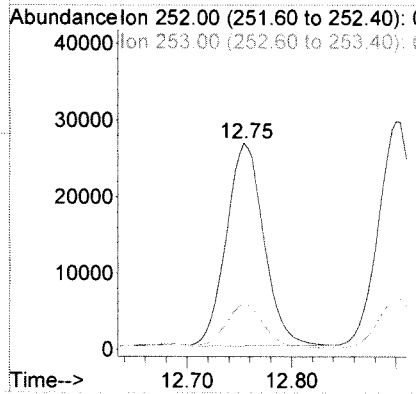
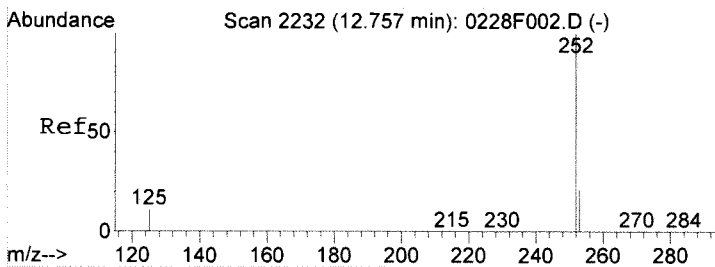
#30
 Benzo(k)fluoranthene
 Concen: 113.32 ng/ml
 RT: 12.12 min Scan# 2070
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

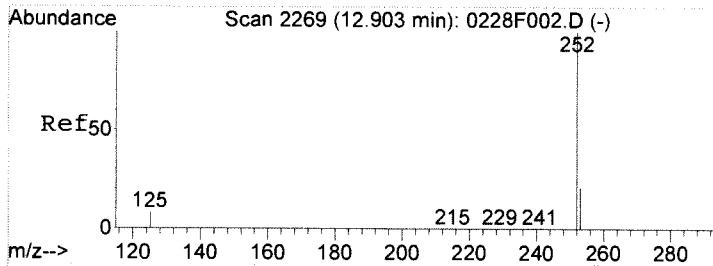
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.1	0.0	51.6
125	7.3	0.0	29.7



#31
 Benzo(e)pyrene
 Concen: 125.48 ng/ml
 RT: 12.75 min Scan# 2231
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

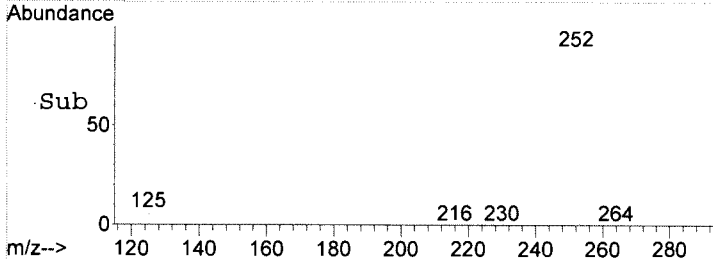
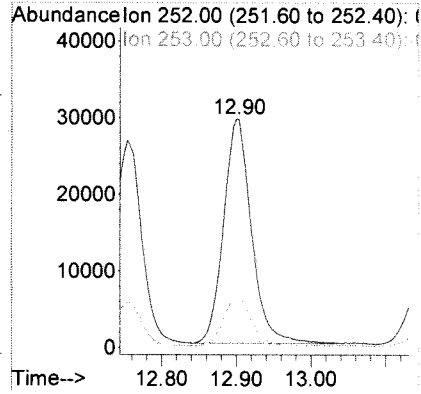
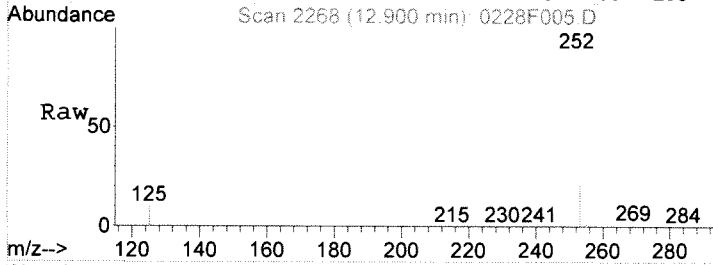
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.4	0.0	51.6
125	10.4	0.0	33.5





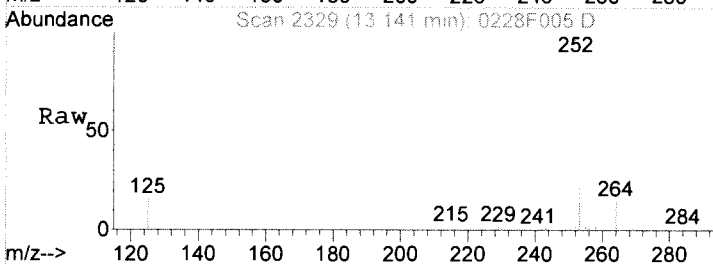
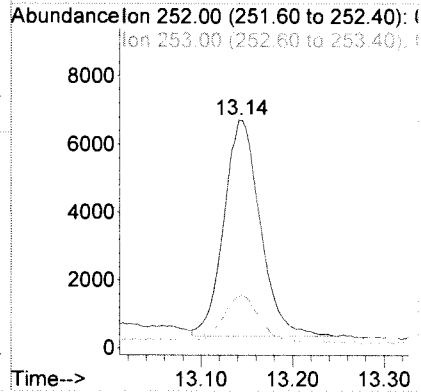
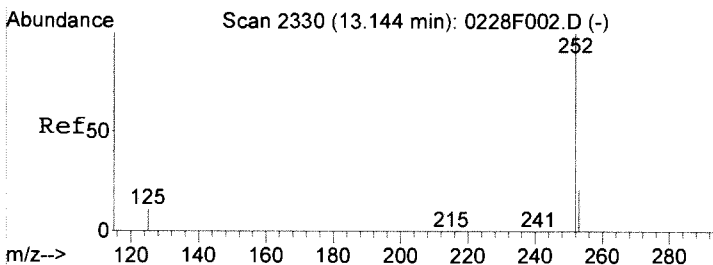
#32
 Benzo(a)pyrene
 Concen: 157.66 ng/ml
 RT: 12.90 min Scan# 2268
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

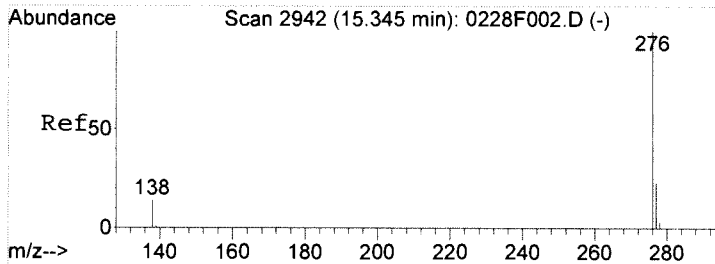
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.5	0.0	51.8
125	9.1	0.0	31.1



#33
 Perylene
 Concen: 36.89 ng/ml
 RT: 13.14 min Scan# 2329
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

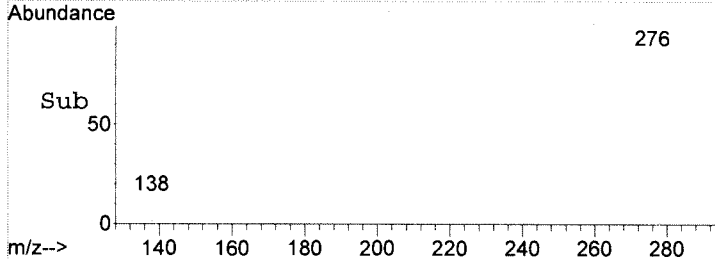
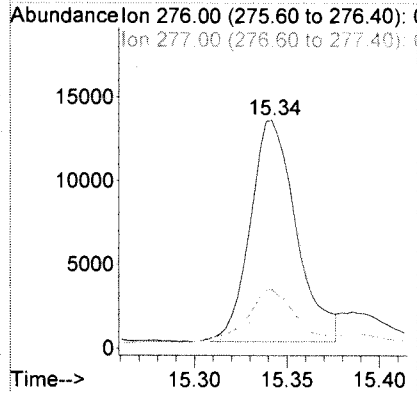
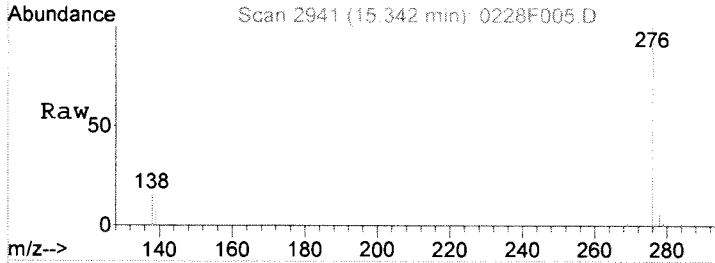
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.2	0.0	51.9
125	11.6	0.0	34.4





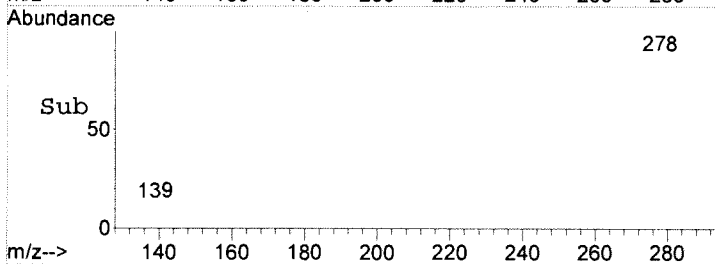
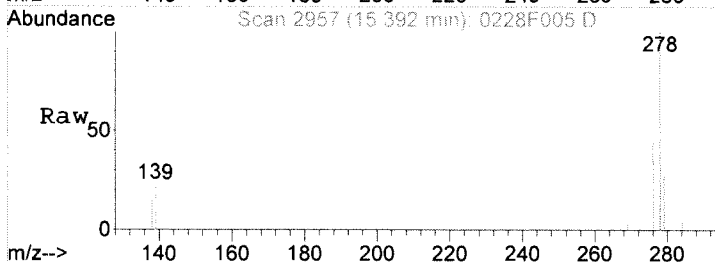
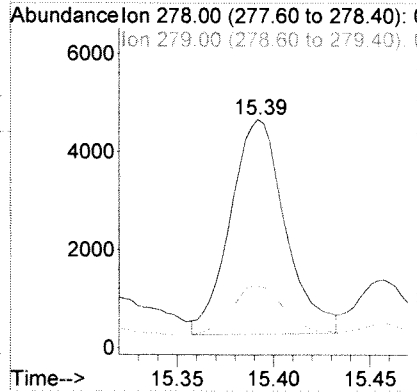
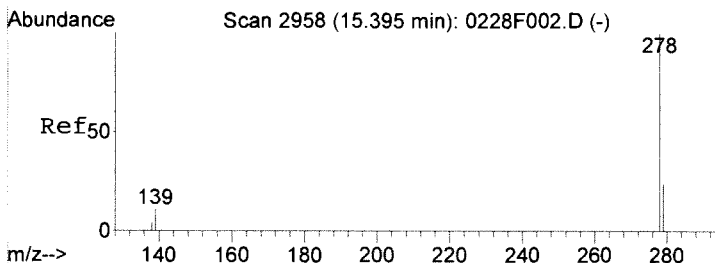
#34
 Indeno(1,2,3-cd)pyrene
 Concen: 53.29 ng/ml
 RT: 15.34 min Scan# 2941
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

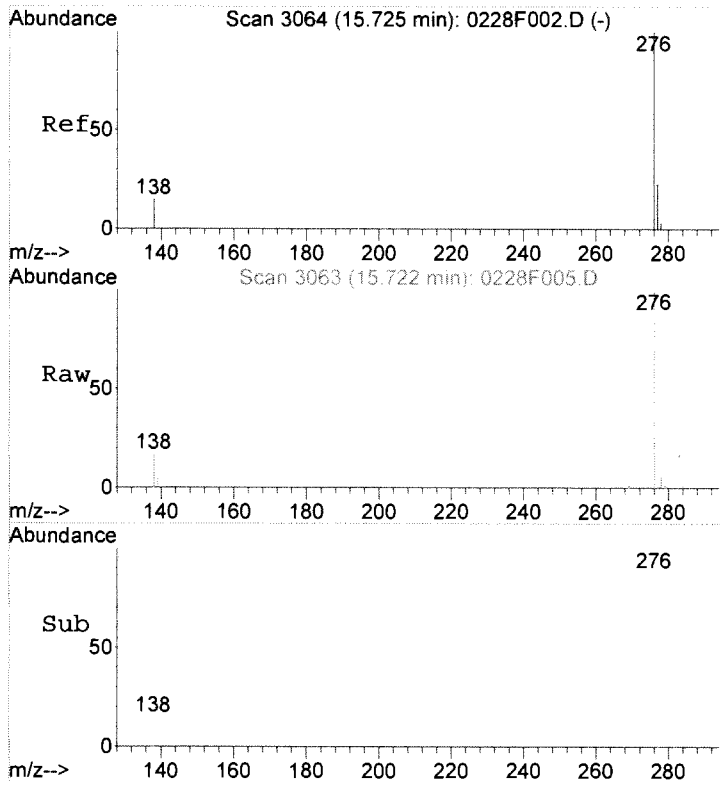
Tgt Ion	Resp	Lower	Upper
276	100		
277	23.6	0.0	53.6
138	13.9	0.0	37.2



#35
 Dibenz(a,h)anthracene
 Concen: 19.83 ng/ml
 RT: 15.39 min Scan# 2957
 Delta R.T. 0.00 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

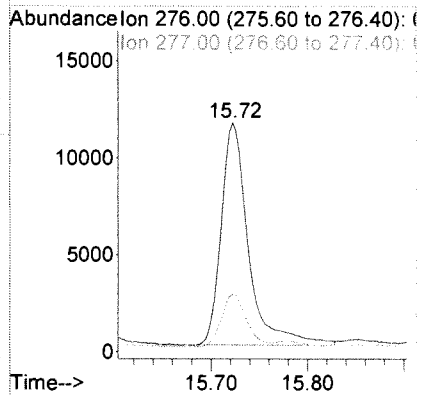
Tgt Ion	Resp	Lower	Upper
278	100		
279	23.8	0.0	54.1
139	12.2	0.0	34.1





#36
 Benzo(g,h,i)perylene
 Concen: 46.87 ng/ml
 RT: 15.72 min Scan# 3063
 Delta R.T. 0.01 min
 Lab File: 0228F005.D
 Acq: 28 Feb 2018 10:37 am

Tgt Ion	Resp	Lower	Upper
276	100		
277	23.8	0.0	53.4
138	14.8	0.0	38.8



Exception Report

Data File: J:\MS20\DATA\022718\0227F012.D
Lab ID: K1801267-013
RunType: SMPL
Matrix: SEDIMENT

Date Acquired: 02/27/2018 17:51
Date Quantitated: 02/28/2018 09:54
Batch ID: KWG1801193
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA		x
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Above Highest ICAL Level	Pyrene	2065.08	NA	2000	see [signature]

Primary Review: [signature] FEB 28 2018
 Secondary Review: [signature]

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F012.D	Instrument: MS20
Acqu Date: 02/27/2018 17:51	Quant Date: 02/28/2018 09:54
Run Type: SMPL	Vial: 12
Lab ID: K1801267-013	ListJoinID: LJ18598
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: SEDIMENT
Prod Code: 8270D PAH SIM	Collect Date: 02/06/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801193	Prep Lot: KWG1801007	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664504	Prep Date: 02/19/2018	

Quant Method: J:\MS20\METHODS\110217PAH.M	Calibration ID: CAL15594
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18598
Tune Ref: J:\MS20\DATA\022718\0227F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	88510	200.00	OK
2	Acenaphthene-d10	8.31	0.01	164	44387	200.00	OK
3	Phenanthrene-d10	11.51	0.01	188	88584	200.00	OK
4	Chrysene-d12	18.87	0.03	240	97862	200.00	OK
5	Perylene-d12	23.18	0.04	264	109093	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	9.31	0.00	0.00	176	40101	141.35	71	38-104	OK
3	Fluoranthene-d10	14.74	0.07	0.00	212	80158	156.76	78	39-109	OK
4	Terphenyl-d14	16.00	0.02	0.00	244	67998	162.97	81	38-113	OK

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	88530	195.80	280		
1	2-Methylnaphthalene	6.76		0.00	142	21138	70.01	99		
2	Acenaphthylene	8.06		0.00	152	15713	34.93	49		
2	Acenaphthene	8.36		0.00	154	29302	105.67	150		
2	Dibenzofuran	8.69		0.00	168	37864	90.76	130		
2	Fluorene	9.37		0.00	166	36251	109.22	150		
3	Phenanthrene	11.56		0.00	178	149313	287.90	410		
3	Anthracene	11.69	0.01	0.00	178	82829	171.55	240		
3	Fluoranthene	14.79	0.06	0.00	202	381654	676.06	960		
4	Pyrene	15.37	0.04	0.00	202	1140437	2.065	2900	E	
4	Benz(a)anthracene	18.84	0.01	0.00	228	177777	334.66	470		
4	Chrysene	18.94	0.02	0.00	228	291358	550.28	780		
5	Benzo(b)fluoranthene	21.95	0.03	0.00	252	462228	742.76	1100		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS20\DATA\022718\0227F012.D	Instrument:	MS20
Acqu Date:	02/27/2018 17:51	Quant Date:	02/28/2018 09:54
Run Type:	SMPL	ListJoinID:	LJ18598
Lab ID:	K1801267-013	Vial:	12
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	22.03	0.02	0.00	252	150868	240.00	340		
5	Benzo(a)pyrene	22.98	0.04	0.00	252	274810	512.06	730		
5	Indeno(1,2,3-cd)pyrene	27.03	0.03	0.00	276	138260	249.43	350		
5	Dibenz(a,h)anthracene	27.14	0.02	0.00	278	38828	67.62	96		
5	Benzo(g,h,i)perylene	27.59	0.02	0.00	276	152468	229.57	330		

Prep Amount: 10.440 g **Dilution:** 1.0
Prep Final Vol: 10 mL **Unit Factor:** 1
Solids: 67.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL, also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F012.D
 Acq On : 27 Feb 2018 5:51 pm
 Sample : K1801267-013
 Misc :

Vial: 12
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:23 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	88510	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.31	164	44387	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.51	188	88584	200.00	ng/ml	0.00
38) Chrysene-d12	18.87	240	97862	200.00	ng/ml	0.00
51) Perylene-d12	23.18	264	109093	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	33280	150.20	ng/ml	-0.01
Spiked Amount 1000.000			Recovery =	15.02%		
17) Fluorene-d10	9.31	176	40101	141.35	ng/ml	-0.02
Spiked Amount 1000.000			Recovery =	14.14%		
37) Fluoranthene-d10	14.74	212	80158	156.76	ng/ml	0.04
Spiked Amount 1000.000			Recovery =	15.68%		
44) Terphenyl-d14	16.00	244	67998	162.97	ng/ml	0.00
Spiked Amount 1000.000			Recovery =	16.30%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	6.00	128	88530	195.80	ng/ml	99
4) 2-Methylnaphthalene	6.76	142	21138	70.01	ng/ml	91
5) 1-Methylnaphthalene	6.89	142	15745	58.56	ng/ml	89
6) Biphenyl	7.39	154	11199	30.96	ng/ml	98
7) 2,6-Dimethylnaphthalene	7.63	156	17913	68.38	ng/ml	98
13) Acenaphthylene	8.06	152	15713	34.93	ng/ml	92
14) Acenaphthene	8.36	154	29302	105.67	ng/ml	97
15) Dibenzofuran	8.69	168	37864	90.76	ng/ml	86
16) 2,3,5-Trimethylnaphthalene	9.09	170	23657m	92.39	ng/ml	
18) Fluorene	9.37	166	36251	109.22	ng/ml	99
23) Dibenzothiophene	11.25	184	16445	34.78	ng/ml	96
28) Phenanthrene	11.56	178	149313	287.90	ng/ml	99
29) Anthracene	11.69	178	82829	171.55	ng/ml	91
30) Carbazole	12.17	167	9074m	21.50	ng/ml	
31) 1-Methylphenanthrene	13.19	192	16426m	44.59	ng/ml	
36) Fluoranthene	14.79	202	381654	676.06	ng/ml	96
39) Pyrene	15.37	202	1140437	2065.08	ng/ml	92
45) Benz(a)anthracene	18.84	228	177777	334.66	ng/ml	100
46) Chrysene	18.94	228	291358	550.28	ng/ml	99
52) Benzo(b)fluoranthene	21.95	252	462228	742.76	ng/ml	96
53) Benzo(k)fluoranthene	22.03	252	150868	240.00	ng/ml	98
54) Benzo(e)pyrene	22.81	252	234577	388.18	ng/ml	96
55) Benzo(a)pyrene	22.98	252	274810	512.06	ng/ml	99
56) Perylene	23.26	252	149313	263.92	ng/ml	99
57) Indeno(1,2,3-cd)pyrene	27.03	276	138260	249.43	ng/ml	99
58) Dibenz(a,h)anthracene	27.14	278	38828	67.62	ng/ml	95
59) Benzo(g,h,i)perylene	27.59	276	152468	229.57	ng/ml	98

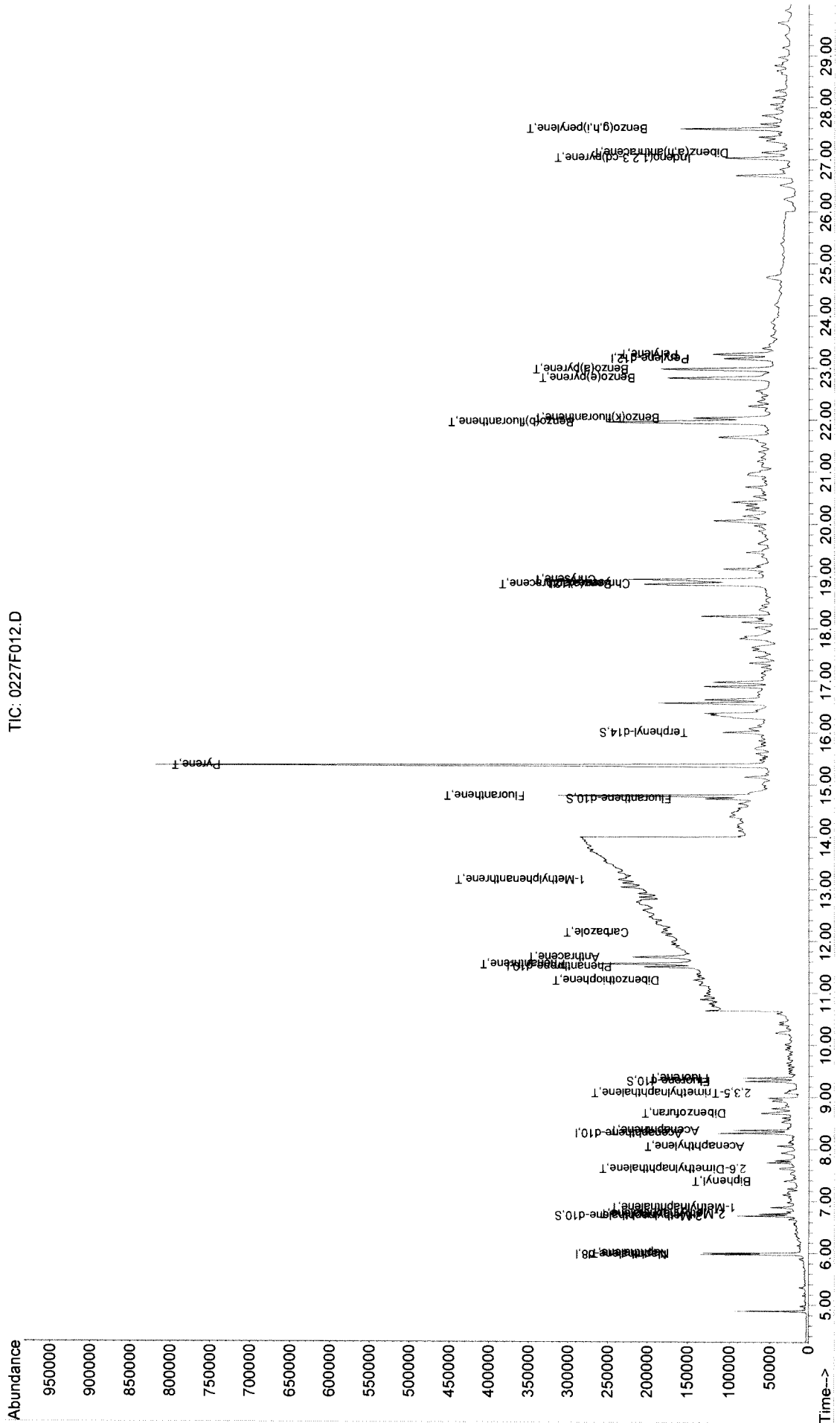
(#) = qualifier out of range (m) = manual integration
 0227F012.D 110217PAH.M Wed Feb 28 09:54:40 2018

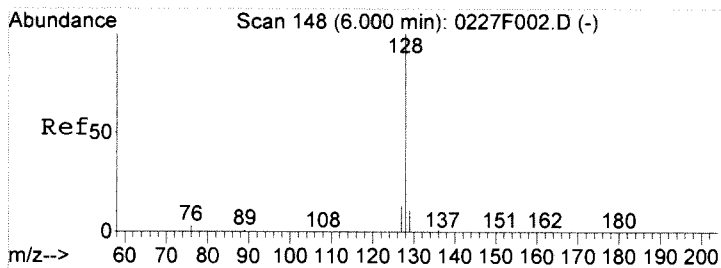
Data File : J:\MS20\DATA\022718\0227F012.D
 Acq On : 27 Feb 2018 5:51 pm
 Sample : K1801267-013
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:54 2018

Vial: 12
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: 110217PAH.RES

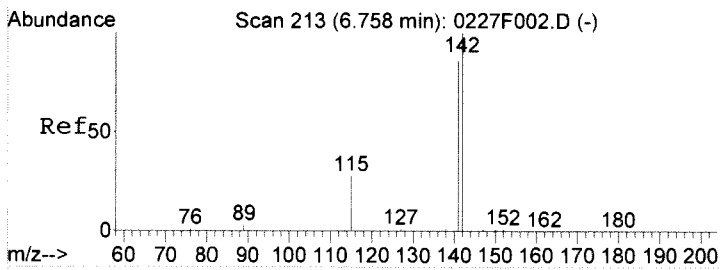
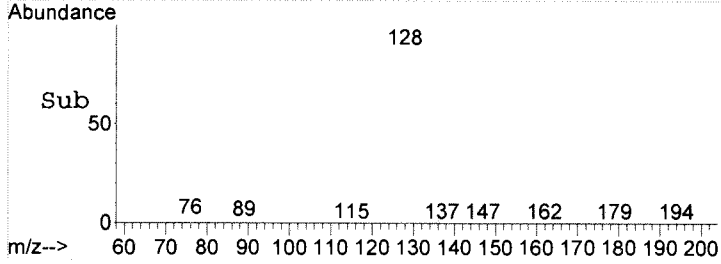
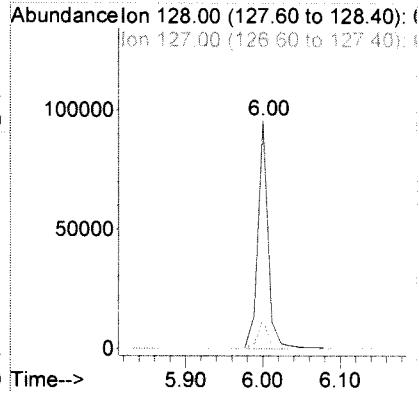
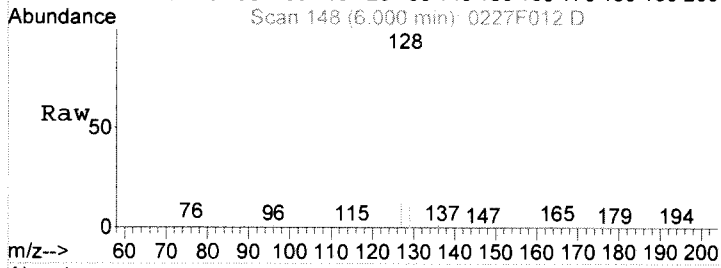
Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration





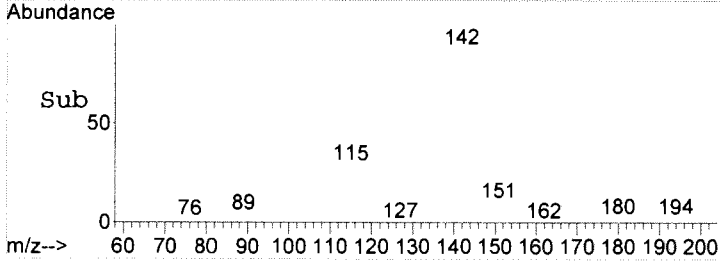
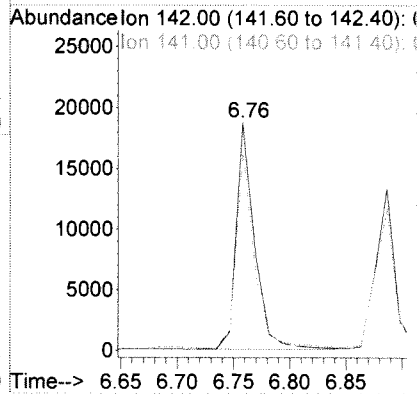
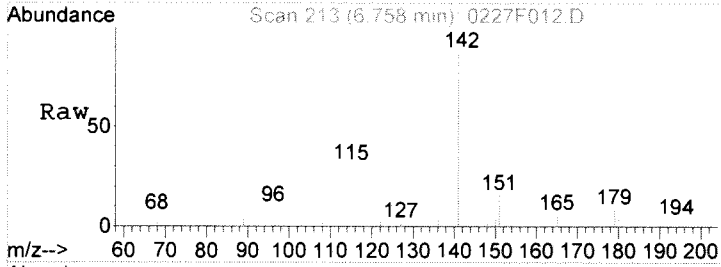
#2
 Naphthalene
 Concen: 195.80 ng/ml
 RT: 6.00 min Scan# 148
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

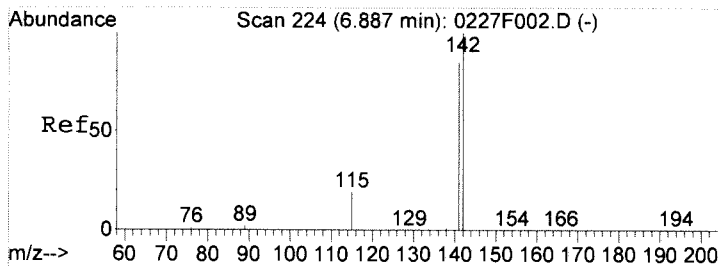
Tgt Ion	Ratio	Lower	Upper
128	100		
127	12.6	0.0	42.2
129	11.2	0.0	41.2



#4
 2-Methylnaphthalene
 Concen: 70.01 ng/ml
 RT: 6.76 min Scan# 213
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

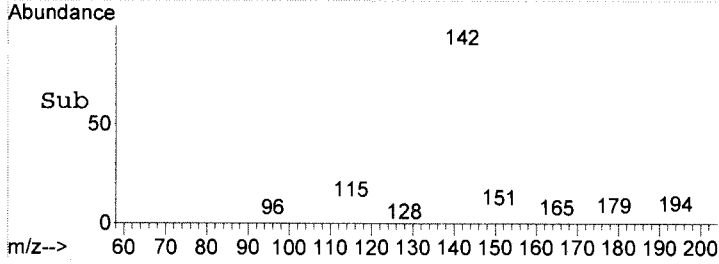
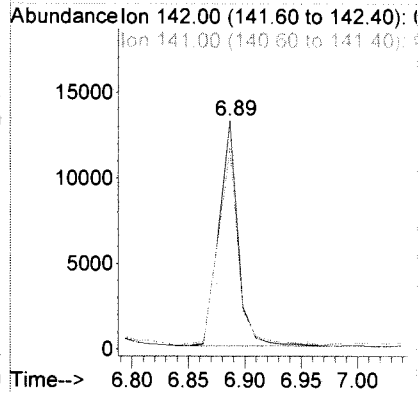
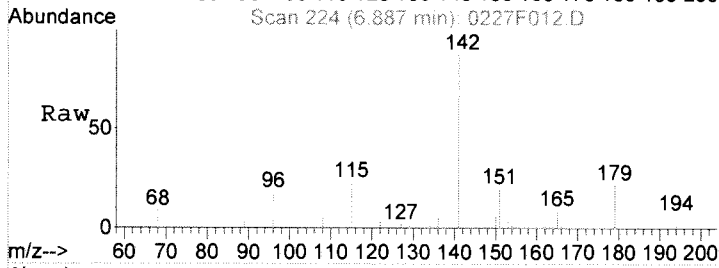
Tgt Ion	Ratio	Lower	Upper
142	100		
141	86.8	52.0	112.0
115	28.8	0.0	45.6





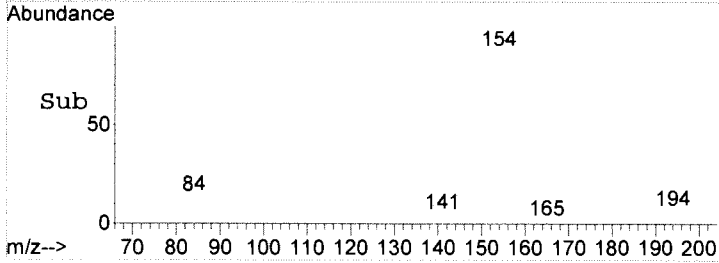
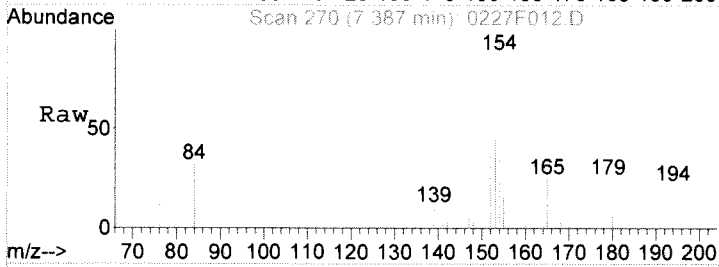
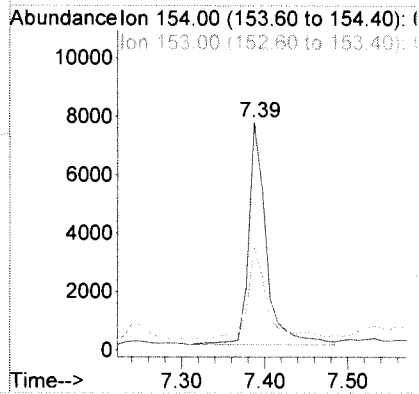
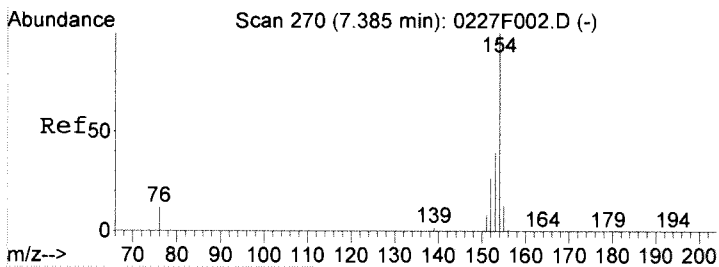
#5
 1-Methylnaphthalene
 Concen: 58.56 ng/ml
 RT: 6.89 min Scan# 224
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

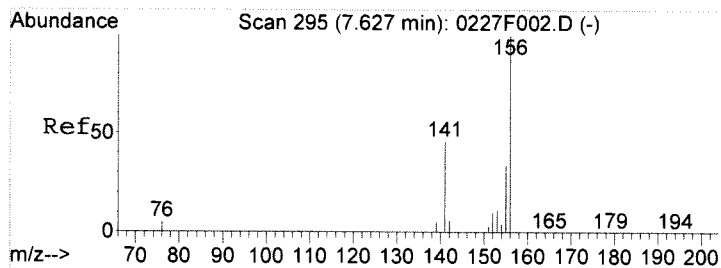
Tgt Ion	Ratio	Lower	Upper
142	100		
141	86.8	61.1	121.1
115	20.5	7.1	67.1



#6
 Biphenyl
 Concen: 30.96 ng/ml
 RT: 7.39 min Scan# 270
 Delta R.T. -0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

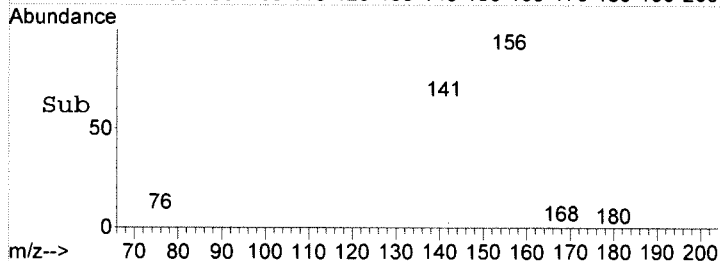
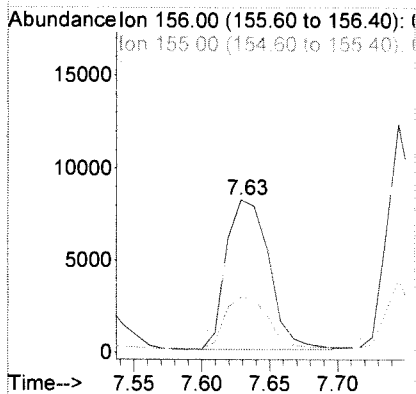
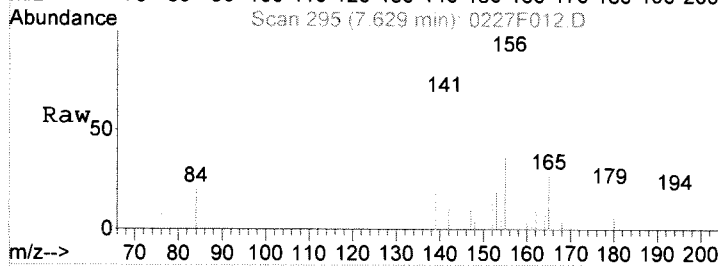
Tgt Ion	Ratio	Lower	Upper
154	100		
153	41.5	10.6	70.6
152	26.5	0.0	57.9





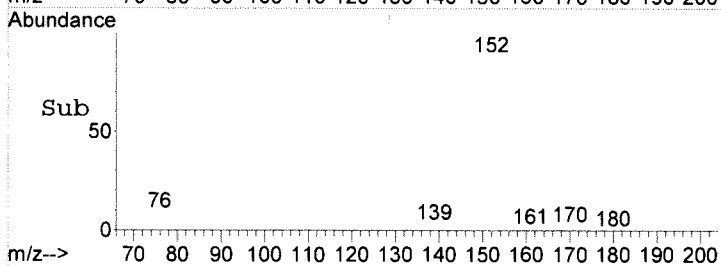
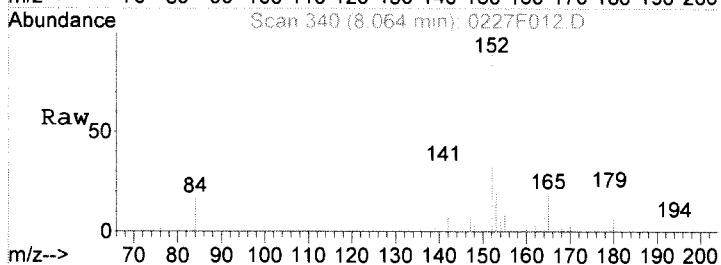
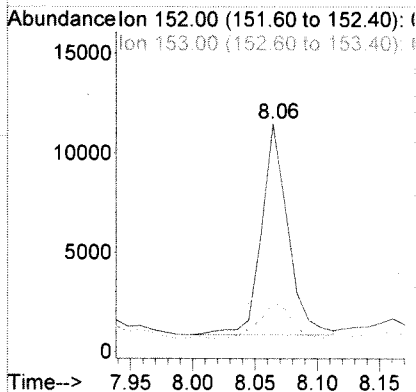
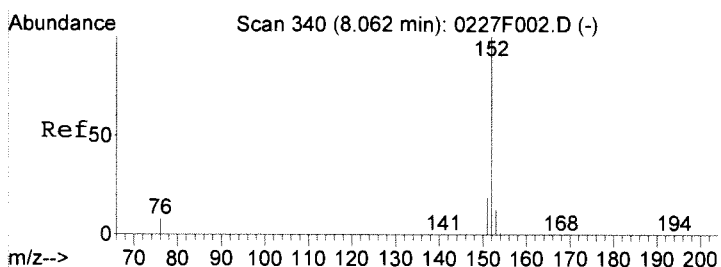
#7
 2,6-Dimethylnaphthalene
 Concen: 68.38 ng/ml
 RT: 7.63 min Scan# 295
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

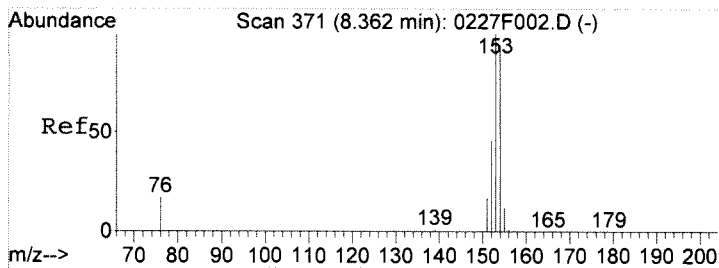
Tgt Ion	Resp	Lower	Upper
156	17913		
155	34.6	5.1	65.1
141	61.0	32.5	92.5



#13
 Acenaphthylene
 Concen: 34.93 ng/ml
 RT: 8.06 min Scan# 340
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

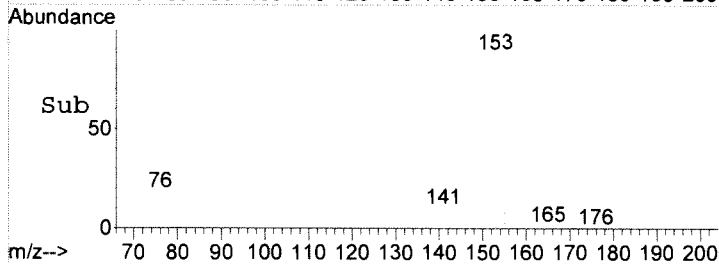
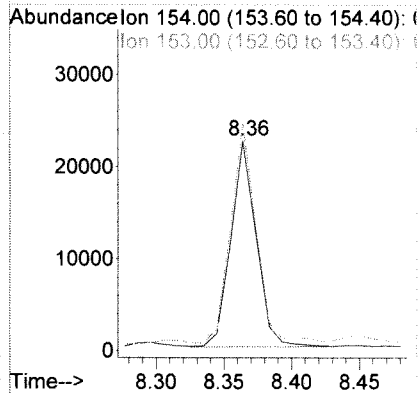
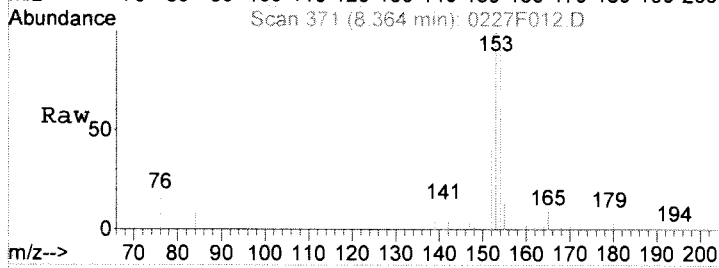
Tgt Ion	Resp	Lower	Upper
152	15713		
153	17.2	0.0	43.4
151	22.9	0.0	49.3





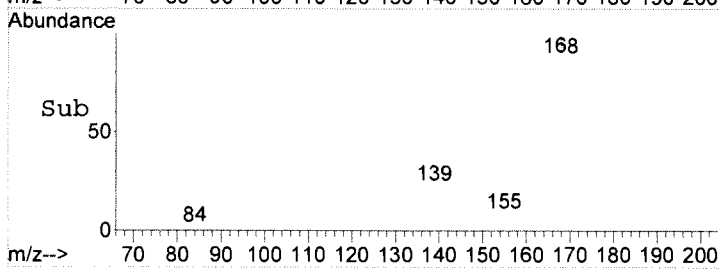
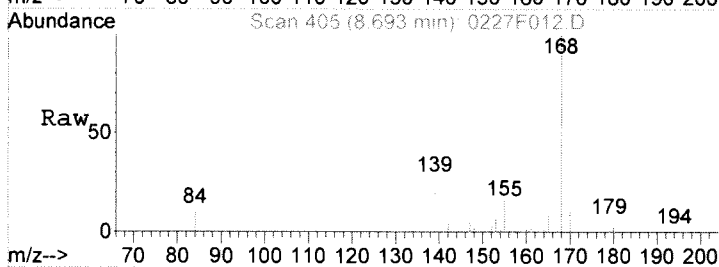
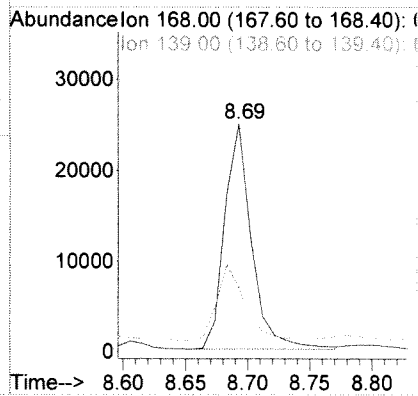
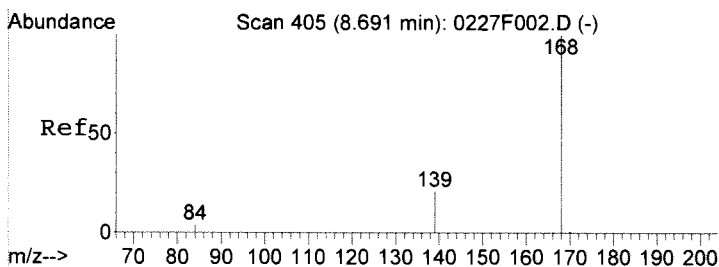
#14
 Acenaphthene
 Concen: 105.67 ng/ml
 RT: 8.36 min Scan# 371
 Delta R.T. -0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

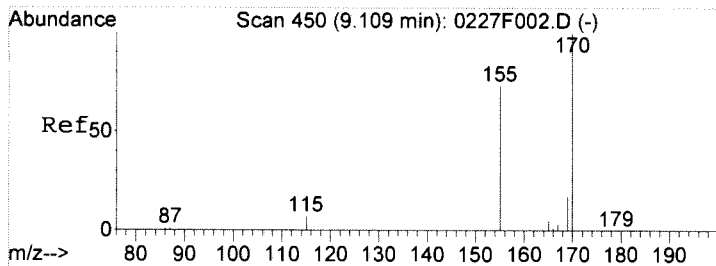
Tgt Ion	Resp	Lower	Upper
154	29302		
153	107.3	74.4	134.4
152	49.1	17.6	77.6



#15
 Dibenzofuran
 Concen: 90.76 ng/ml
 RT: 8.69 min Scan# 405
 Delta R.T. -0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

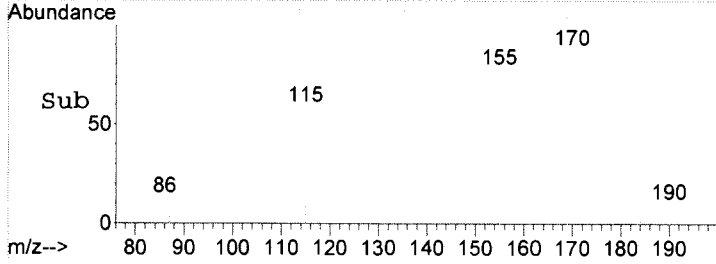
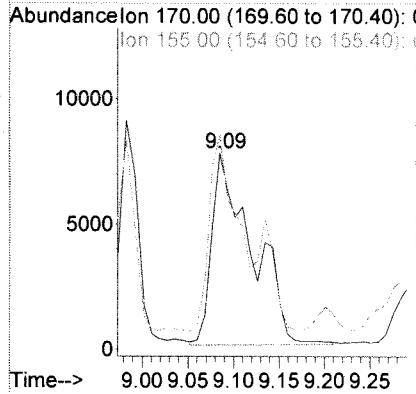
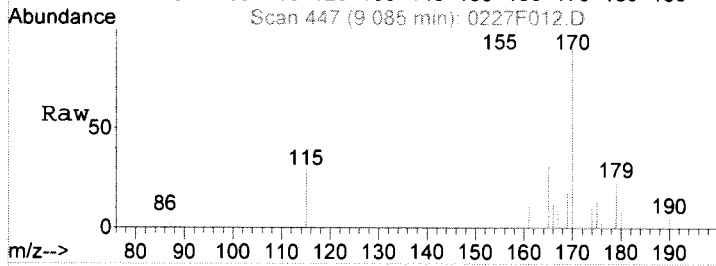
Tgt Ion	Resp	Lower	Upper
168	37864		
168	100		
139	23.4	0.0	46.9
84	4.6	0.0	32.7





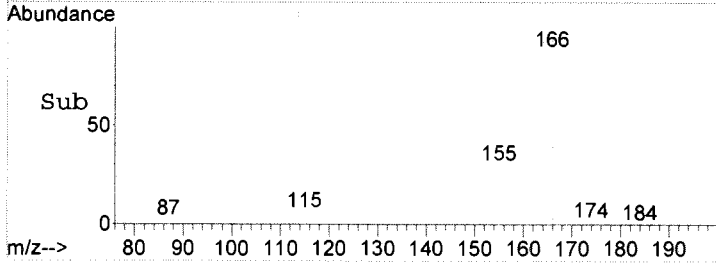
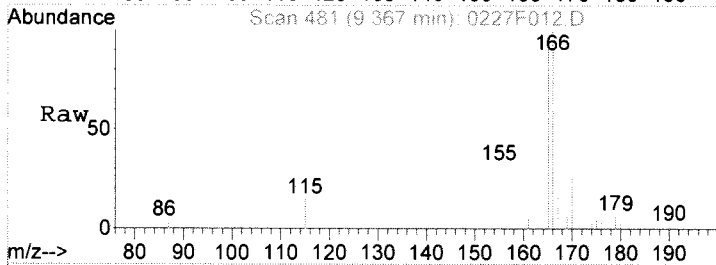
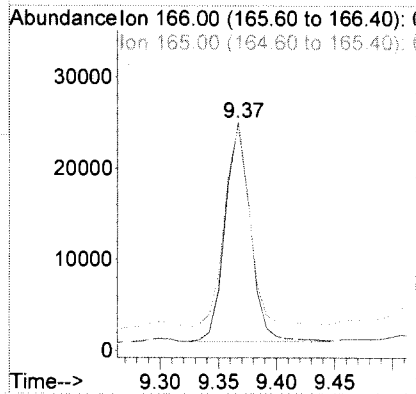
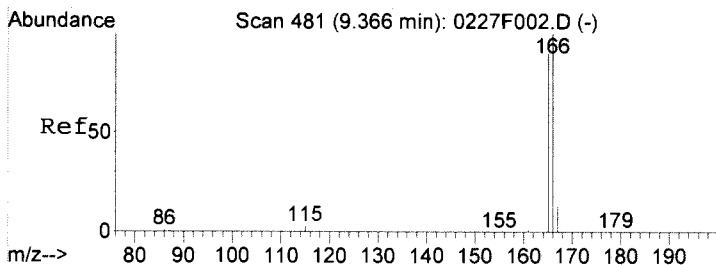
#16
 2,3,5-Trimethylnaphthalene
 Concen: 92.39 ng/ml m
 RT: 9.09 min Scan# 447
 Delta R.T. -0.04 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

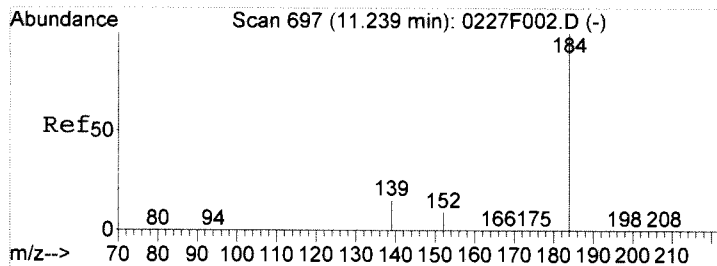
Tgt Ion	Resp	Lower	Upper
170	100		
155	109.1	36.5	96.5#
115	32.0	0.0	36.6



#18
 Fluorene
 Concen: 109.22 ng/ml
 RT: 9.37 min Scan# 481
 Delta R.T. -0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

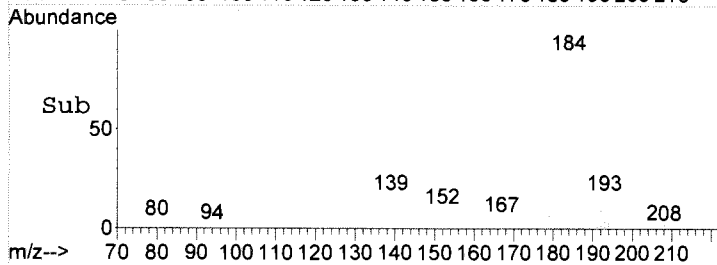
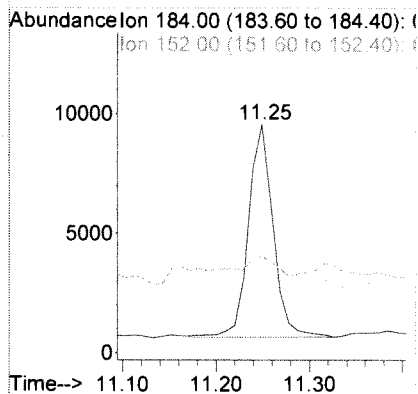
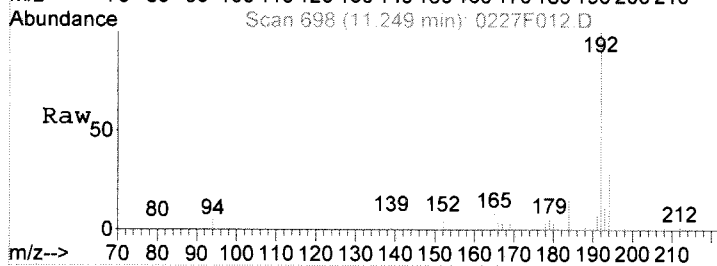
Tgt Ion	Resp	Lower	Upper
166	100		
165	92.3	62.7	122.7
167	15.0	0.0	43.3





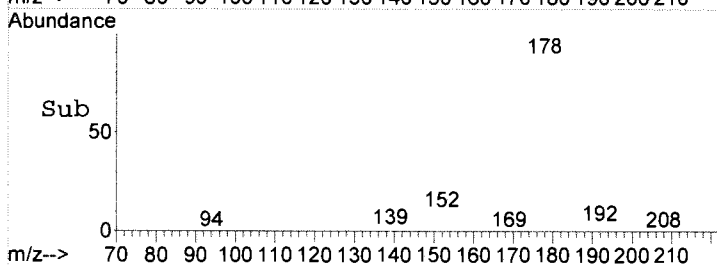
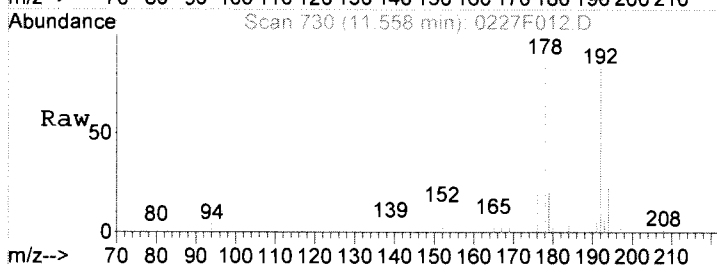
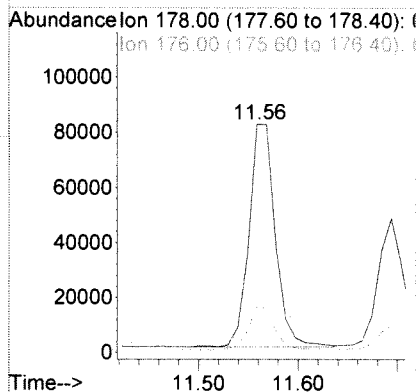
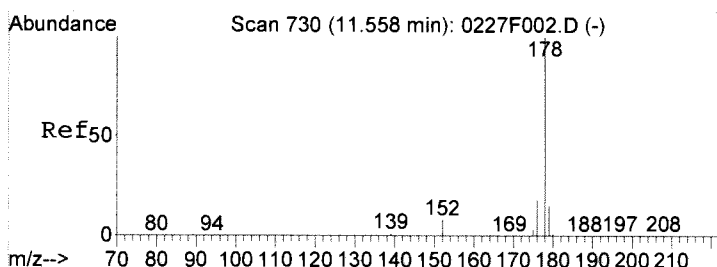
#23
 Dibenzothiophene
 Concen: 34.78 ng/ml
 RT: 11.25 min Scan# 698
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

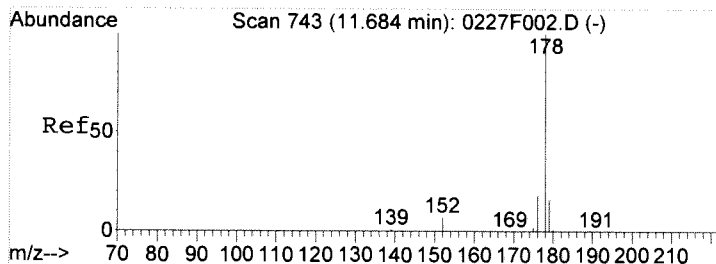
Tgt Ion	Ratio	Lower	Upper
184	100		
152	6.8	0.0	39.1
139	14.1	0.0	45.2



#28
 Phenanthrene
 Concen: 287.90 ng/ml
 RT: 11.56 min Scan# 730
 Delta R.T. -0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

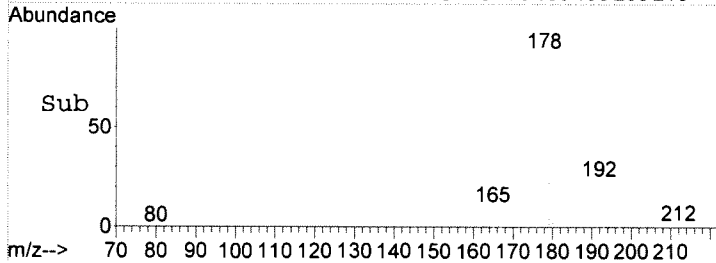
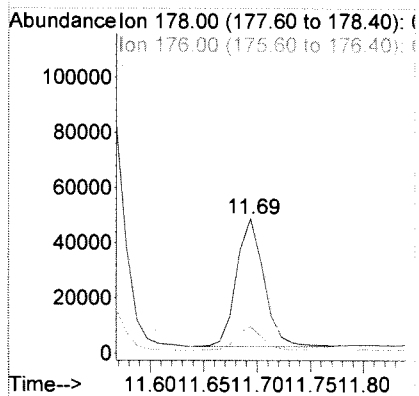
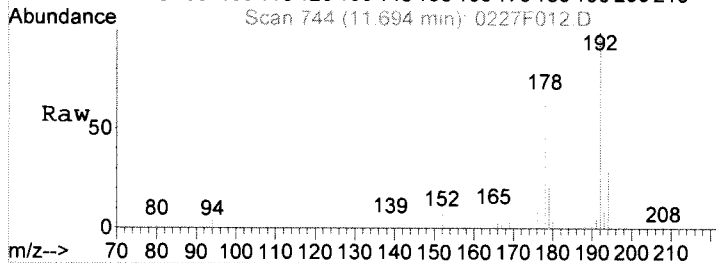
Tgt Ion	Ratio	Lower	Upper
178	100		
176	19.4	0.0	48.7
179	15.2	0.0	45.5





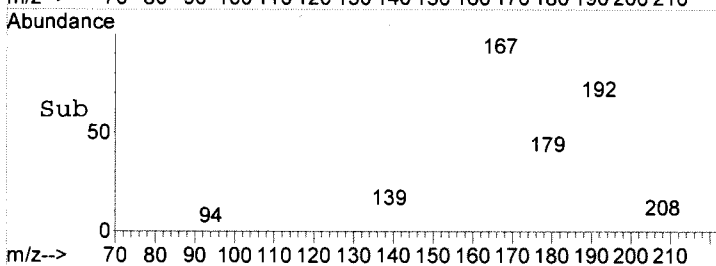
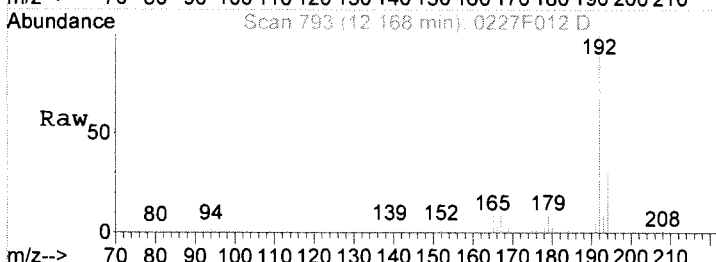
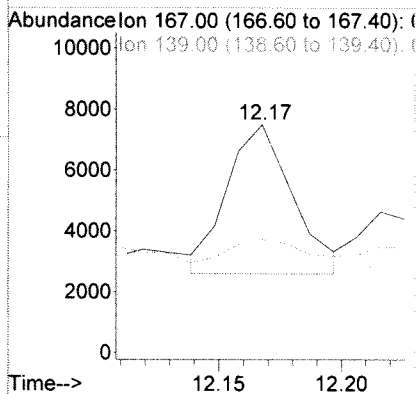
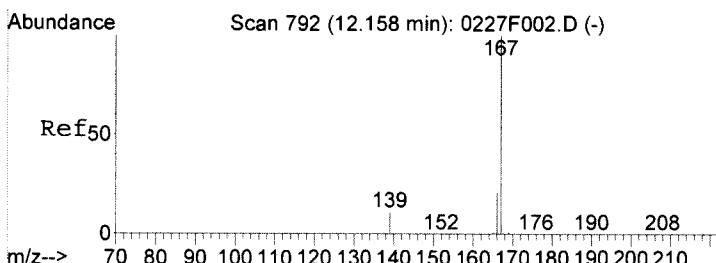
#29
 Anthracene
 Concen: 171.55 ng/ml
 RT: 11.69 min Scan# 744
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

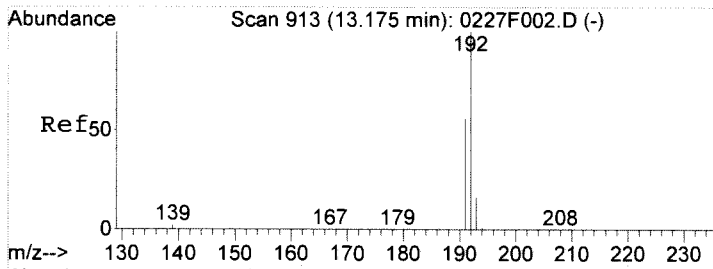
Tgt Ion	Ratio	Lower	Upper
178	100		
176	18.3	0.0	48.4
179	23.1	0.0	45.4



#30
 Carbazole
 Concen: 21.50 ng/ml m
 RT: 12.17 min Scan# 793
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

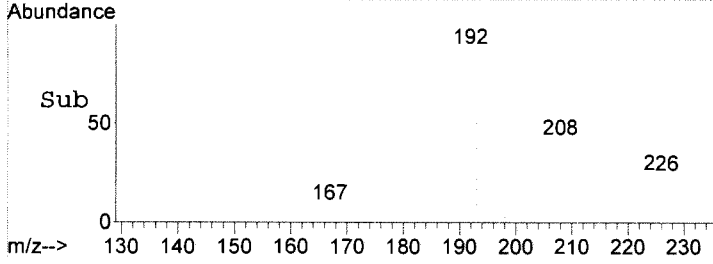
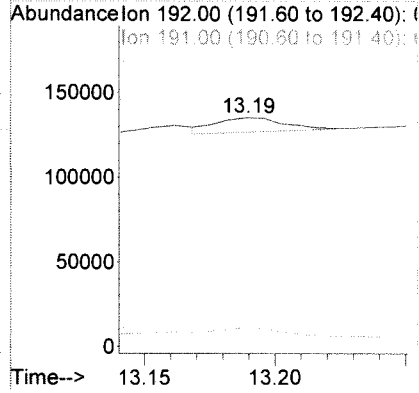
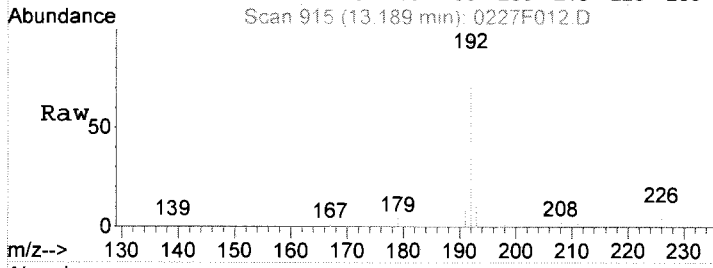
Tgt Ion	Ratio	Lower	Upper
167	100		
139	49.4	0.0	41.5#
166	54.4	0.0	50.7#





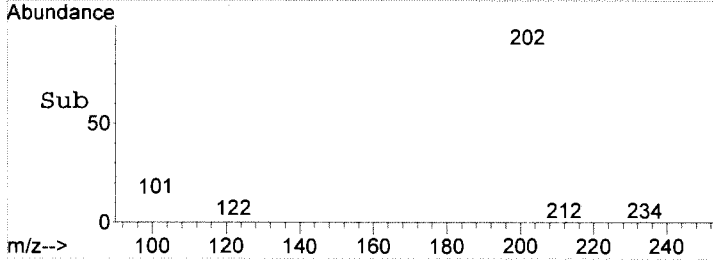
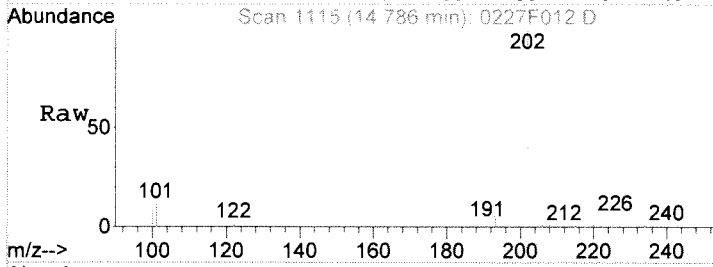
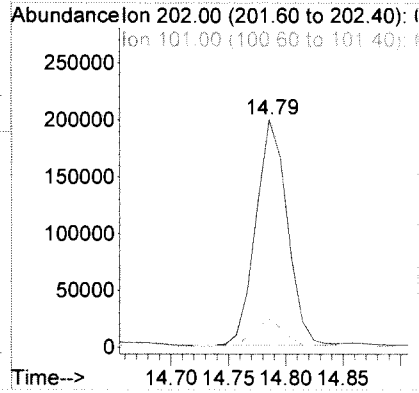
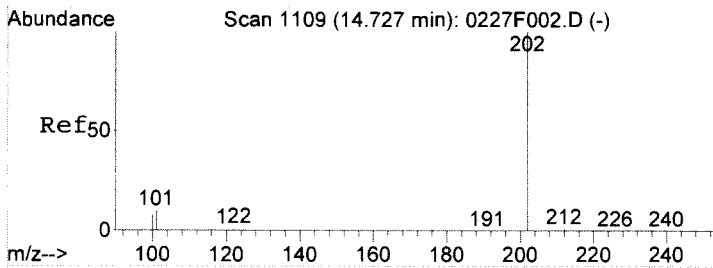
#31
 1-Methylphenanthrene
 Concen: 44.59 ng/ml m
 RT: 13.19 min Scan# 915
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

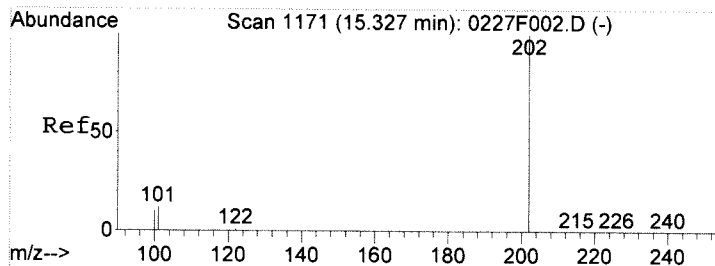
Tgt Ion	Resp	Lower	Upper
192	16426		
191	8.2	27.7	87.7#
193	10.7	0.0	45.6



#36
 Fluoranthene
 Concen: 676.06 ng/ml
 RT: 14.79 min Scan# 1115
 Delta R.T. 0.04 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

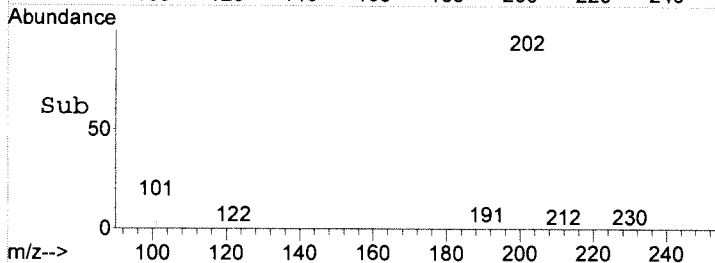
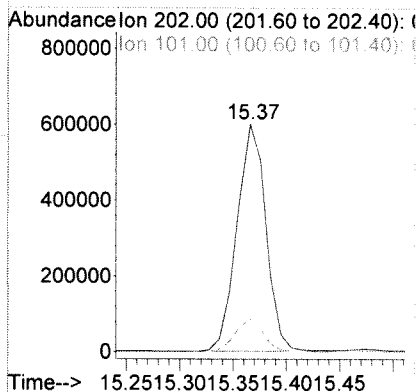
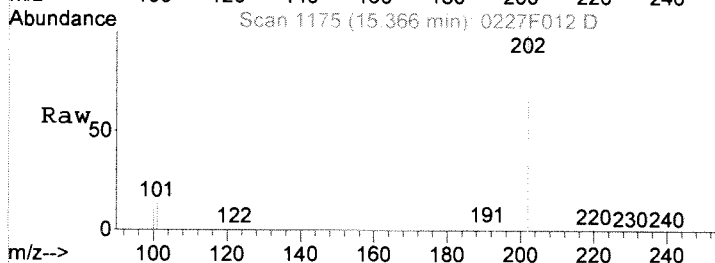
Tgt Ion	Resp	Lower	Upper
202	381654		
101	12.0	0.0	40.5
100	9.0	0.0	37.9





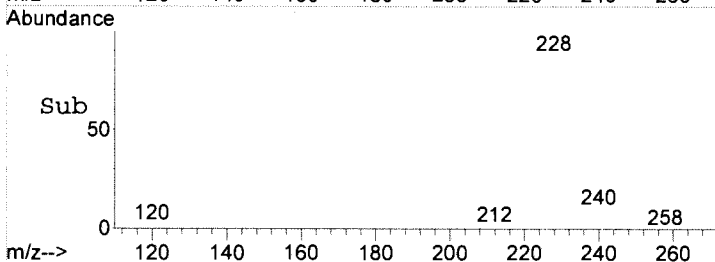
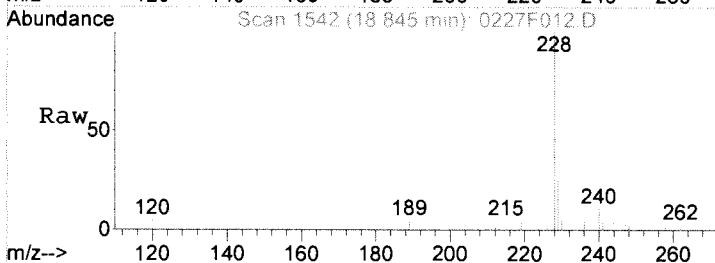
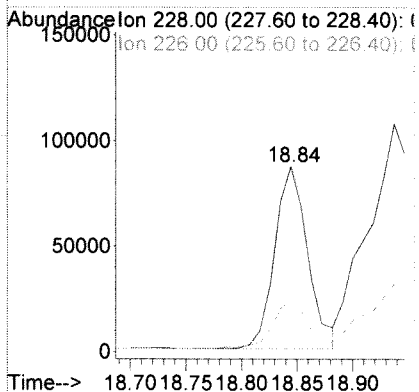
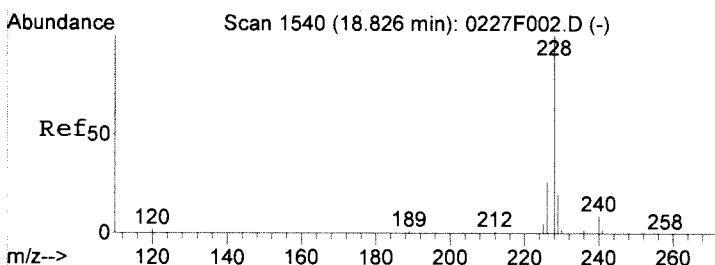
#39
 Pyrene
 Concen: 2065.08 ng/ml
 RT: 15.37 min Scan# 1175
 Delta R.T. 0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

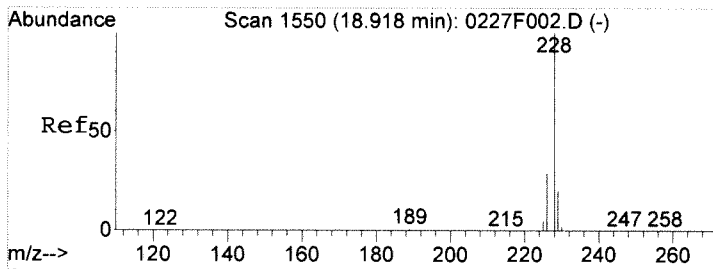
Tgt Ion	Ratio	Lower	Upper
202	100		
101	14.2	0.0	40.9
100	11.4	0.0	38.9



#45
 Benz (a) anthracene
 Concen: 334.66 ng/ml
 RT: 18.84 min Scan# 1542
 Delta R.T. 0.00 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

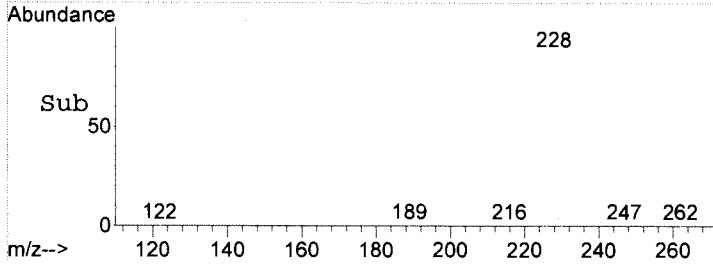
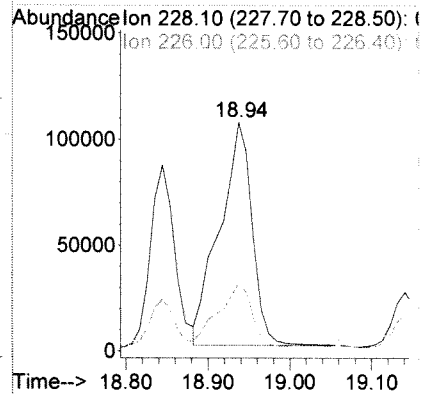
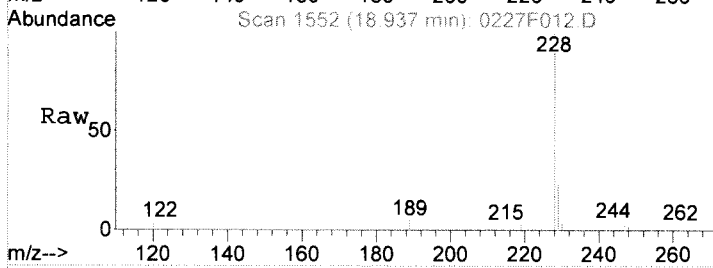
Tgt Ion	Ratio	Lower	Upper
228	100		
226	26.6	0.0	56.6
229	19.9	0.0	50.0





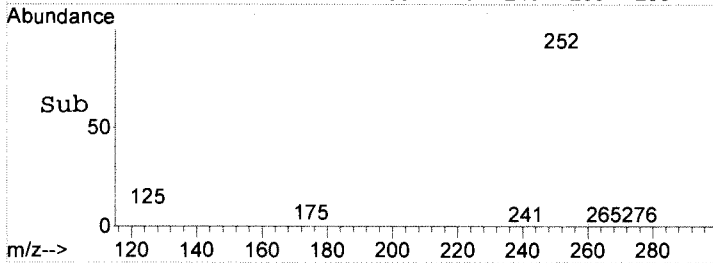
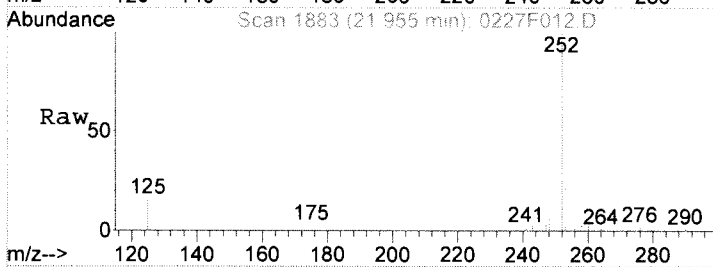
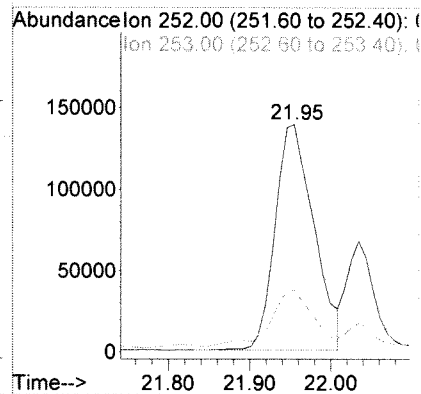
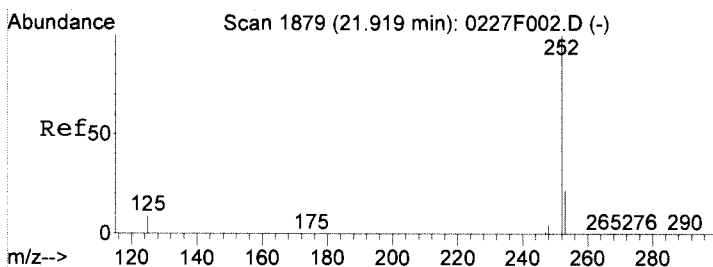
#46
 Chrysene
 Concen: 550.28 ng/ml
 RT: 18.94 min Scan# 1552
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

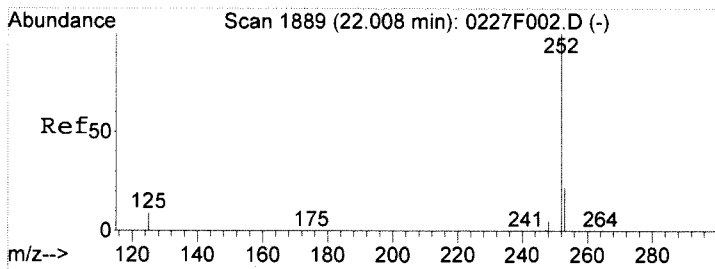
Tgt Ion	Ratio	Resp	Lower	Upper
228	100	291358		
226	27.9	0.0	58.4	
229	19.0	0.0	49.9	



#52
 Benzo(b)fluoranthene
 Concen: 742.76 ng/ml
 RT: 21.95 min Scan# 1883
 Delta R.T. 0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

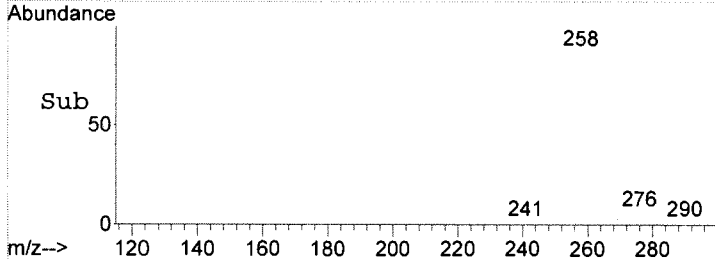
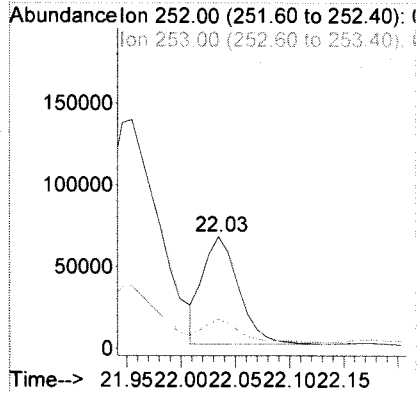
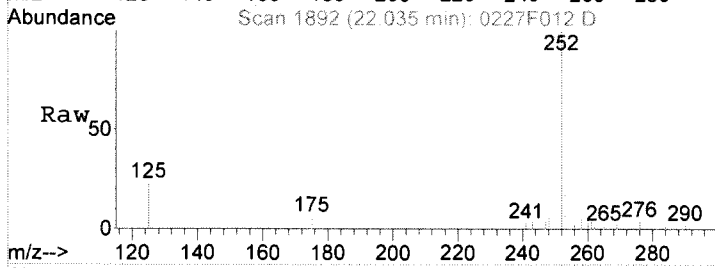
Tgt Ion	Ratio	Resp	Lower	Upper
252	100	462228		
253	24.6	0.0	51.9	
125	8.4	0.0	38.2	





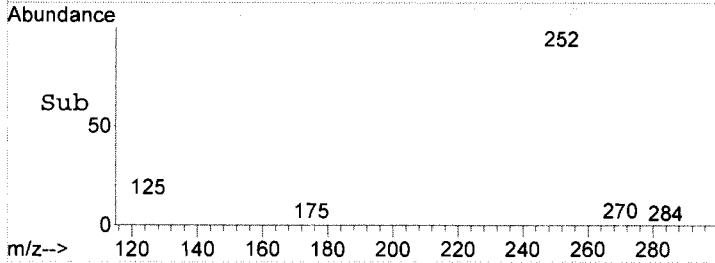
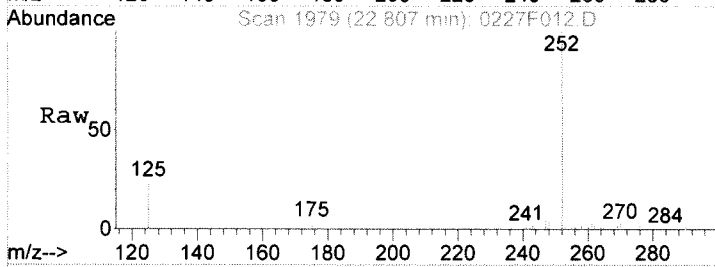
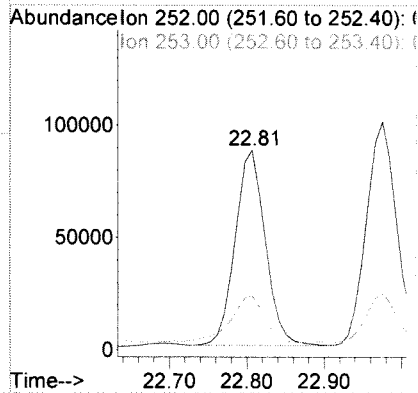
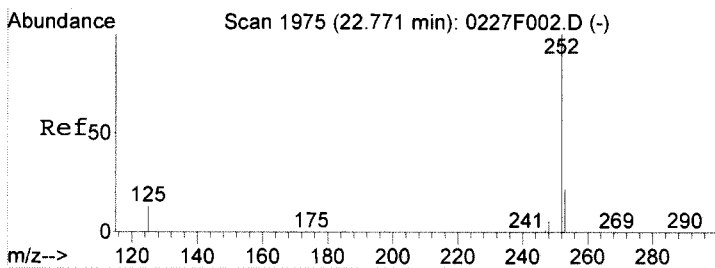
#53
 Benzo(k)fluoranthene
 Concen: 240.00 ng/ml
 RT: 22.03 min Scan# 1892
 Delta R.T. 0.00 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

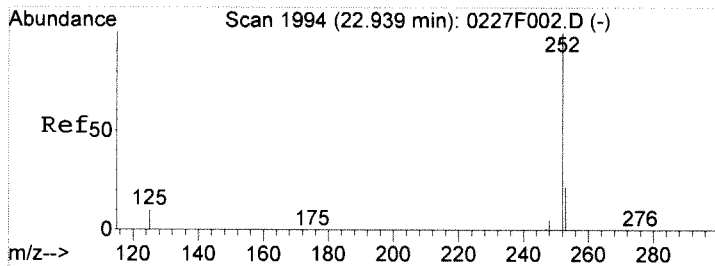
Tgt Ion	Ratio	Lower	Upper
252	100		
253	21.2	0.0	51.9
125	7.5	0.0	38.7



#54
 Benzo(e)pyrene
 Concen: 388.18 ng/ml
 RT: 22.81 min Scan# 1979
 Delta R.T. 0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

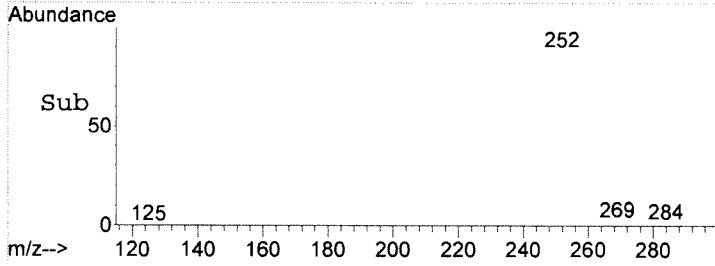
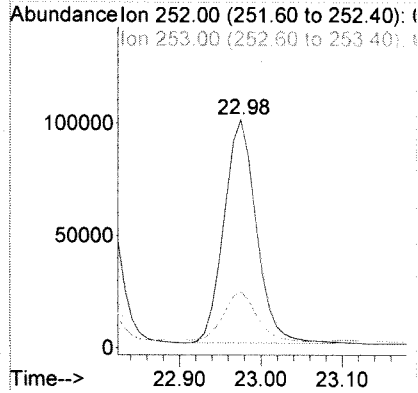
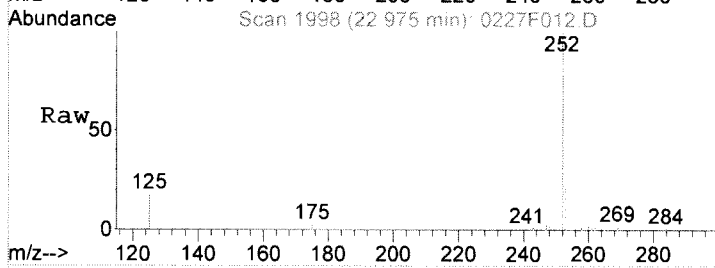
Tgt Ion	Ratio	Lower	Upper
252	100		
253	23.6	0.0	51.6
125	13.2	0.0	42.3





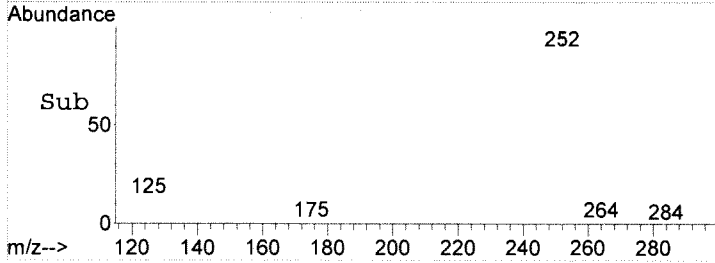
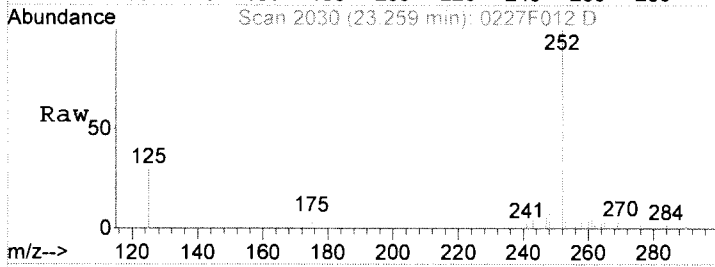
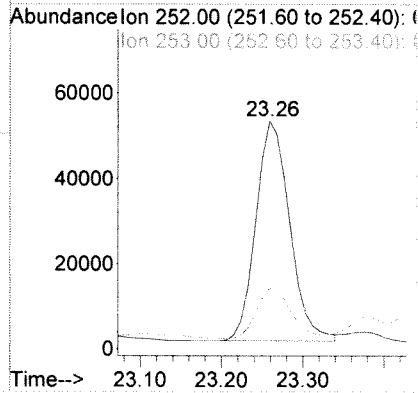
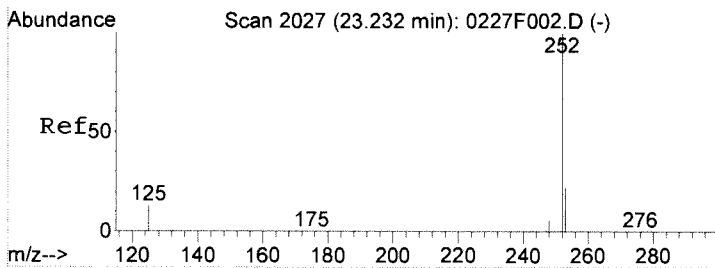
#55
 Benzo(a)pyrene
 Concen: 512.06 ng/ml
 RT: 22.98 min Scan# 1998
 Delta R.T. 0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

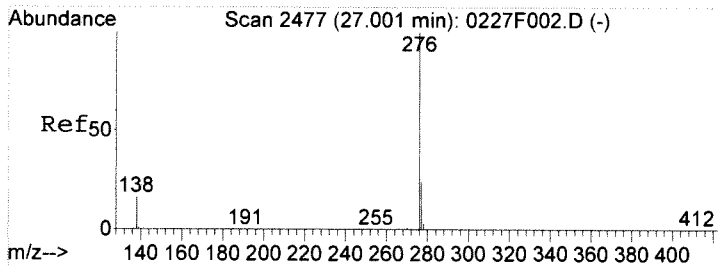
Tgt Ion	Ratio	Lower	Upper
252	100		
253	21.8	0.0	52.1
125	9.2	0.0	39.5



#56
 Perylene
 Concen: 263.92 ng/ml
 RT: 23.26 min Scan# 2030
 Delta R.T. 0.00 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

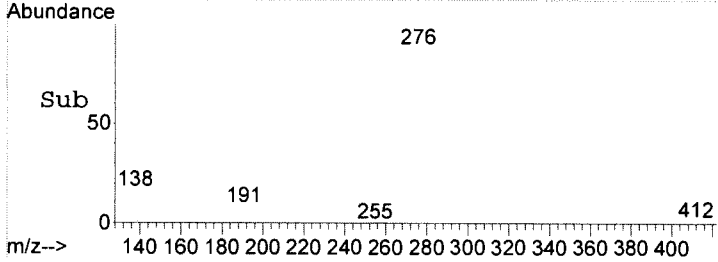
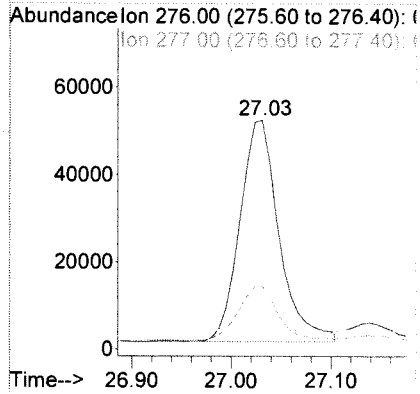
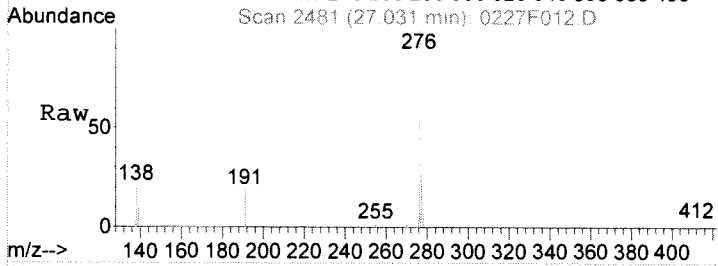
Tgt Ion	Ratio	Lower	Upper
252	100		
253	22.0	0.0	51.9
125	13.5	0.0	43.0





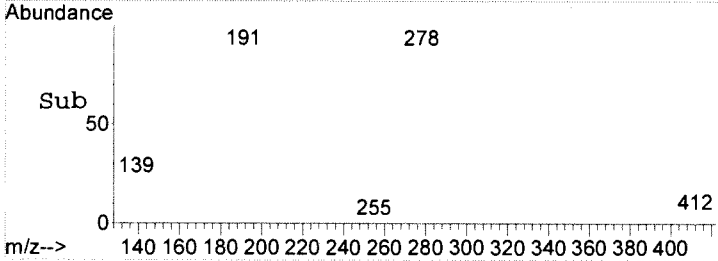
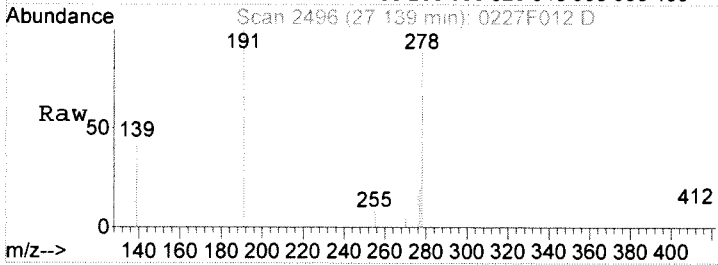
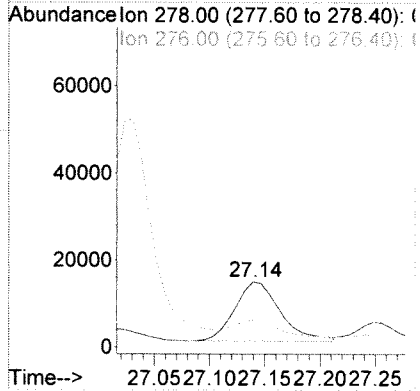
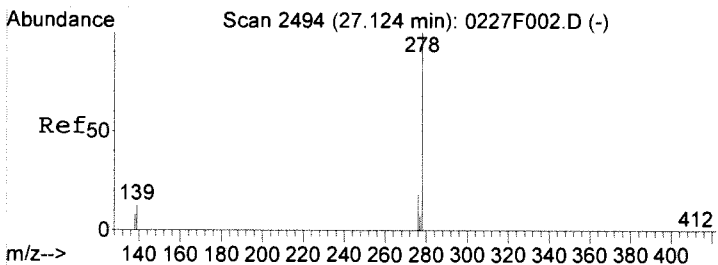
#57
 Indeno(1,2,3-cd)pyrene
 Concen: 249.43 ng/ml
 RT: 27.03 min Scan# 2481
 Delta R.T. 0.02 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

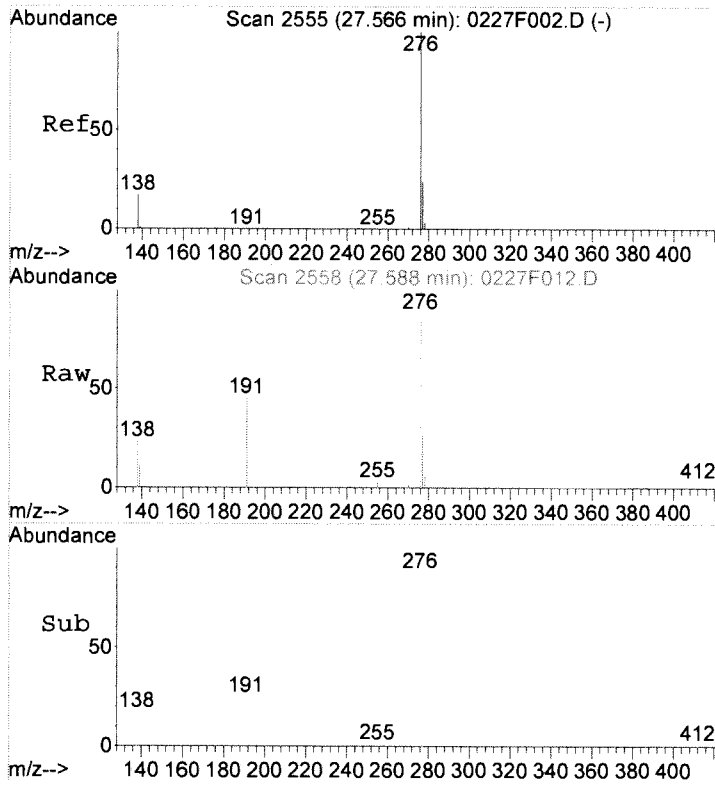
Tgt Ion	Resp	Lower	Upper
276	100		
277	24.2	0.0	54.0
138	15.7	0.0	46.0



#58
 Dibenz(a,h)anthracene
 Concen: 67.62 ng/ml
 RT: 27.14 min Scan# 2496
 Delta R.T. -0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

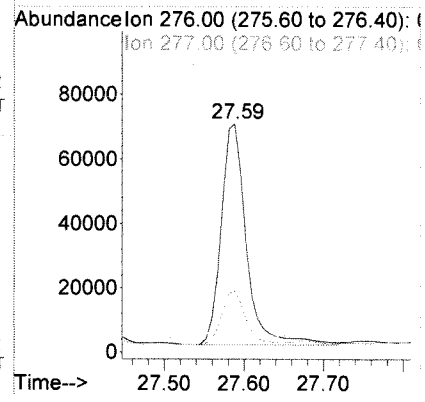
Tgt Ion	Resp	Lower	Upper
278	100		
276	27.9	0.0	55.0
139	14.4	0.0	42.8





#59
 Benzo(g,h,i)perylene
 Concen: 229.57 ng/ml
 RT: 27.59 min Scan# 2558
 Delta R.T. 0.01 min
 Lab File: 0227F012.D
 Acq: 27 Feb 2018 5:51 pm

Tgt Ion	Resp	Lower	Upper
276	152468		
277	24.5	0.0	54.2
138	17.9	0.0	46.5



Exception Report

Data File: J:\MS14\DATA\022818\0228F006.D
Lab ID: K1801267-013
RunType: DL
Matrix: SEDIMENT

Date Acquired: 02/28/2018 11:00
Date Quantitated: 03/01/2018 07:31
Batch ID: KWG1801214
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Primary Review:  **MAR 01 2018**

Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\022818\0228F006.D	Instrument: MS14
Acqu Date: 02/28/2018 11:00	Quant Date: 03/01/2018 07:31
Run Type: DL	Vial: 6
Lab ID: K1801267-013	ListJoinID: LJ18598
	Dilution: 2.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier: IV	Matrix: SEDIMENT
Prod Code: 8270D PAH SIM	Collect Date: 02/06/2018	Receive Date: 02/08/2018

Analysis Lot: KWG1801214	Prep Lot: KWG1801007	Report Group: K1801267
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664504	Prep Date: 02/19/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title: Polynuclear Aromatic Hydrocarbons	Report List ID: LJ18598
Tune Ref: J:\MS14\DATA\022818\0228F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Report List

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.70	-0.01	136	62268	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	30897	200.00	OK
3	Phenanthrene-d10	7.52	0.00	188	69628	200.00	OK
4	Chrysene-d12	10.04	0.01	240	89073	200.00	OK
5	Perylene-d12	13.12	0.05	264	94032	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	14792	69.98	70	38-104	OK NR
3	Fluoranthene-d10	8.52	0.01	0.00	212	43401	99.20	99	39-109	OK NR
4	Terphenyl-d14	8.86	0.01	0.00	244	32949	87.73	88	38-113	OK NR

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.72	-0.01	0.00	128	35644	100.49	280	D	NR
1	2-Methylnaphthalene	5.38		0.00	142	8300	33.61	95	D	NR
2	Acenaphthylene	6.17	0.01	0.00	152	8391	22.19	63	D	NR
2	Acenaphthene	6.31		0.00	154	12105	56.94	160	D	NR
2	Dibenzofuran	6.46		0.00	168	16281	48.74	140	D	NR
2	Fluorene	6.74		0.00	166	15029	57.36	160	D	NR
3	Phenanthrene	7.54		0.00	178	70737	163.83	460	D	NR
3	Anthracene	7.58		0.00	178	36094	84.76	240	D	NR
3	Fluoranthene	8.54	0.02	0.00	202	216354	422.07	1200	D	NR
4	Pyrene	8.73	0.02	0.00	202	655185	1.219	3500	D	
4	Benz(a)anthracene	10.03	0.01	0.00	228	83352	155.18	440	D	NR
4	Chrysene	10.08	0.01	0.00	228	147008	292.70	830	D	NR
5	Benzo(b)fluoranthene	12.09	0.04	0.00	252	217911	367.08	1000	D	NR

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\022818\0228F006.D	Instrument:	MS14
Acqu Date:	02/28/2018 11:00	Quant Date:	03/01/2018 07:31
Run Type:	DL	ListJoinID:	LJ18598
Lab ID:	K1801267-013	Vial:	6
		Dilution:	2.0
		Soln Conc. Units:	ng/ml

Target Compounds Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	12.15	0.03	0.00	252	83719m	143.58	410	D	NR
5	Benzo(a)pyrene	12.94	0.04	0.00	252	135377	260.89	740	D	NR
5	Indeno(1,2,3-cd)pyrene	15.37	0.02	0.00	276	66026m	141.64	400	D	NR
5	Dibenz(a,h)anthracene	15.42	0.03	0.00	278	17004m	35.83	100	D	NR
5	Benzo(g,h,i)perylene	15.76	0.03	0.00	276	71948	138.72	390	D	NR

Prep Amount: 10.440 g **Dilution:** 2.0
Prep Final Vol: 10 mL **Unit Factor:** 1
Solids: 67.6 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound
D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis
*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\022818\0228F006.D

Vial: 6

Acq On : 28 Feb 2018 11:00 am

Operator: LWeiskopf

Sample : K1801267-013DIL 2X

Inst : MS14

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Feb 28 12:08:29 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Wed Feb 28 06:43:32 2018

Response via : Initial Calibration

DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.70	136	62268	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	30897	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.52	188	69628	200.00	ng/ml	0.00
23) Chrysene-d12	10.04	240	89073	200.00	ng/ml	0.02
28) Perylene-d12	13.12	264	94032	200.00	ng/ml	0.06

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.35	152	11570	69.31	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	6.93%	
13) Fluorene-d10	6.72	176	14792	69.98	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	7.00%	
22) Fluoranthene-d10	8.52	212	43401	99.20	ng/ml	0.02
Spiked Amount	1000.000		Recovery	=	9.92%	
25) Terphenyl-d14	8.86	244	32949	87.73	ng/ml	0.01
Spiked Amount	1000.000		Recovery	=	8.77%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.72	128	35644	100.49	ng/ml	99
4) 2-Methylnaphthalene	5.38	142	8300	33.61	ng/ml#	80
5) 1-Methylnaphthalene	5.46	142	6532	29.93	ng/ml	92
6) Biphenyl	5.79	154	4719	15.10	ng/ml	97
7) 2,6-Dimethylnaphthalene	5.93	156	7145	32.17	ng/ml	99
9) Acenaphthylene	6.17	152	8391	22.19	ng/ml	82
10) Acenaphthene	6.31	154	12105	56.94	ng/ml	98
11) Dibenzofuran	6.46	168	16281	48.74	ng/ml	98
12) 2,3,5-Trimethylnaphthalene	6.62	170	8738	40.64	ng/ml	90
14) Fluorene	6.74	166	15029	57.36	ng/ml	98
16) Dibenzothiophene	7.44	184	8019	18.16	ng/ml	86
17) Phenanthrene	7.54	178	70737	163.83	ng/ml	95
18) Anthracene	7.58	178	36094	84.76	ng/ml	98
19) Carbazole	7.72	167	5342	13.84	ng/ml	89
20) 1-Methylphenanthrene	8.06	192	12000m	36.55	ng/ml	
21) Fluoranthene	8.54	202	216354	422.07	ng/ml	99
24) Pyrene	8.73	202	655185	1218.65	ng/ml	99
26) Benz(a)anthracene	10.03	228	83352	155.18	ng/ml	97
27) Chrysene	10.08	228	147008	292.70	ng/ml	98
29) Benzo(b)fluoranthene	12.09	252	217911	367.08	ng/ml	98
30) Benzo(k)fluoranthene	12.15	252	83719m	143.58	ng/ml	
31) Benzo(e)pyrene	12.80	252	111096	196.19	ng/ml	97
32) Benzo(a)pyrene	12.94	252	135377	260.89	ng/ml	92
33) Perylene	13.19	252	69427	135.82	ng/ml	94
34) Indeno(1,2,3-cd)pyrene	15.37	276	66026m	141.64	ng/ml	
35) Dibenz(a,h)anthracene	15.42	278	17004m	35.83	ng/ml	
36) Benzo(g,h,i)perylene	15.76	276	71948	138.72	ng/ml	97

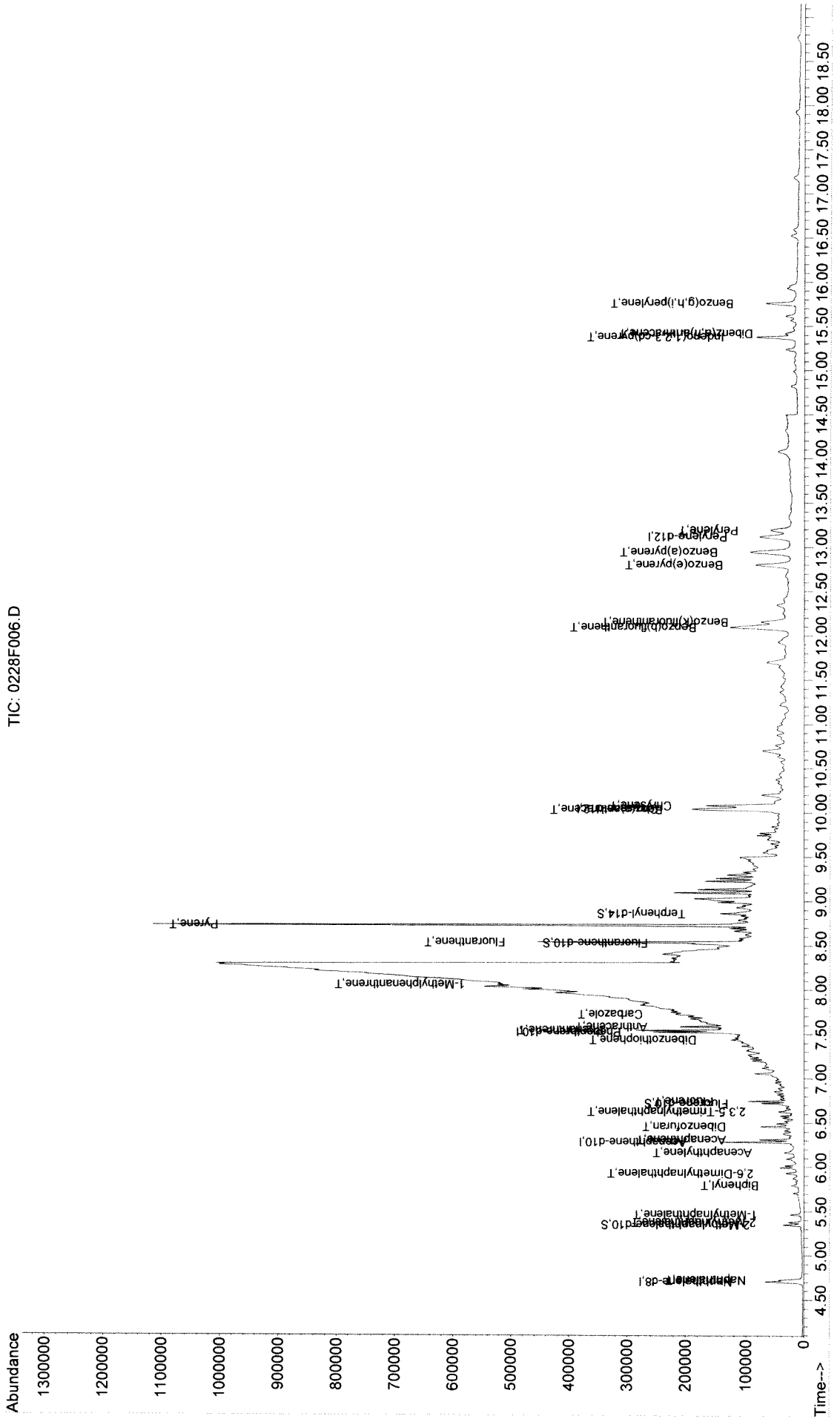
(#) = qualifier out of range (m) = manual integration
0228F006.D 101317PAH.M Thu Mar 01 07:31:47 2018

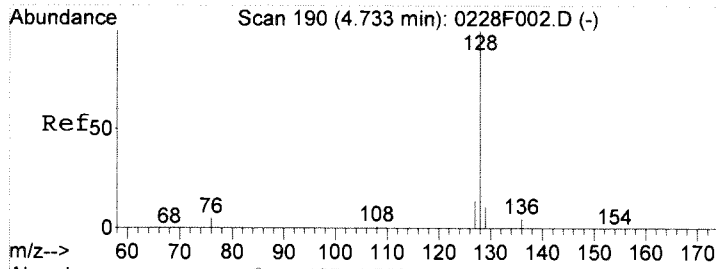
Data File : J:\MS14\DATA\022818\0228F006.D
Acq On : 28 Feb 2018 11:00 am
Sample : K1801267-013DIL 2X
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 1 7:31 2018

Vial: 6
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Thu Mar 01 07:26:50 2018
Response via : Initial Calibration

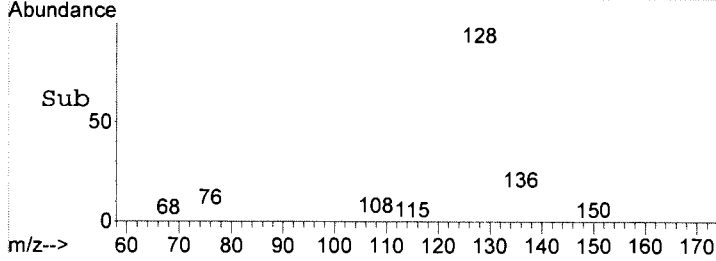
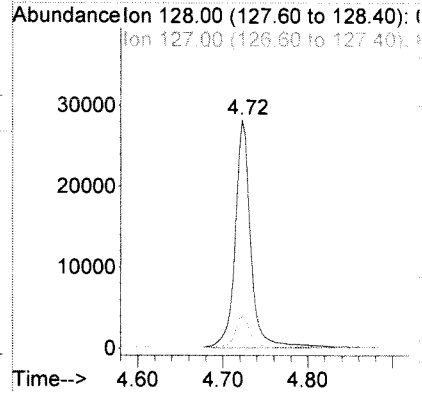
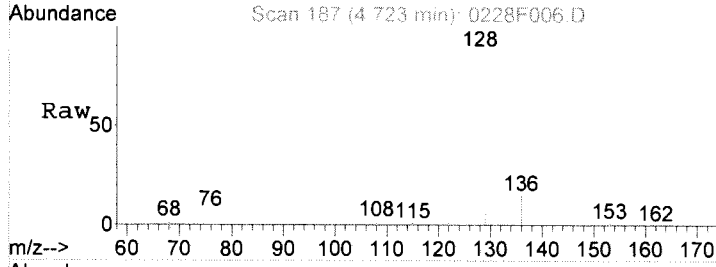
TIC: 0228F006.D





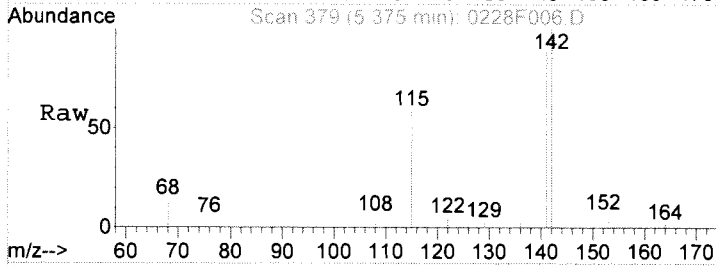
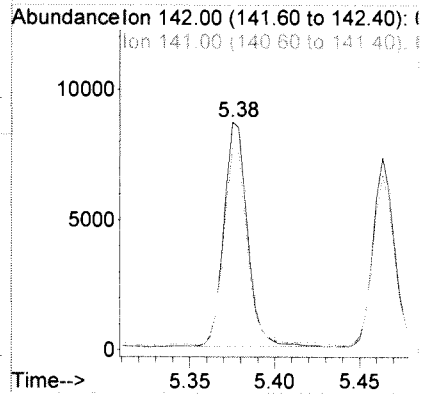
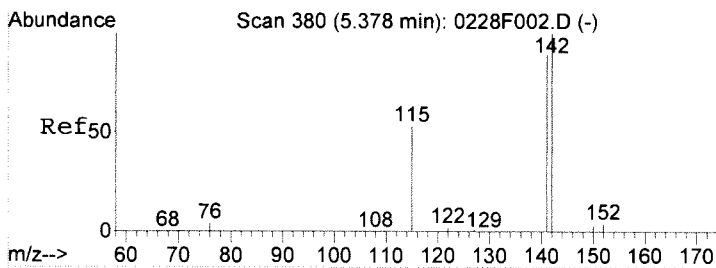
#2
 Naphthalene
 Concen: 100.49 ng/ml
 RT: 4.72 min Scan# 187
 Delta R.T. -0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

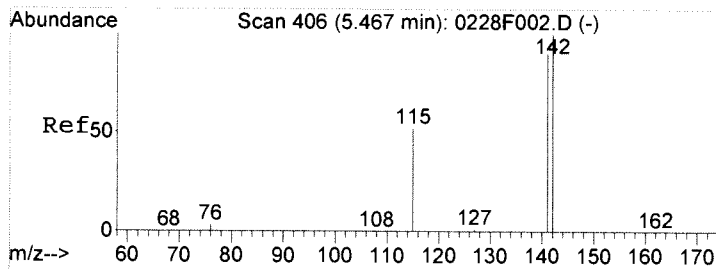
Tgt Ion	Ratio	Lower	Upper
128	100		
127	14.1	0.0	44.1
129	10.8	0.0	30.4



#4
 2-Methylnaphthalene
 Concen: 33.61 ng/ml
 RT: 5.38 min Scan# 379
 Delta R.T. -0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

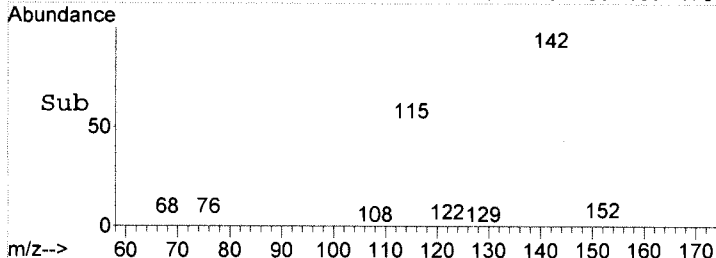
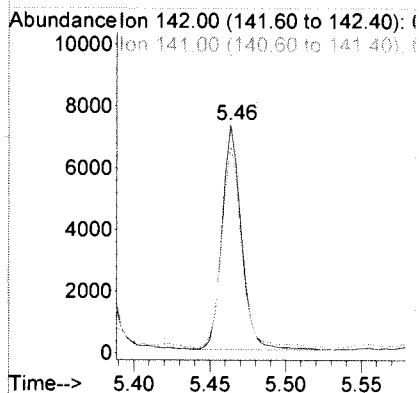
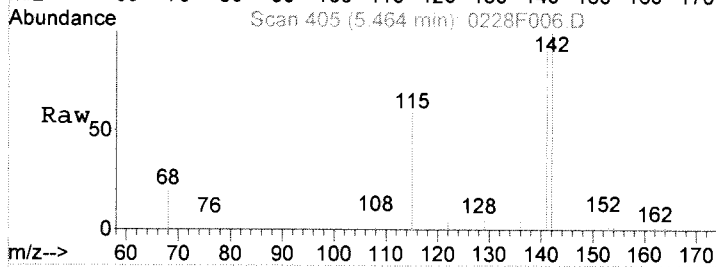
Tgt Ion	Ratio	Lower	Upper
142	100		
141	88.3	51.7	111.7
115	54.8	2.0	42.0#





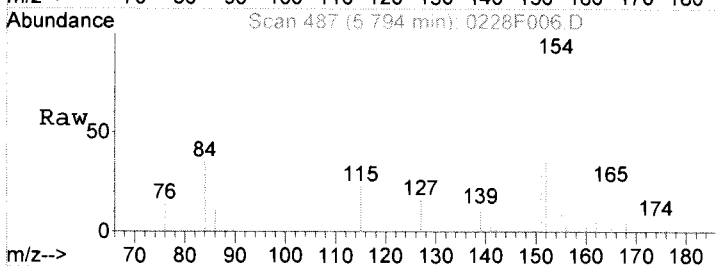
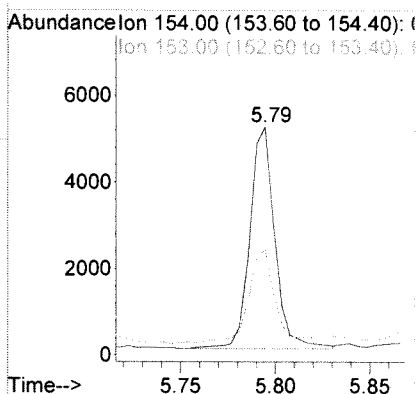
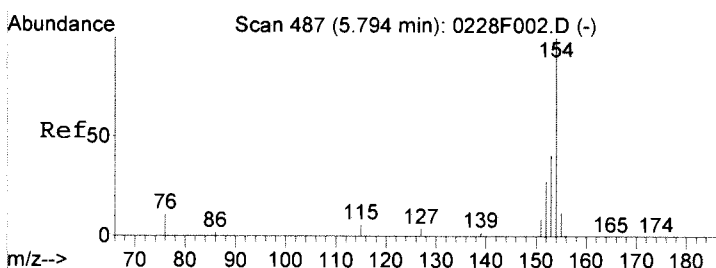
#5
 1-Methylnaphthalene
 Concen: 29.93 ng/ml
 RT: 5.46 min Scan# 405
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

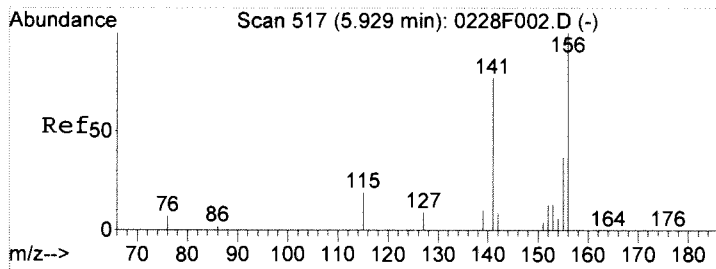
Tgt Ion	Ratio	Lower	Upper
142	100		
141	89.6	63.0	123.0
115	53.8	22.4	62.4



#6
 Biphenyl
 Concen: 15.10 ng/ml
 RT: 5.79 min Scan# 487
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

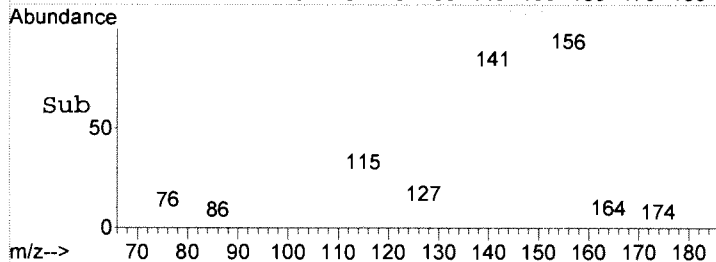
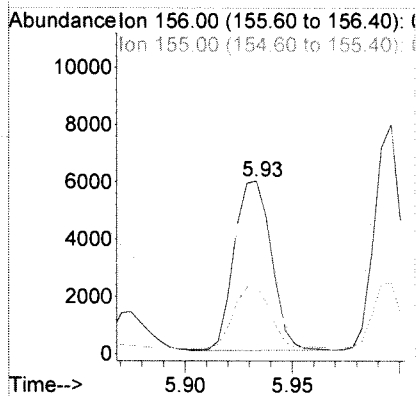
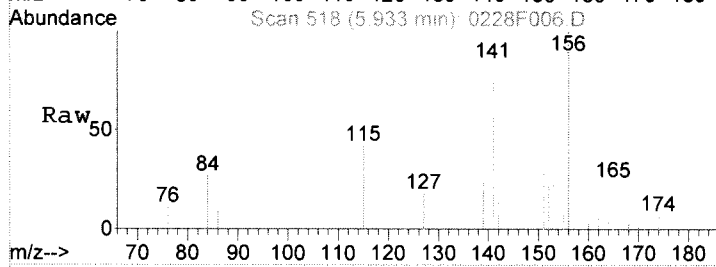
Tgt Ion	Ratio	Lower	Upper
154	100		
153	41.5	11.3	71.3
152	25.2	8.5	48.5





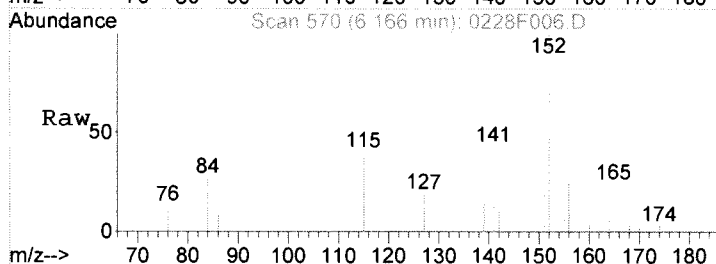
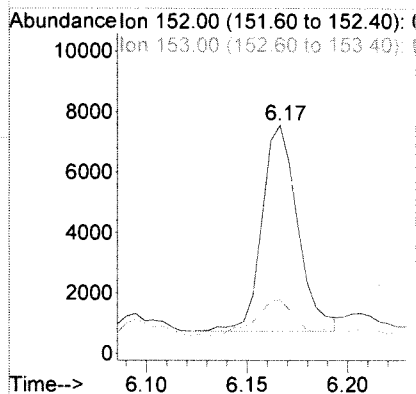
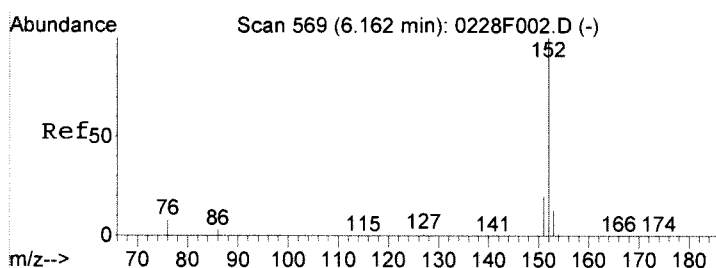
#7
 2,6-Dimethylnaphthalene
 Concen: 32.17 ng/ml
 RT: 5.93 min Scan# 518
 Delta R.T. 0.01 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

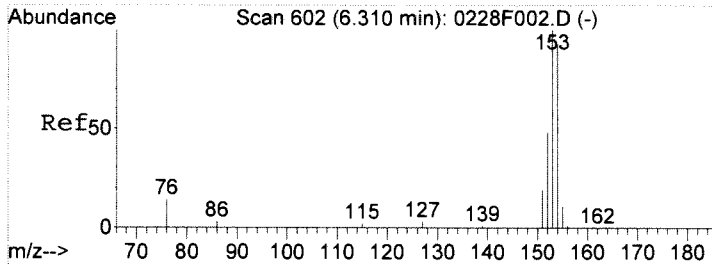
Tgt Ion	Resp	Lower	Upper
156	100		
155	37.2	8.0	68.0
141	76.6	56.4	96.4



#9
 Acenaphthylene
 Concen: 22.19 ng/ml
 RT: 6.17 min Scan# 570
 Delta R.T. 0.01 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

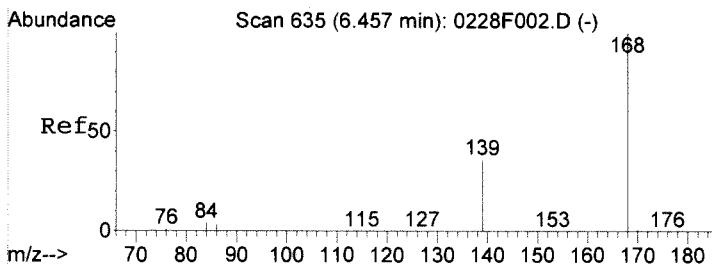
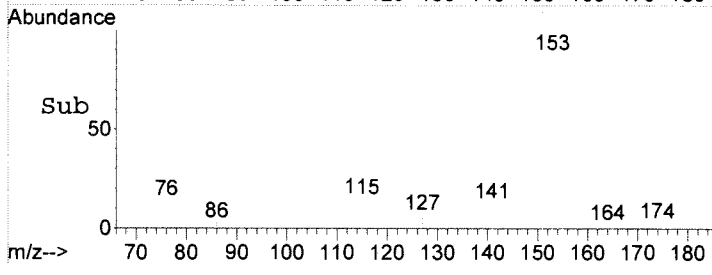
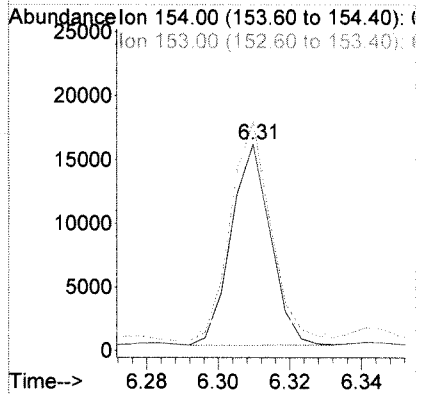
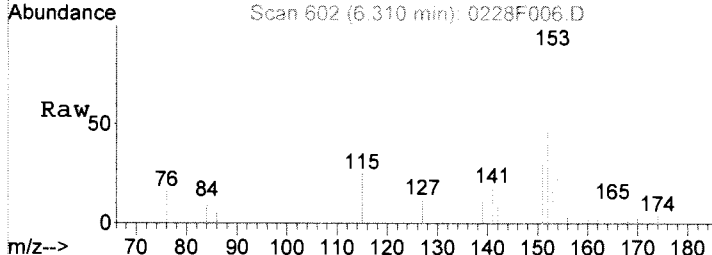
Tgt Ion	Resp	Lower	Upper
152	100		
153	17.3	0.0	42.8
151	30.8	0.3	40.3





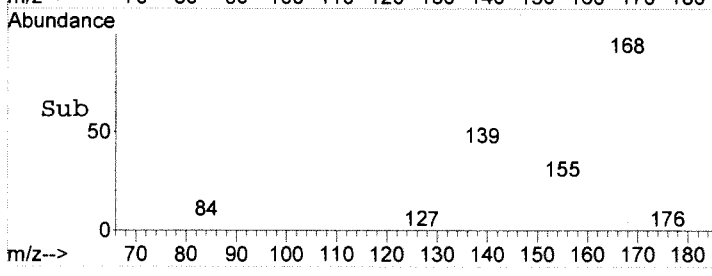
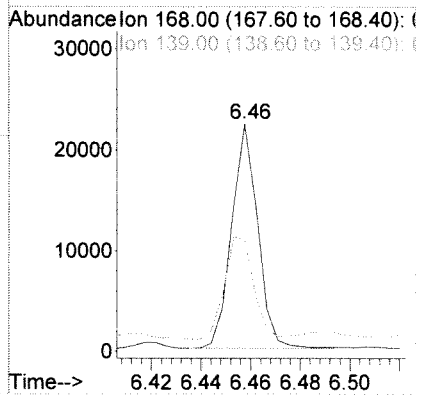
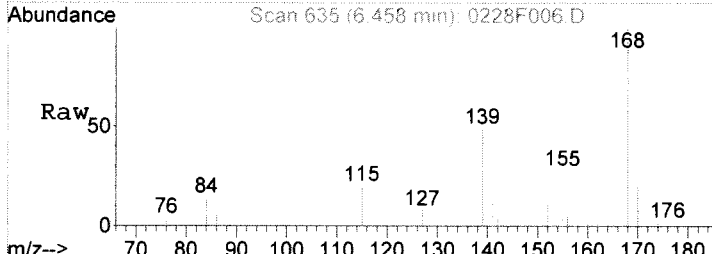
#10
 Acenaphthene
 Concen: 56.94 ng/ml
 RT: 6.31 min Scan# 602
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

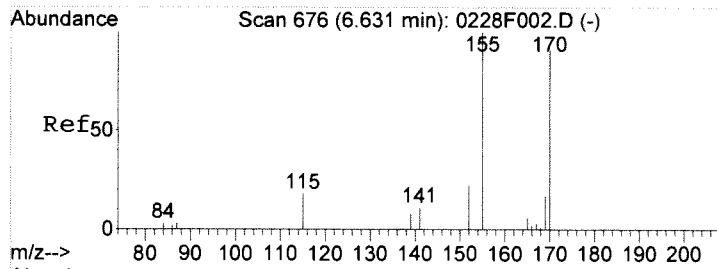
Tgt Ion	Resp	Lower	Upper
154	12105		
153	109.2	77.8	137.8
152	52.4	20.8	80.8



#11
 Dibenzofuran
 Concen: 48.74 ng/ml
 RT: 6.46 min Scan# 635
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

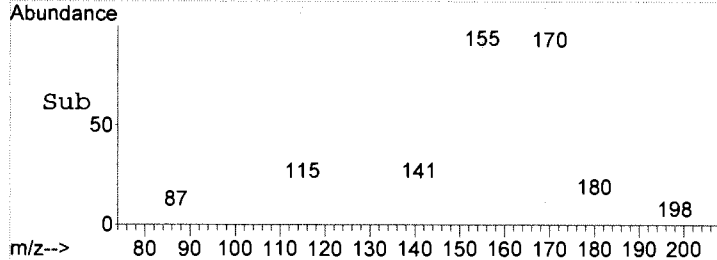
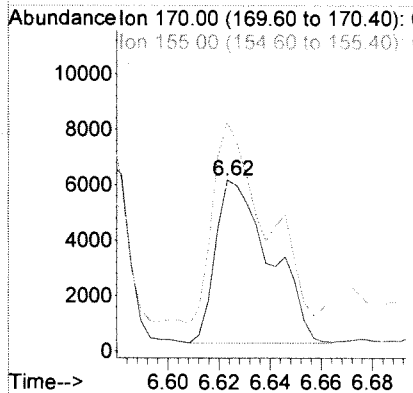
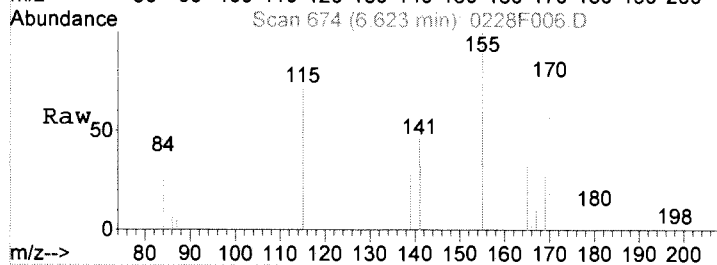
Tgt Ion	Resp	Lower	Upper
168	16281		
139	44.1	15.4	75.4
84	4.6	0.0	24.7





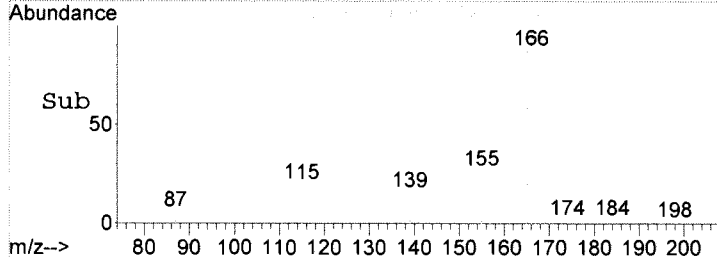
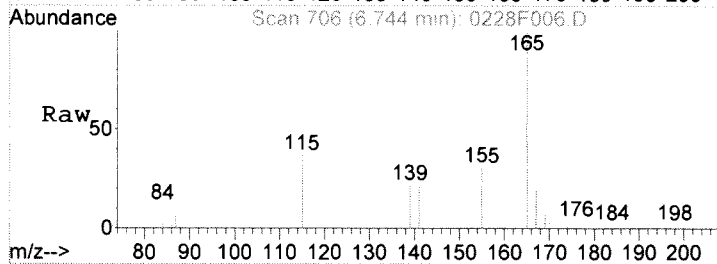
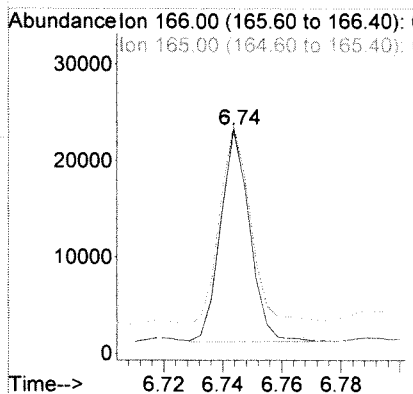
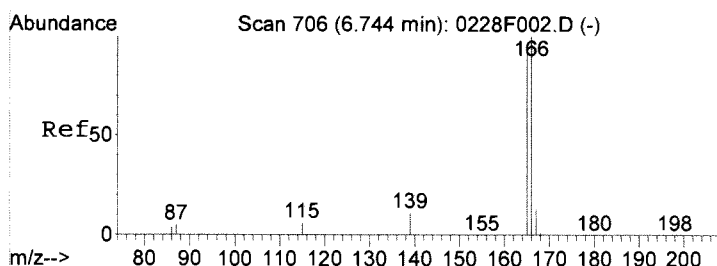
#12
 2,3,5-Trimethylnaphthalene
 Concen: 40.64 ng/ml
 RT: 6.62 min Scan# 674
 Delta R.T. -0.01 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

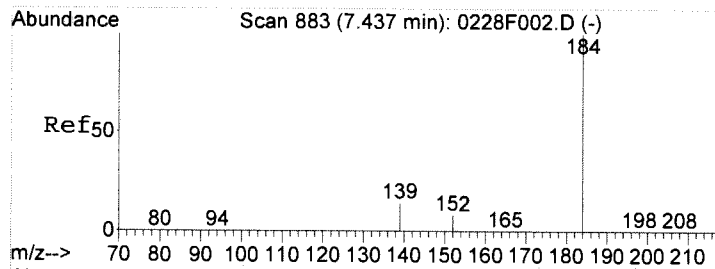
Tgt Ion	Resp	Lower	Upper
170	100		
155	124.4	87.2	147.2
115	35.2	0.8	40.8



#14
 Fluorene
 Concen: 57.36 ng/ml
 RT: 6.74 min Scan# 706
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

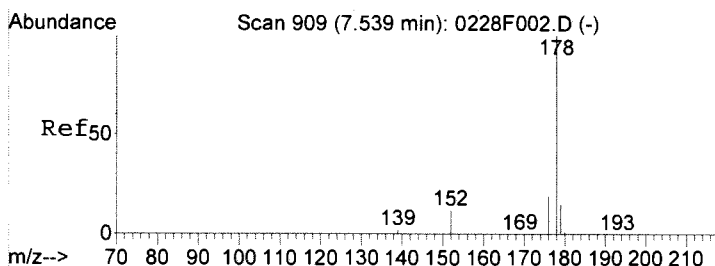
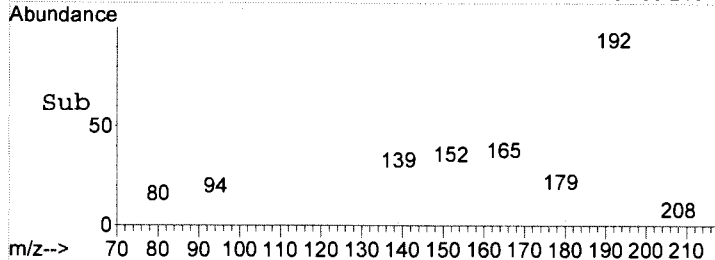
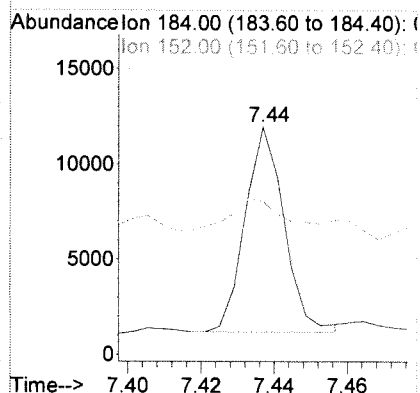
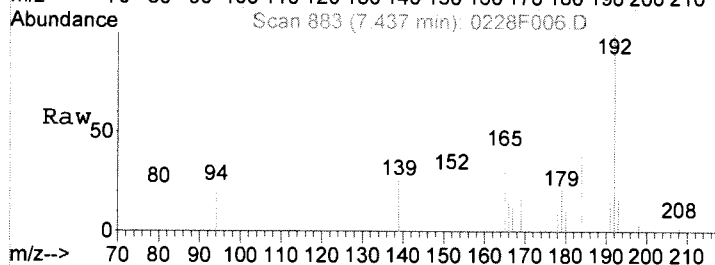
Tgt Ion	Resp	Lower	Upper
166	100		
165	94.3	65.6	125.6
167	16.3	0.0	33.0





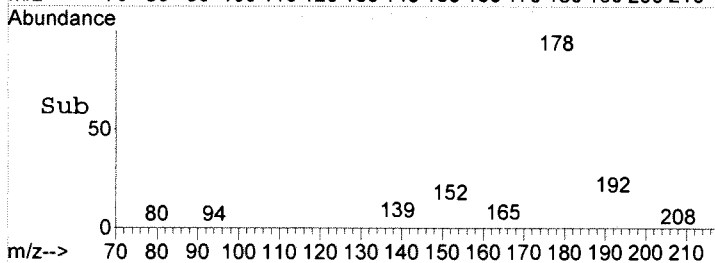
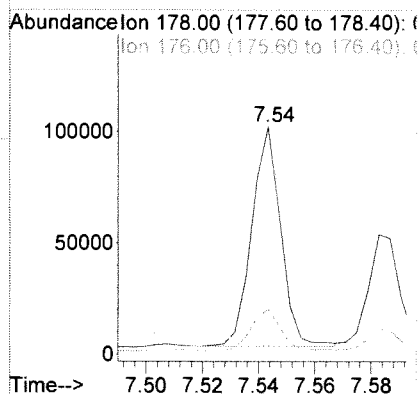
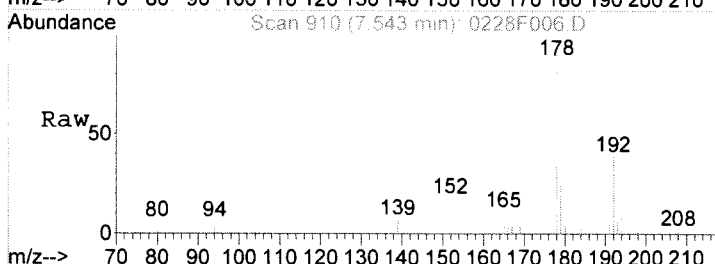
#16
 Dibenzothiophene
 Concen: 18.16 ng/ml
 RT: 7.44 min Scan# 883
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

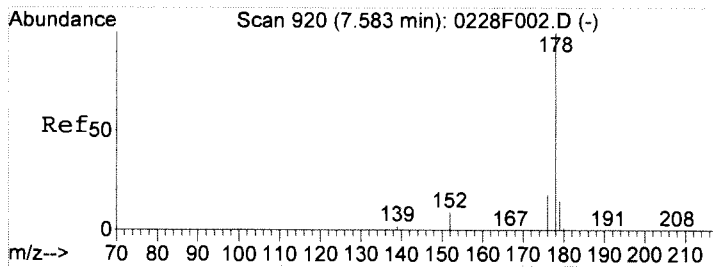
Tgt Ion	Ratio	Lower	Upper
184	100		
152	14.2	0.0	38.5
139	19.5	0.0	34.3



#17
 Phenanthrene
 Concen: 163.83 ng/ml
 RT: 7.54 min Scan# 910
 Delta R.T. 0.01 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

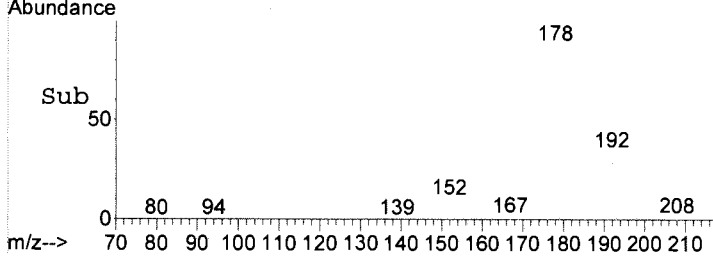
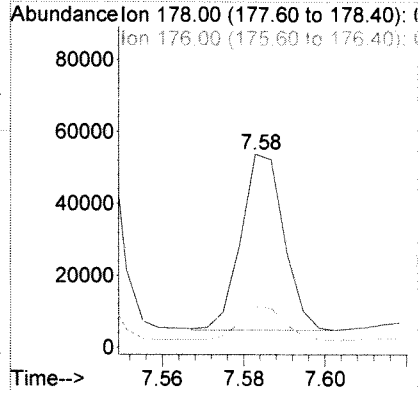
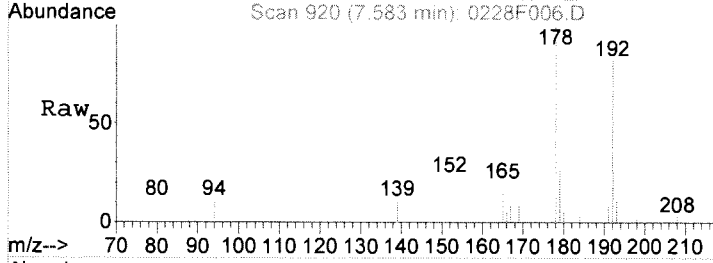
Tgt Ion	Ratio	Lower	Upper
178	100		
176	18.7	0.0	49.6
179	19.0	0.0	35.1





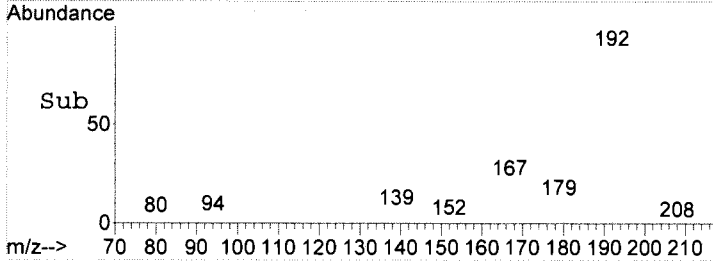
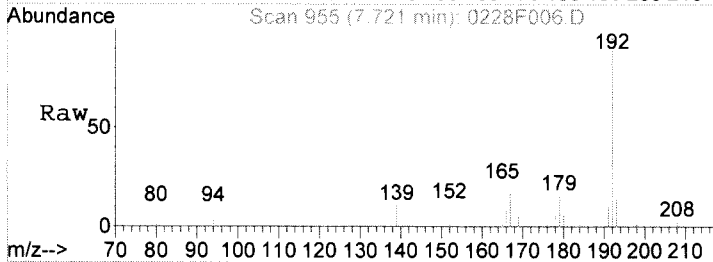
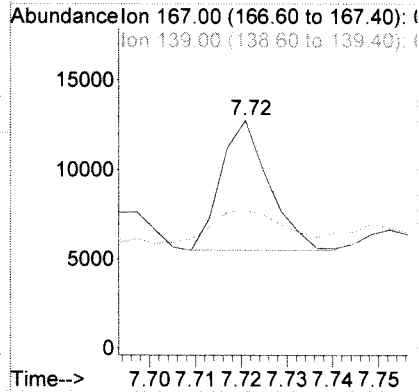
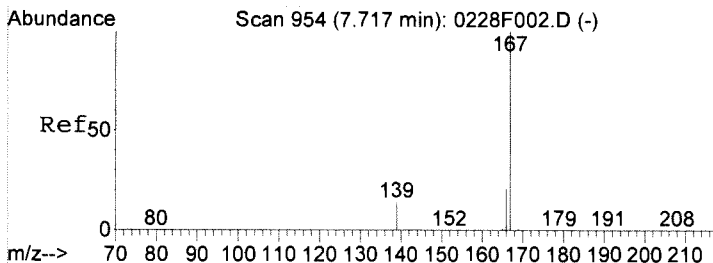
#18
 Anthracene
 Concen: 84.76 ng/ml
 RT: 7.58 min Scan# 920
 Delta R.T. 0.00 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

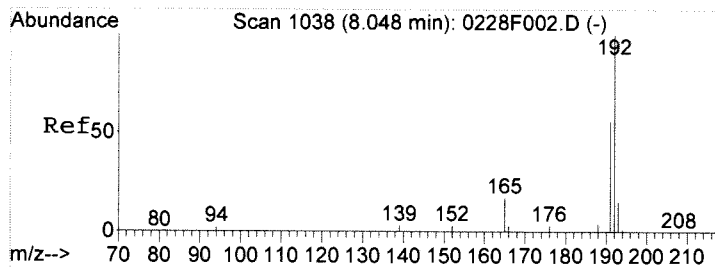
Tgt Ion	Resp	Lower	Upper
178	36094		
176	19.0	0.0	48.2
179	16.1	0.0	34.8



#19
 Carbazole
 Concen: 13.84 ng/ml
 RT: 7.72 min Scan# 955
 Delta R.T. 0.01 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

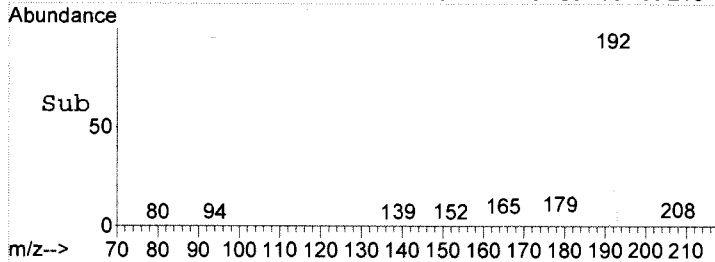
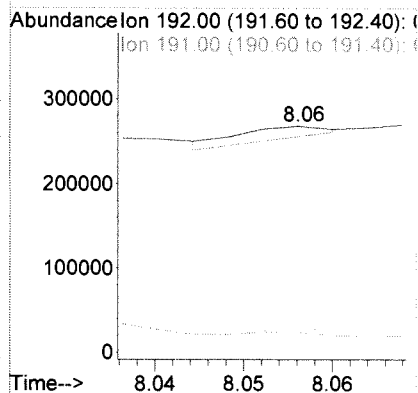
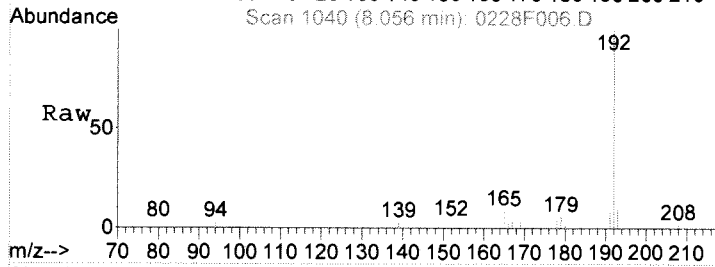
Tgt Ion	Resp	Lower	Upper
167	5342		
139	21.9	0.0	45.2
166	18.0	1.6	41.6





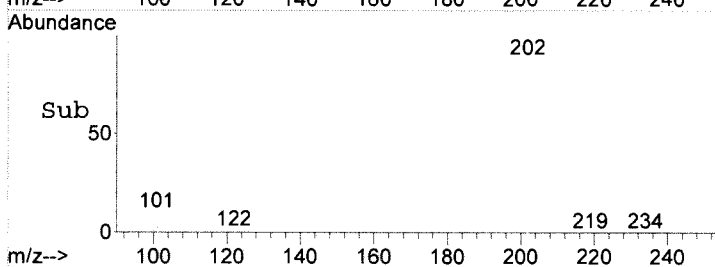
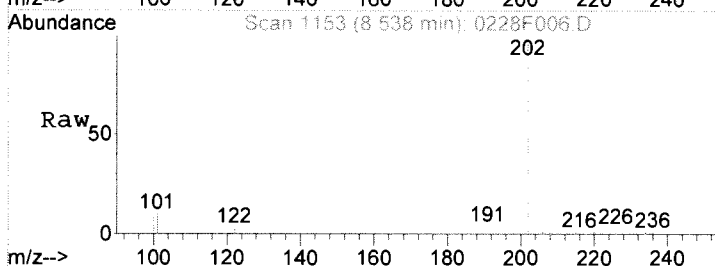
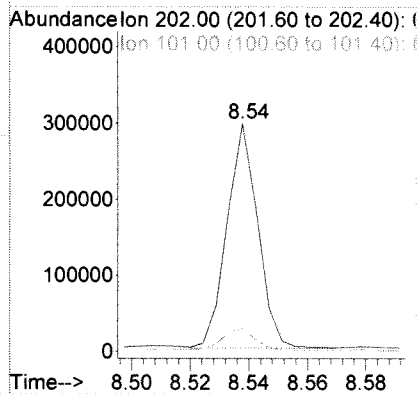
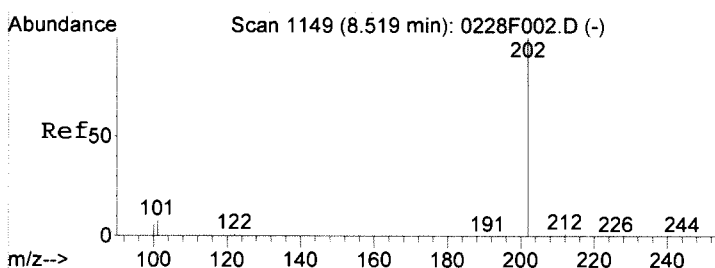
#20
 1-Methylphenanthrene
 Concen: 36.55 ng/ml m
 RT: 8.06 min Scan# 1040
 Delta R.T. 0.01 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

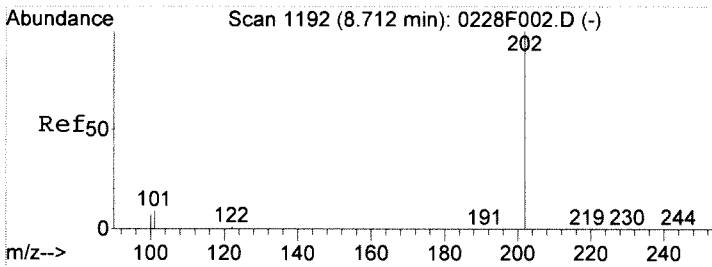
Tgt Ion	Ratio	Lower	Upper
192	100		
191	8.8	26.8	86.8#
193	10.0	0.0	45.3



#21
 Fluoranthene
 Concen: 422.07 ng/ml
 RT: 8.54 min Scan# 1153
 Delta R.T. 0.02 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

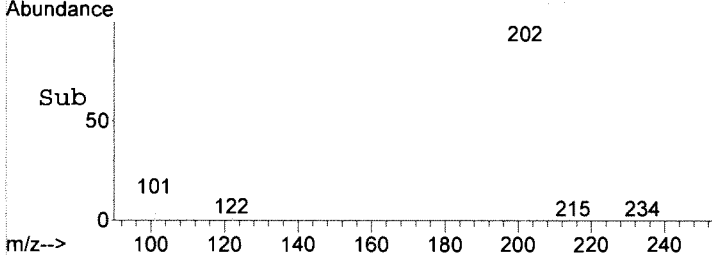
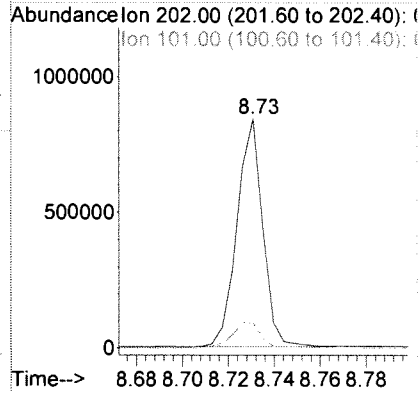
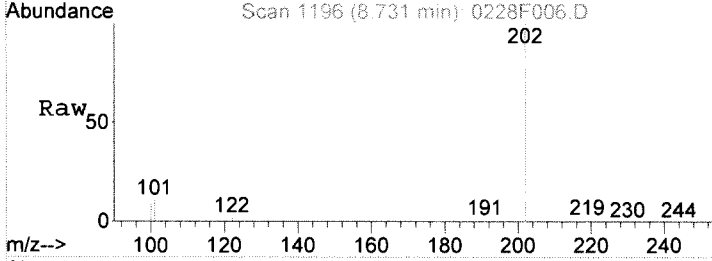
Tgt Ion	Ratio	Lower	Upper
202	100		
101	9.6	0.0	39.1
100	7.3	0.0	27.0





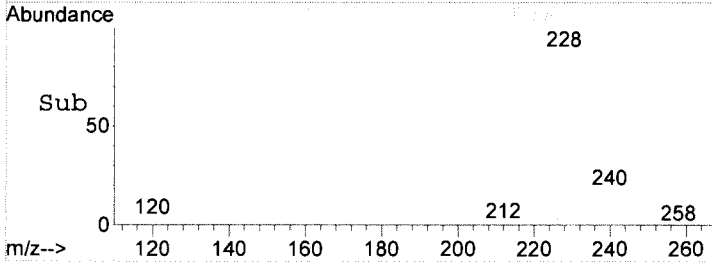
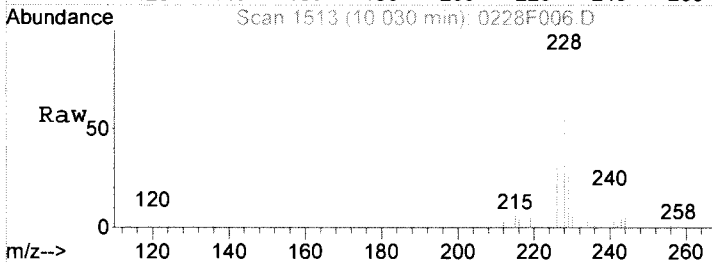
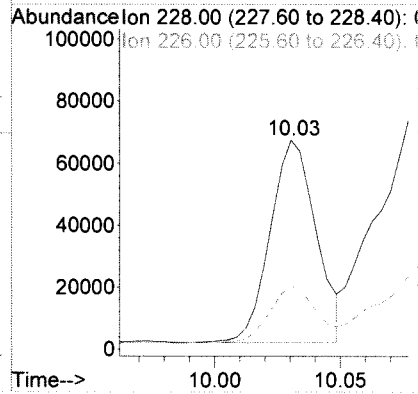
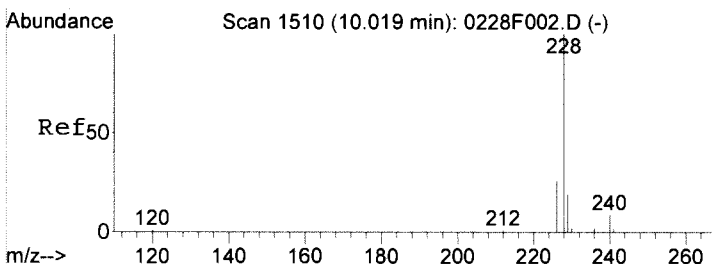
#24
 Pyrene
 Concen: 1218.65 ng/ml
 RT: 8.73 min Scan# 1196
 Delta R.T. 0.02 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

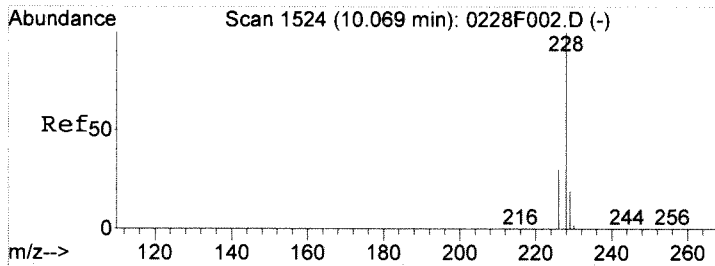
Tgt Ion	Ratio	Lower	Upper
202	100		
101	10.7	0.0	40.5
100	8.7	0.0	28.3



#26
 Benz (a) anthracene
 Concen: 155.18 ng/ml
 RT: 10.03 min Scan# 1513
 Delta R.T. 0.02 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

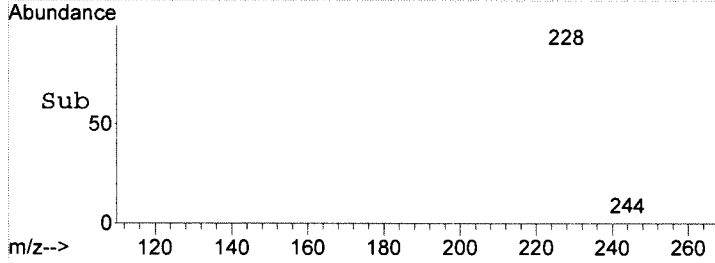
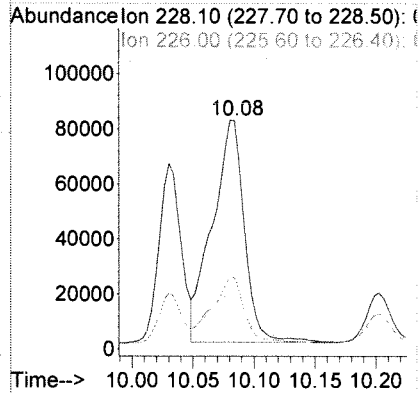
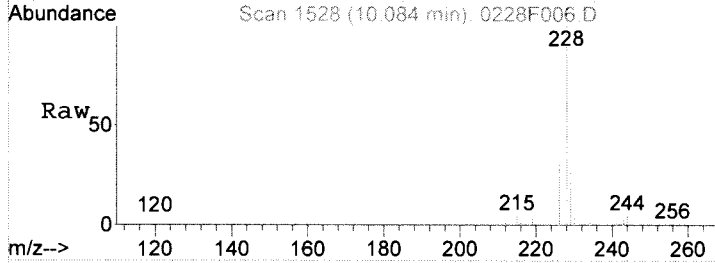
Tgt Ion	Ratio	Lower	Upper
228	100		
226	27.9	0.0	56.4
229	20.8	0.0	39.3





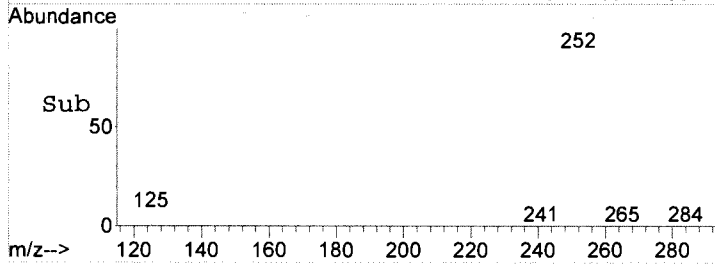
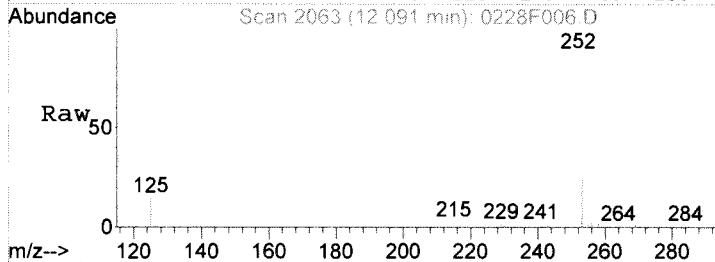
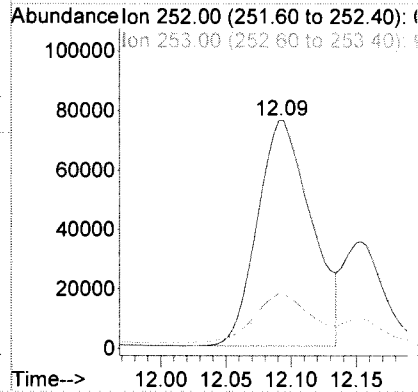
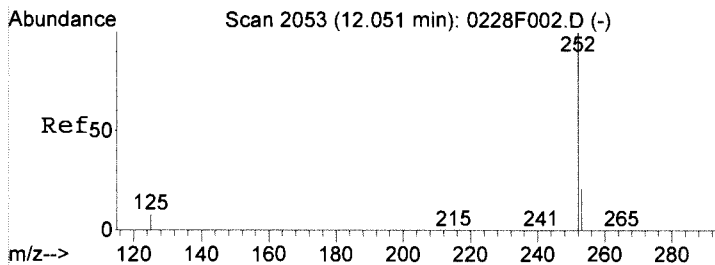
#27
 Chrysene
 Concen: 292.70 ng/ml
 RT: 10.08 min Scan# 1528
 Delta R.T. 0.02 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

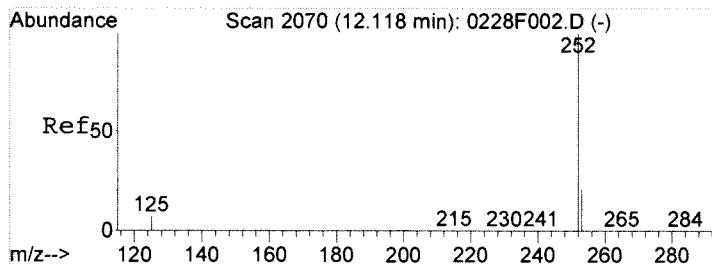
Tgt Ion	Resp	Lower	Upper
228	100		
226	29.2	0.0	59.0
229	20.9	0.0	39.2



#29
 Benzo(b)fluoranthene
 Concen: 367.08 ng/ml
 RT: 12.09 min Scan# 2063
 Delta R.T. 0.06 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

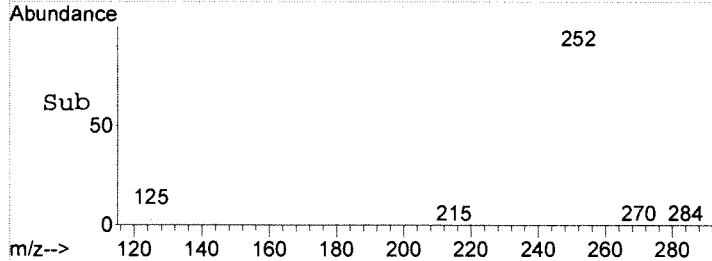
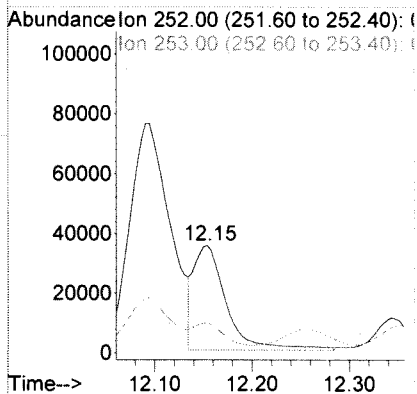
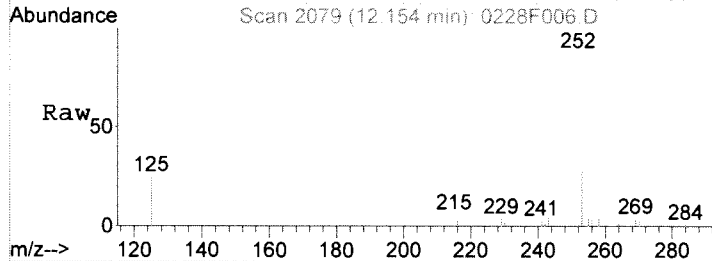
Tgt Ion	Resp	Lower	Upper
252	100		
253	21.9	0.0	51.8
125	7.4	0.0	29.7





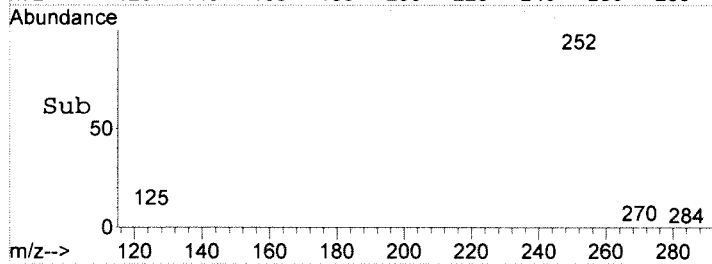
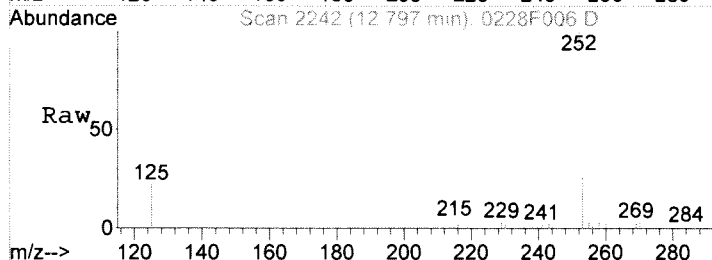
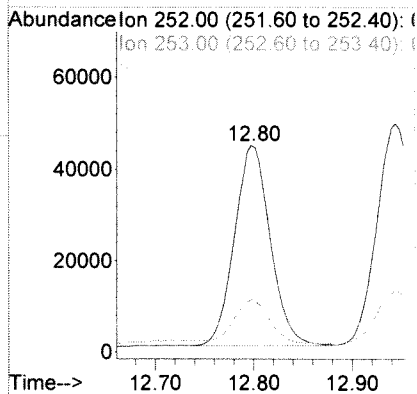
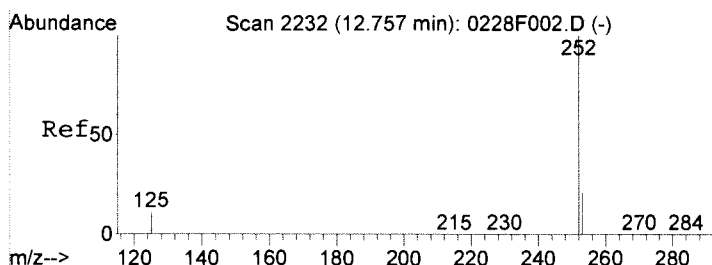
#30
 Benzo(k)fluoranthene
 Concen: 143.58 ng/ml m
 RT: 12.15 min Scan# 2079
 Delta R.T. 0.05 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

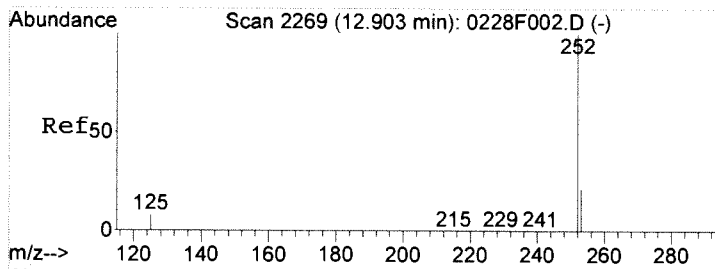
Tgt Ion	Resp	Ion Ratio	Lower	Upper
252	100			
253	28.1	0.0	51.6	
125	24.6	0.0	29.7	



#31
 Benzo(e)pyrene
 Concen: 196.19 ng/ml
 RT: 12.80 min Scan# 2242
 Delta R.T. 0.06 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

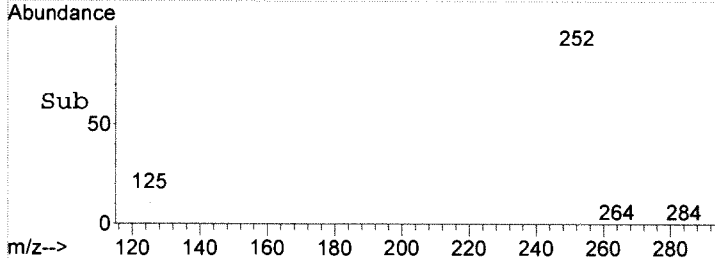
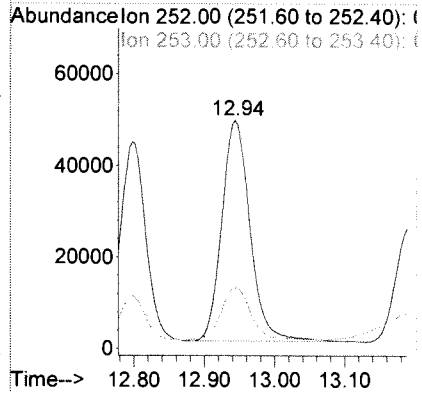
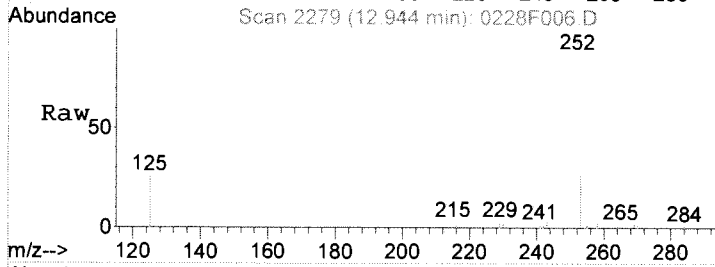
Tgt Ion	Resp	Ion Ratio	Lower	Upper
252	100			
253	21.9	0.0	51.6	
125	11.1	0.0	33.5	





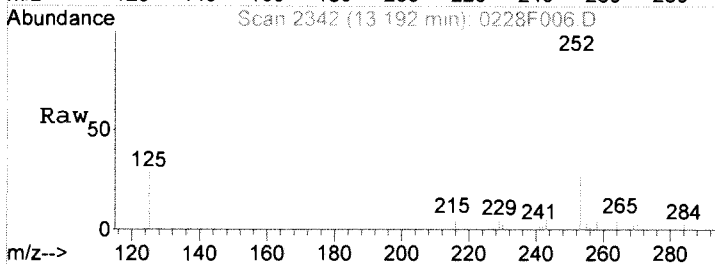
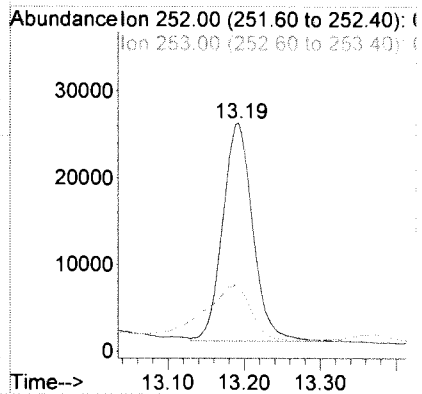
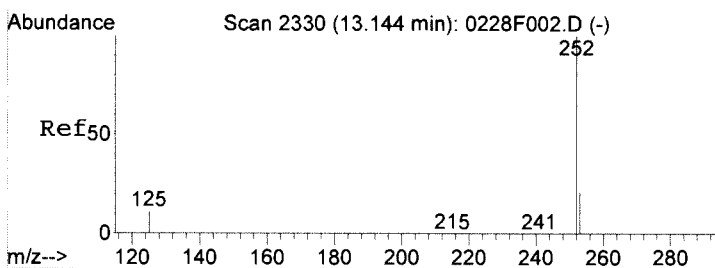
#32
 Benzo (a) pyrene
 Concen: 260.89 ng/ml
 RT: 12.94 min Scan# 2279
 Delta R.T. 0.06 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

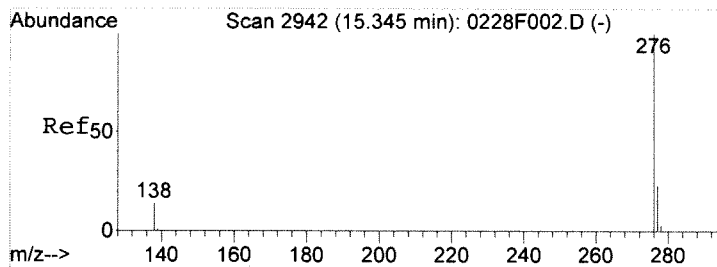
Tgt Ion	252	253	125	Resp	135377	Lower	Upper
Ion Ratio	100	23.9	16.4			0.0	51.8
						0.0	31.1



#33
 Perylene
 Concen: 135.82 ng/ml
 RT: 13.19 min Scan# 2342
 Delta R.T. 0.06 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

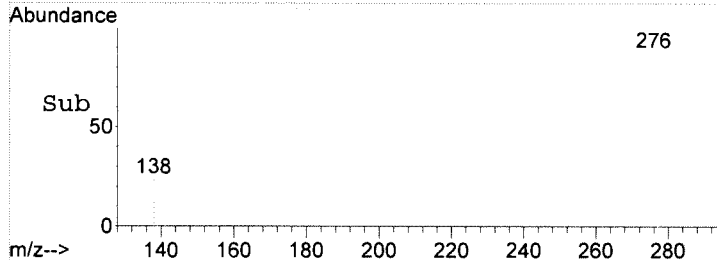
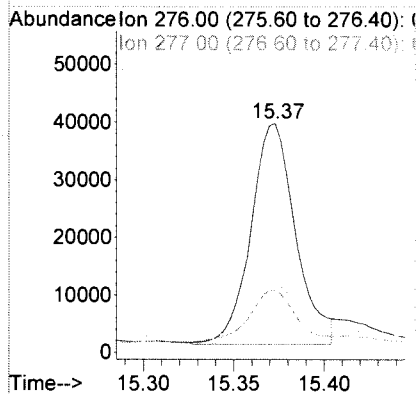
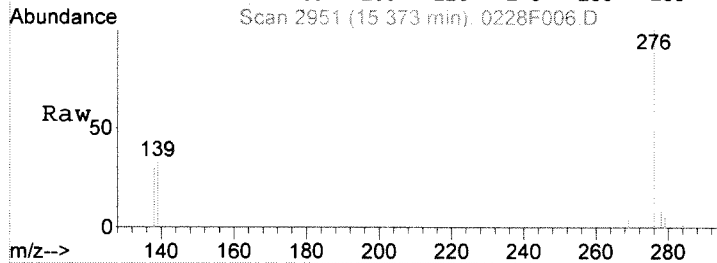
Tgt Ion	252	253	125	Resp	69427	Lower	Upper
Ion Ratio	100	23.1	10.2			0.0	51.9
						0.0	34.4





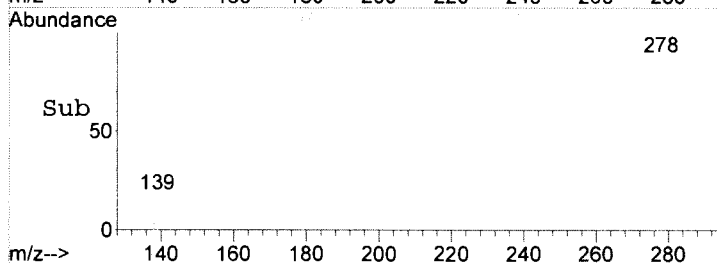
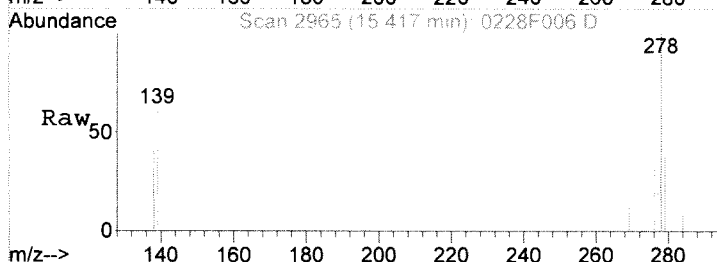
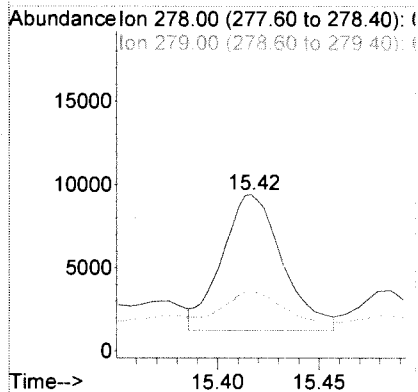
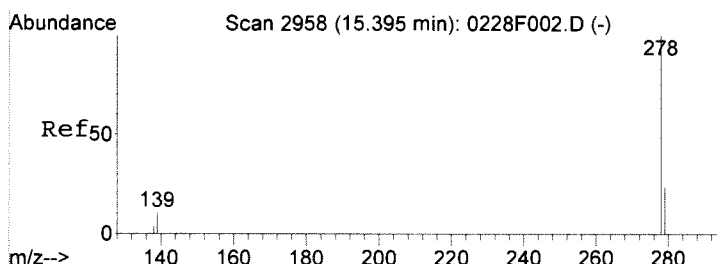
#34
 Indeno(1,2,3-cd)pyrene
 Concen: 141.64 ng/ml m
 RT: 15.37 min Scan# 2951
 Delta R.T. 0.04 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

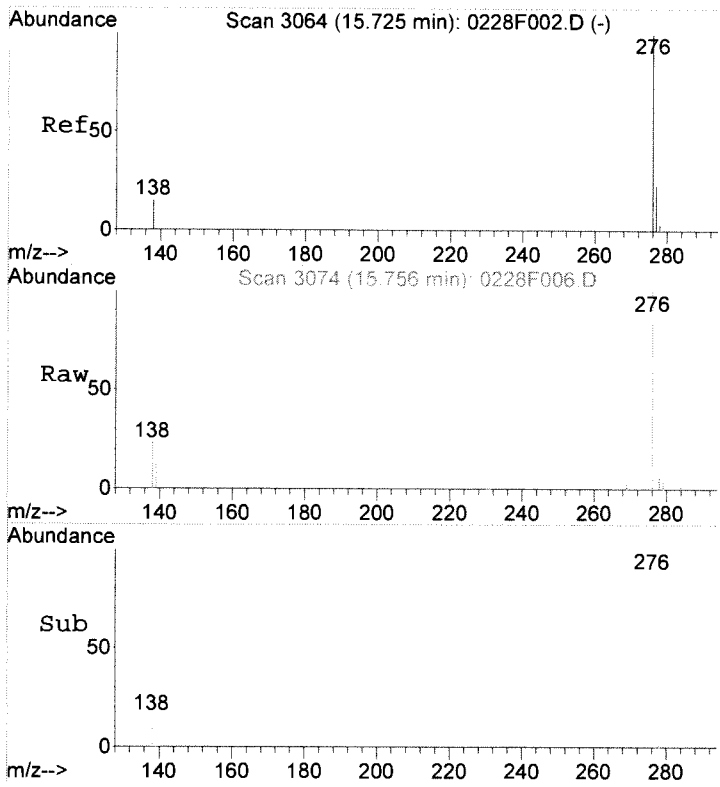
Tgt Ion	Ratio	Lower	Upper
276	100		
277	27.2	0.0	53.6
138	30.1	0.0	37.2



#35
 Dibenz(a,h)anthracene
 Concen: 35.83 ng/ml m
 RT: 15.42 min Scan# 2965
 Delta R.T. 0.03 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

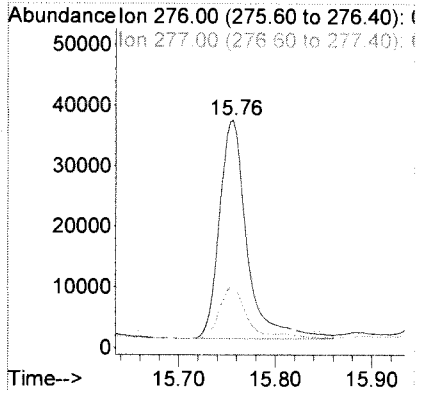
Tgt Ion	Ratio	Lower	Upper
278	100		
279	37.7	0.0	54.1
139	62.1	0.0	34.1





#36
 Benzo(g,h,i)perylene
 Concen: 138.72 ng/ml
 RT: 15.76 min Scan# 3074
 Delta R.T. 0.04 min
 Lab File: 0228F006.D
 Acq: 28 Feb 2018 11:00 am

Tgt Ion	Resp	Lower	Upper
276	71948		
277	23.5	0.0	53.4
138	16.1	0.0	38.8



Exception Report

Data File: J:\MS20\DATA\022718\0227F003.D
Lab ID: KWG1801007-4
RunType: MB
Matrix: SOIL

Date Acquired: 02/27/2018 11:17
Date Quantitated: 02/28/2018 08:56
Batch ID: KWG1801193
Analysis Method: 8270D SIM
MethodJoinID: MJ1651

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K1257
 K1267
 K1291
 K1322

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	2-Methylnaphthalene-d10	25.2	NA	20	NT

Primary Review: *ca* **FEB 28 2018**
 Secondary Review: *mj*

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F003.D	Instrument: MS20
Acqu Date: 02/27/2018 11:17	Quant Date: 02/28/2018 08:56
Run Type: MB	MethodJoinID: MJ1651
Lab ID: KWG1801007-4	Vial: 3
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier:	Matrix: SOIL
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/23/2018

Analysis Lot: KWG1801193	Prep Lot: KWG1801007	Report Group:
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664512	Prep Date: 02/19/2018	

Quant Method: J:\MS20\METHODS\110217PAH.M	Calibration ID: CAL15594
Title:	
Tune Ref: J:\MS20\DATA\022718\0227F001.D	Method ID: MJ1651
MB Ref:	Quant based on Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	95473	200.00	OK
2	Acenaphthene-d10	8.31	0.01	164	48948	200.00	OK
3	Phenanthrene-d10	11.51	0.01	188	98004	200.00	OK
4	Chrysene-d12	18.85	0.01	240	110587	200.00	OK
5	Perylene-d12	23.15	0.01	264	120810	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	6.72	0.00	0.00	152	37722	157.83	79	70-130	OK
2	Fluorene-d10	9.31	0.00	0.00	176	42807	136.83	68	38-104	OK
3	Fluoranthene-d10	14.68	0.01	0.00	212	81829	144.65	72	39-109	OK
4	Terphenyl-d14	15.99	0.01	0.00	244	74325	157.64	79	38-113	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	235	0.4800	0.47	U	
1	2-Methylnaphthalene				142	0d		0.37	U	
1	1-Methylnaphthalene				142	0d		0.37	U	
1	Biphenyl	7.40	0.01	0.00	154	251	0.6400	0.75	U	
1	2,6-Dimethylnaphthalene				156	0		0.52	U	
1	C1-Naphthalenes				142	0		4.8	U	
1	C2-Naphthalenes				156	0		4.8	U	
1	C3-Naphthalenes				170	0		4.8	U	
1	C4-Naphthalenes				184	0		4.8	U	
2	Acenaphthylene				152	0d		0.28	U	
2	Acenaphthene				154	0d		0.30	U	
2	Dibenzofuran				168	0		0.60	U	

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS20\DATA\022718\0227F003.D	Instrument:	MS20
Acqu Date:	02/27/2018 11:17	Quant Date:	02/28/2018 08:56
Run Type:	MB	MethodJoinID:	MJ1651
Lab ID:	KWG1801007-4	Vial:	3
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/Kg Wet Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	2,3,5-Trimethylnaphthalene				170	0		0.46	U	
2	Fluorene				166	0d		0.57	U	
2	C1-Fluorenes				180	0		4.8	U	
2	C2-Fluorenes				194	0		4.8	U	
2	C3-Fluorenes				208	0		4.8	U	
3	Dibenzothiophene				184	0		0.51	U	
3	C1-Dibenzothiophenes				198	0		4.8	U	
3	C2-Dibenzothiophenes				212	0		4.8	U	
3	C3-Dibenzothiophenes				226	0		4.8	U	
3	C4-Dibenzothiophenes				240	0		4.8	U	
3	Phenanthrene	11.56		0.00	178	135	0.2400	0.59	U	
3	Anthracene				178	0		0.29	U	
3	Carbazole				167	0d		0.38	U	
3	1-Methylphenanthrene				192	0		0.58	U	
3	C1-Phenanthrenes/Anthracenes				192	0		4.8	U	
3	C2-Phenanthrenes/Anthracenes				206	0		4.8	U	
3	C3-Phenanthrenes/Anthracenes				220	0		4.8	U	
3	C4-Phenanthrenes/Anthracenes				234	0		4.8	U	
3	Fluoranthene	14.73		0.00	202	80	0.1300	0.63	U	
4	Pyrene				202	0		0.32	U	
4	C1-Fluoranthenes/Pyrenes				216	0		4.8	U	
4	C2-Fluoranthenes/Pyrenes				230	0		4.8	U	
4	C3-Fluoranthenes/Pyrenes				244	0		4.8	U	
4	C4-Fluoranthenes/Pyrenes				258	0		4.8	U	
4	Benz(a)anthracene	18.85	0.02	0.00	228	285	0.4700	0.450	J	
4	Chrysene				228	0d		0.31	U	
4	C1-Chrysenes				242	0		4.8	U	
4	C2-Chrysenes				256	0		4.8	U	
4	C3-Chrysenes				270	0		4.8	U	
4	C4-Chrysenes				284	0		4.8	U	
5	Benzo(b)fluoranthene				252	0d		0.29	U	
5	Benzo(k)fluoranthene				252	0d		0.24	U	
5	Benzo(e)pyrene				252	0		0.29	U	
5	Benzo(a)pyrene				252	0		0.38	U	
5	Perylene				252	0d		0.35	U	
5	Indeno(1,2,3-cd)pyrene				276	0		0.36	U	
5	Dibenz(a,h)anthracene				278	0		0.23	U	
5	Benzo(g,h,i)perylene				276	0d		0.40	U	

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B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F003.D
Acqu Date: 02/27/2018 11:17
Run Type: MB
Lab ID: KWG1801007-4

Quant Date: 02/28/2018 08:56
MethodJoinID: MJ1651

Instrument: MS20
Vial: 3
Dilution: 1.0
Soln Conc. Units: ng/ml

Prep Amount: 10.440 g
Prep Final Vol: 10 mL
Solids: %
Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result \geq MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F003.D
 Acq On : 27 Feb 2018 11:17 am
 Sample : KWG1801007-4 MB
 Misc :

Vial: 3
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:18 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	95473	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.31	164	48948	200.00	ng/ml	0.00
22) Phenanthrene-d10	11.51	188	98004	200.00	ng/ml	0.00
38) Chrysene-d12	18.85	240	110587	200.00	ng/ml	-0.02
51) Perylene-d12	23.15	264	120810	200.00	ng/ml	-0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	37722	157.83	ng/ml	-0.01
Spiked Amount 1000.000			Recovery =	15.78%		
17) Fluorene-d10	9.31	176	42807	136.83	ng/ml	-0.02
Spiked Amount 1000.000			Recovery =	13.68%		
37) Fluoranthene-d10	14.68	212	81829	144.65	ng/ml	-0.02
Spiked Amount 1000.000			Recovery =	14.47%		
44) Terphenyl-d14	15.99	244	74325	157.64	ng/ml	-0.02
Spiked Amount 1000.000			Recovery =	15.76%		

Target Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	6.00	128	235	0.48	ng/ml	98
6) Biphenyl	7.40	154	251	0.64	ng/ml	80
28) Phenanthrene	11.56	178	135	0.24	ng/ml	86
36) Fluoranthene	14.73	202	80	0.13	ng/ml#	55
45) Benz(a)anthracene	18.85	228	285	0.47	ng/ml	71

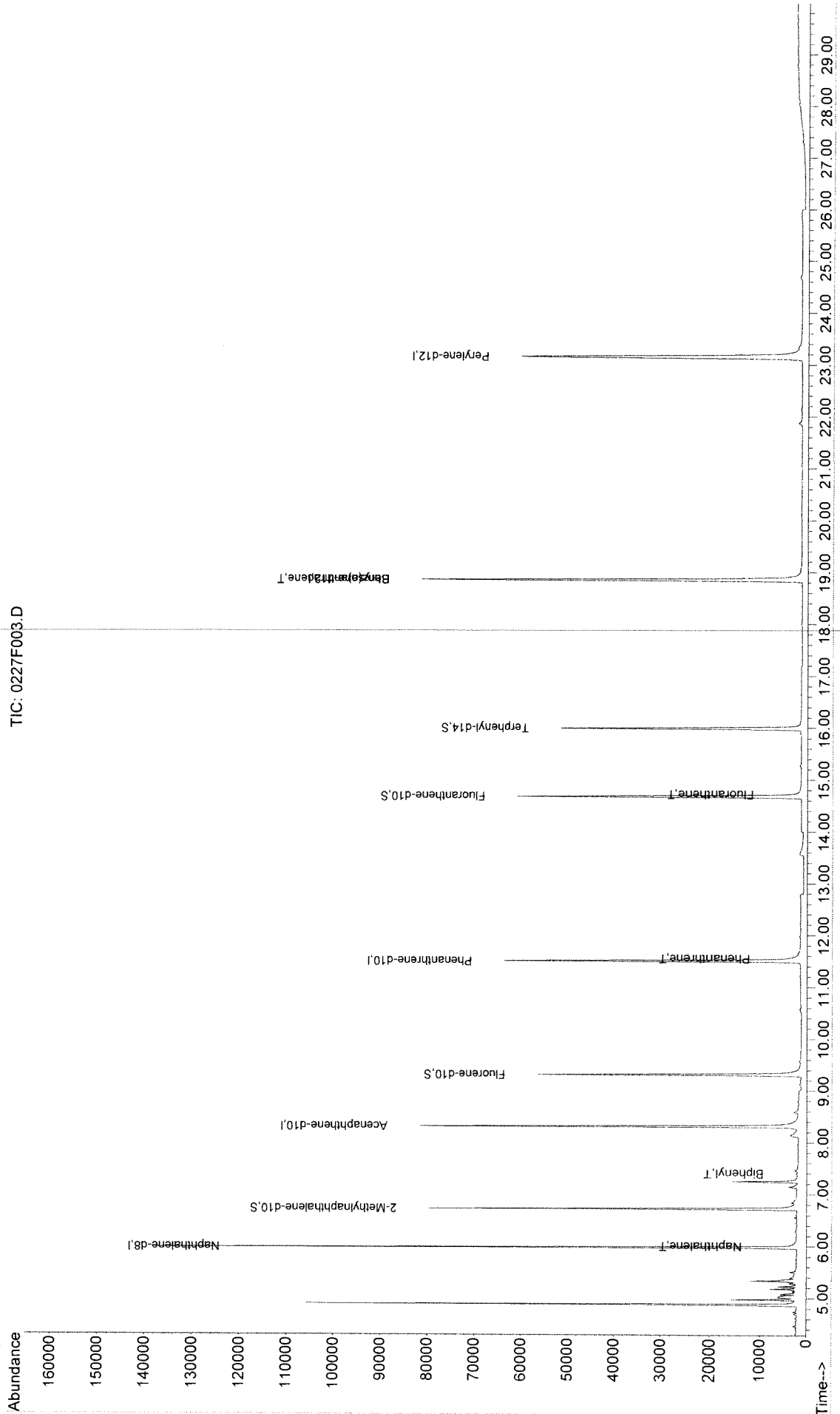
 (#) = qualifier out of range (m) = manual integration
 0227F003.D 110217PAH.M Wed Feb 28 08:57:10 2018

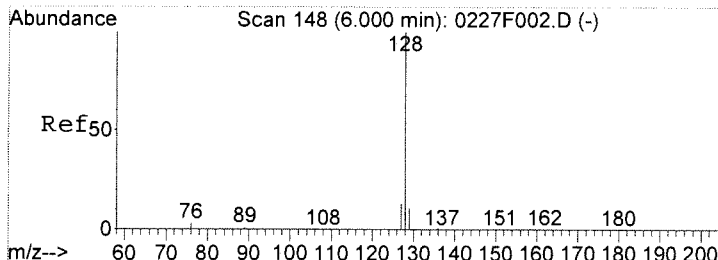
Data File : J:\MS20\DATA\022718\0227F003.D
 Acq On : 27 Feb 2018 11:17 am
 Sample : KWG1801007-4 MB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:56 2018
 Quant Results File: 110217PAH.RES

Vial: 3
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration

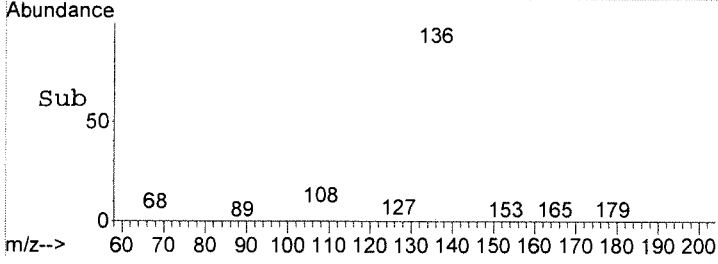
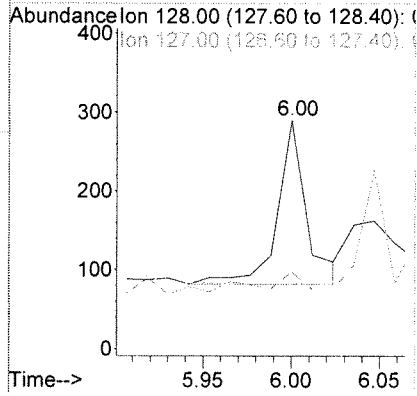
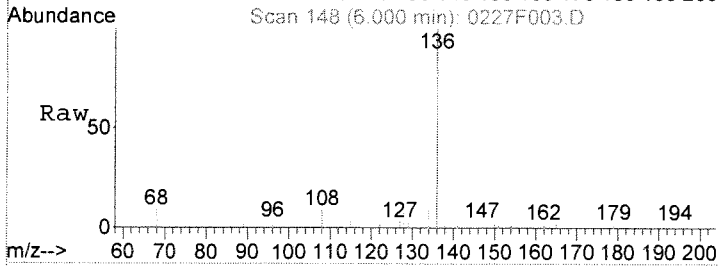
TIC: 0227F003.D





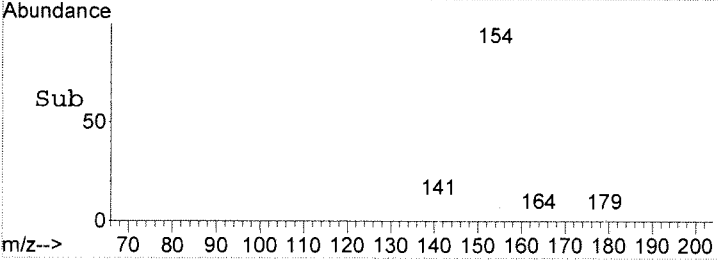
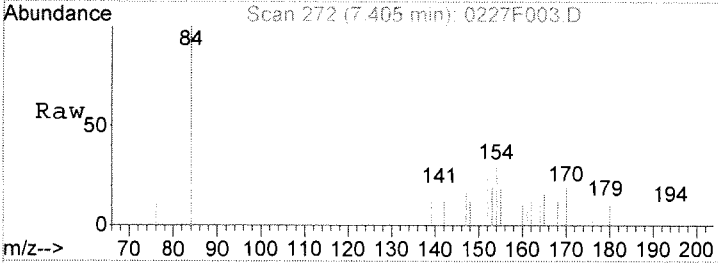
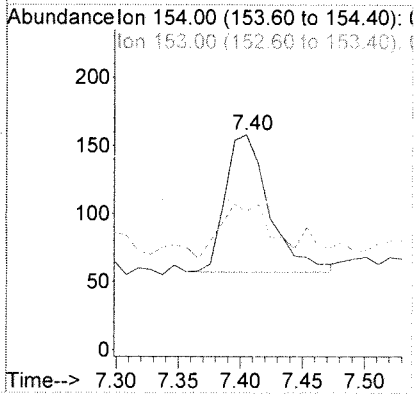
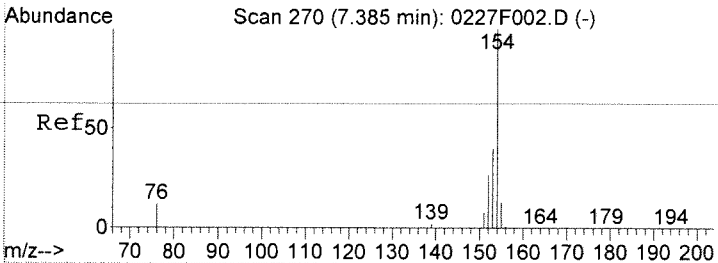
#2
 Naphthalene
 Concen: 0.48 ng/ml
 RT: 6.00 min Scan# 148
 Delta R.T. -0.01 min
 Lab File: 0227F003.D
 Acq: 27 Feb 2018 11:17 am

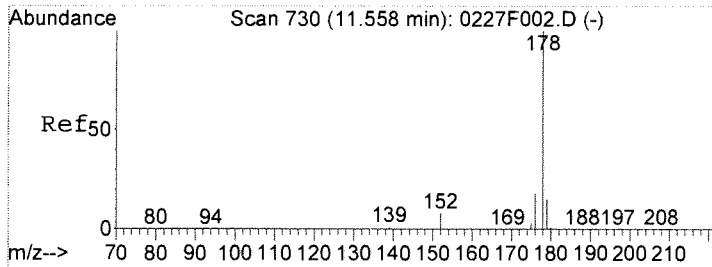
Tgt Ion	Resp	Lower	Upper
128	235		
127	10.6	0.0	42.2
129	11.1	0.0	41.2



#6
 Biphenyl
 Concen: 0.64 ng/ml
 RT: 7.40 min Scan# 272
 Delta R.T. 0.00 min
 Lab File: 0227F003.D
 Acq: 27 Feb 2018 11:17 am

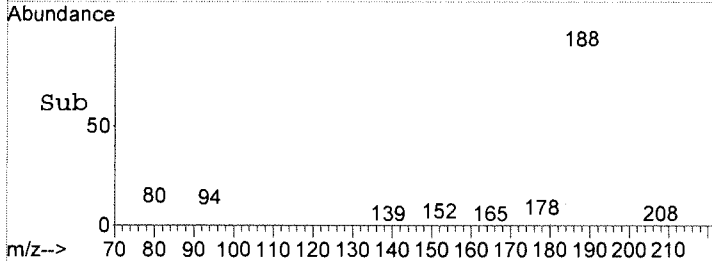
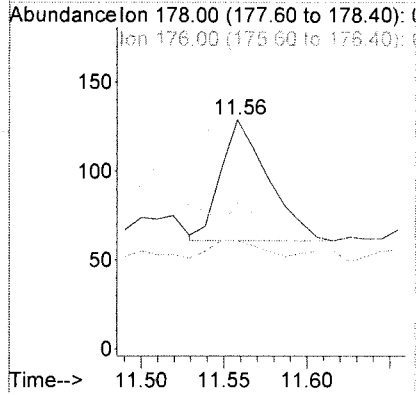
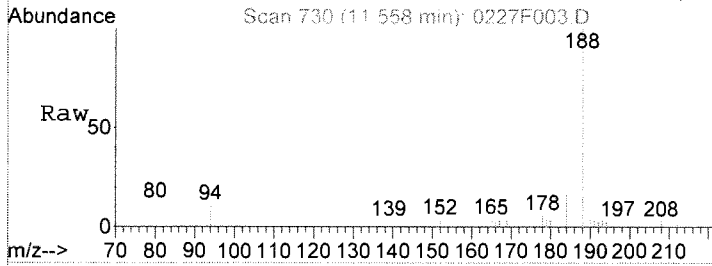
Tgt Ion	Resp	Lower	Upper
154	251		
153	26.7	10.6	70.6
152	18.8	0.0	57.9





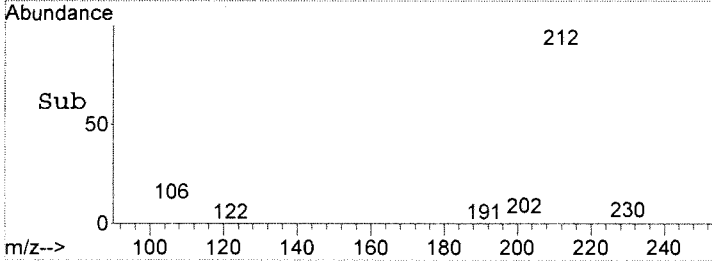
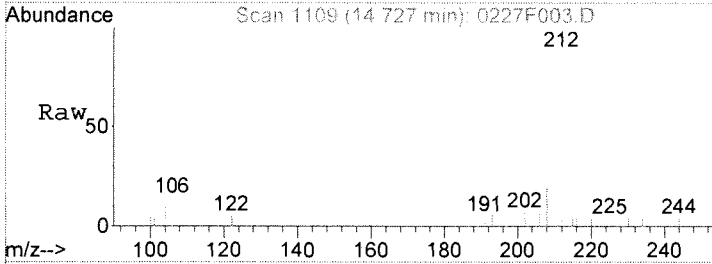
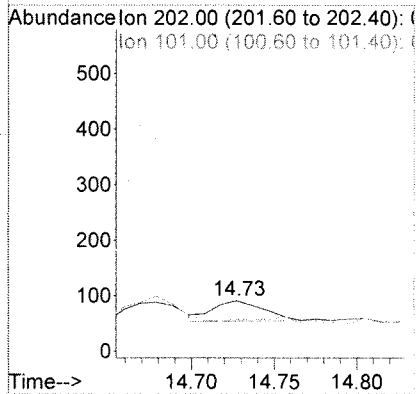
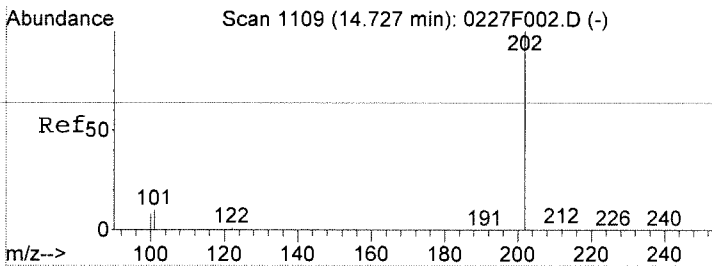
#28
 Phenanthrene
 Concen: 0.24 ng/ml
 RT: 11.56 min Scan# 730
 Delta R.T. -0.02 min
 Lab File: 0227F003.D
 Acq: 27 Feb 2018 11:17 am

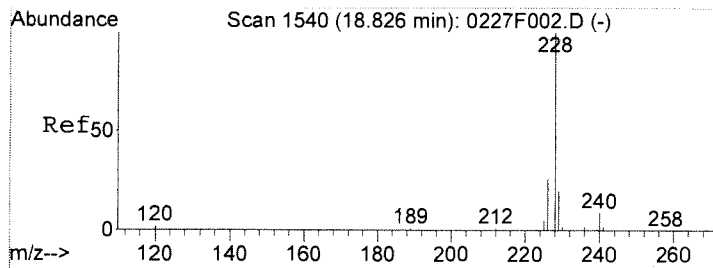
Tgt Ion	Ratio	Lower	Upper
178	100		
176	14.7	0.0	48.7
179	23.5	0.0	45.5



#36
 Fluoranthene
 Concen: 0.13 ng/ml
 RT: 14.73 min Scan# 1109
 Delta R.T. -0.02 min
 Lab File: 0227F003.D
 Acq: 27 Feb 2018 11:17 am

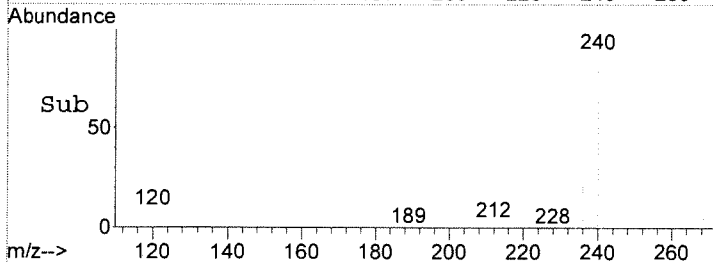
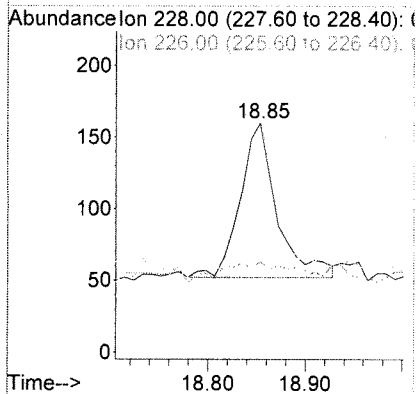
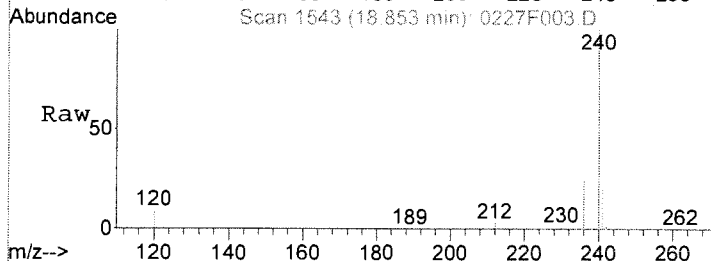
Tgt Ion	Ratio	Lower	Upper
202	100		
101	14.3	0.0	40.5
100	40.0	0.0	37.9#





#45
 Benz (a) anthracene
 Concen: 0.47 ng/ml
 RT: 18.85 min Scan# 1543
 Delta R.T. 0.01 min
 Lab File: 0227F003.D
 Acq: 27 Feb 2018 11:17 am

Tgt Ion	Resp	Lower	Upper
228	100		
226	13.9	0.0	56.6
229	36.1	0.0	50.0



Exception Report

Data File: J:\MS20\DATA\022718\0227F007.D
Lab ID: K1801257-001
Run Type: SMPL
Matrix: SOIL

Date Acquired: 02/27/2018 14:34
Date Quantitated: 02/28/2018 09:00
Batch ID: KWG1801193
Analysis Method: 8270D SIM
ListJoinID: LJ18598

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
Preparation Holding Time	NA	NA	NA	x	
Pre-Preparation Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Method Blank	NA	NA	NA	x	
MB Surrogate Recovery	NA	NA	NA	x	
Lab Control Spike	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Batched
K1267
K1291
K1322

Primary Review: *[Signature]* FEB 28 2018
 Secondary Review: *[Signature]*

Quantitation Report

Data File:	J:\MS20\DATA\022718\0227F007.D	Instrument:	MS20
Acqu Date:	02/27/2018 14:34	Quant Date:	02/28/2018 09:00
Run Type:	SMPL	ListJoinID:	LJ18598
Lab ID:	K1801257-001	Vial:	7
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:	II	Matrix:	SOIL
Prod Code:	8270D PAH SIM	Collect Date:	02/07/2018	Receive Date:	02/08/2018

Analysis Lot:	KWG1801193	Prep Lot:	KWG1801007	Report Group:	K1801257
Analysis Method:	8270D SIM	Prep Method:	EPA 3546		
Prep Ref:	1664508	Prep Date:	02/19/2018		

Quant Method:	J:\MS20\METHODS\110217PAH.M	Calibration ID:	CAL15594
Title:	Polynuclear Aromatic Hydrocarbons	Report List ID:	LJ18598
Tune Ref:	J:\MS20\DATA\022718\0227F001.D	Method ID:	MJ1651
MB Ref:	J:\MS20\DATA\022718\0227F003.D	Quant based on Report List	

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	98433	200.00	OK
2	Acenaphthene-d10	8.30	0.00	164	50363	200.00	OK
3	Phenanthrene-d10	11.50	0.00	188	99226	200.00	OK
4	Chrysene-d12	18.85	0.01	240	111786	200.00	OK
5	Perylene-d12	23.15	0.01	264	116478	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	9.31	0.00	0.00	176	42317	131.47	66	38-104	OK
3	Fluoranthene-d10	14.68	0.01	0.00	212	84389	147.33	74	39-109	OK
4	Terphenyl-d14	15.99	0.01	0.00	244	73803	154.85	77	38-113	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	983m	1.95	2.3	J	
1	2-Methylnaphthalene	6.76		0.00	142	996m	2.97	3.5	J	
2	Acenaphthylene	8.07	0.01	0.00	152	153	0.3000	0.35	J	
2	Acenaphthene	8.36		0.00	154	318	1.01	1.2	J	
2	Dibenzofuran	8.70	0.01	0.00	168	578	1.22	1.4	J	
2	Fluorene	9.37		0.00	166	682	1.81	2.1	J	
3	Phenanthrene	11.56		0.00	178	8955	15.41	18		
3	Anthracene	11.69	0.01	0.00	178	997	1.84	2.2	J	
3	Fluoranthene	14.73		0.00	202	5390	8.52	10		
4	Pyrene	15.34	0.01	0.00	202	9882	15.67	18		
4	Benz(a)anthracene	18.83		0.00	228	5665	9.34	11		
4	Chrysene	18.92		0.00	228	9000m	14.88	17		
5	Benzo(b)fluoranthene	21.93	0.01	0.00	252	7497m	11.28	13		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F007.D
 Acqu Date: 02/27/2018 14:34
 Run Type: SMPL
 Lab ID: K1801257-001

Quant Date: 02/28/2018 09:00
 ListJoinID: LJ18598

Instrument: MS20
 Vial: 7
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

						Final Conc. Units:		ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
5	Benzo(k)fluoranthene	22.02	0.01	0.00	252	744m	1.11	1.3	J	
5	Benzo(a)pyrene	22.95	0.01	0.00	252	3372	5.88	6.9		
5	Indeno(1,2,3-cd)pyrene	27.02	0.02	0.00	276	1678	2.84	3.3	J	
5	Dibenz(a,h)anthracene	27.12		0.00	278	2769	4.52	5.3	J	
5	Benzo(g,h,i)perylene	27.57		0.00	276	5643	7.96	9.3		

Prep Amount: 10.350 g Dilution: 1.0
 Prep Final Vol: 10 mL Unit Factor: 1
 Solids: 82.3 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:20 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	98433	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.30	164	50363	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.50	188	99226	200.00	ng/ml	-0.02
38) Chrysene-d12	18.85	240	111786	200.00	ng/ml	-0.02
51) Perylene-d12	23.15	264	116478	200.00	ng/ml	-0.02

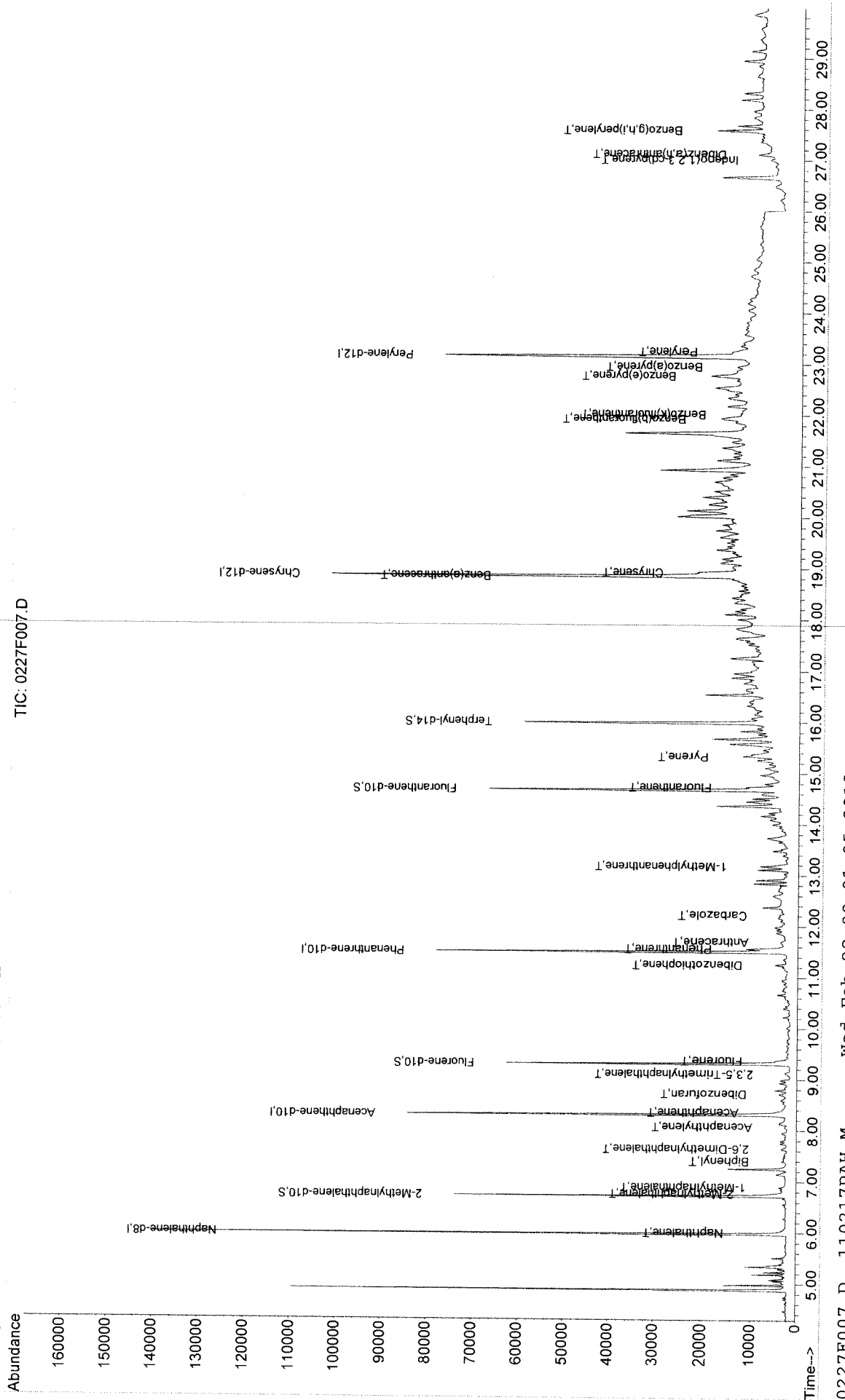
System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) 2-Methylnaphthalene-d10	6.72	152	35833	145.42	ng/ml	-0.01
Spiked Amount	1000.000		Recovery	=	14.54%	
17) Fluorene-d10	9.31	176	42317	131.47	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	13.15%	
37) Fluoranthene-d10	14.68	212	84389	147.33	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	14.73%	
44) Terphenyl-d14	15.99	244	73803	154.85	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	15.48%	

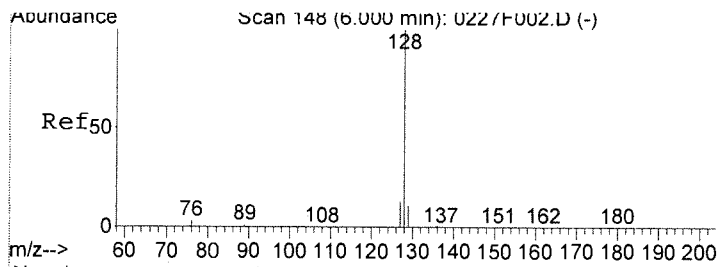
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	6.00	128	983m	1.95	ng/ml	
4) 2-Methylnaphthalene	6.76	142	996m	2.97	ng/ml	
5) 1-Methylnaphthalene	6.89	142	666m	2.23	ng/ml	
6) Biphenyl	7.39	154	724	1.80	ng/ml	89
7) 2,6-Dimethylnaphthalene	7.64	156	1220	4.19	ng/ml	97
13) Acenaphthylene	8.07	152	153	0.30	ng/ml#	68
14) Acenaphthene	8.36	154	318	1.01	ng/ml	96
15) Dibenzofuran	8.70	168	578	1.22	ng/ml	69
16) 2,3,5-Trimethylnaphthalene	9.11	170	1588m	5.47	ng/ml	
18) Fluorene	9.37	166	682	1.81	ng/ml	93
23) Dibenzothiophene	11.25	184	2700	5.10	ng/ml	96
28) Phenanthrene	11.56	178	8955	15.41	ng/ml	98
29) Anthracene	11.69	178	997	1.84	ng/ml	76
30) Carbazole	12.21	167	732	1.55	ng/ml	89
31) 1-Methylphenanthrene	13.17	192	5948	14.41	ng/ml	97
36) Fluoranthene	14.73	202	5390	8.52	ng/ml	98
39) Pyrene	15.34	202	9882	15.67	ng/ml	95
45) Benz(a)anthracene	18.83	228	5665	9.34	ng/ml	80
46) Chrysene	18.92	228	9000m	14.88	ng/ml	
52) Benzo(b)fluoranthene	21.93	252	7497m	11.28	ng/ml	
53) Benzo(k)fluoranthene	22.02	252	744m	1.11	ng/ml	
54) Benzo(e)pyrene	22.78	252	10866	16.84	ng/ml	83
55) Benzo(a)pyrene	22.95	252	3372	5.88	ng/ml	82
56) Perylene	23.23	252	3297	5.46	ng/ml	92
57) Indeno(1,2,3-cd)pyrene	27.02	276	1678	2.84	ng/ml	96
58) Dibenz(a,h)anthracene	27.12	278	2769	4.52	ng/ml	75
59) Benzo(g,h,i)perylene	27.57	276	5643	7.96	ng/ml	95

(#) = qualifier out of range (m) = manual integration
 0227F007.D 110217PAH.M Wed Feb 28 09:01:03 2018

Data File : J:\MS20\DATA\022718\0227F007.D
Acq On : 27 Feb 2018 2:34 pm
Sample : K1801257-001
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 28 9:00 2018
Vial: 7
Operator: LWeiskopf
Inst : MS20
Multiplr: 1.00
Quant Results File: 110217PAH.REB

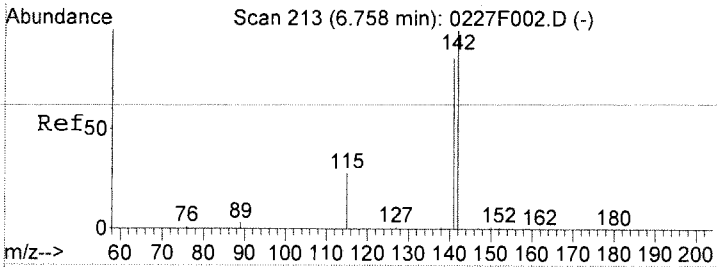
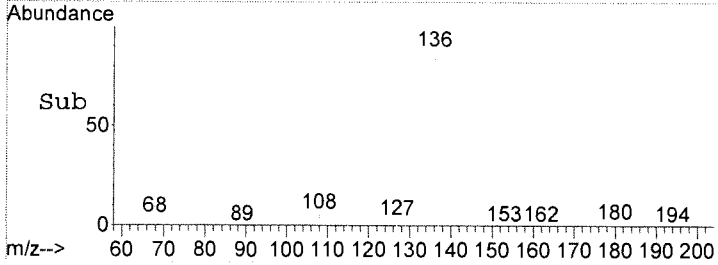
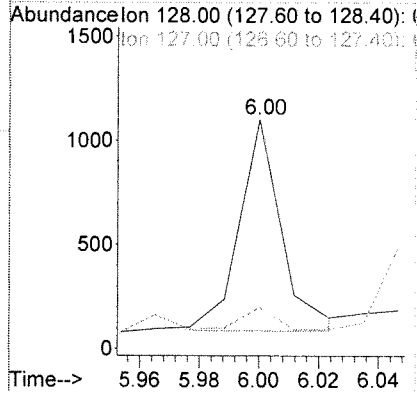
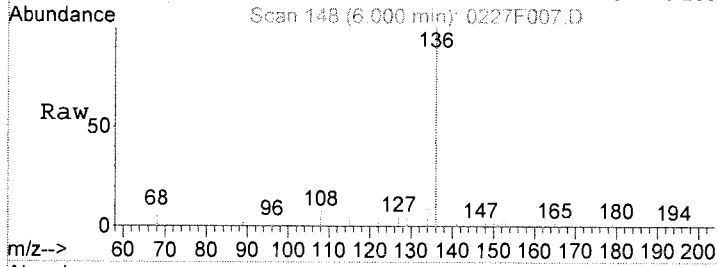
Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 28 08:52:31 2018
Response via : Initial Calibration





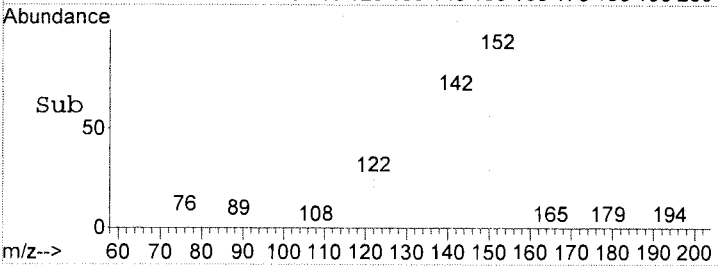
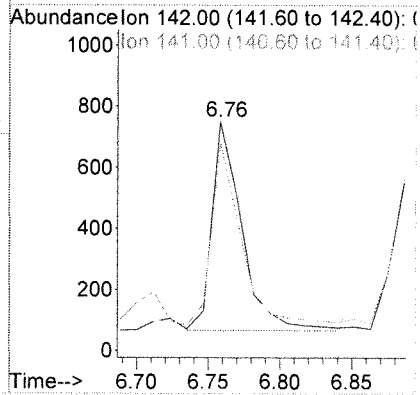
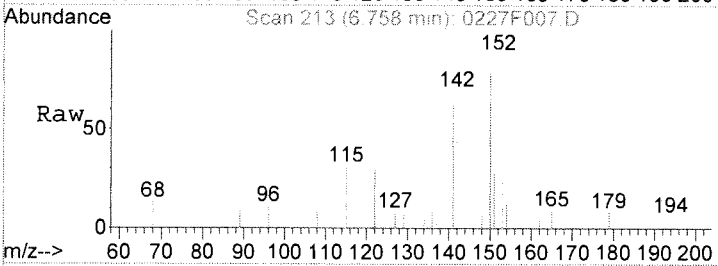
#4
 Naphthalene
 Concen: 1.95 ng/ml m
 RT: 6.00 min Scan# 148
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

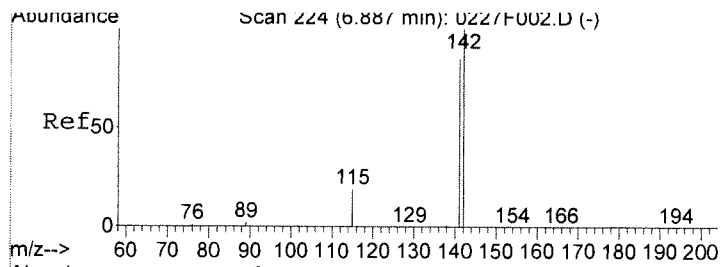
Tgt Ion	Ratio	Lower	Upper
128	100		
127	18.1	0.0	42.2
129	17.8	0.0	41.2



#4
 2-Methylnaphthalene
 Concen: 2.97 ng/ml m
 RT: 6.76 min Scan# 213
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

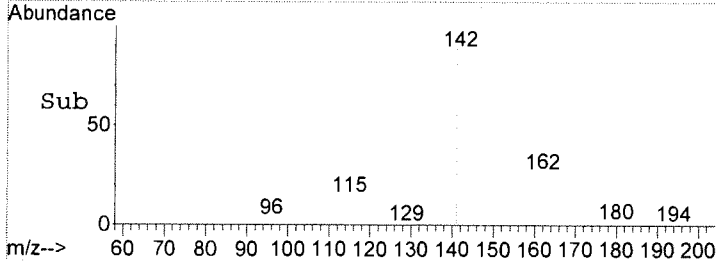
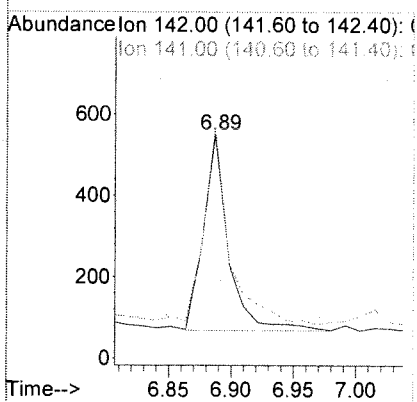
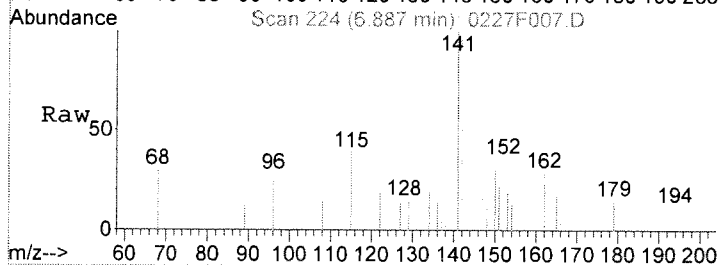
Tgt Ion	Ratio	Lower	Upper
142	100		
141	90.5	52.0	112.0
115	44.6	0.0	45.6





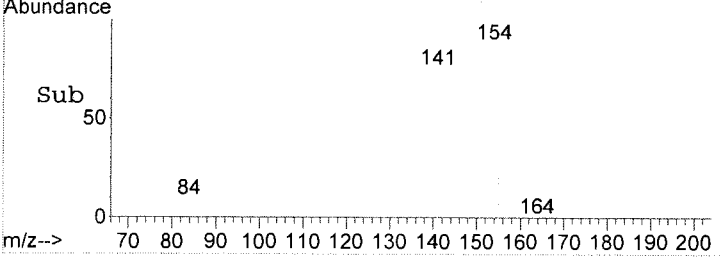
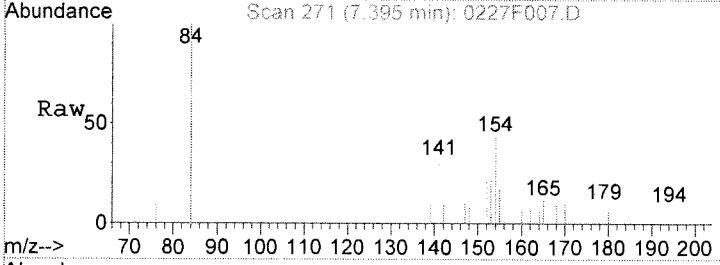
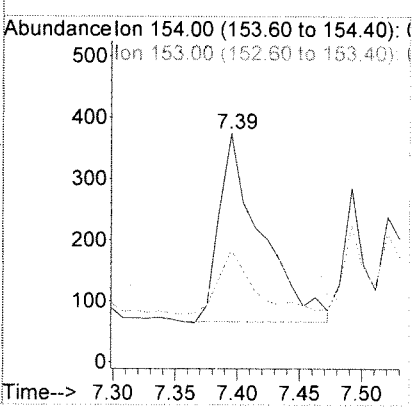
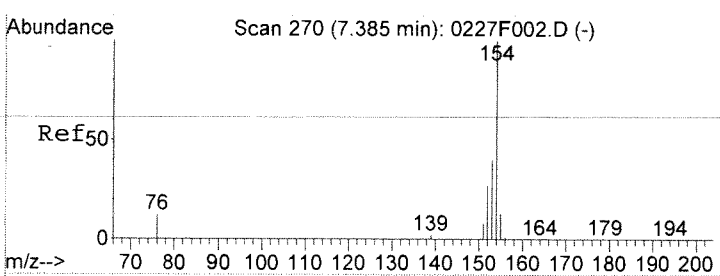
#5
 1-Methylnaphthalene
 Concen: 2.23 ng/ml m
 RT: 6.89 min Scan# 224
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

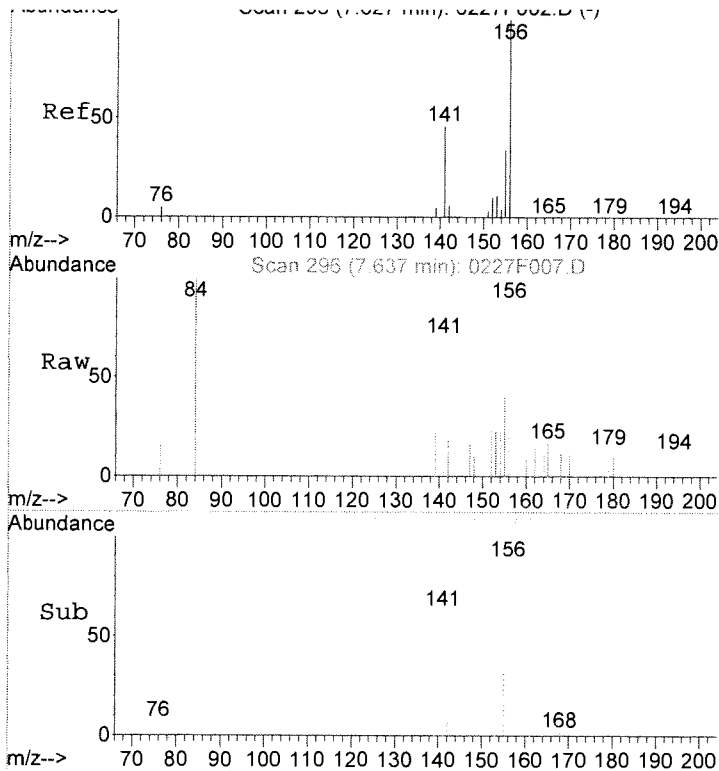
Tgt Ion	Ratio	Lower	Upper
142	100		
141	102.4	61.1	121.1
115	40.0	7.1	67.1



#6
 Biphenyl
 Concen: 1.80 ng/ml
 RT: 7.39 min Scan# 271
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

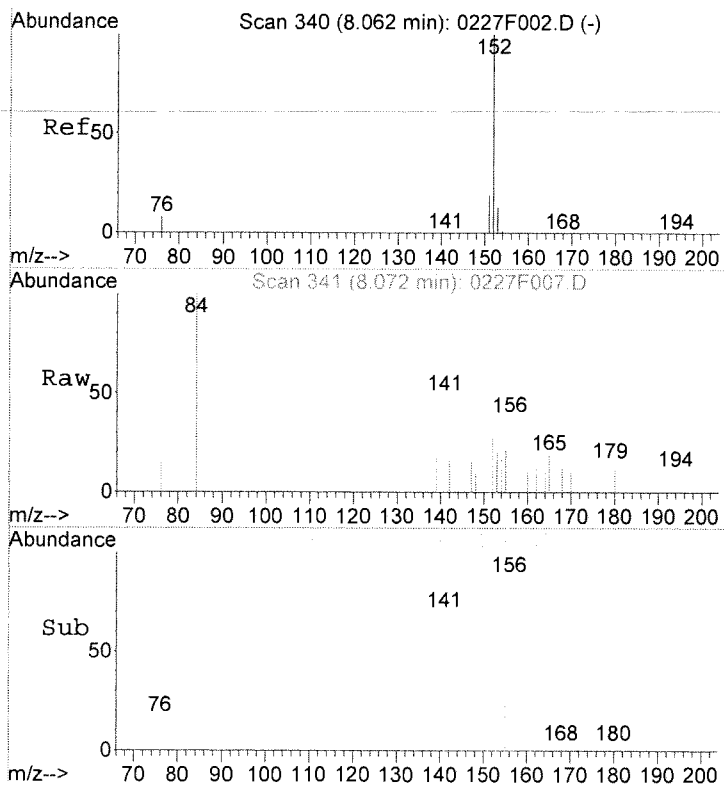
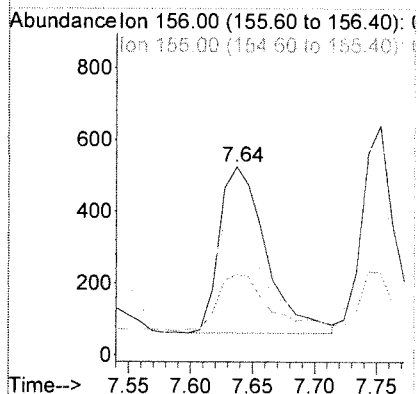
Tgt Ion	Ratio	Lower	Upper
154	100		
153	34.4	10.6	70.6
152	21.1	0.0	57.9





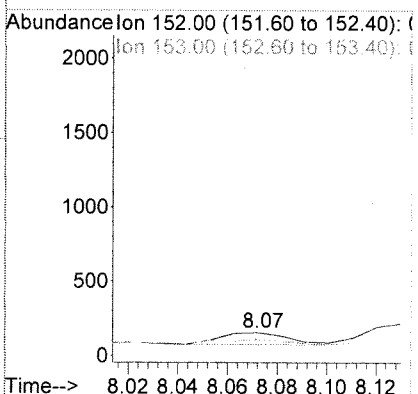
2,6-Dimethylnaphthalene
 Concen: 4.19 ng/ml
 RT: 7.64 min Scan# 296
 Delta R.T. 0.00 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

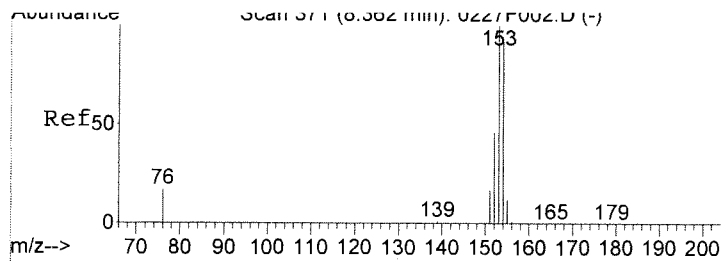
Tgt Ion	Resp	Lower	Upper
156	1220		
155	32.8	5.1	65.1
141	64.0	32.5	92.5



#13
 Acenaphthylene
 Concen: 0.30 ng/ml
 RT: 8.07 min Scan# 341
 Delta R.T. 0.00 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

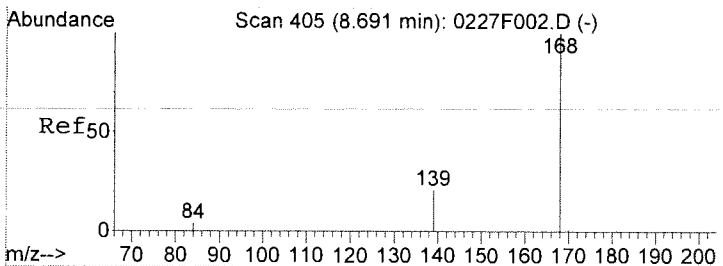
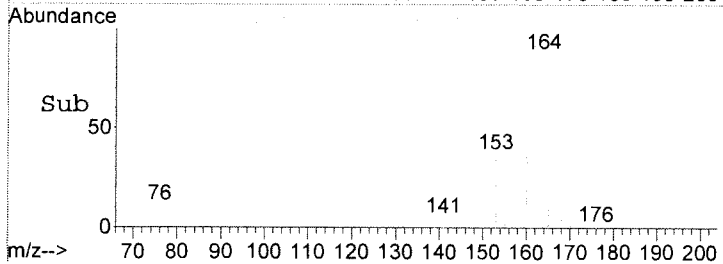
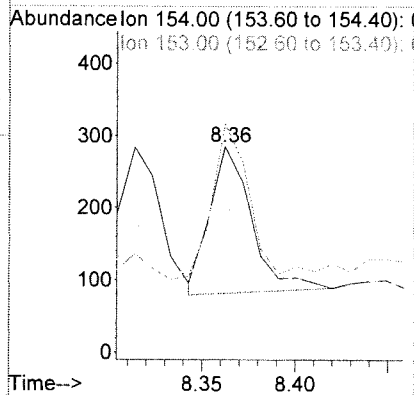
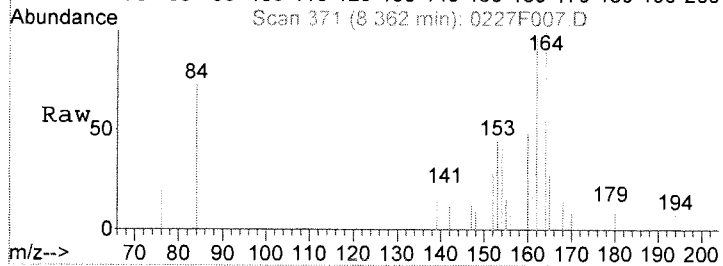
Tgt Ion	Resp	Lower	Upper
152	153		
153	43.8	0.0	43.4#
151	18.8	0.0	49.3





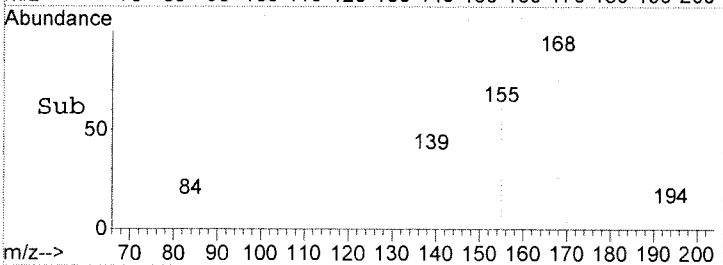
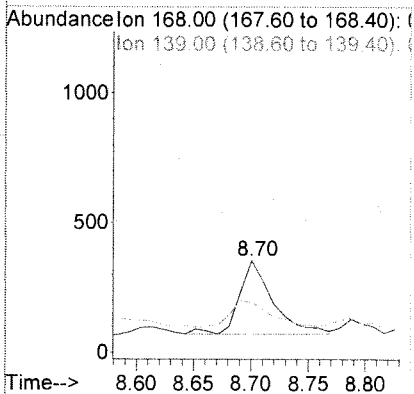
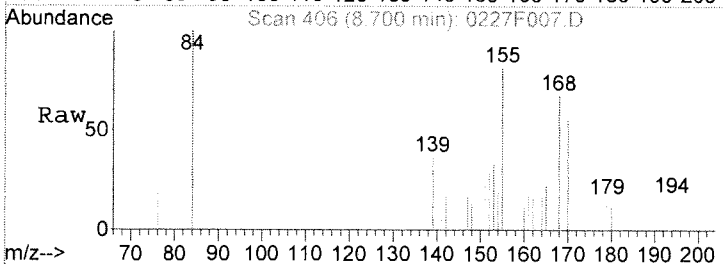
Acenaphthene
 Concen: 1.01 ng/ml
 RT: 8.36 min Scan# 371
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

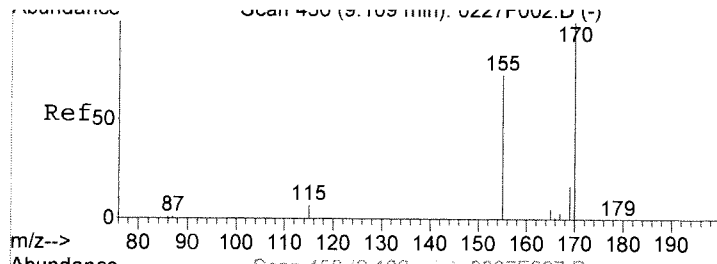
Tgt Ion	Resp	Lower	Upper
154	100		
153	108.2	74.4	134.4
152	51.0	17.6	77.6



#15
 Dibenzofuran
 Concen: 1.22 ng/ml
 RT: 8.70 min Scan# 406
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

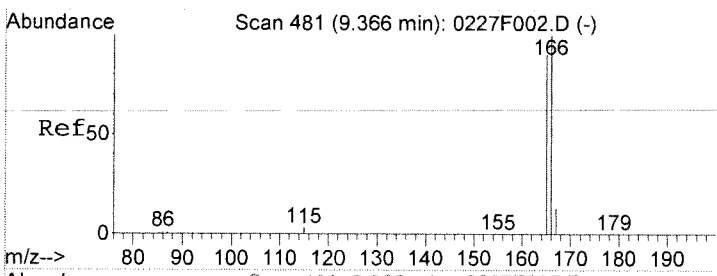
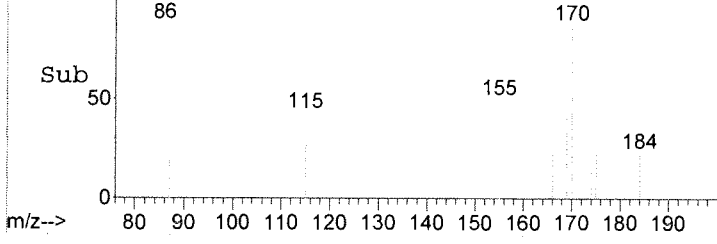
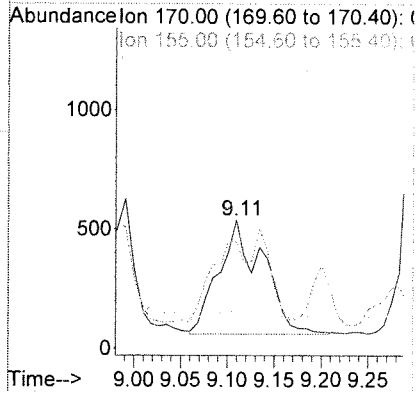
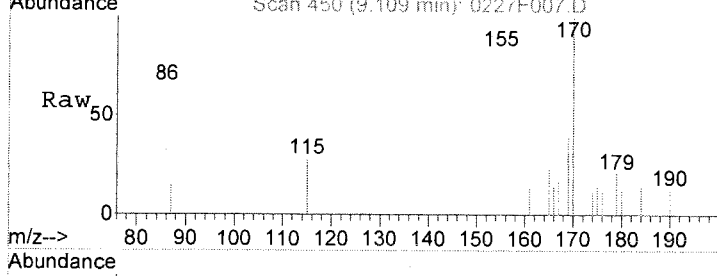
Tgt Ion	Resp	Lower	Upper
168	100		
139	32.2	0.0	46.9
84	0.4	0.0	32.7





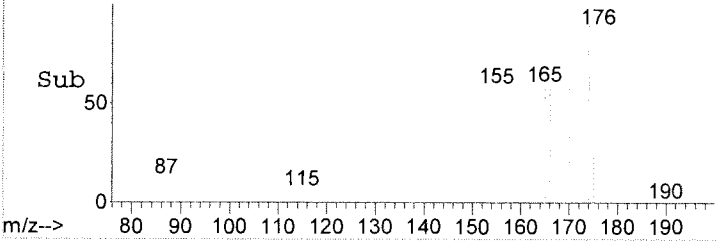
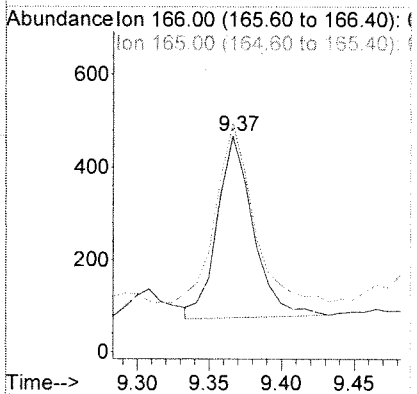
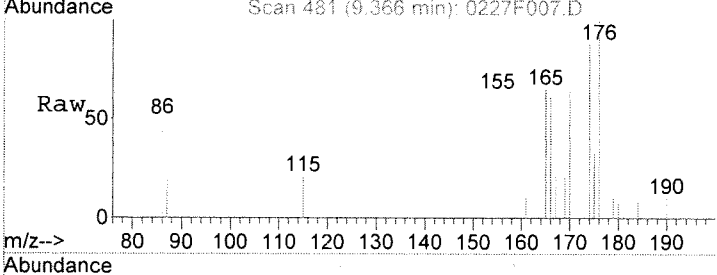
#10
 2,3,5-Trimethylnaphthalene
 Concen: 5.47 ng/ml m
 RT: 9.11 min Scan# 450
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

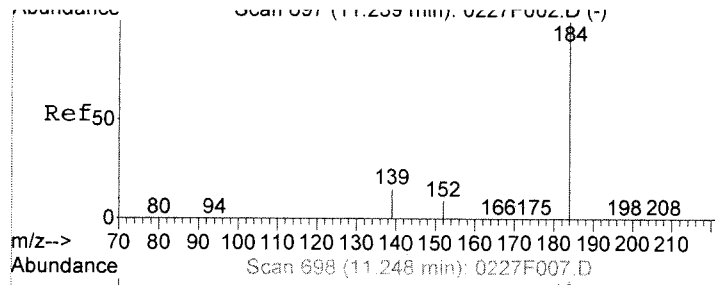
Tgt Ion	Resp	Lower	Upper
170	1588		
155	83.4	36.5	96.5
115	28.3	0.0	36.6



#18
 Fluorene
 Concen: 1.81 ng/ml
 RT: 9.37 min Scan# 481
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

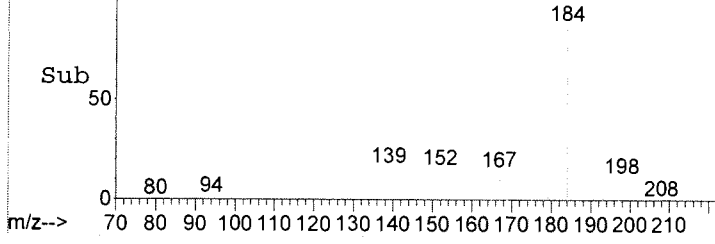
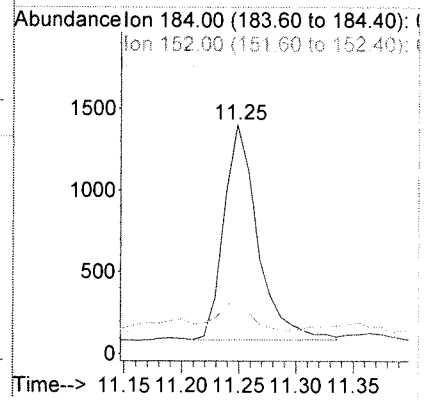
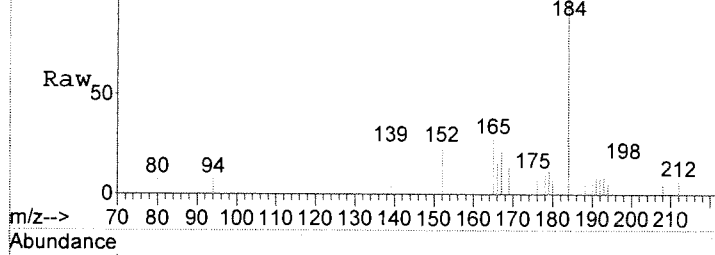
Tgt Ion	Resp	Lower	Upper
166	682		
165	99.5	62.7	122.7
167	15.7	0.0	43.3





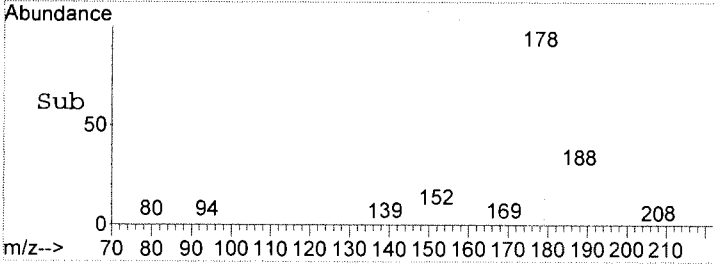
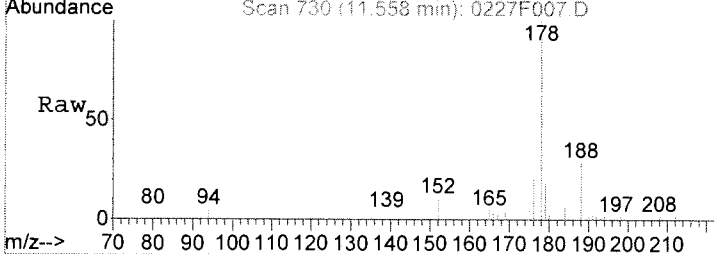
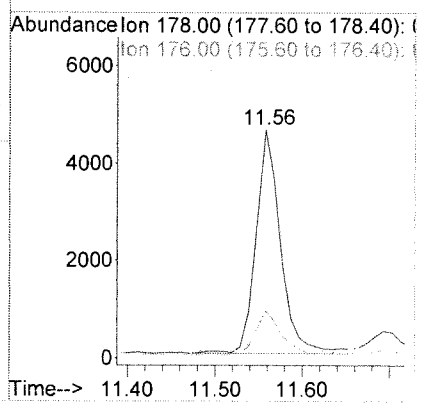
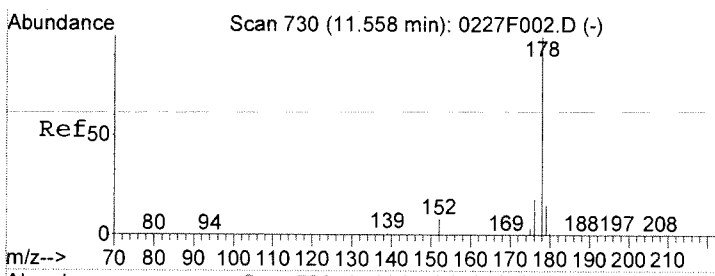
#25
 Dibenzothiophene
 Concen: 5.10 ng/ml
 RT: 11.25 min Scan# 698
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

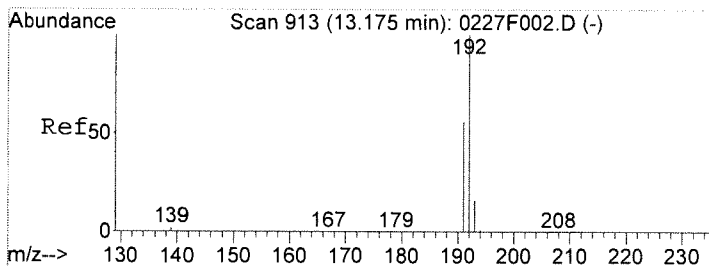
Tgt Ion	Resp	Lower	Upper
184	2700		
152	12.6	0.0	39.1
139	15.0	0.0	45.2



#28
 Phenanthrene
 Concen: 15.41 ng/ml
 RT: 11.56 min Scan# 730
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

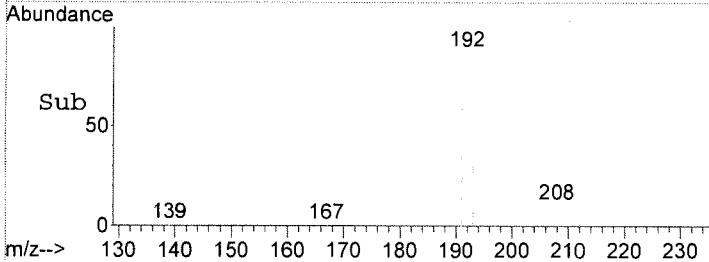
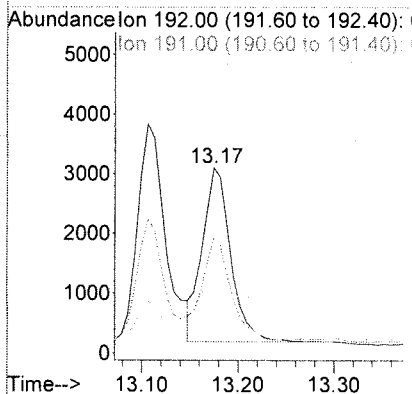
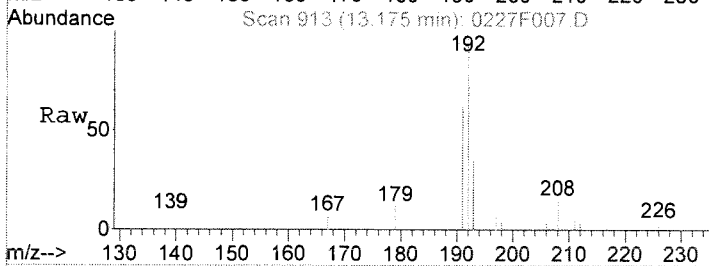
Tgt Ion	Resp	Lower	Upper
178	8955		
176	19.5	0.0	48.7
179	14.6	0.0	45.5





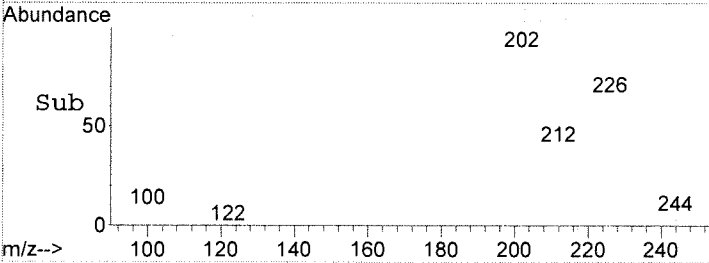
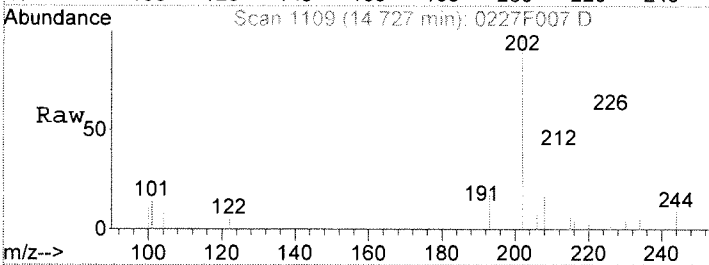
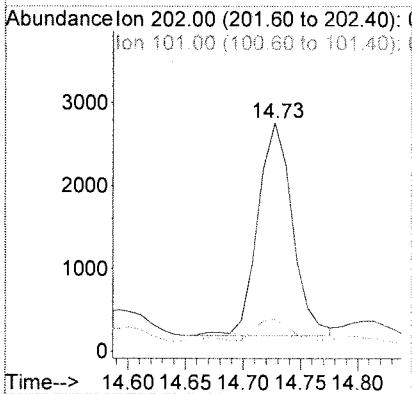
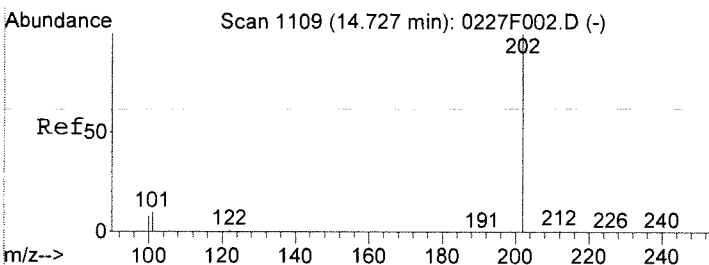
#31
 1-Methylphenanthrene
 Concen: 14.41 ng/ml
 RT: 13.17 min Scan# 913
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

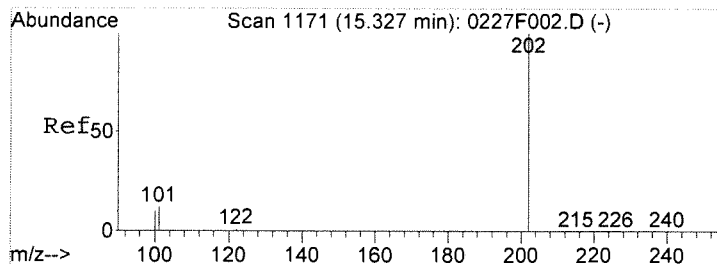
Tgt Ion	Resp	Lower	Upper
192	5948	100	100
191	57.3	27.7	87.7
193	20.0	0.0	45.6



#36
 Fluoranthene
 Concen: 8.52 ng/ml
 RT: 14.73 min Scan# 1109
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

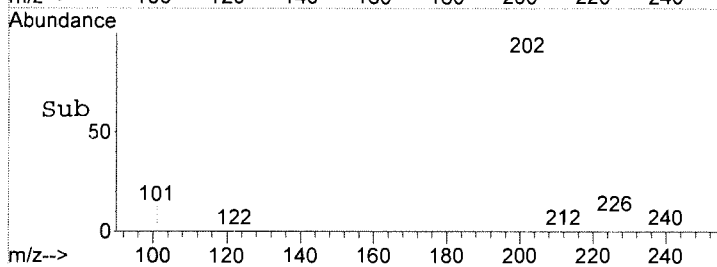
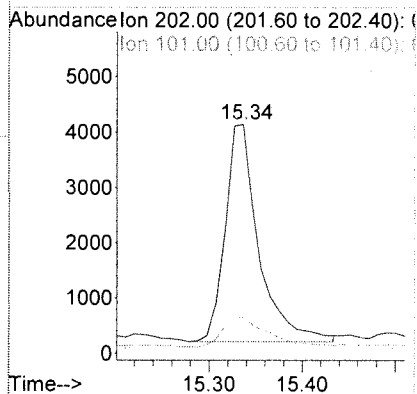
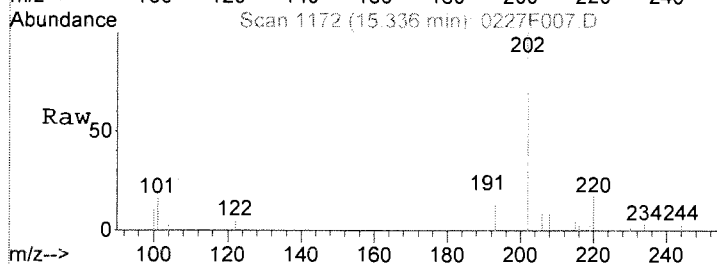
Tgt Ion	Resp	Lower	Upper
202	5390	100	100
101	9.9	0.0	40.5
100	8.8	0.0	37.9





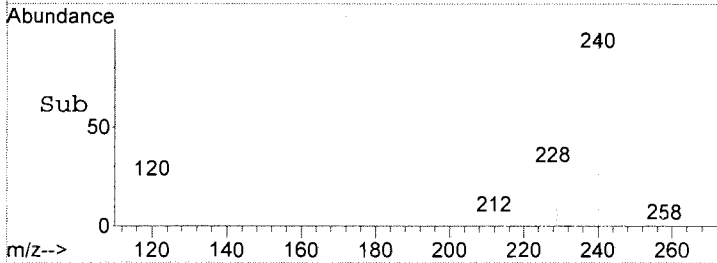
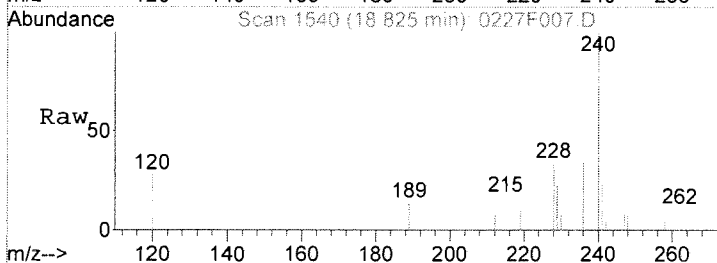
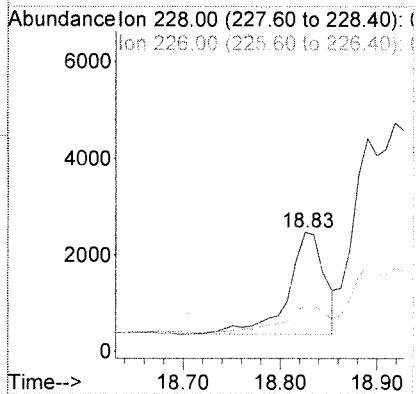
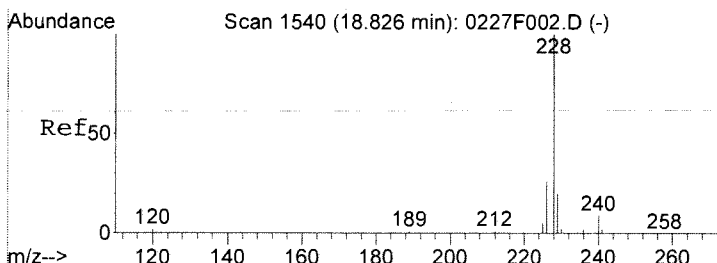
#39
 Pyrene
 Concen: 15.67 ng/ml
 RT: 15.34 min Scan# 1172
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

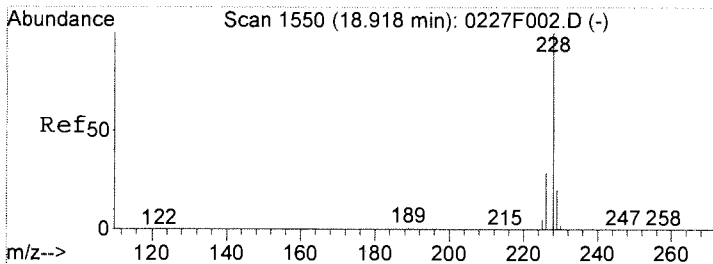
Tgt Ion	Resp	Lower	Upper
202	9882		
101	13.4	0.0	40.9
100	10.1	0.0	38.9



#45
 Benz(a)anthracene
 Concen: 9.34 ng/ml
 RT: 18.83 min Scan# 1540
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

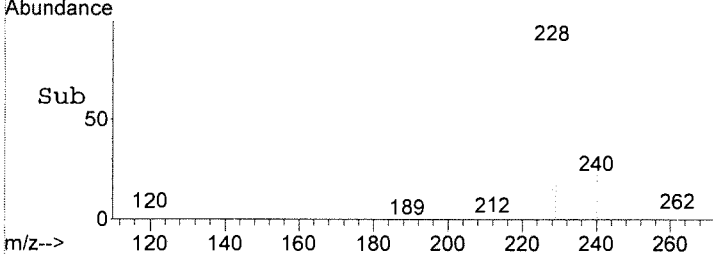
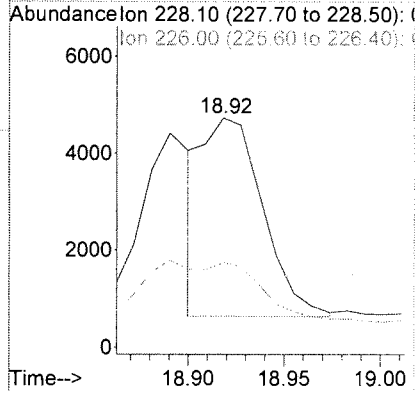
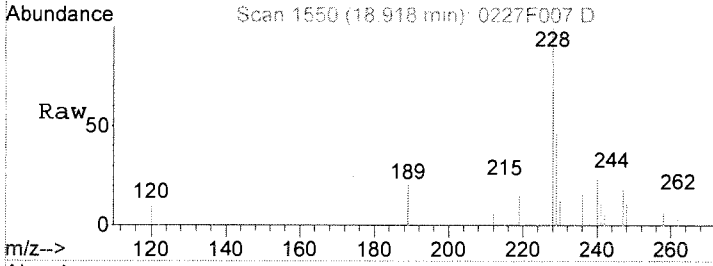
Tgt Ion	Resp	Lower	Upper
228	5665		
226	26.0	0.0	56.6
229	40.6	0.0	50.0





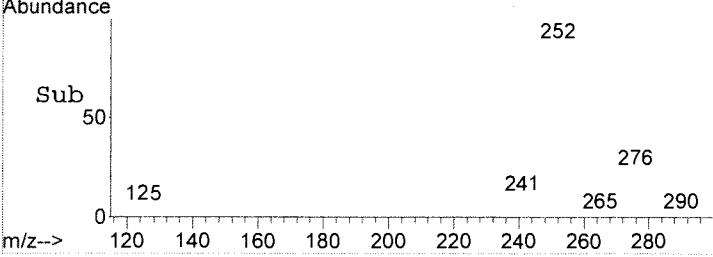
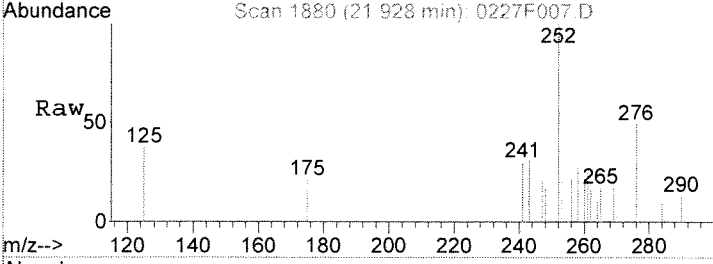
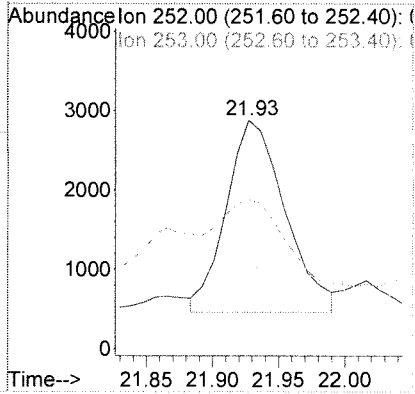
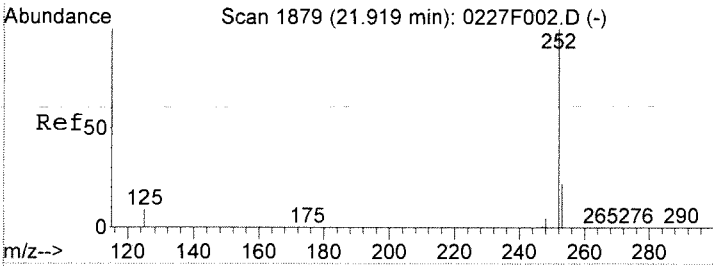
#46
 Chrysene
 Concen: 14.88 ng/ml m
 RT: 18.92 min Scan# 1550
 Delta R.T. -0.03 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

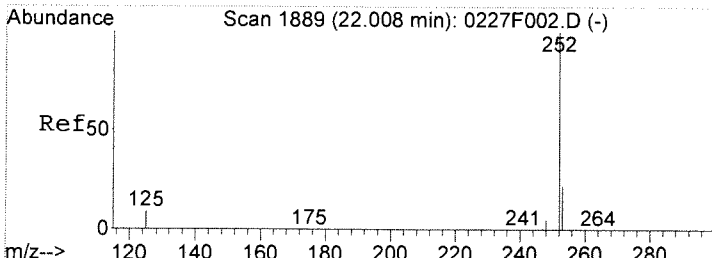
Tgt Ion	Resp	Lower	Upper
228	9000		
226	36.6	0.0	58.4
229	46.7	0.0	49.9



#52
 Benzo(b) fluoranthene
 Concen: 11.28 ng/ml m
 RT: 21.93 min Scan# 1880
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

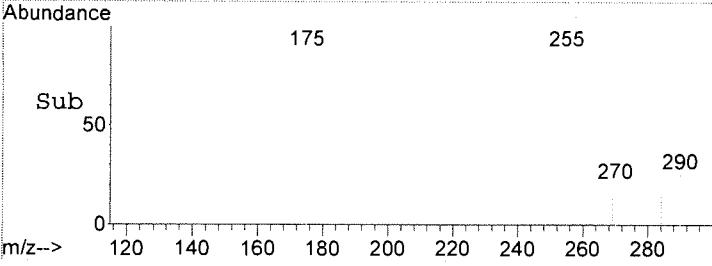
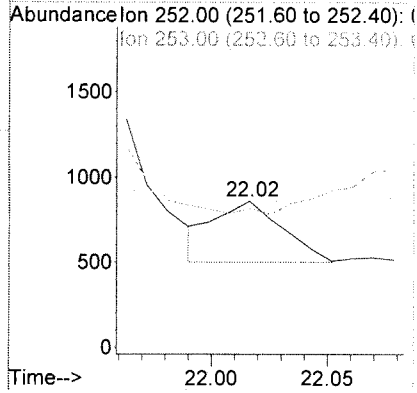
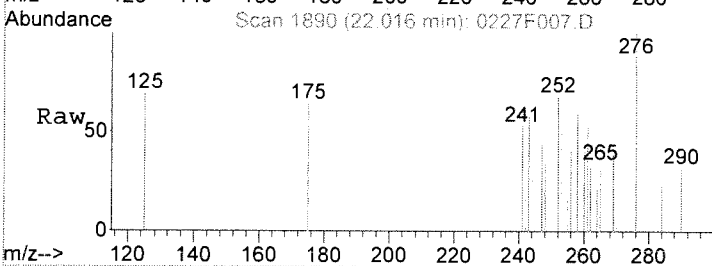
Tgt Ion	Resp	Lower	Upper
252	7497		
253	65.1	0.0	51.9#
125	37.1	0.0	38.2





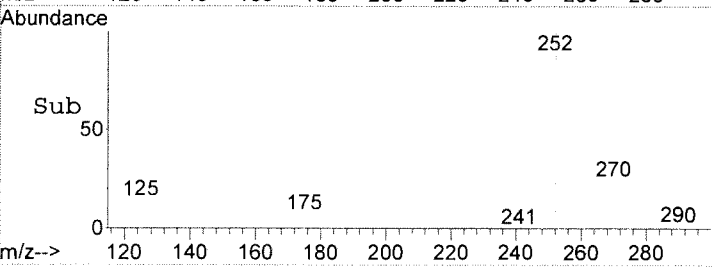
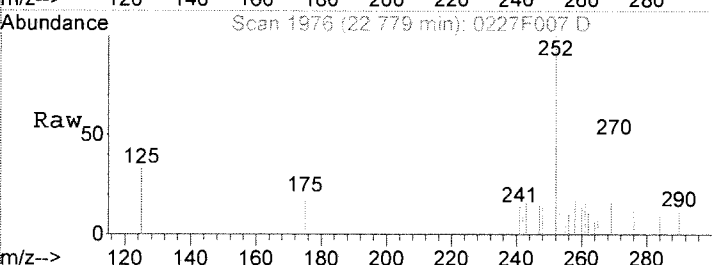
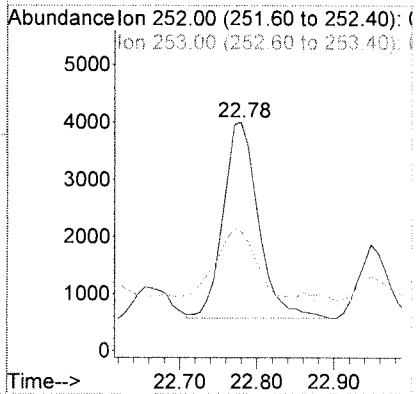
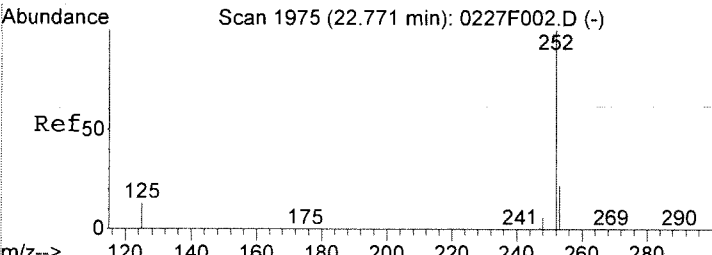
#53
 Benzo(k)fluoranthene
 Concen: 1.11 ng/ml m
 RT: 22.02 min Scan# 1890
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

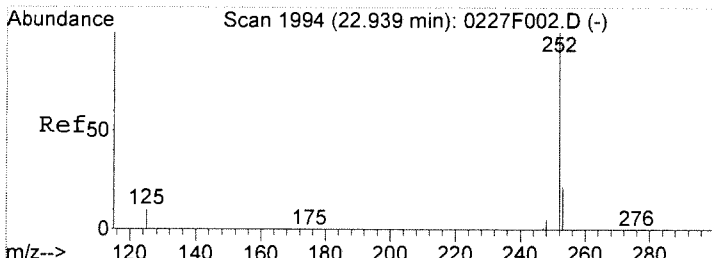
Tgt Ion	Resp	Lower	Upper
252	100		
253	94.9	0.0	51.9#
125	101.3	0.0	38.7#



#54
 Benzo(e)pyrene
 Concen: 16.84 ng/ml
 RT: 22.78 min Scan# 1976
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

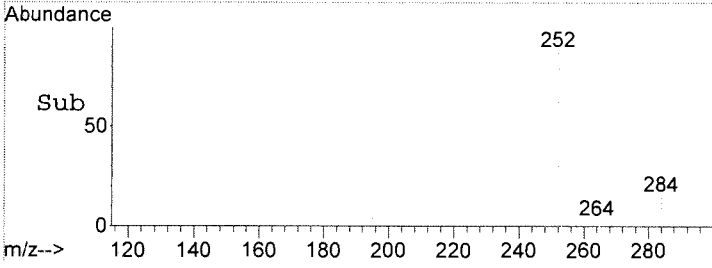
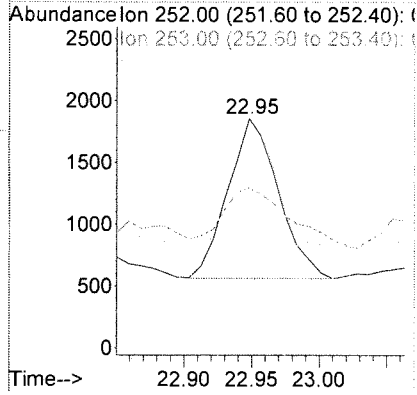
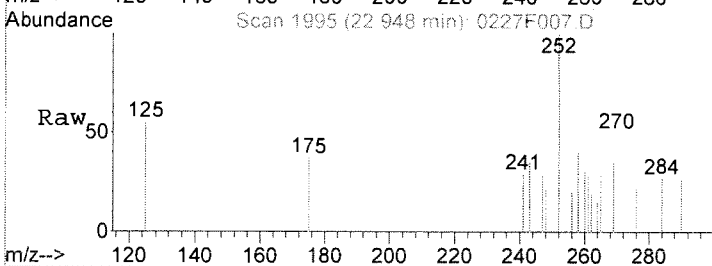
Tgt Ion	Resp	Lower	Upper
252	100		
253	33.8	0.0	51.6
125	13.2	0.0	42.3





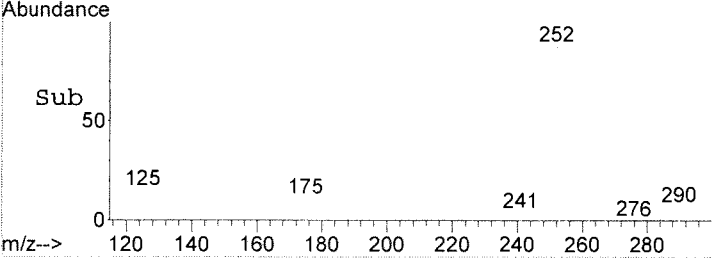
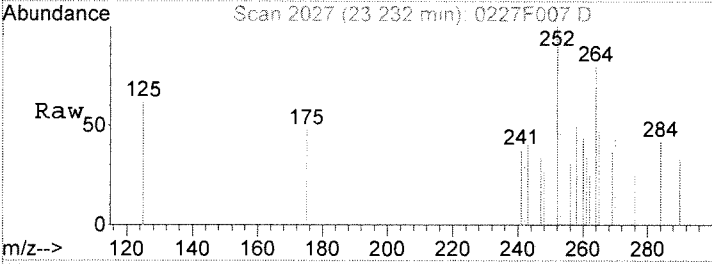
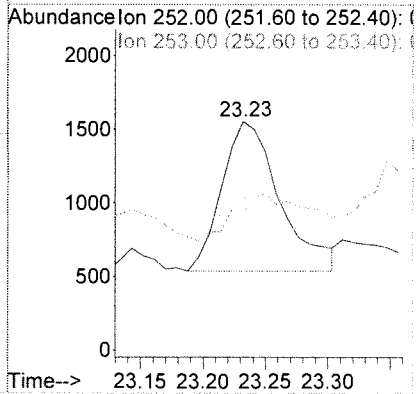
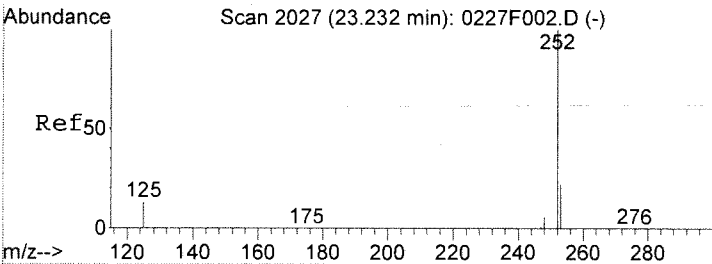
#55
 Benzo(a)pyrene
 Concen: 5.88 ng/ml
 RT: 22.95 min Scan# 1995
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

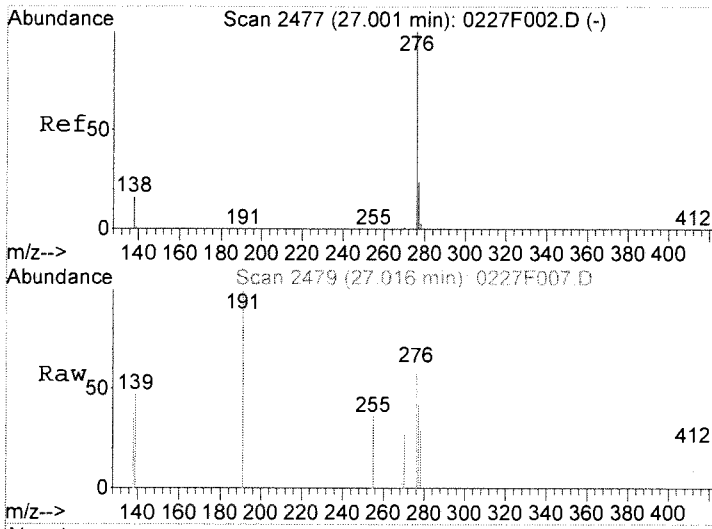
Tgt Ion	Resp	Lower	Upper
252	3372		
253	32.4	0.0	52.1
125	13.4	0.0	39.5



#56
 Perylene
 Concen: 5.46 ng/ml
 RT: 23.23 min Scan# 2027
 Delta R.T. -0.03 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

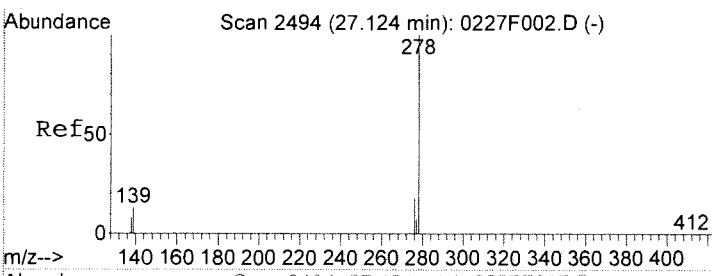
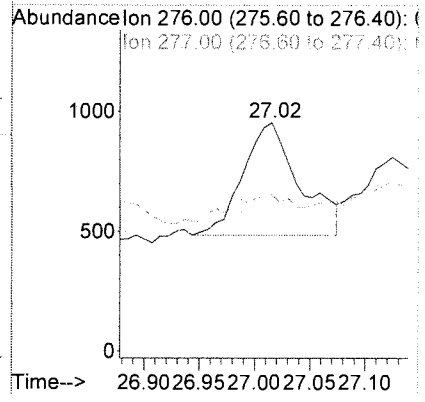
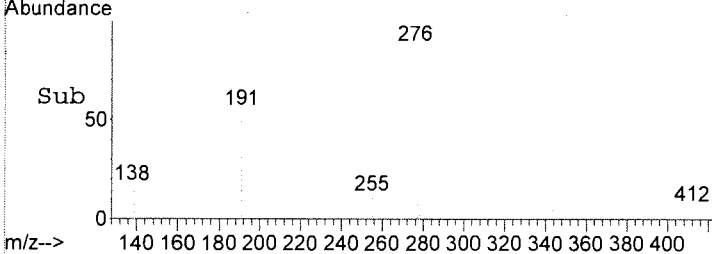
Tgt Ion	Resp	Lower	Upper
252	3297		
253	26.1	0.0	51.9
125	15.3	0.0	43.0





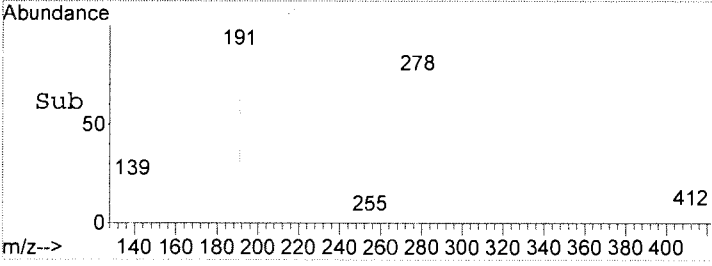
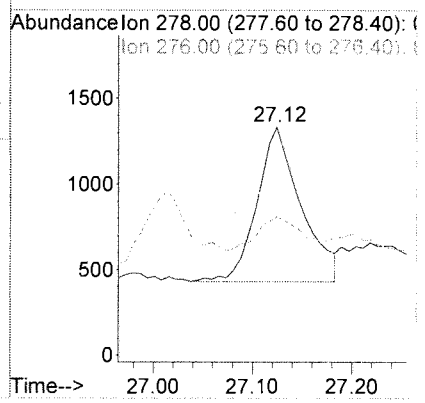
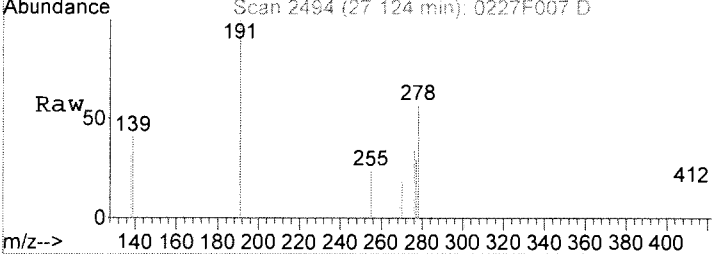
#57
 Indeno(1,2,3-cd)pyrene
 Concen: 2.84 ng/ml
 RT: 27.02 min Scan# 2479
 Delta R.T. 0.00 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

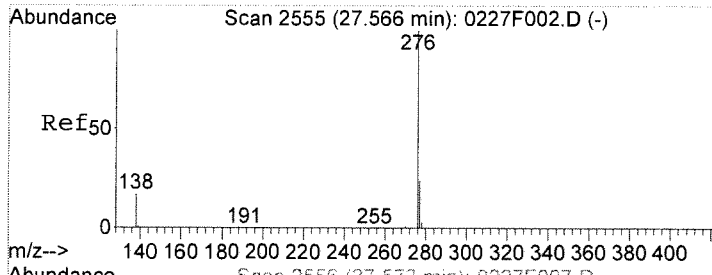
Tgt Ion	Resp	Lower	Upper
276	1678		
277	23.4	0.0	54.0
138	19.8	0.0	46.0



#58
 Dibenz(a,h)anthracene
 Concen: 4.52 ng/ml
 RT: 27.12 min Scan# 2494
 Delta R.T. -0.02 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

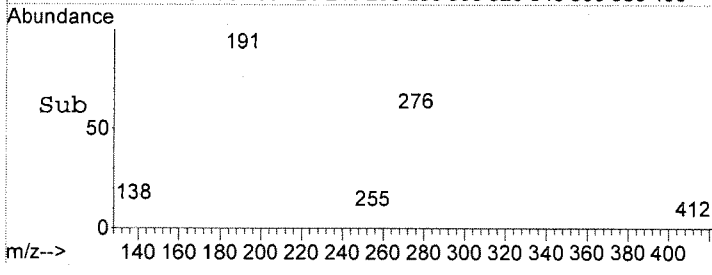
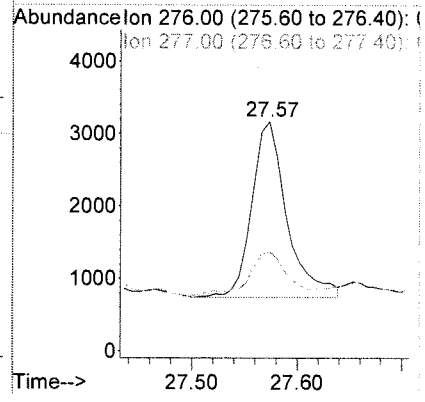
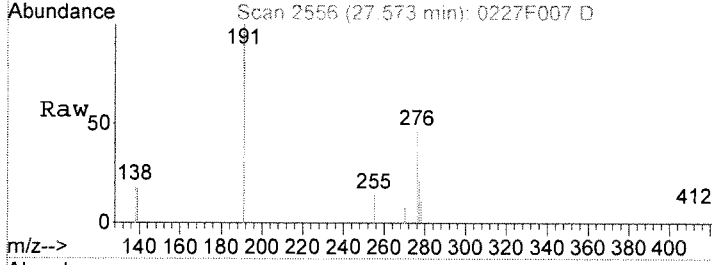
Tgt Ion	Resp	Lower	Upper
278	2769		
276	13.0	0.0	55.0
139	22.9	0.0	42.8





#59
 Benzo(g,h,i)perylene
 Concen: 7.96 ng/ml
 RT: 27.57 min Scan# 2556
 Delta R.T. -0.01 min
 Lab File: 0227F007.D
 Acq: 27 Feb 2018 2:34 pm

Tgt Ion	Resp	Lower	Upper
276	5643		
277	24.9	0.0	54.2
138	20.8	0.0	46.5

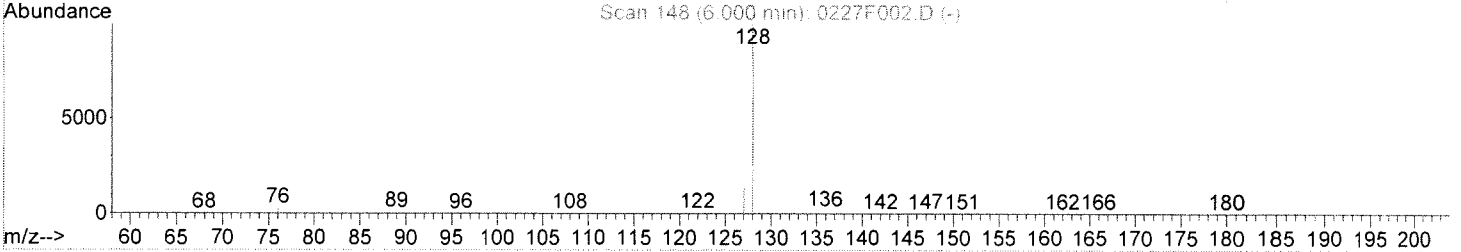
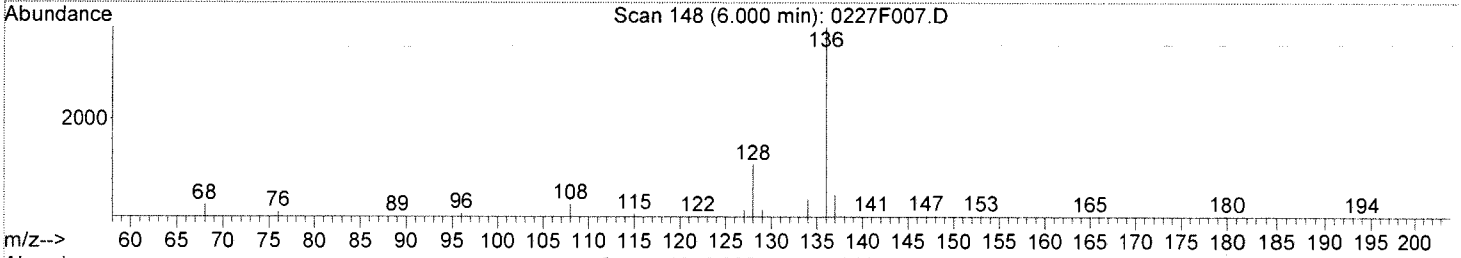
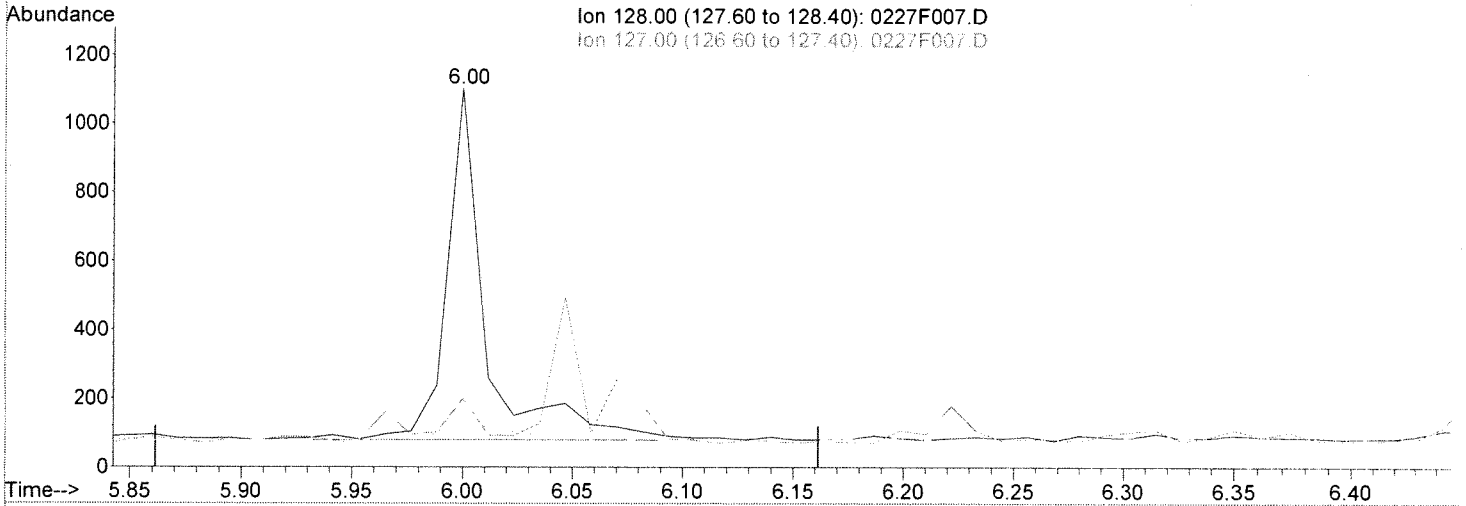


Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:53 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(2) Naphthalene (T)

6.00min 2.54ng/ml

response 1276

Ion	Exp%	Act%
128.00	100	100
127.00	12.20	11.83
129.00	11.20	11.44
0.00	0.00	0.00

Manual Integration:

Before

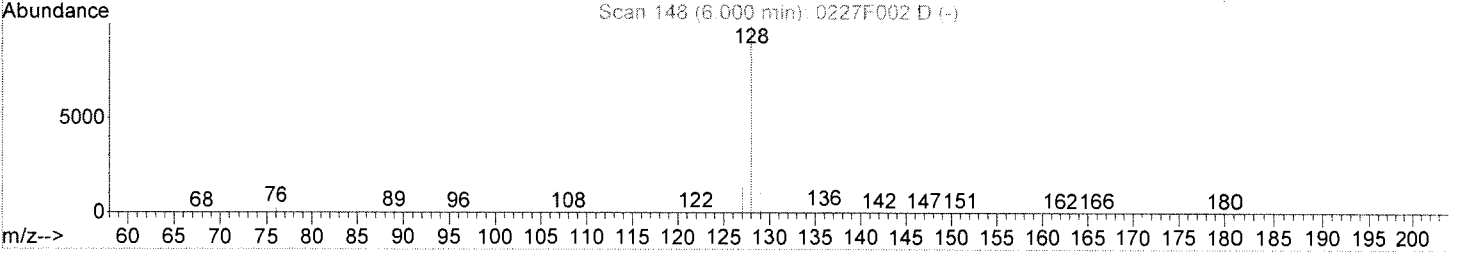
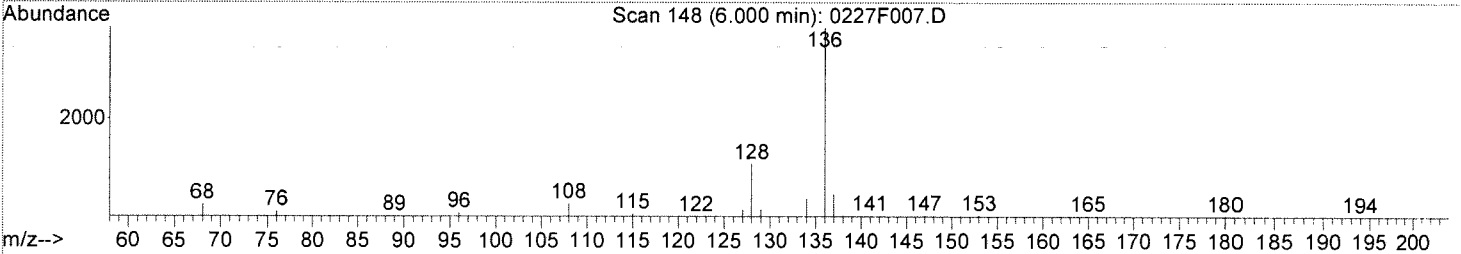
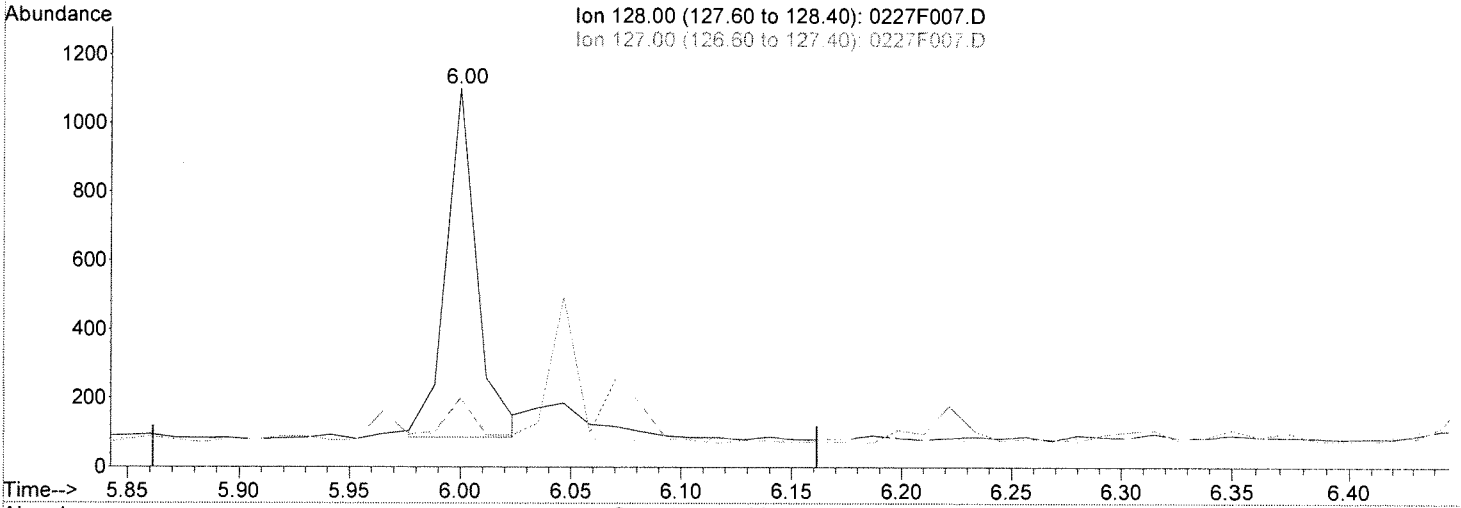
02/28/18

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:59 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(2) Naphthalene (T)

6.00min 1.95ng/ml m

response 983

Ion	Exp%	Act%
128.00	100	100
127.00	12.20	18.06
129.00	11.20	17.79
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

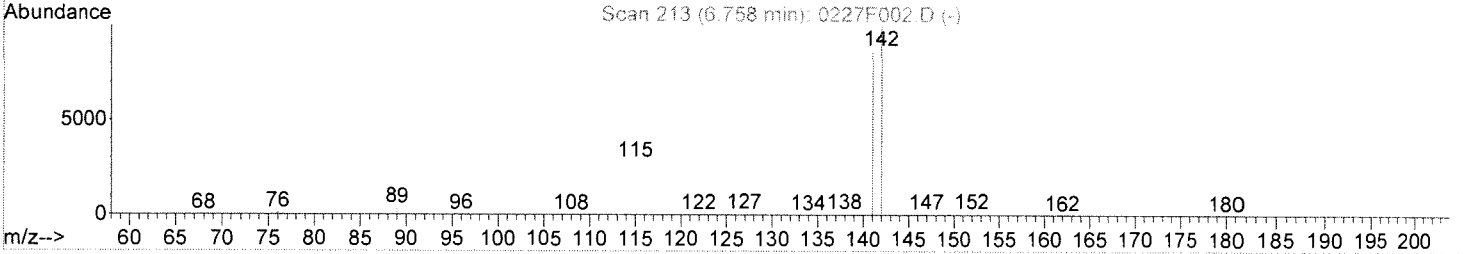
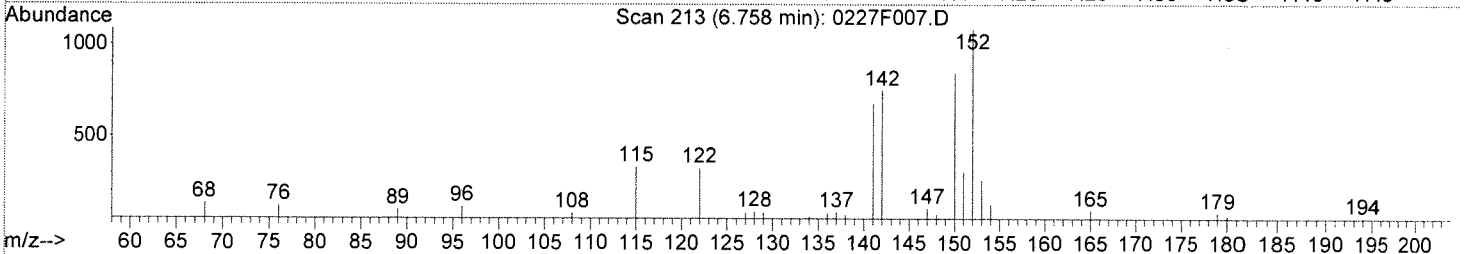
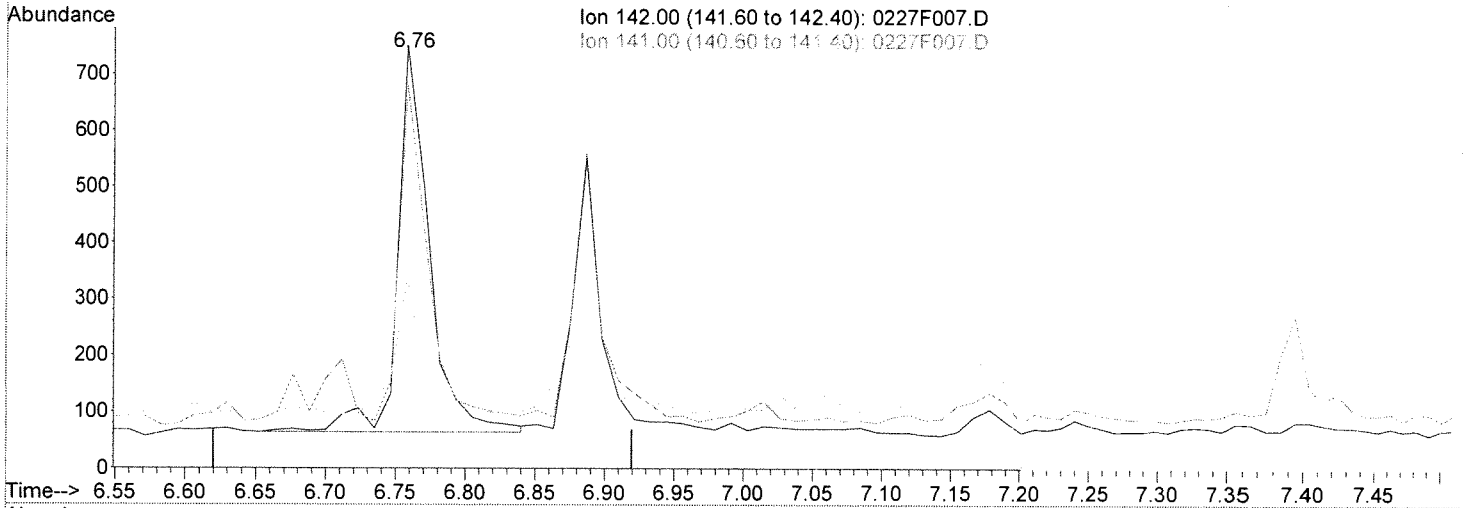
02/28/18

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:59 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(4) 2-Methylnaphthalene (T)

6.76min 3.20ng/ml

response 1076

Ion	Exp%	Act%
142.00	100	100
141.00	82.00	86.46
115.00	15.60	34.21
0.00	0.00	0.00

Manual Integration:

Before

02/28/18

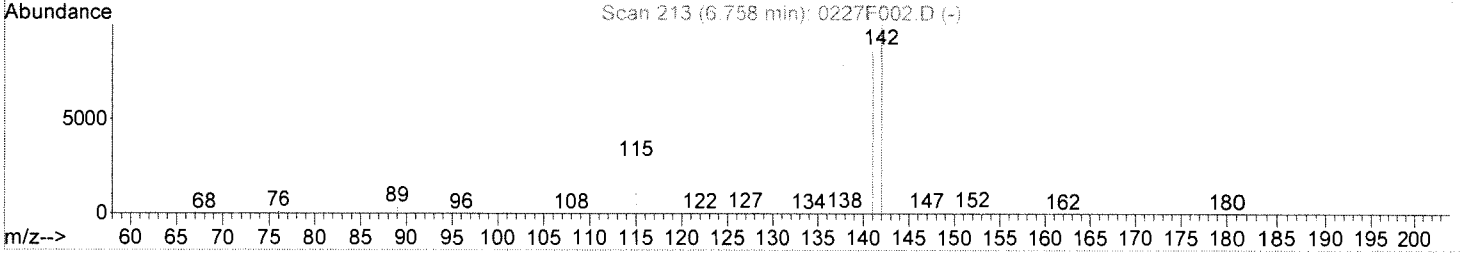
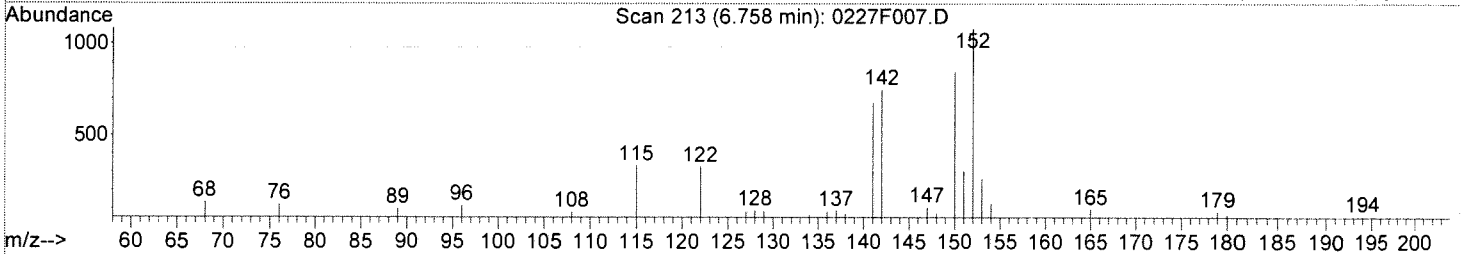
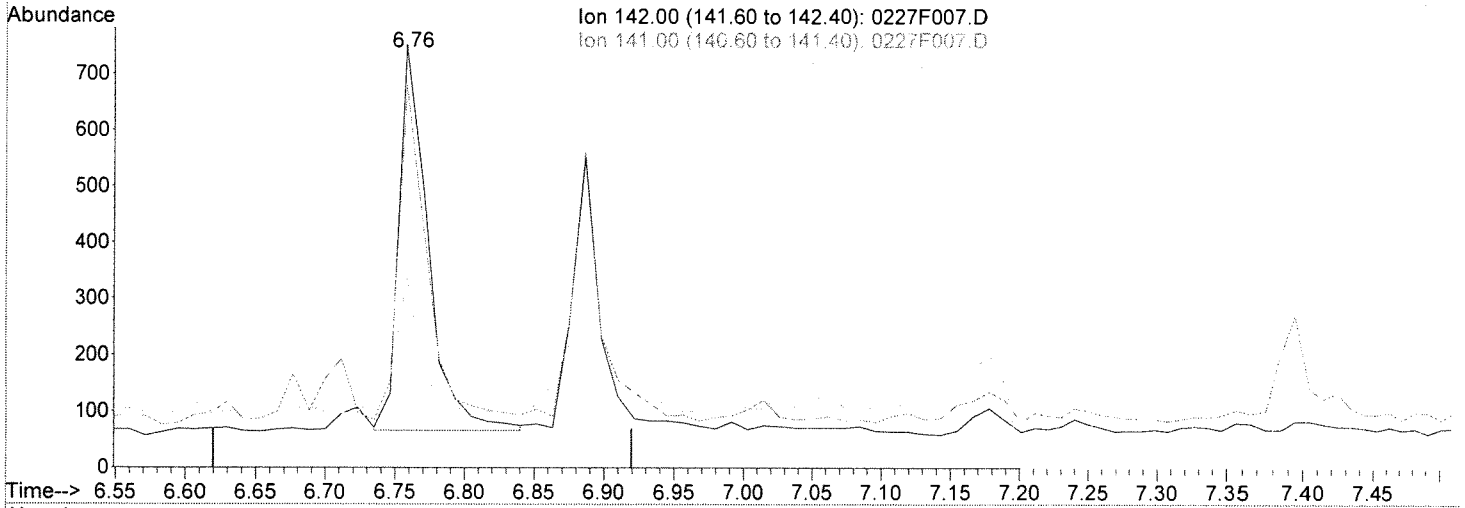
Handwritten signature and initials, likely belonging to the analyst, located next to the 'Manual Integration' section.

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:59 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(4) 2-Methylnaphthalene (T)

6.76min 2.97ng/ml m

response 996

Ion	Exp%	Act%
142.00	100	100
141.00	82.00	90.55
115.00	15.60	44.61
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

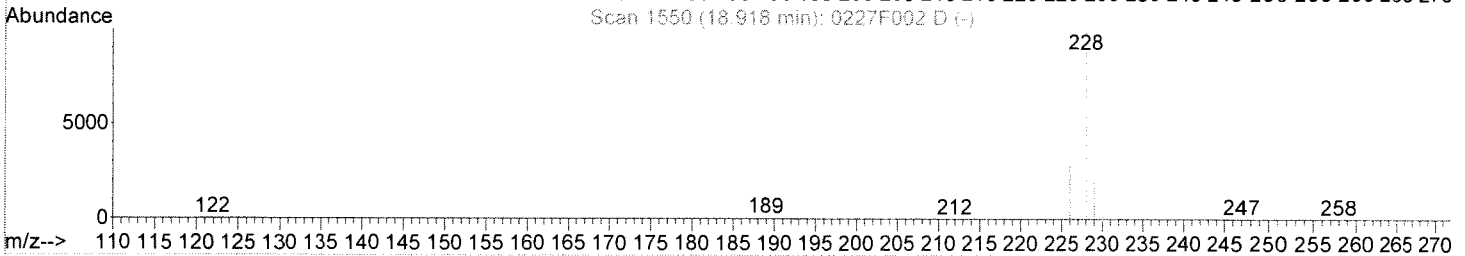
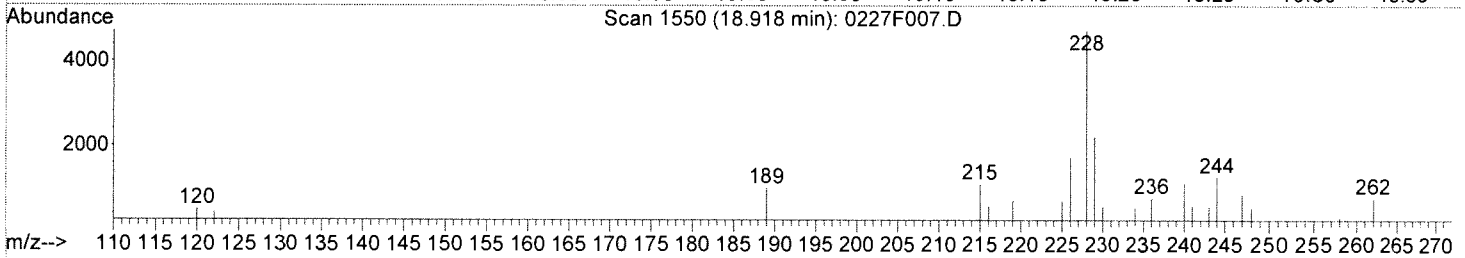
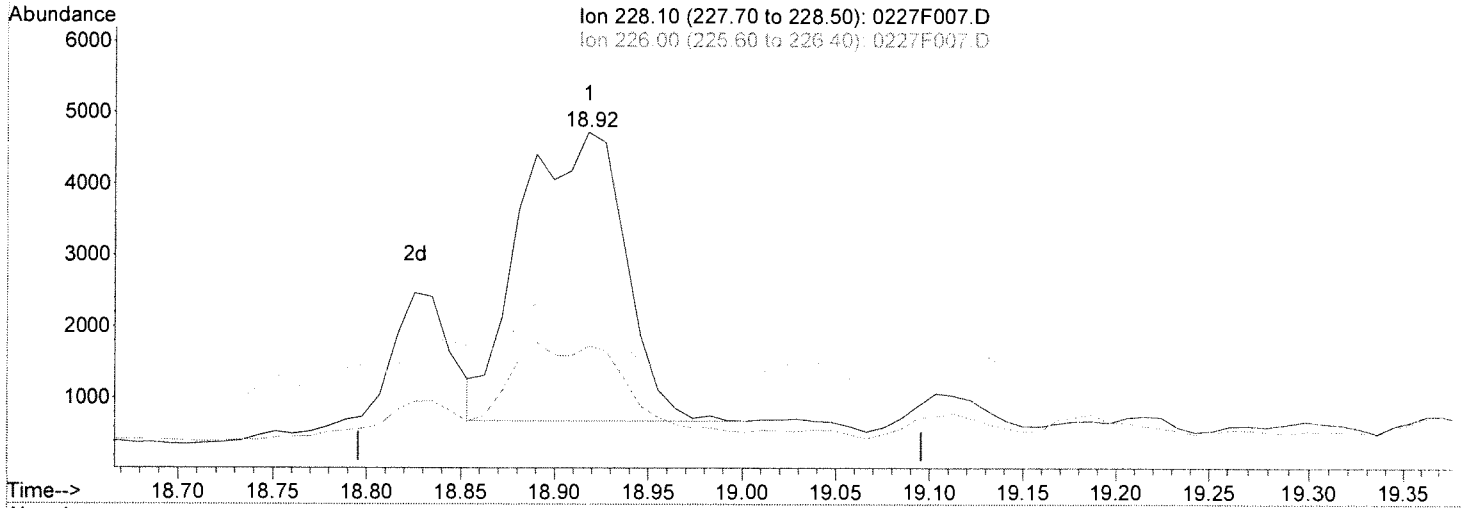
02/28/18

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:59 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(46) Chrysene (T)

18.92min 25.84ng/ml

response 15628

Ion	Exp%	Act%
228.10	100	100
226.00	28.40	29.79
229.00	19.90	19.91
0.00	0.00	0.00

Manual Integration:

Before

02/28/18

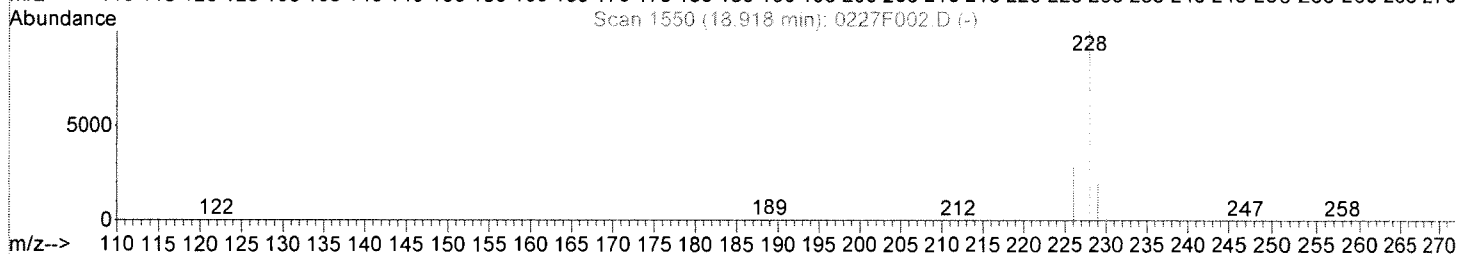
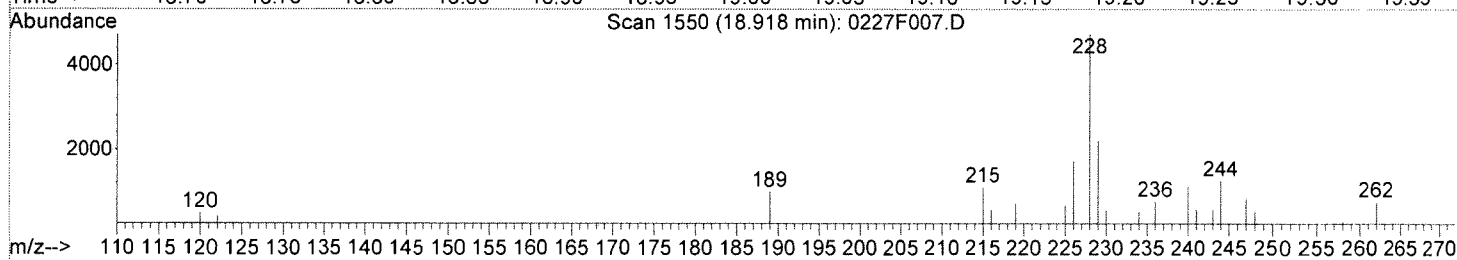
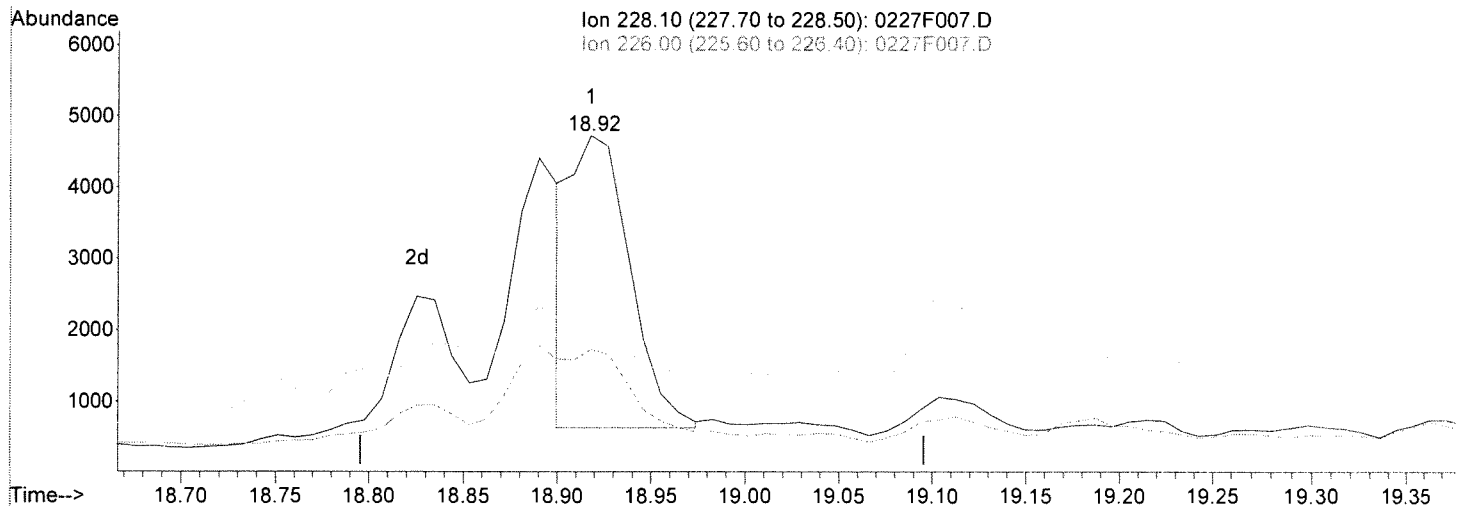
Handwritten signature/initials

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:00 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(46) Chrysene (T)
 18.92min 14.88ng/ml m
 response 9000

Ion	Exp%	Act%
228.10	100	100
226.00	28.40	36.58
229.00	19.90	46.72
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

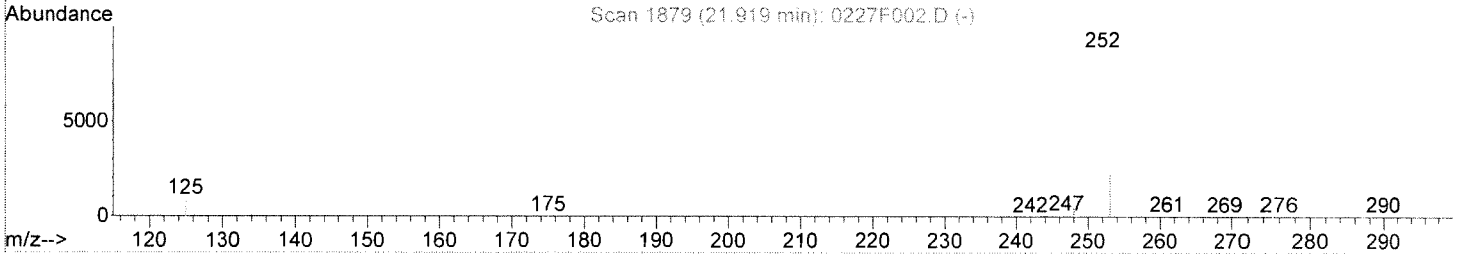
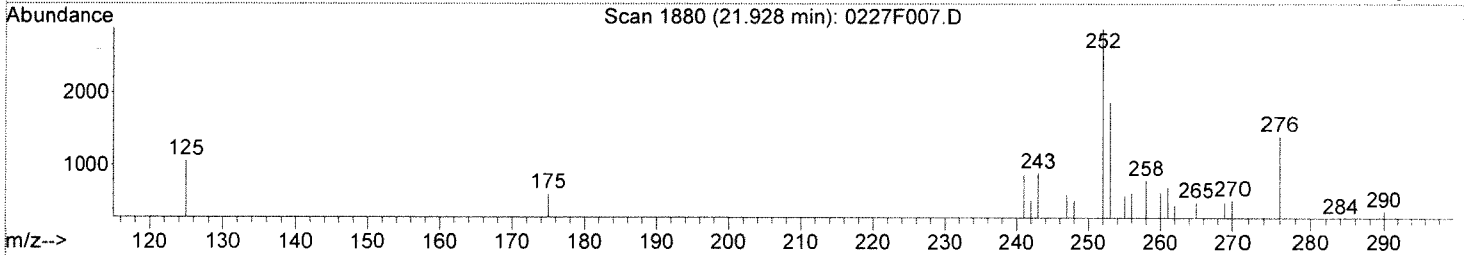
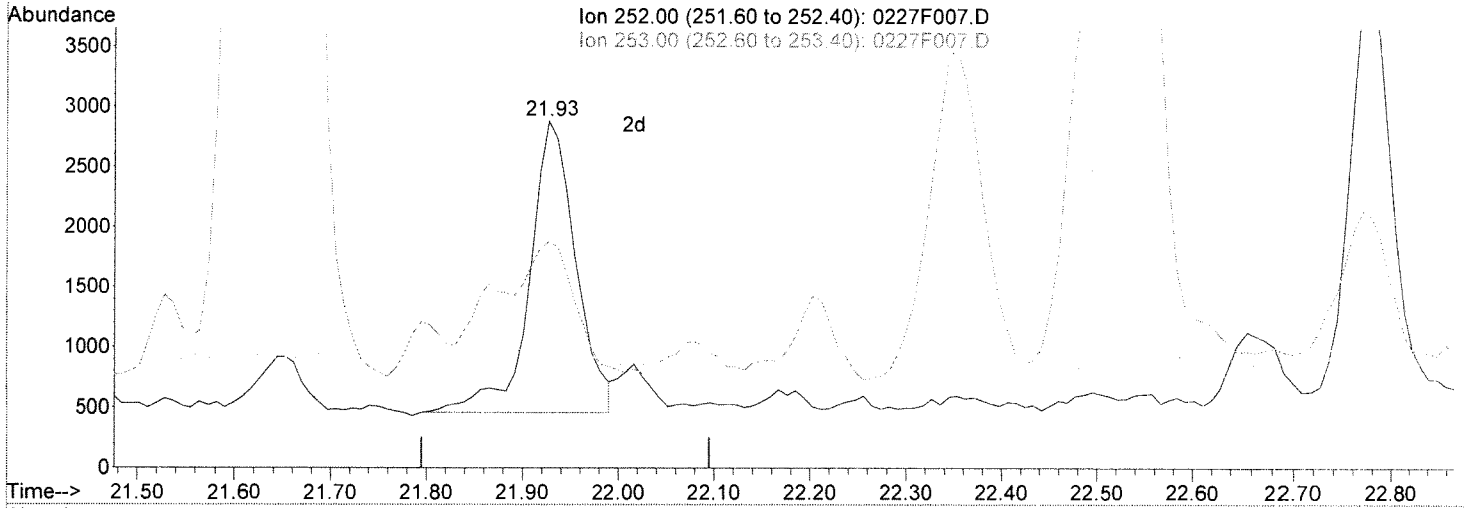
02/28/18

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:00 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(52) Benzo(b)fluoranthene (T)

21.93min 12.19ng/ml

response 8097

Ion	Exp%	Act%
252.00	100	100
253.00	21.90	42.92
125.00	8.20	8.17
0.00	0.00	0.00

Manual Integration:

Before

02/28/18

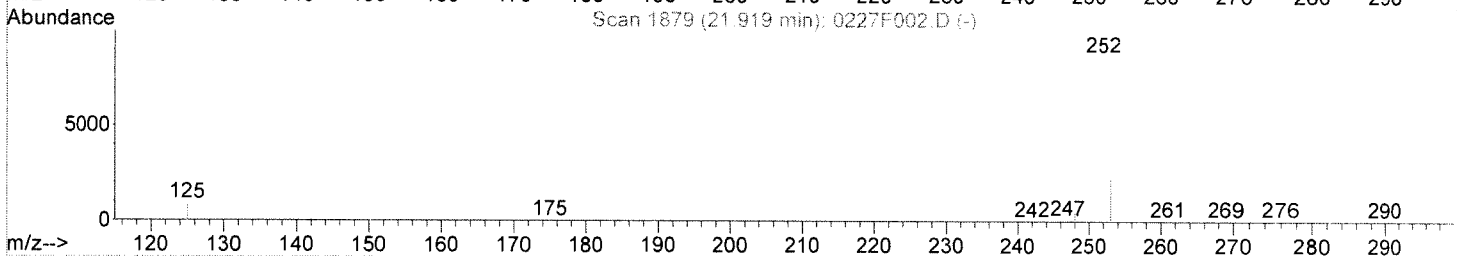
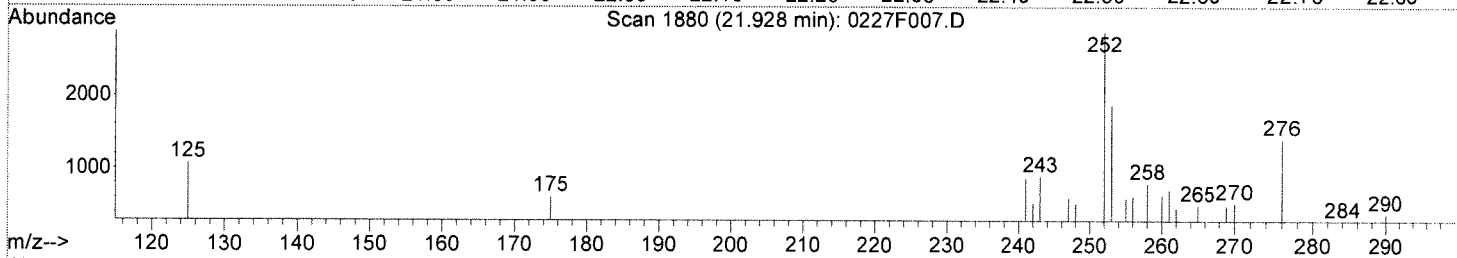
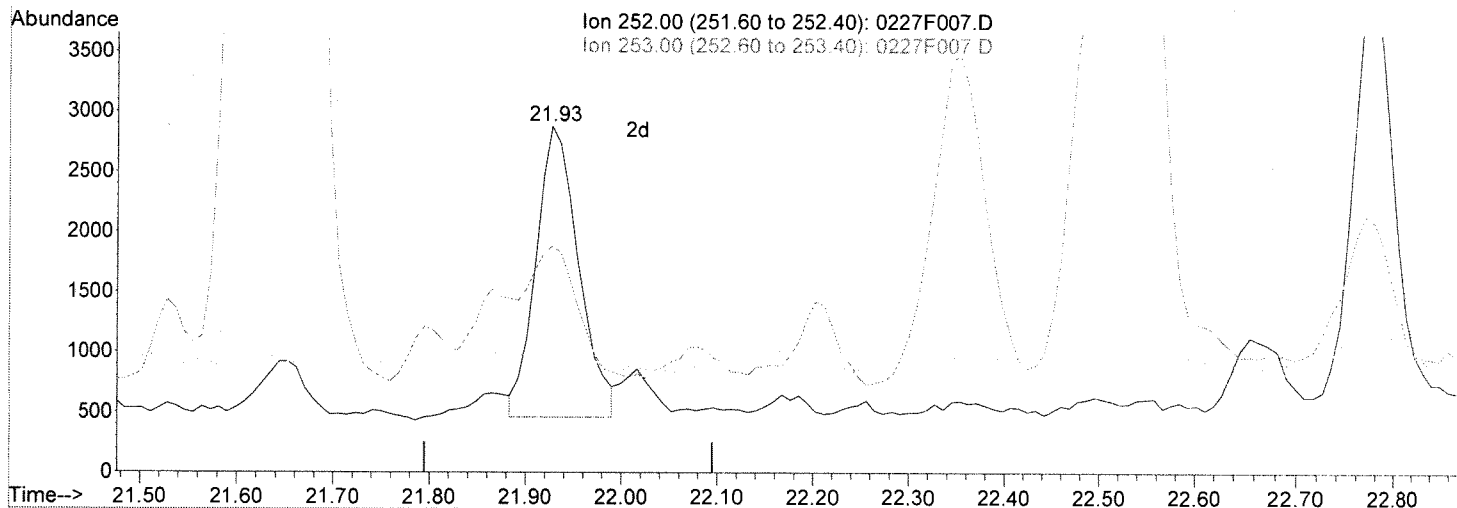
la
u

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:00 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(52) Benzo(b)fluoranthene (T)

21.93min 11.28ng/ml m

response 7497

Ion	Exp%	Act%
252.00	100	100
253.00	21.90	65.13#
125.00	8.20	37.06
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

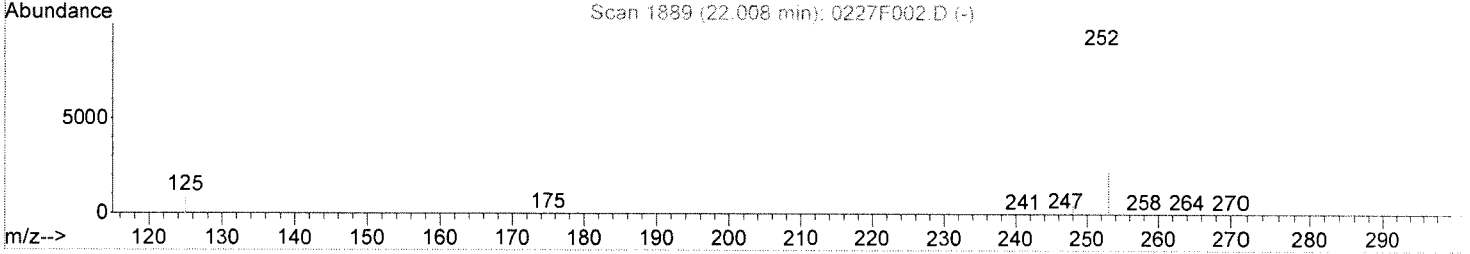
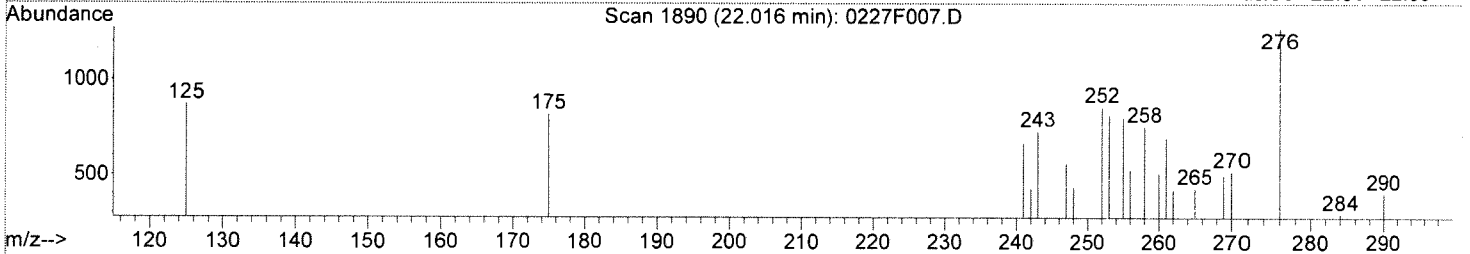
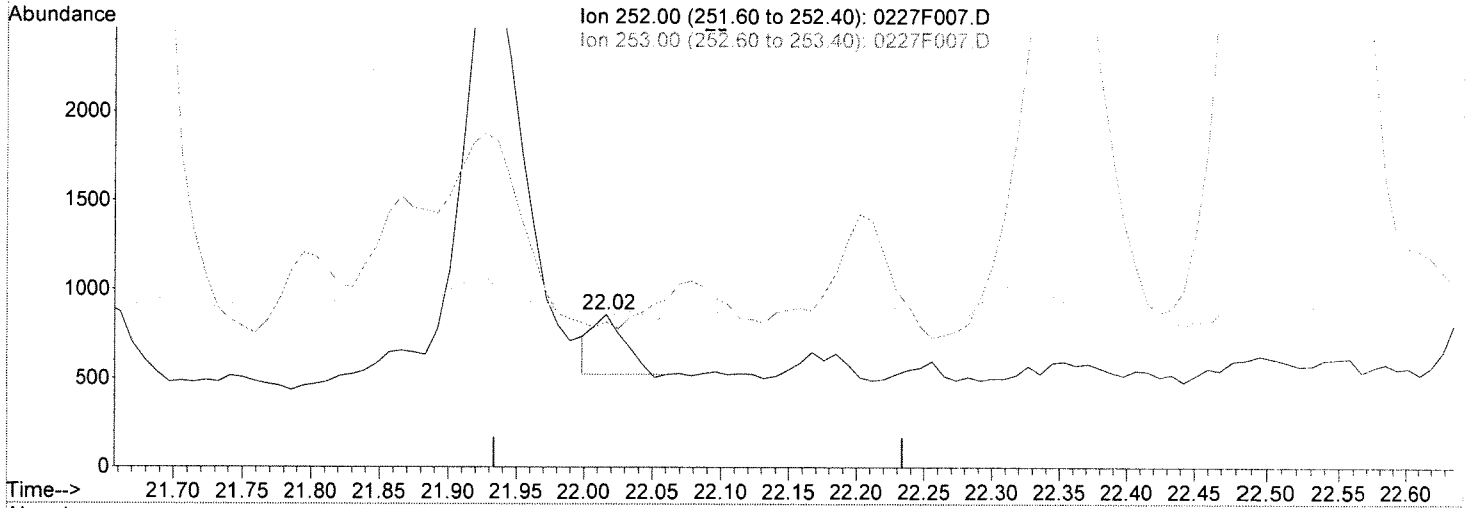
02/28/18

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:00 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(53) Benzo(k)fluoranthene (T)

22.02min 0.81ng/ml

response 545

Ion	Exp%	Act%
252.00	100	100
253.00	21.90	1.18
125.00	8.70	8.28
0.00	0.00	0.00

Manual Integration:

Before

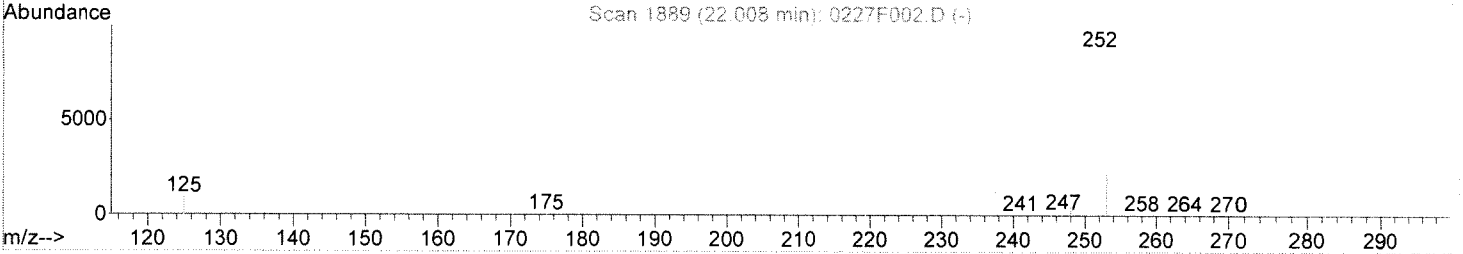
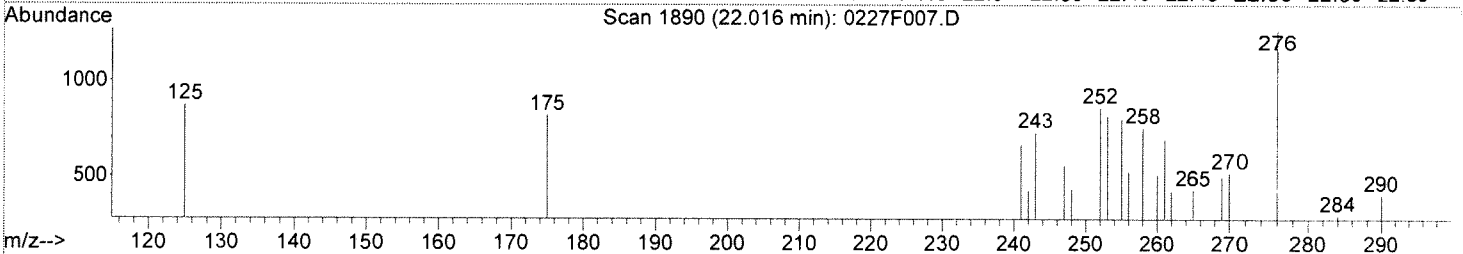
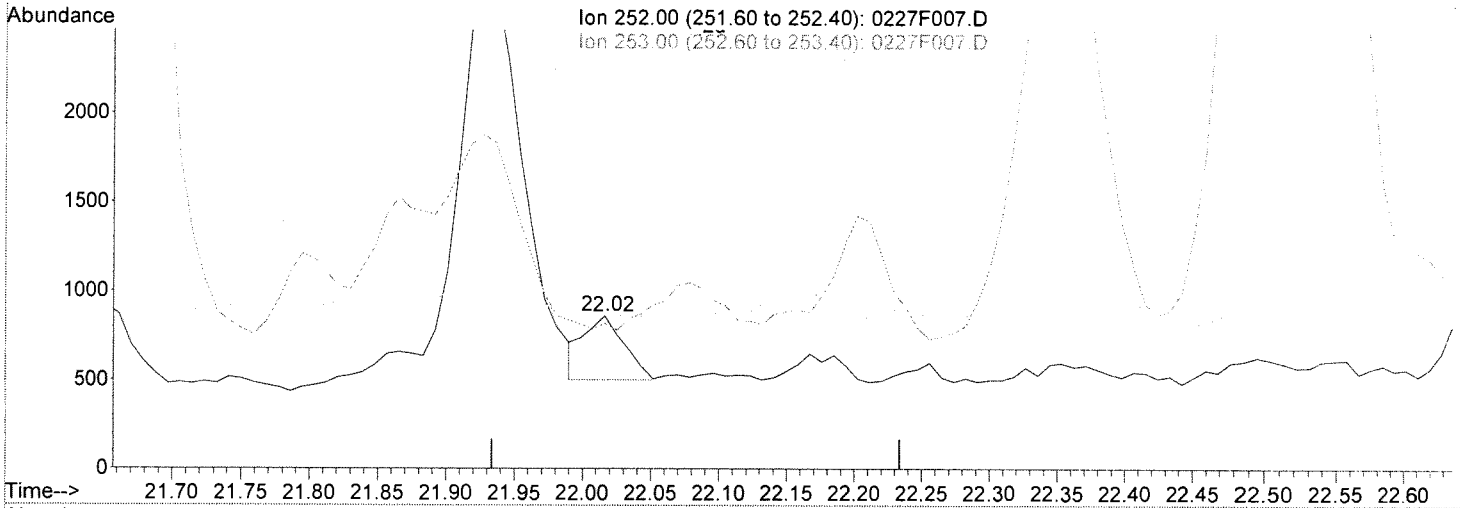
02/28/18

Data File : J:\MS20\DATA\022718\0227F007.D
 Acq On : 27 Feb 2018 2:34 pm
 Sample : K1801257-001
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 9:00 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Multiple Level Calibration



TIC: 0227F007.D

(53) Benzo(k)fluoranthene (T)

22.02min 1.11ng/ml m

response 744

Ion	Exp%	Act%
252.00	100	100
253.00	21.90	94.89#
125.00	8.70	101.28#
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

02/28/18

Exception Report

Data File: J:\MS20\DATA\022718\0227F005.D
Lab ID: KWG1801007-1 -- K1801257-001MS
RunType: MS
Matrix: SOIL

Date Acquired: 02/27/2018 13:15
Date Quantitated: 02/28/2018 08:53
Batch ID: KWG1801193
Analysis Method: 8270D SIM
MethodJoinID: MJ1651

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA		x
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

Batch QC
K1267
K1291
K1322

Analyte Exceptions

Exception Categories	Analyte Name	Result	Low Limit	High Limit	Corrective Action
Continuing Calibration Recovery	2-Methylnaphthalene-d10	25.2	NA	20	<i>NA</i>

Primary Review: *AFEB 28 2018*
 Secondary Review: *NA*

Quantitation Report

Data File:	J:\MS20\DATA\022718\0227F005.D	Instrument:	MS20
Acqu Date:	02/27/2018 13:15	Quant Date:	02/28/2018 08:53
Run Type:	MS	MethodJoinID:	MJ1651
Lab ID:	KWG1801007-1 -- K1801257-001MS	Vial:	5
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	SOIL
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	02/28/2018

Analysis Lot:	KWG1801193	Prep Lot:	KWG1801007	Report Group:	
Analysis Method:	8270D SIM	Prep Method:	EPA 3546		
Prep Ref:	1664506	Prep Date:	02/19/2018		

Quant Method:	J:\MS20\METHODS\110217PAH.M	Calibration ID:	CAL15594
Title:		Method ID:	MJ1651
Tune Ref:	J:\MS20\DATA\022718\0227F001.D	Quant based on Method	
MB Ref:	J:\MS20\DATA\022718\0227F003.D		

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	97060	200.00	OK
2	Acenaphthene-d10	8.30	0.00	164	47101	200.00	OK
3	Phenanthrene-d10	11.50	0.00	188	96104	200.00	OK
4	Chrysene-d12	18.84	0.00	240	109353	200.00	OK
5	Perylene-d12	23.14	0.00	264	115242	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	6.72	0.00	0.00	152	40250	165.65	83	70-130	OK
2	Fluorene-d10	9.31	0.00	0.00	176	42881	142.44	71	38-104	OK
3	Fluoranthene-d10	14.68	0.01	0.00	212	84509	152.34	76	39-109	OK
4	Terphenyl-d14	15.99	0.01	0.00	244	73974	158.67	79	38-113	OK

Target Compounds

							Final Conc. Units:		ug/Kg Dry Weight	
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	191435	386.10	455		
1	2-Methylnaphthalene	6.76		0.00	142	130355	393.70	464		
1	1-Methylnaphthalene	6.89		0.00	142	118848	403.09	475		
1	Biphenyl	7.39		0.00	154	158123	398.68	470		
1	2,6-Dimethylnaphthalene	7.62	-0.01	0.00	156	114655	399.14	470		
1	C1-Naphthalenes				142	0		5.9		U
1	C2-Naphthalenes				156	0		5.9		U
1	C3-Naphthalenes				170	0		5.9		U
1	C4-Naphthalenes				184	0		5.9		U
2	Acenaphthylene	8.06		0.00	152	194372	407.23	480		
2	Acenaphthene	8.36		0.00	154	114790	390.11	460		
2	Dibenzofuran	8.69		0.00	168	176779	399.31	470		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F005.D
 Acqu Date: 02/27/2018 13:15
 Run Type: MS
 Lab ID: KWG1801007-1 -- K1801257-001MS

Quant Date: 02/28/2018 08:53
 MethodJoinID: MJ1651

Instrument: MS20
 Vial: 5
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/Kg Dry Weight

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	2,3,5-Trimethylnaphthalene	9.11		0.00	170	116818	429.92	506		
2	Fluorene	9.37		0.00	166	140968	400.24	471		
2	C1-Fluorenes				180	0		5.9	U	
2	C2-Fluorenes				194	0		5.9	U	
2	C3-Fluorenes				208	0		5.9	U	
3	Dibenzothiophene	11.24		0.00	184	186940	364.42	429		
3	C1-Dibenzothiophenes				198	0		5.9	U	
3	C2-Dibenzothiophenes				212	0		5.9	U	
3	C3-Dibenzothiophenes				226	0		5.9	U	
3	C4-Dibenzothiophenes				240	0		5.9	U	
3	Phenanthrene	11.56		0.00	178	220674	392.20	462		
3	Anthracene	11.68		0.00	178	211239	403.27	475		
3	Carbazole	12.16		0.00	167	192086	419.60	494		
3	1-Methylphenanthrene	13.17		0.00	192	167491	419.07	494		
3	C1-Phenanthrenes/Anthracenes				192	0		5.9	U	
3	C2-Phenanthrenes/Anthracenes				206	0		5.9	U	
3	C3-Phenanthrenes/Anthracenes				220	0		5.9	U	
3	C4-Phenanthrenes/Anthracenes				234	0		5.9	U	
3	Fluoranthene	14.73		0.00	202	266804	435.63	513		
4	Pyrene	15.33		0.00	202	277454	449.61	530		
4	C1-Fluoranthenes/Pyrenes				216	0		5.9	U	
4	C2-Fluoranthenes/Pyrenes				230	0		5.9	U	
4	C3-Fluoranthenes/Pyrenes				244	0		5.9	U	
4	C4-Fluoranthenes/Pyrenes				258	0		5.9	U	
4	Benz(a)anthracene	18.83		0.00	228	271261	456.98	538		
4	Chrysene	18.92		0.00	228	260815	440.83	519		
4	C1-Chrysenes				242	0		5.9	U	
4	C2-Chrysenes				256	0		5.9	U	
4	C3-Chrysenes				270	0		5.9	U	
4	C4-Chrysenes				284	0		5.9	U	
5	Benzo(b)fluoranthene	21.92		0.00	252	291036	442.72	522		
5	Benzo(k)fluoranthene	22.01		0.00	252	284349	428.21	504		
5	Benzo(e)pyrene	22.77		0.00	252	276947	433.85	511		
5	Benzo(a)pyrene	22.94		0.00	252	255192	450.13	530		
5	Perylene	23.22	-0.01	0.00	252	257449	430.77	507		
5	Indeno(1,2,3-cd)pyrene	27.00		0.00	276	259353	442.93	522		
5	Dibenz(a,h)anthracene	27.12		0.00	278	263693	434.75	512		
5	Benzo(g,h,i)perylene	27.57		0.00	276	278243	396.59	467		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F005.D
Acqu Date: 02/27/2018 13:15
Run Type: MS
Lab ID: KWG1801007-1 -- K1801257-001MS

Quant Date: 02/28/2018 08:53
MethodJoinID: MJ1651

Instrument: MS20
Vial: 5
Dilution: 1.0
Soln Conc. Units: ng/ml

Prep Amount: 10.315 g
Prep Final Vol: 10 mL
Solids: 82.3 %
Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F005.D
Acq On : 27 Feb 2018 1:15 pm
Sample : K1801257-001MS
Misc :

Vial: 5
Operator: LWeiskopf
Inst : MS20
Multiplr: 1.00

MS Integration Params: RTEINT.P
Quant Time: Feb 28 08:53:19 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 28 08:52:31 2018
Response via : Initial Calibration
DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	97060	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.30	164	47101	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.50	188	96104	200.00	ng/ml	-0.02
38) Chrysene-d12	18.84	240	109353	200.00	ng/ml	-0.03
51) Perylene-d12	23.14	264	115242	200.00	ng/ml	-0.03

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	40250	165.65	ng/ml	-0.01
Spiked Amount	1000.000		Recovery	=	16.57%	
17) Fluorene-d10	9.31	176	42881	142.44	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	14.24%	
37) Fluoranthene-d10	14.68	212	84509	152.34	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	15.23%	
44) Terphenyl-d14	15.99	244	73974	158.67	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	15.87%	

Target Compounds

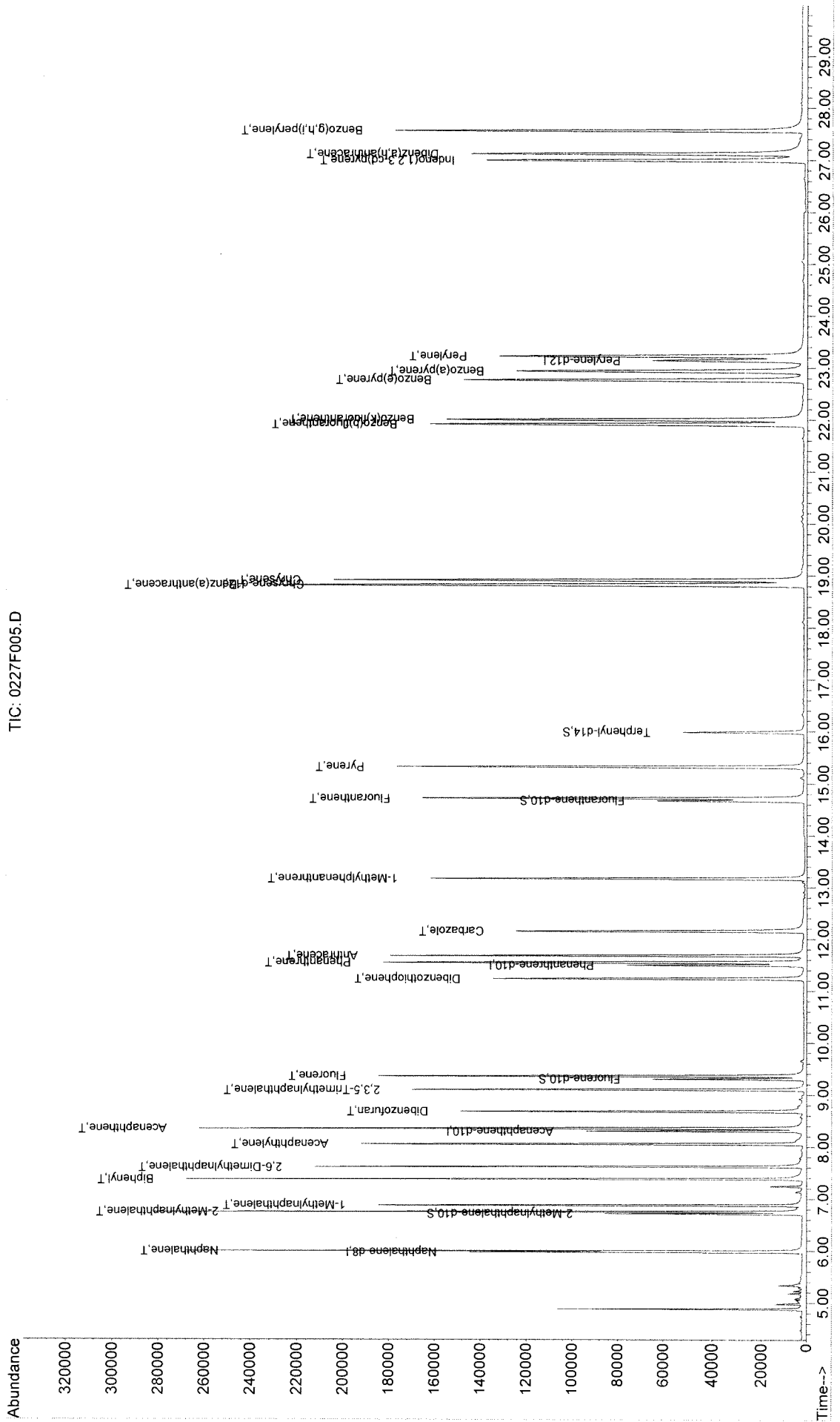
						Qvalue
2) Naphthalene	6.00	128	191435	386.10	ng/ml	99
4) 2-Methylnaphthalene	6.76	142	130355	393.70	ng/ml	94
5) 1-Methylnaphthalene	6.89	142	118848	403.09	ng/ml	85
6) Biphenyl	7.39	154	158123	398.68	ng/ml	98
7) 2,6-Dimethylnaphthalene	7.62	156	114655	399.14	ng/ml	87
13) Acenaphthylene	8.06	152	194372	407.23	ng/ml	100
14) Acenaphthene	8.36	154	114790	390.11	ng/ml	99
15) Dibenzofuran	8.69	168	176779	399.31	ng/ml	92
16) 2,3,5-Trimethylnaphthalene	9.11	170	116818	429.92	ng/ml	95
18) Fluorene	9.37	166	140968	400.24	ng/ml	98
23) Dibenzothiophene	11.24	184	186940	364.42	ng/ml	99
28) Phenanthrene	11.56	178	220674	392.20	ng/ml	99
29) Anthracene	11.68	178	211239	403.27	ng/ml	99
30) Carbazole	12.16	167	192086	419.60	ng/ml	99
31) 1-Methylphenanthrene	13.17	192	167491	419.07	ng/ml	98
36) Fluoranthene	14.73	202	266804	435.63	ng/ml	98
39) Pyrene	15.33	202	277454	449.61	ng/ml	95
45) Benz(a)anthracene	18.83	228	271261	456.98	ng/ml	99
46) Chrysene	18.92	228	260815	440.83	ng/ml	100
52) Benzo(b)fluoranthene	21.92	252	291036	442.72	ng/ml	99
53) Benzo(k)fluoranthene	22.01	252	284349	428.21	ng/ml	100
54) Benzo(e)pyrene	22.77	252	276947	433.85	ng/ml	98
55) Benzo(a)pyrene	22.94	252	255192	450.13	ng/ml	99
56) Perylene	23.22	252	257449	430.77	ng/ml	99
57) Indeno(1,2,3-cd)pyrene	27.00	276	259353	442.93	ng/ml	99
58) Benz(a,h)anthracene	27.12	278	263693	434.75	ng/ml	99
59) Benzo(g,h,i)perylene	27.57	276	278243	396.59	ng/ml	99

(#) = qualifier out of range (m) = manual integration
0227F005.D 110217PAH.M Wed Feb 28 08:58:54 2018

Data File : J:\MS20\DATA\022718\0227F005.D
Acq On : 27 Feb 2018 1:15 pm
Sample : K1801257-001MS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 28 8:53 2018

Vial: 5
Operator: Lweiskopf
Inst : MS20
Multiplr: 1.00
Quant Results File: 110217PAH.RES

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 28 08:52:31 2018
Response via : Initial Calibration



TIC: 0227F005.D

Quantitation Report

Data File:	J:\MS20\DATA\022718\0227F006.D	Instrument:	MS20
Acqu Date:	02/27/2018 13:54	Quant Date:	02/28/2018 08:53
Run Type:	DMS	MethodJoinID:	MJ1651
Lab ID:	KWG1801007-2 -- K1801257-001DMS	Vial:	6
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	SOIL
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	02/28/2018

Analysis Lot:	KWG1801193	Prep Lot:	KWG1801007	Report Group:	
Analysis Method:	8270D SIM	Prep Method:	EPA 3546		
Prep Ref:	1664507	Prep Date:	02/19/2018		

Quant Method:	J:\MS20\METHODS\110217PAH.M	Calibration ID:	CAL15594
Title:		Method ID:	MJ1651
Tune Ref:	J:\MS20\DATA\022718\0227F001.D	Quant based on Method	
MB Ref:	J:\MS20\DATA\022718\0227F003.D		

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	102921	200.00	OK
2	Acenaphthene-d10	8.31	0.01	164	48677	200.00	OK
3	Phenanthrene-d10	11.50	0.00	188	100669	200.00	OK
4	Chrysene-d12	18.84	0.00	240	113482	200.00	OK
5	Perylene-d12	23.14	0.00	264	119828	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	6.72	0.00	0.00	152	37027	143.71	72	70-130	OK
2	Fluorene-d10	9.31	0.00	0.00	176	39999	128.57	64	38-104	OK
3	Fluoranthene-d10	14.68	0.01	0.00	212	79434	136.70	68	39-109	OK
4	Terphenyl-d14	15.99	0.01	0.00	244	69642	143.94	72	38-113	OK

Target Compounds

							Final Conc. Units:		ug/Kg Dry Weight	
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	186110	353.99	426		
1	2-Methylnaphthalene	6.76		0.00	142	126654	360.74	434		
1	1-Methylnaphthalene	6.89		0.00	142	115974	370.94	446		
1	Biphenyl	7.39		0.00	154	154769	368.00	443		
1	2,6-Dimethylnaphthalene	7.62	-0.01	0.00	156	112406	369.03	444		
1	C1-Naphthalenes				142	0		6.1		U
1	C2-Naphthalenes				156	0		6.1		U
1	C3-Naphthalenes				170	0		6.1		U
1	C4-Naphthalenes				184	0		6.1		U
2	Acenaphthylene	8.06		0.00	152	190281	385.75	464		
2	Acenaphthene	8.36		0.00	154	113565	373.45	449		
2	Dibenzofuran	8.69		0.00	168	173668	379.58	457		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS20\DATA\022718\0227F006.D	Instrument:	MS20
Acqu Date:	02/27/2018 13:54	Quant Date:	02/28/2018 08:53
Run Type:	DMS	MethodJoinID:	MJ1651
Lab ID:	KWG1801007-2 -- K1801257-001DMS	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

						Final Conc. Units:		ug/Kg Dry Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	2,3,5-Trimethylnaphthalene	9.11		0.00	170	114852	409.00	492		
2	Fluorene	9.37		0.00	166	140343	385.56	464		
2	C1-Fluorenes				180	0		6.1	U	
2	C2-Fluorenes				194	0		6.1	U	
2	C3-Fluorenes				208	0		6.1	U	
3	Dibenzothiophene	11.24		0.00	184	180727	336.33	405		
3	C1-Dibenzothiophenes				198	0		6.1	U	
3	C2-Dibenzothiophenes				212	0		6.1	U	
3	C3-Dibenzothiophenes				226	0		6.1	U	
3	C4-Dibenzothiophenes				240	0		6.1	U	
3	Phenanthrene	11.56		0.00	178	220894	374.79	451		
3	Anthracene	11.68		0.00	178	210062	382.84	461		
3	Carbazole	12.16		0.00	167	194037	404.65	487		
3	1-Methylphenanthrene	13.18	0.01	0.00	192	168731	403.03	485		
3	C1-Phenanthrenes/Anthracenes				192	0		6.1	U	
3	C2-Phenanthrenes/Anthracenes				206	0		6.1	U	
3	C3-Phenanthrenes/Anthracenes				220	0		6.1	U	
3	C4-Phenanthrenes/Anthracenes				234	0		6.1	U	
3	Fluoranthene	14.73		0.00	202	271197	422.73	509		
4	Pyrene	15.33		0.00	202	278880	435.48	524		
4	C1-Fluoranthenes/Pyrenes				216	0		6.1	U	
4	C2-Fluoranthenes/Pyrenes				230	0		6.1	U	
4	C3-Fluoranthenes/Pyrenes				244	0		6.1	U	
4	C4-Fluoranthenes/Pyrenes				258	0		6.1	U	
4	Benz(a)anthracene	18.83		0.00	228	273446	443.90	534		
4	Chrysene	18.92		0.00	228	262069	426.84	514		
4	C1-Chrysenes				242	0		6.1	U	
4	C2-Chrysenes				256	0		6.1	U	
4	C3-Chrysenes				270	0		6.1	U	
4	C4-Chrysenes				284	0		6.1	U	
5	Benzo(b)fluoranthene	21.92		0.00	252	295164	431.81	520		
5	Benzo(k)fluoranthene	22.01		0.00	252	286338	414.70	499		
5	Benzo(e)pyrene	22.77		0.00	252	280022	421.87	508		
5	Benzo(a)pyrene	22.94		0.00	252	256605	435.30	524		
5	Perylene	23.22	-0.01	0.00	252	259150	417.02	502		
5	Indeno(1,2,3-cd)pyrene	26.99	-0.01	0.00	276	259845	426.78	514		
5	Dibenz(a,h)anthracene	27.12		0.00	278	263392	417.64	503		
5	Benzo(g,h,i)perylene	27.57		0.00	276	281420	385.76	464		

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File:	J:\MS20\DATA\022718\0227F006.D	Instrument:	MS20
Acqu Date:	02/27/2018 13:54	Quant Date:	02/28/2018 08:53
Run Type:	DMS	MethodJoinID:	MJ1651
Lab ID:	KWG1801007-2 -- K1801257-001DMS	Vial:	6
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Prep Amount: 10.098 g **Dilution:** 1.0
Prep Final Vol: 10 mL **Unit Factor:** 1
Solids: 82.3 %

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F006.D
 Acq On : 27 Feb 2018 1:54 pm
 Sample : K1801257-001DMS
 Misc :

Vial: 6
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:19 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	102921	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.31	164	48677	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.50	188	100669	200.00	ng/ml	-0.02
38) Chrysene-d12	18.84	240	113482	200.00	ng/ml	-0.03
51) Perylene-d12	23.14	264	119828	200.00	ng/ml	-0.03

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	37027	143.71	ng/ml	-0.01
Spiked Amount	1000.000		Recovery	=	14.37%	
17) Fluorene-d10	9.31	176	39999	128.57	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	12.86%	
37) Fluoranthene-d10	14.68	212	79434	136.70	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	13.67%	
44) Terphenyl-d14	15.99	244	69642	143.94	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	14.39%	

Target Compounds

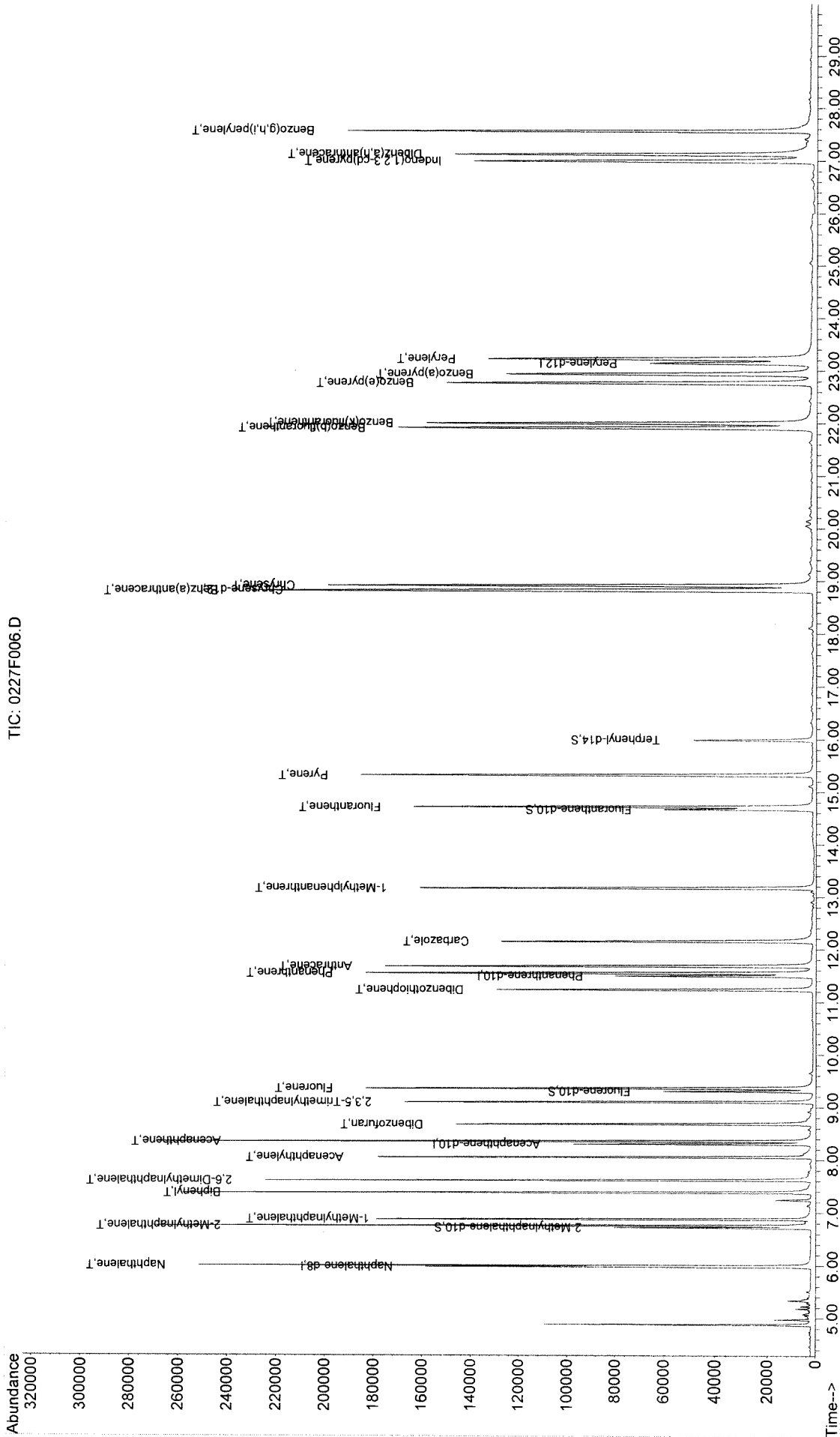
						Qvalue
2) Naphthalene	6.00	128	186110	353.99	ng/ml	100
4) 2-Methylnaphthalene	6.76	142	126654	360.74	ng/ml	93
5) 1-Methylnaphthalene	6.89	142	115974	370.94	ng/ml	86
6) Biphenyl	7.39	154	154769	368.00	ng/ml	97
7) 2,6-Dimethylnaphthalene	7.62	156	112406	369.03	ng/ml	93
13) Acenaphthylene	8.06	152	190281	385.75	ng/ml	100
14) Acenaphthene	8.36	154	113565	373.45	ng/ml	100
15) Dibenzofuran	8.69	168	173668	379.58	ng/ml	95
16) 2,3,5-Trimethylnaphthalene	9.11	170	114852	409.00	ng/ml	92
18) Fluorene	9.37	166	140343	385.56	ng/ml	98
23) Dibenzothiophene	11.24	184	180727	336.33	ng/ml	99
28) Phenanthrene	11.56	178	220894	374.79	ng/ml	99
29) Anthracene	11.68	178	210062	382.84	ng/ml	99
30) Carbazole	12.16	167	194037	404.65	ng/ml	100
31) 1-Methylphenanthrene	13.18	192	168731	403.03	ng/ml	98
36) Fluoranthene	14.73	202	271197	422.73	ng/ml	99
39) Pyrene	15.33	202	278880	435.48	ng/ml	95
45) Benz(a)anthracene	18.83	228	273446	443.90	ng/ml	99
46) Chrysene	18.92	228	262069	426.84	ng/ml	100
52) Benzo(b)fluoranthene	21.92	252	295164	431.81	ng/ml	99
53) Benzo(k)fluoranthene	22.01	252	286338	414.70	ng/ml	100
54) Benzo(e)pyrene	22.77	252	280022	421.87	ng/ml	99
55) Benzo(a)pyrene	22.94	252	256605	435.30	ng/ml	99
56) Perylene	23.22	252	259150	417.02	ng/ml	99
57) Indeno(1,2,3-cd)pyrene	26.99	276	259845	426.78	ng/ml	98
58) Dibenz(a,h)anthracene	27.12	278	263392	417.64	ng/ml	98
59) Benzo(g,h,i)perylene	27.57	276	281420	385.76	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 0227F006.D 110217PAH.M Wed Feb 28 08:58:57 2018

Data File : J:\MS20\DATA\022718\0227F006.D
 Acq On : 27 Feb 2018 1:54 pm
 Sample : K1801257-001DMS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 8:53 2018

Vial: 6
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00
 Quant Results File: 110217PAH.RES

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration



Exception Report


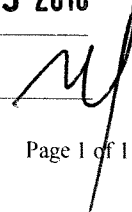
Data File: J:\MS14\DATA\021418\0214F007.D
Lab ID: KWG1800892-1
RunType: LCS
Matrix: WATER

Date Acquired: 02/14/2018 08:04
Date Quantitated: 02/14/2018 13:16
Batch ID: KWG1800938
Analysis Method: 8270D SIM
MethodJoinID: MJ1638

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K1041 (RX)
 K1267
 K1300

Primary Review:  **FEB 15 2018**
 Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\021418\0214F007.D	Instrument: MS14
Acqu Date: 02/14/2018 08:04	Quant Date: 02/14/2018 13:16
Run Type: LCS	MethodJoinID: MJ1638
Lab ID: KWG1800892-1	Vial: 7
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/13/2018

Analysis Lot: KWG1800938	Prep Lot: KWG1800892	Report Group:
Analysis Method: 8270D SIM	Prep Method: EPA 3511	
Prep Ref: 1663653	Prep Date: 02/13/2018	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title:	
Tune Ref: J:\MS14\DATA\021418\0214F001.D	Method ID: MJ1638
MB Ref: J:\MS14\DATA\021418\0214F006.D	Quant based on Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.73	0.01	136	48368m	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	21491	200.00	OK
3	Phenanthrene-d10	7.51	0.00	188	43999	200.00	OK
4	Chrysene-d12	10.01	-0.01	240	46197	200.00	OK
5	Perylene-d12	13.02	-0.01	264	45842	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	144560	983.30	98	42-131	OK
3	Fluoranthene-d10	8.49	0.00	0.00	212	279698	1,012	101	42-133	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	176780	907.57	91	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Final Conc. Units:	Q	Rpt?
1	Naphthalene	4.75	0.01	0.00	128	170283m	618.05	2.75	ug/L		
1	2-Methylnaphthalene	5.39	0.01	0.00	142	102197	532.80	2.37			
1	1-Methylnaphthalene	5.47		0.00	142	98109	578.67	2.57			
1	Biphenyl	5.79		0.00	154	131628	542.17	2.41			
1	2,6-Dimethylnaphthalene	5.93		0.00	156	92977	538.90	2.40			
2	Acenaphthylene	6.16		0.00	152	175022	665.54	2.96			
2	Acenaphthene	6.31		0.00	154	98720	667.58	2.97			
2	Dibenzofuran	6.45		0.00	168	169566	729.78	3.24			
2	2,3,5-Trimethylnaphthalene	6.63		0.00	170	91377	610.95	2.72			
2	Fluorene	6.74		0.00	166	118850	652.11	2.90			
3	Dibenzothiophene	7.43		0.00	184	196601	704.72	3.13			
3	Phenanthrene	7.53		0.00	178	181872	666.60	2.96			
3	Anthracene	7.57		0.00	178	184646	686.19	3.05			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\021418\0214F007.D	Instrument:	MS14
Acqu Date:	02/14/2018 08:04	Quant Date:	02/14/2018 13:16
Run Type:	LCS	MethodJoinID:	MJ1638
Lab ID:	KWG1800892-1	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole	7.71		0.00	167	92576	379.59	1.69		
3	1-Methylphenanthrene	8.04		0.00	192	139690	673.38	2.99		
3	Fluoranthene	8.51		0.00	202	206750	638.28	2.84		
4	Pyrene	8.70		0.00	202	220828	791.95	3.52		
4	Benzo(a)anthracene	10.00		0.00	228	198819	713.69	3.17		
4	Chrysene	10.05		0.00	228	193340	742.23	3.30		
5	Benzo(b)fluoranthene	12.01		0.00	252	201791	697.26	3.10		
5	Benzo(k)fluoranthene	12.08		0.00	252	207612	730.37	3.25		
5	Benzo(e)pyrene	12.71		0.00	252	195505	708.20	3.15		
5	Benzo(a)pyrene	12.86		0.00	252	177669	702.32	3.12		
5	Perylene	13.11	0.01	0.00	252	182409	731.96	3.25		
5	Indeno(1,2,3-cd)pyrene	15.31		0.00	276	151367	666.05	2.96		
5	Dibenz(a,h)anthracene	15.36	-0.01	0.00	278	149837	647.55	2.88		
5	Benzo(g,h,i)perylene	15.69		0.00	276	183426	725.43	3.22		

Prep Amount: 450 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\021418\0214F007.D

Vial: 7

Acq On : 14 Feb 2018 8:04 am

Operator: LWeiskopf

Sample : KWG1800892-1 LCS

Inst : MS14

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Feb 14 12:54:21 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Wed Feb 14 12:53:50 2018

Response via : Initial Calibration

DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.73	136	48368m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	21491	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.51	188	43999	200.00	ng/ml	0.00
23) Chrysene-d12	10.01	240	46197	200.00	ng/ml	0.00
28) Perylene-d12	13.02	264	45842	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.36	152	126162	972.90	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	97.29%	
13) Fluorene-d10	6.72	176	144560	983.30	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	98.33%	
22) Fluoranthene-d10	8.49	212	279698	1011.71	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	101.17%	
25) Terphenyl-d14	8.84	244	176780	907.57	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	90.76%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.75	128	170283m	618.05	ng/ml	
4) 2-Methylnaphthalene	5.39	142	102197	532.80	ng/ml	97
5) 1-Methylnaphthalene	5.47	142	98109	578.67	ng/ml	96
6) Biphenyl	5.79	154	131628	542.17	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.93	156	92977	538.90	ng/ml	98
9) Acenaphthylene	6.16	152	175022	665.54	ng/ml	99
10) Acenaphthene	6.31	154	98720	667.58	ng/ml	96
11) Dibenzofuran	6.45	168	169566	729.78	ng/ml	92
12) 2,3,5-Trimethylnaphthalene	6.63	170	91377	610.95	ng/ml	94
14) Fluorene	6.74	166	118850	652.11	ng/ml	99
16) Dibenzothiophene	7.43	184	196601	704.72	ng/ml	98
17) Phenanthrene	7.53	178	181872	666.60	ng/ml	99
18) Anthracene	7.57	178	184646	686.19	ng/ml	99
19) Carbazole	7.71	167	92576	379.59	ng/ml	99
20) 1-Methylphenanthrene	8.04	192	139690	673.38	ng/ml	99
21) Fluoranthene	8.51	202	206750	638.28	ng/ml	98
24) Pyrene	8.70	202	220828	791.95	ng/ml	98
26) Benz(a)anthracene	10.00	228	198819	713.69	ng/ml	99
27) Chrysene	10.05	228	193340	742.23	ng/ml	100
29) Benzo(b)fluoranthene	12.01	252	201791	697.26	ng/ml	98
30) Benzo(k)fluoranthene	12.08	252	207612	730.37	ng/ml	98
31) Benzo(e)pyrene	12.71	252	195505	708.20	ng/ml	96
32) Benzo(a)pyrene	12.86	252	177669	702.32	ng/ml	98
33) Perylene	13.11	252	182409	731.96	ng/ml	97
34) Indeno(1,2,3-cd)pyrene	15.31	276	151367	666.05	ng/ml	96
35) Dibenz(a,h)anthracene	15.36	278	149837	647.55	ng/ml	97
36) Benzo(g,h,i)perylene	15.69	276	183426	725.43	ng/ml	95

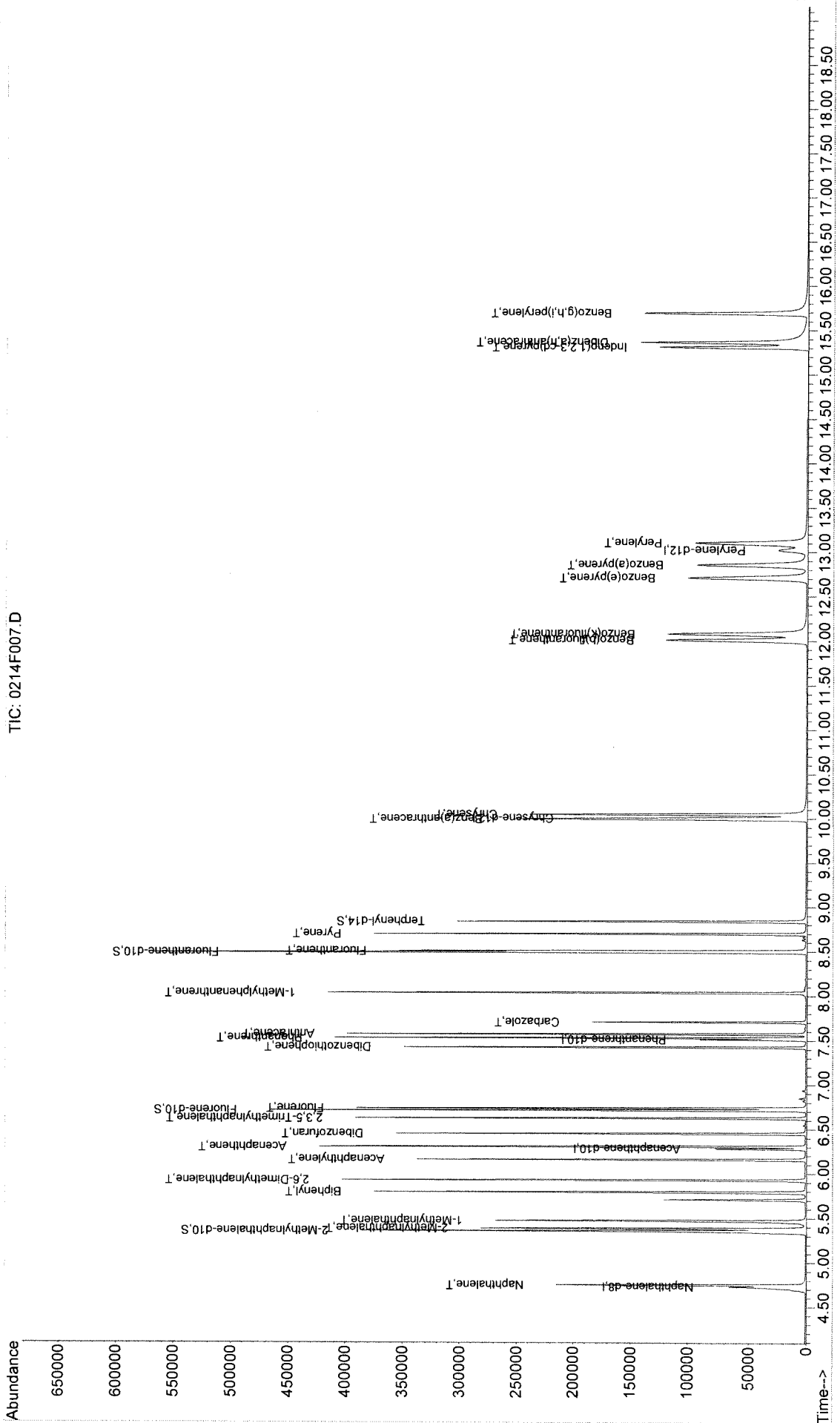
(#) = qualifier out of range (m) = manual integration

0214F007.D 101317PAH.M Wed Feb 14 13:18:27 2018

Data File : J:\MS14\DATA\021418\0214F007.D
Acq On : 14 Feb 2018 8:04 am
Sample : KWG1800892-1 LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:16 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Initial Calibration



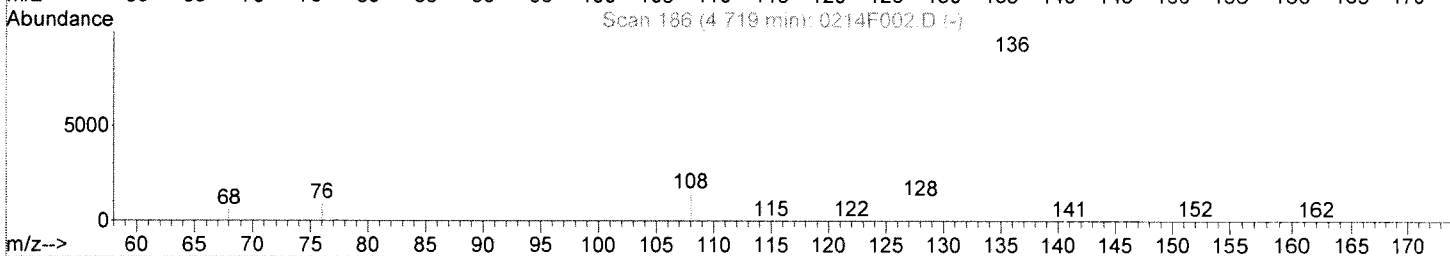
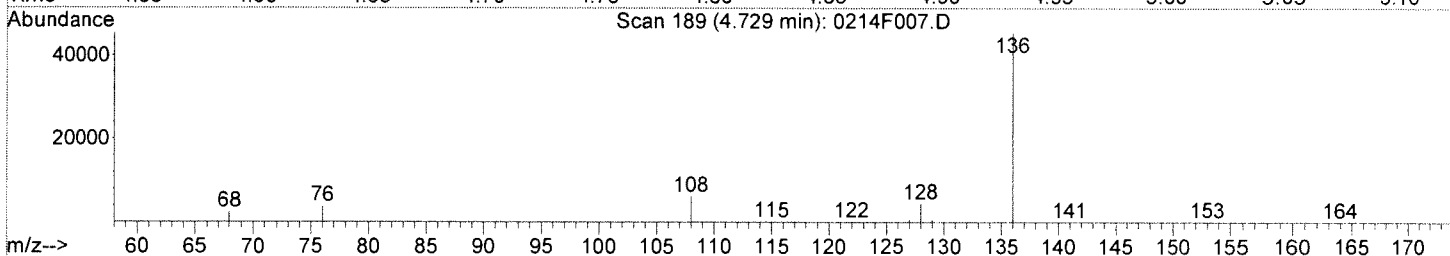
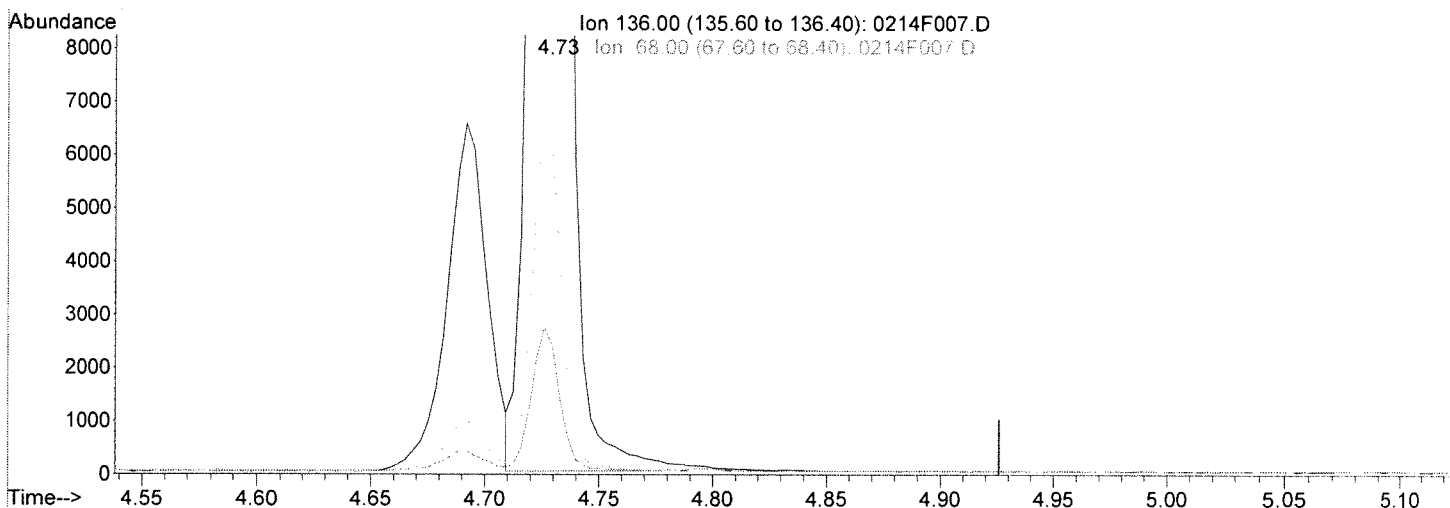
TIC: 0214F007.D

Data File : J:\MS14\DATA\021418\0214F007.D
 Acq On : 14 Feb 2018 8:04 am
 Sample : KWG1800892-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 12:54 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F007.D

(1) Naphthalene-d8 (I)

4.73min 200.00ng/ml

response 40361

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.19
108.00	10.50	13.42
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

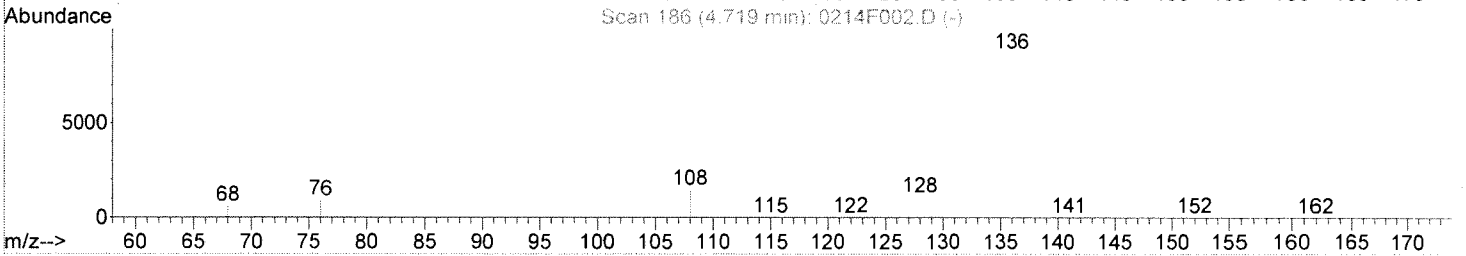
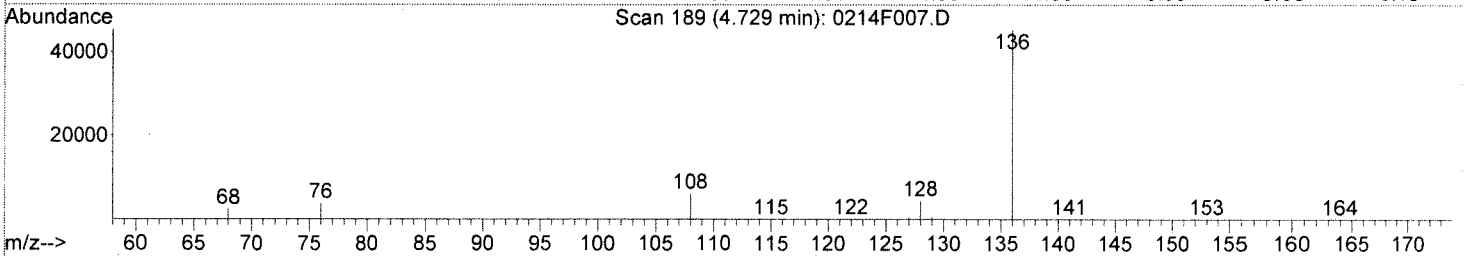
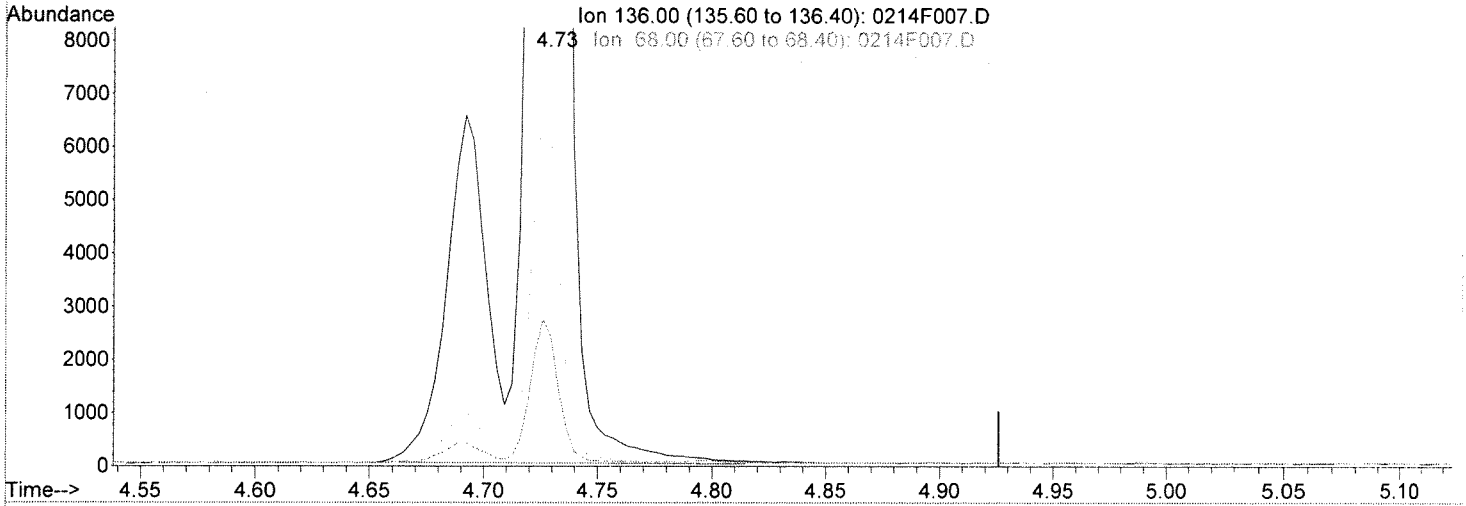
Handwritten signature and date

Data File : J:\MS14\DATA\021418\0214F007.D
 Acq On : 14 Feb 2018 8:04 am
 Sample : KWG1800892-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 13:16 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F007.D

(1) Naphthalene-d8 (I)
 4.73min 200.00ng/ml m
 response 48368

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.33
108.00	10.50	13.53
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 02/14/18

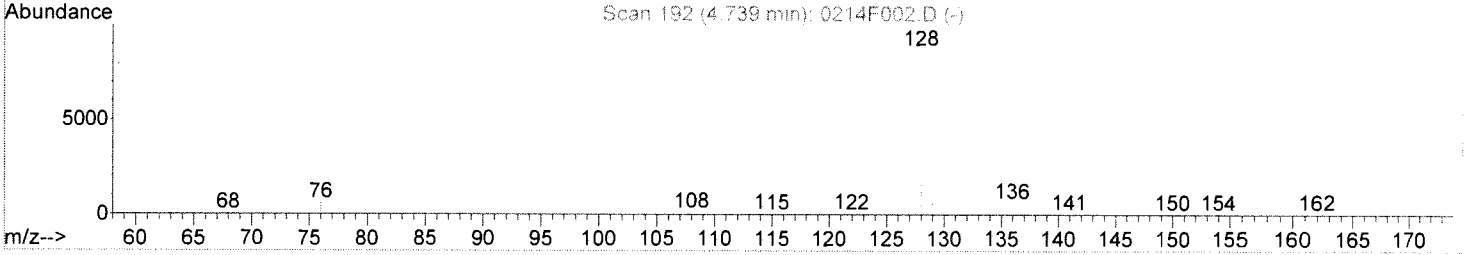
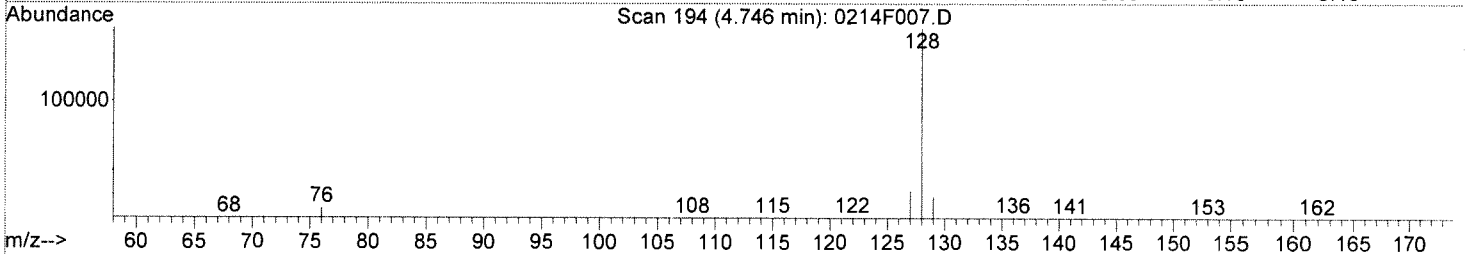
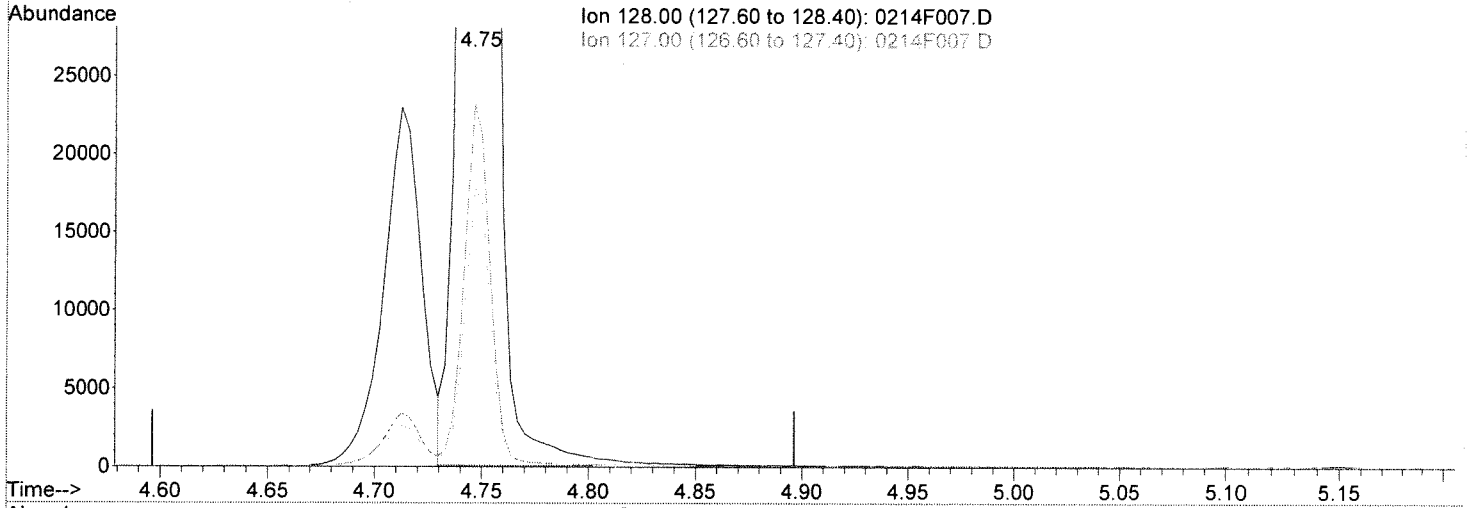
Handwritten signature/initials

Data File : J:\MS14\DATA\021418\0214F007.D
Acq On : 14 Feb 2018 8:04 am
Sample : KWG1800892-1 LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:16 2018

Vial: 7
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F007.D

(2) Naphthalene (T)

4.75min 513.76ng/ml

response 141549

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	14.23
129.00	20.50	10.89
0.00	0.00	0.00

Manual Integration:

Before

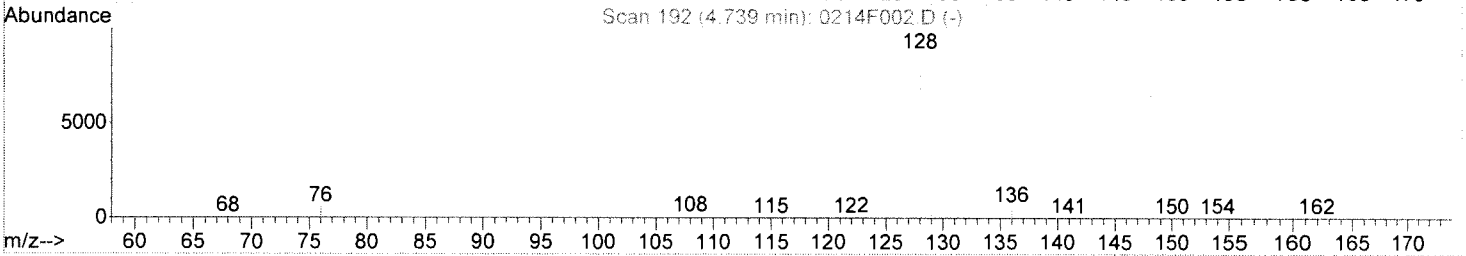
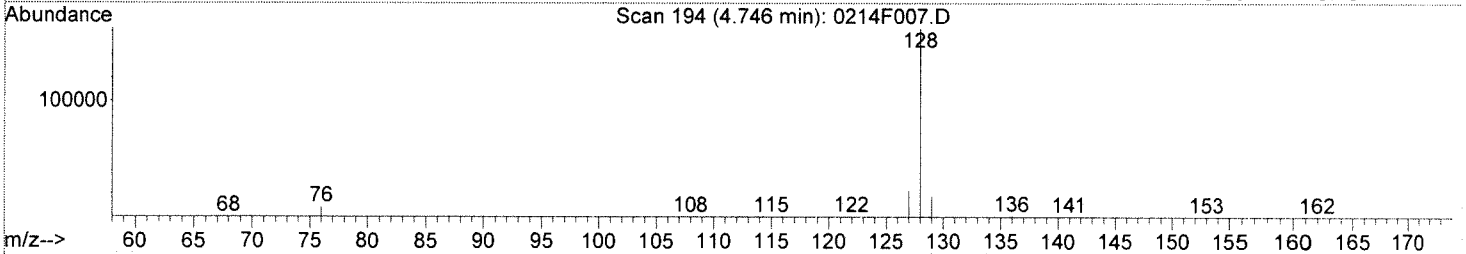
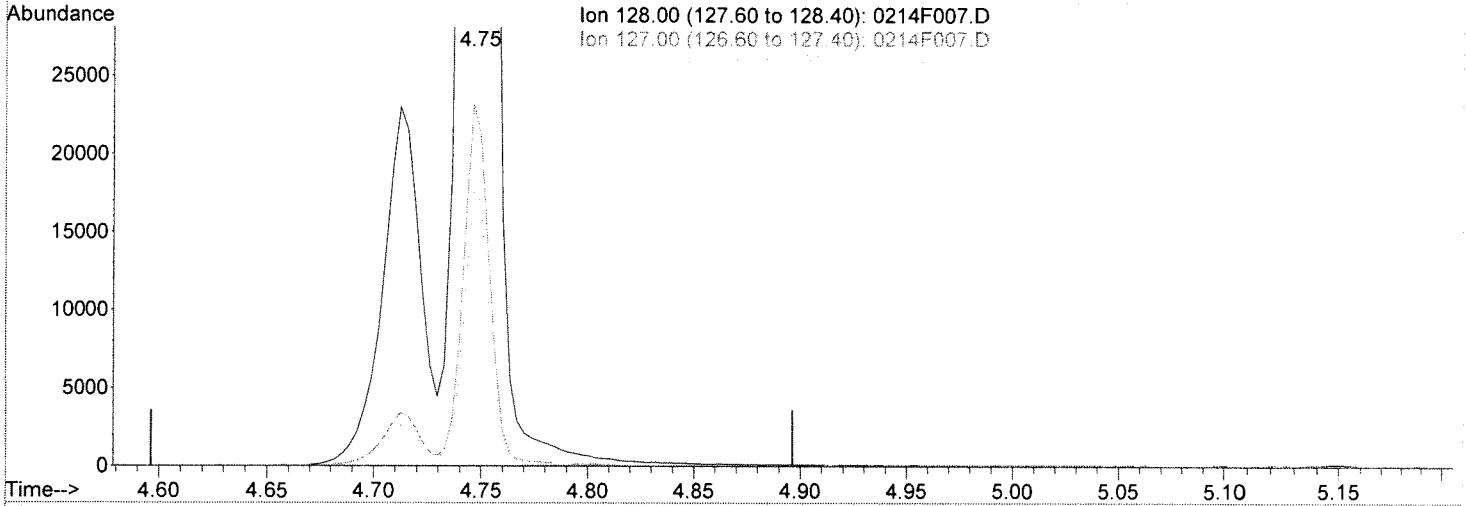
02/14/18

Data File : J:\MS14\DATA\021418\0214F007.D
 Acq On : 14 Feb 2018 8:04 am
 Sample : KWG1800892-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 13:16 2018

Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F007.D

(2) Naphthalene (T)
 4.75min 618.05ng/ml m
 response 170283

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	14.25
129.00	20.50	10.92
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 02/14/18

Quantitation Report

Data File:	J:\MS14\DATA\021418\0214F008.D	Instrument:	MS14
Acqu Date:	02/14/2018 08:27	Quant Date:	02/14/2018 13:17
Run Type:	DLCS	MethodJoinID:	MJ1638
Lab ID:	KWG1800892-2	Vial:	8
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	02/13/2018

Analysis Lot:	KWG1800938	Prep Lot:	KWG1800892	Report Group:	
Analysis Method:	8270D SIM	Prep Method:	EPA 3511		
Prep Ref:	1663654	Prep Date:	02/13/2018		

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:		Method ID:	MJ1638
Tune Ref:	J:\MS14\DATA\021418\0214F001.D	Quant based on Method	
MB Ref:	J:\MS14\DATA\021418\0214F006.D		

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.73	0.01	136	47696m	200.00	OK
2	Acenaphthene-d10	6.28	0.00	164	21337	200.00	OK
3	Phenanthrene-d10	7.51	0.00	188	43802	200.00	OK
4	Chrysene-d12	10.01	-0.01	240	46165	200.00	OK
5	Perylene-d12	13.02	-0.01	264	45984	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.72	0.00	0.00	176	138823	951.09	95	42-131	OK
3	Fluoranthene-d10	8.49	0.00	0.00	212	274317	996.71	100	42-133	OK
4	Terphenyl-d14	8.84	0.00	0.00	244	163351	839.20	84	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Final Conc. Units:	Q	Rpt?
1	Naphthalene	4.75	0.01	0.00	128	162796m	599.20	2.66	ug/L		
1	2-Methylnaphthalene	5.39	0.01	0.00	142	98784	522.26	2.32			
1	1-Methylnaphthalene	5.47		0.00	142	94522	565.37	2.51			
1	Biphenyl	5.79		0.00	154	126385	527.91	2.35			
1	2,6-Dimethylnaphthalene	5.93		0.00	156	89349	525.17	2.33			
2	Acenaphthylene	6.16		0.00	152	170609	653.45	2.90			
2	Acenaphthene	6.31		0.00	154	95450	650.13	2.89			
2	Dibenzofuran	6.45		0.00	168	151791	657.99	2.92			
2	2,3,5-Trimethylnaphthalene	6.63		0.00	170	88504	596.01	2.65			
2	Fluorene	6.74		0.00	166	115606	638.89	2.84			
3	Dibenzothiophene	7.43		0.00	184	190924	687.45	3.06			
3	Phenanthrene	7.53		0.00	178	177748	654.41	2.91			
3	Anthracene	7.57		0.00	178	177341	662.01	2.94			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\021418\0214F008.D
Acqu Date: 02/14/2018 08:27
Run Type: DLCS
Lab ID: KWG1800892-2

Quant Date: 02/14/2018 13:17
MethodJoinID: MJ1638

Instrument: MS14
Vial: 8
Dilution: 1.0
Soln Conc. Units: ng/ml

Target Compounds

						Final Conc. Units: ug/L				
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole	7.71		0.00	167	90940	374.56	1.66		
3	1-Methylphenanthrene	8.04		0.00	192	135414	655.70	2.91		
3	Fluoranthene	8.51		0.00	202	199051	617.27	2.74		
4	Pyrene	8.70		0.00	202	214583	770.09	3.42		
4	Benz(a)anthracene	10.00		0.00	228	193753	695.99	3.09		
4	Chrysene	10.05		0.00	228	185560	712.86	3.17		
5	Benzo(b)fluoranthene	12.01		0.00	252	197939	681.84	3.03		
5	Benzo(k)fluoranthene	12.08		0.00	252	199184	698.56	3.10		
5	Benzo(e)pyrene	12.71		0.00	252	189628	684.79	3.04		
5	Benzo(a)pyrene	12.86		0.00	252	171685	676.57	3.01		
5	Perylene	13.10		0.00	252	176917	707.73	3.15		
5	Indeno(1,2,3-cd)pyrene	15.31		0.00	276	146075	640.77	2.85		
5	Dibenz(a,h)anthracene	15.36	-0.01	0.00	278	144768	623.71	2.77		
5	Benzo(g,h,i)perylene	15.69		0.00	276	177440	699.59	3.11		

Prep Amount: 450 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Wed Feb 14 12:53:50 2018

Response via : Initial Calibration

DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.73	136	47696m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	21337	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.51	188	43802	200.00	ng/ml	0.00
23) Chrysene-d12	10.01	240	46165	200.00	ng/ml	0.00
28) Perylene-d12	13.02	264	45984	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.36	152	117785	921.10	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	92.11%	
13) Fluorene-d10	6.72	176	138823	951.09	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	95.11%	
22) Fluoranthene-d10	8.49	212	274317	996.71	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	99.67%	
25) Terphenyl-d14	8.84	244	163351	839.20	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	83.92%	

Target Compounds

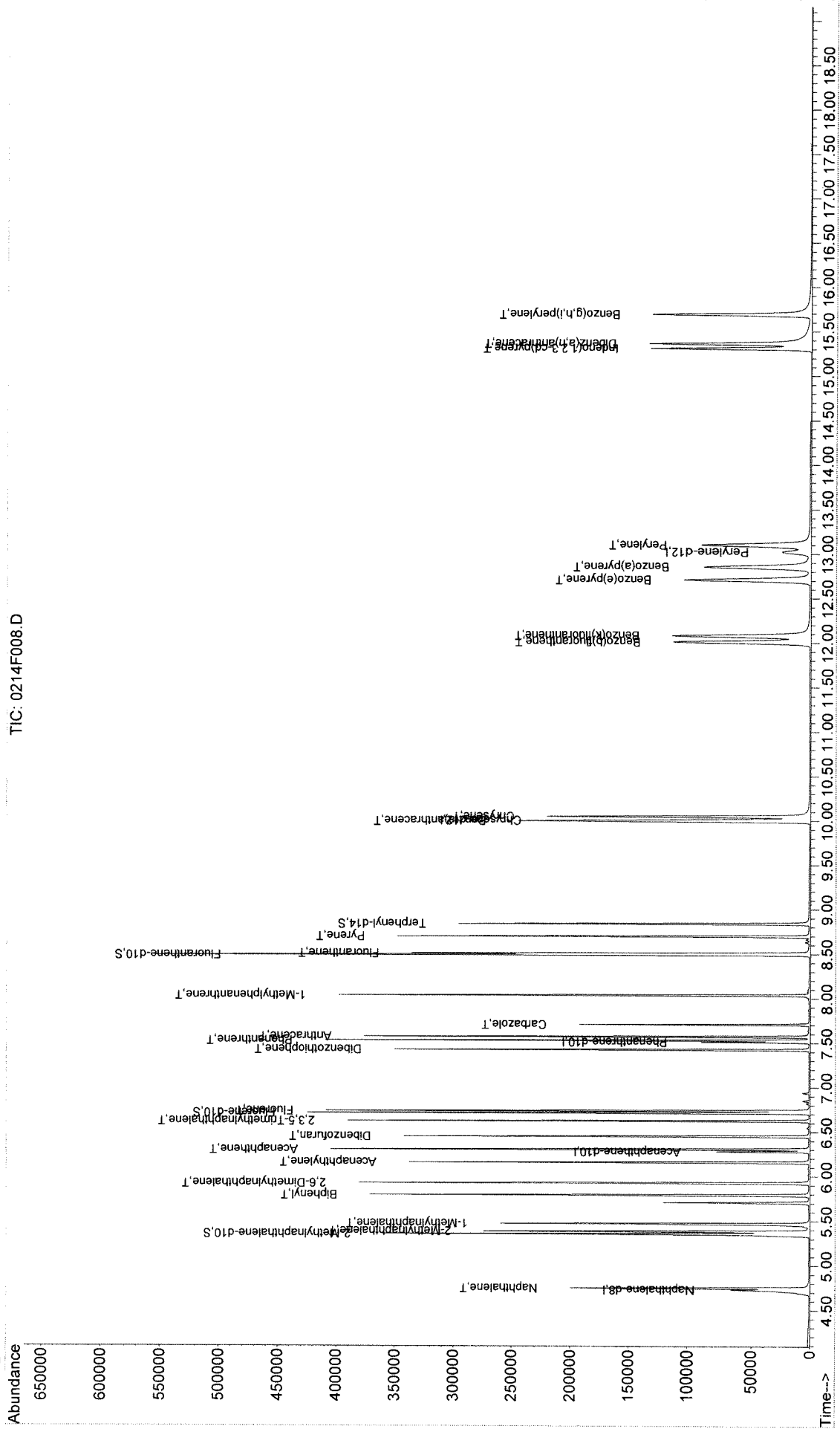
						Qvalue
2) Naphthalene	4.75	128	162796m	599.20	ng/ml	
4) 2-Methylnaphthalene	5.39	142	98784	522.26	ng/ml	97
5) 1-Methylnaphthalene	5.47	142	94522	565.37	ng/ml	97
6) Biphenyl	5.79	154	126385	527.91	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.93	156	89349	525.17	ng/ml	98
9) Acenaphthylene	6.16	152	170609	653.45	ng/ml	99
10) Acenaphthene	6.31	154	95450	650.13	ng/ml	95
11) Dibenzofuran	6.45	168	151791	657.99	ng/ml	99
12) 2,3,5-Trimethylnaphthalene	6.63	170	88504	596.01	ng/ml	95
14) Fluorene	6.74	166	115606	638.89	ng/ml	100
16) Dibenzothiophene	7.43	184	190924	687.45	ng/ml	100
17) Phenanthrene	7.53	178	177748	654.41	ng/ml	100
18) Anthracene	7.57	178	177341	662.01	ng/ml	99
19) Carbazole	7.71	167	90940	374.56	ng/ml	99
20) 1-Methylphenanthrene	8.04	192	135414	655.70	ng/ml	100
21) Fluoranthene	8.51	202	199051	617.27	ng/ml	99
24) Pyrene	8.70	202	214583	770.09	ng/ml	97
26) Benz(a)anthracene	10.00	228	193753	695.99	ng/ml	99
27) Chrysene	10.05	228	185560	712.86	ng/ml	99
29) Benzo(b)fluoranthene	12.01	252	197939	681.84	ng/ml	98
30) Benzo(k)fluoranthene	12.08	252	199184	698.56	ng/ml	98
31) Benzo(e)pyrene	12.71	252	189628	684.79	ng/ml	96
32) Benzo(a)pyrene	12.86	252	171685	676.57	ng/ml	98
33) Perylene	13.10	252	176917	707.73	ng/ml	97
34) Indeno(1,2,3-cd)pyrene	15.31	276	146075	640.77	ng/ml	96
35) Dibenz(a,h)anthracene	15.36	278	144768	623.71	ng/ml	97
36) Benzo(g,h,i)perylene	15.69	276	177440	699.59	ng/ml	96

(#) = qualifier out of range (m) = manual integration

Data File : J:\MS14\DATA\021418\0214F008.D
Acq On : 14 Feb 2018 8:27 am
Sample : KWG1800892-2 DLCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:17 2018

Vial: 8
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Initial Calibration

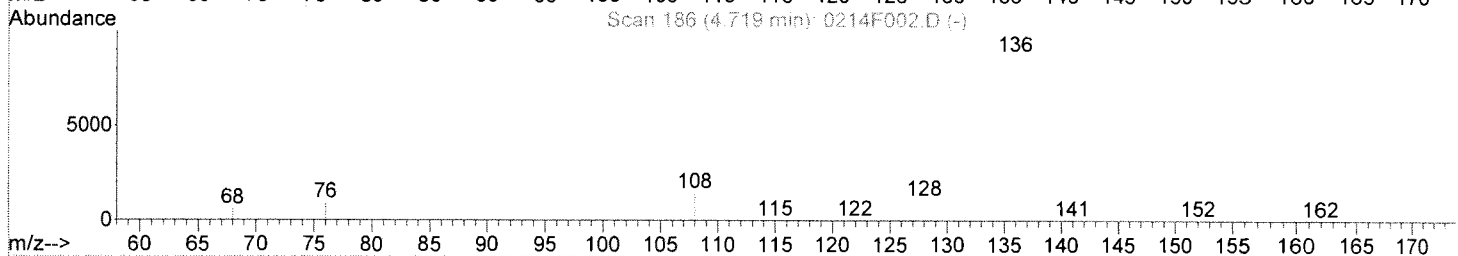
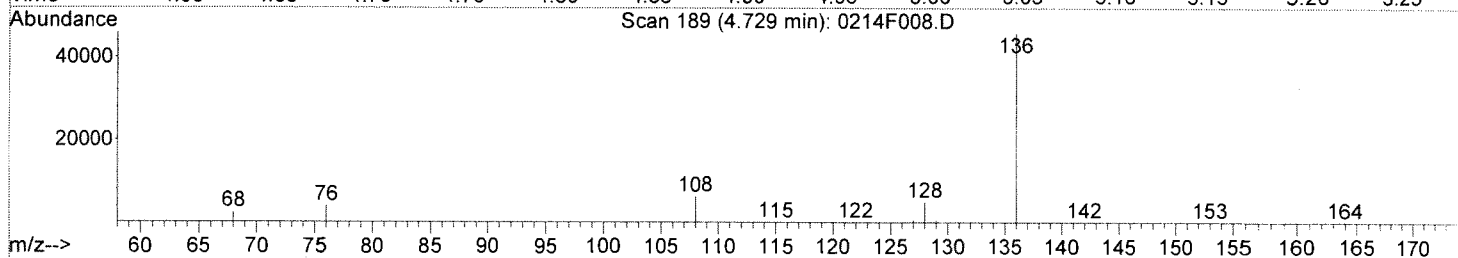
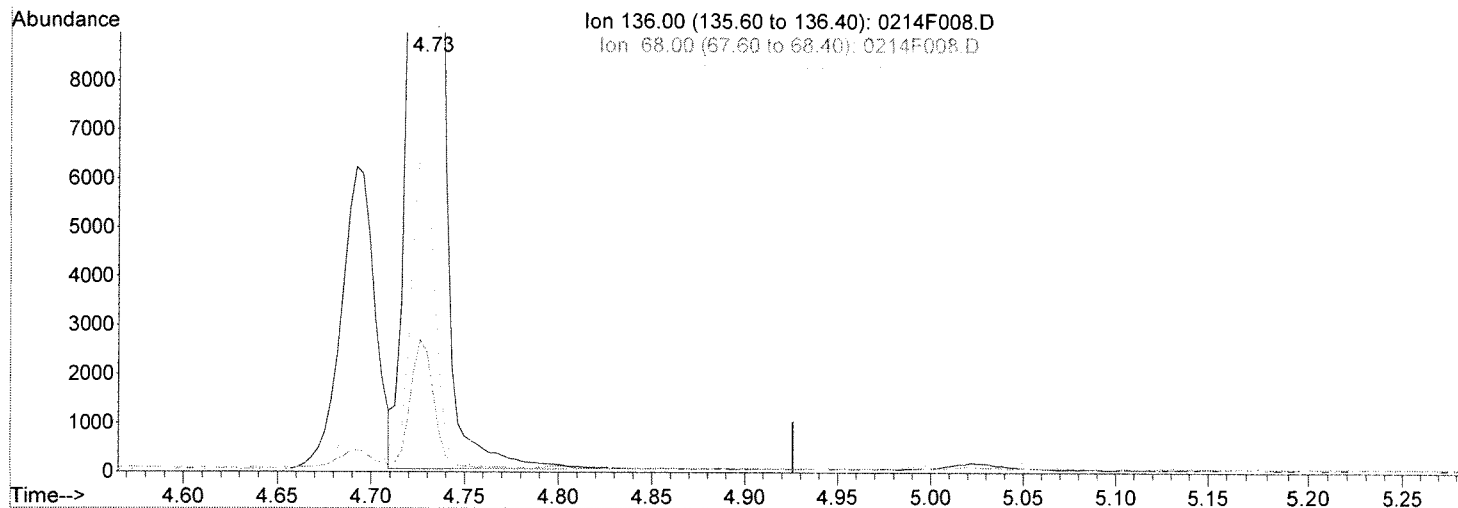


Data File : J:\MS14\DATA\021418\0214F008.D
 Acq On : 14 Feb 2018 8:27 am
 Sample : KWG1800892-2 DLCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 12:54 2018

Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F008.D

(1) Naphthalene-d8 (I)

4.73min 200.00ng/ml

response 39884

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.17
108.00	10.50	13.57
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

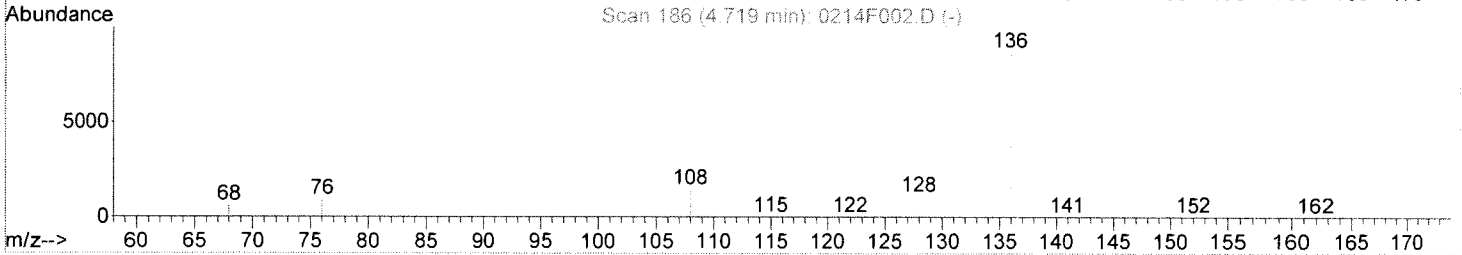
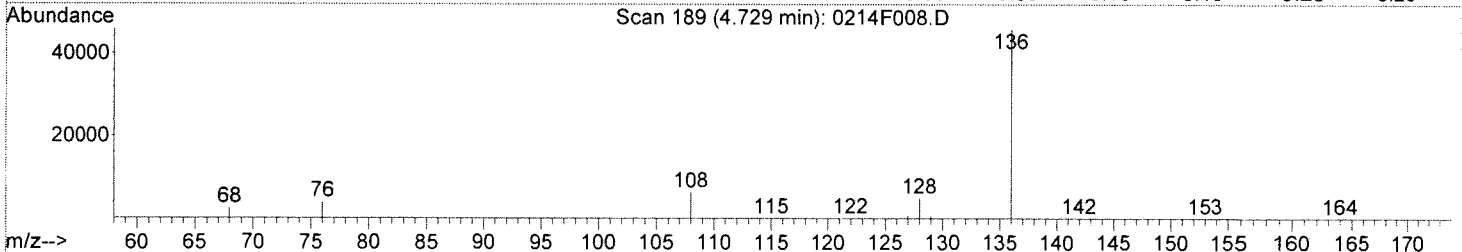
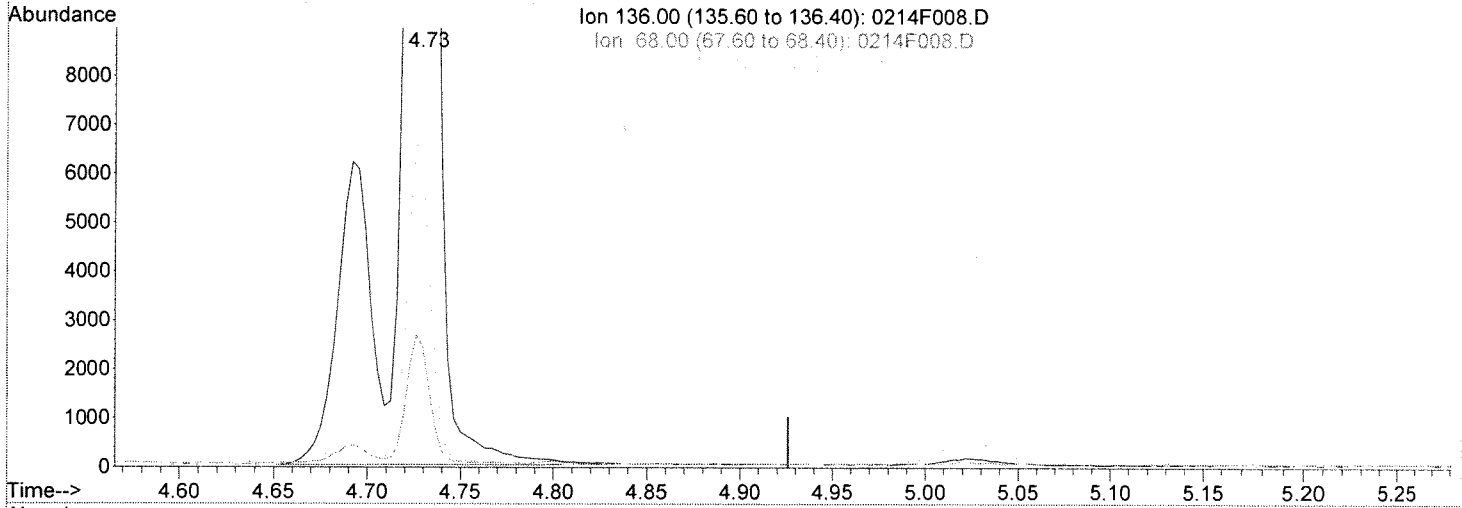
Handwritten signature

Data File : J:\MS14\DATA\021418\0214F008.D
Acq On : 14 Feb 2018 8:27 am
Sample : KWG1800892-2 DLCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:17 2018

Vial: 8
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F008.D

(1) Naphthalene-d8 (I)

4.73min 200.00ng/ml m

response 47696

Ion	Exp%	Act%
136.00	100	100
68.00	4.70	5.32
108.00	10.50	13.67
0.00	0.00	0.00

Manual Integration:

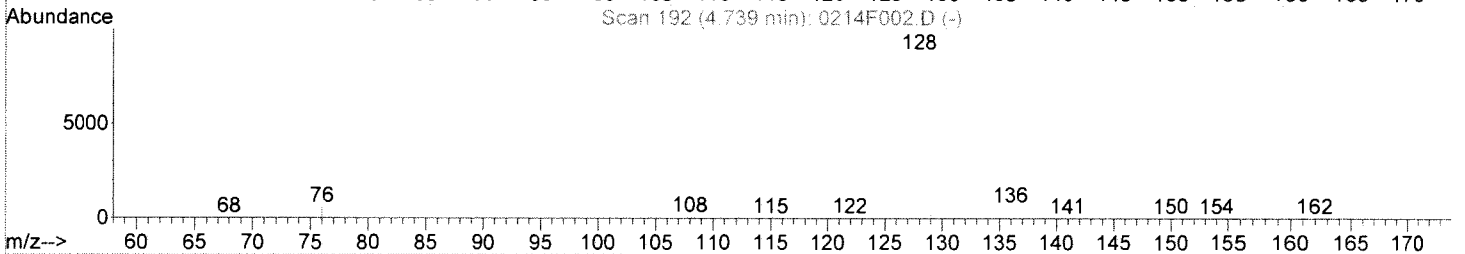
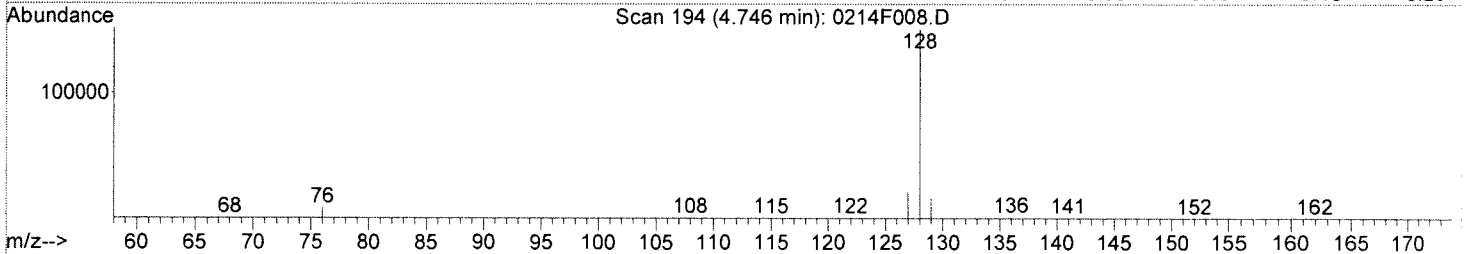
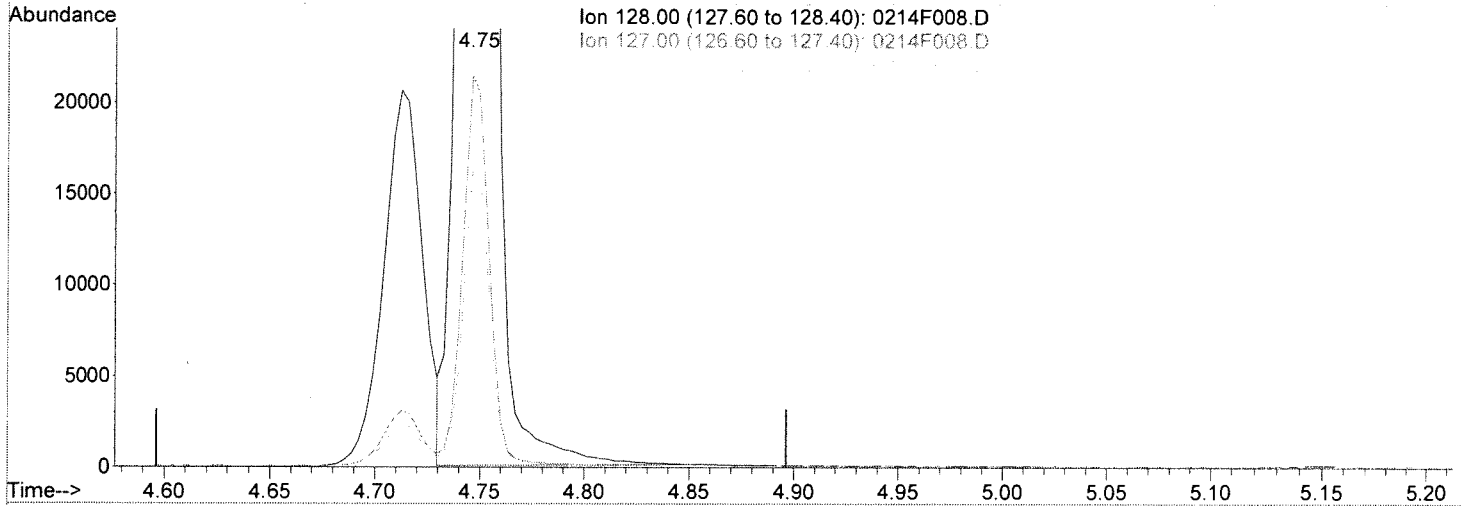
After
IC-Incomplete
02/14/18

Data File : J:\MS14\DATA\021418\0214F008.D
Acq On : 14 Feb 2018 8:27 am
Sample : KWG1800892-2 DLCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 13:17 2018

Vial: 8
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Multiple Level Calibration



TIC: 0214F008.D

(2) Naphthalene (T)

4.75min 499.18ng/ml

response 135620

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	14.19
129.00	20.50	10.76
0.00	0.00	0.00

Manual Integration:

Before

02/14/18

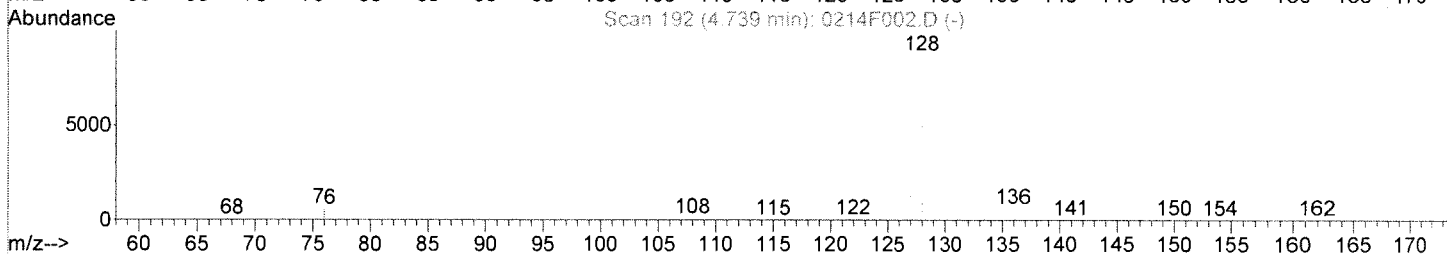
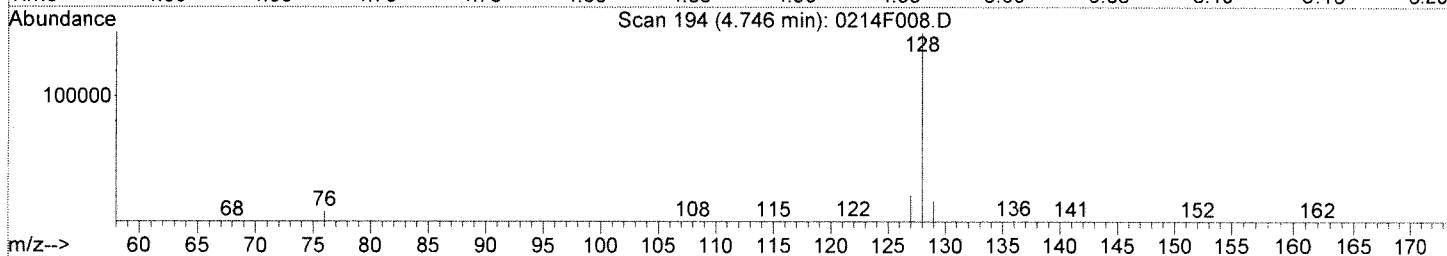
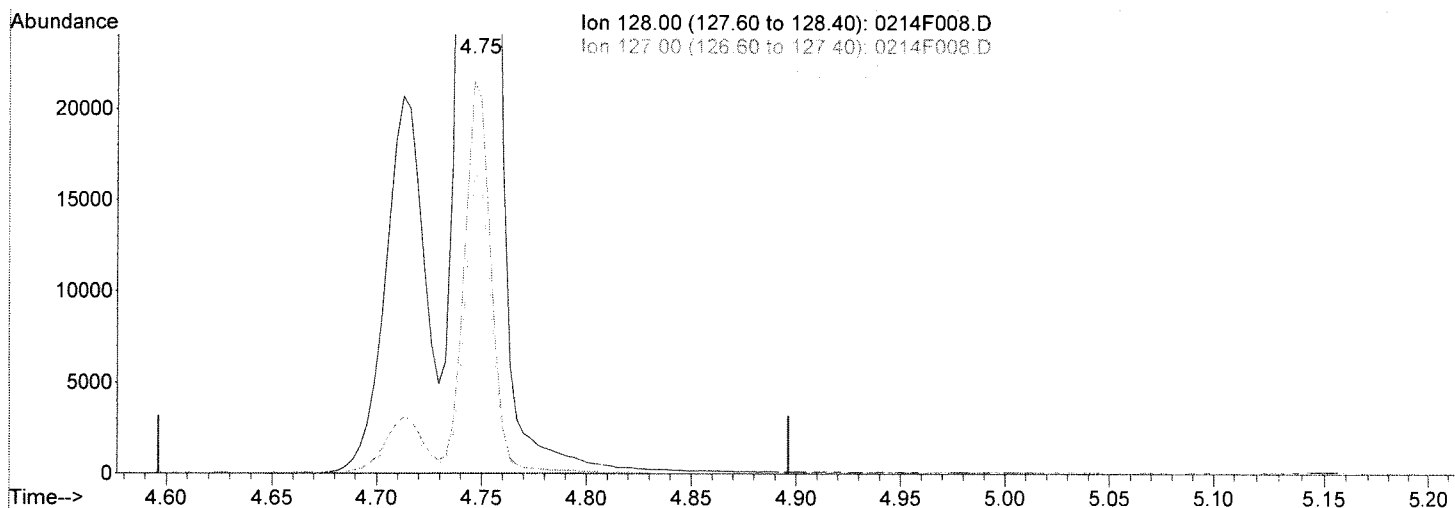
Handwritten signature and initials

Data File : J:\MS14\DATA\021418\0214F008.D
 Acq On : 14 Feb 2018 8:27 am
 Sample : KWG1800892-2 DLCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 14 13:17 2018

Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 14 12:53:50 2018
 Response via : Multiple Level Calibration



TIC: 0214F008.D

(2) Naphthalene (T)
 4.75min 599.20ng/ml m
 response 162796

Ion	Exp%	Act%
128.00	100	100
127.00	22.70	14.22
129.00	20.50	10.79
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 02/14/18

la
g

Exception Report



Data File: J:\MS14\DATA\031318\0313F004.D
Lab ID: KWG1801347-1
RunType: LCS
Matrix: GROUND WATER

Date Acquired: 03/13/2018 06:57
Date Quantitated: 03/13/2018 13:26
Batch ID: KWG1801409
Analysis Method: 8270D SIM
MethodJoinID: MJ1638

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Window	NA	NA	NA	x	
Analytical Holding Time	NA	NA	NA	x	
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Calibration Verification Pass/Fail	NA	NA	NA	x	
Continuing Calibration Recovery	NA	NA	NA	x	
Continuing Calibration Minimum RF	NA	NA	NA	x	
Continuing Calibration SPCC/CCC	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Surrogates	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Relative Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Std MRL Unsupported by ICAL	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	
Overdiluted Analysis	NA	NA	NA	x	

K1267
 K2166
 K2170

Primary Review:  **MAR 14 2018**
 Secondary Review: 

Quantitation Report

Data File:	J:\MS14\DATA\031318\0313F004.D	Instrument:	MS14
Acqu Date:	03/13/2018 06:57	Quant Date:	03/13/2018 13:26
Run Type:	LCS	MethodJoinID:	MJ1638
Lab ID:	KWG1801347-1	Vial:	4
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	GROUND WATER
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	03/09/2018

Analysis Lot:	KWG1801409	Prep Lot:	KWG1801347	Report Group:	
Analysis Method:	8270D SIM	Prep Method:	EPA 3511		
Prep Ref:	1666768	Prep Date:	03/09/2018		

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:		Method ID:	MJ1638
Tune Ref:	J:\MS14\DATA\031318\0313F001.D	Quant based on Method	
MB Ref:	J:\MS14\DATA\031318\0313F003.D		

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.72	0.00	136	50680m	200.00	OK
2	Acenaphthene-d10	6.29	0.00	164	25791	200.00	OK
3	Phenanthrene-d10	7.53	0.00	188	55214	200.00	OK
4	Chrysene-d12	10.06	0.00	240	62573	200.00	OK
5	Perylene-d12	13.14	0.00	264	69179	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.73	0.00	0.00	176	161712	916.57	92	42-131	OK
3	Fluoranthene-d10	8.52	0.00	0.00	212	352181	1,015	102	42-133	OK
4	Terphenyl-d14	8.86	-0.01	0.00	244	229135	868.49	87	32-129	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
								Final Conc. Units: ug/L		
1	Naphthalene	4.74		0.00	128	150029m	519.70	2.31		
1	2-Methylnaphthalene	5.39		0.00	142	106631	530.55	2.36		
1	1-Methylnaphthalene	5.48		0.00	142	98826	556.31	2.47		
1	Biphenyl	5.80		0.00	154	133999	526.76	2.34		
1	2,6-Dimethylnaphthalene	5.94		0.00	156	95967	530.85	2.36		
2	Acenaphthylene	6.17		0.00	152	181435	574.90	2.56		
2	Acenaphthene	6.32		0.00	154	101432	571.56	2.54		
2	Dibenzofuran	6.47		0.00	168	168115	602.90	2.68		
2	2,3,5-Trimethylnaphthalene	6.64		0.00	170	98131	546.72	2.43		
2	Fluorene	6.75		0.00	166	125407	573.36	2.55		
3	Dibenzothiophene	7.44	-0.01	0.00	184	203287	580.68	2.58		
3	Phenanthrene	7.55		0.00	178	196467	573.83	2.55		
3	Anthracene	7.59		0.00	178	200353	593.33	2.64		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\031318\0313F004.D	Instrument:	MS14
Acqu Date:	03/13/2018 06:57	Quant Date:	03/13/2018 13:26
Run Type:	LCS	MethodJoinID:	MJ1638
Lab ID:	KWG1801347-1	Vial:	4
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds

		Final Conc. Units: ug/L								
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole	7.72	-0.01	0.00	167	97296	317.91	1.41		
3	1-Methylphenanthrene	8.06		0.00	192	153836	590.94	2.63		
3	Fluoranthene	8.53		0.00	202	225357	554.41	2.46		
4	Pyrene	8.72	-0.01	0.00	202	242627	642.41	2.86		
4	Benz(a)anthracene	10.04		0.00	228	230575	611.07	2.72		
4	Chrysene	10.09	-0.01	0.00	228	211473	599.38	2.66		
5	Benzo(b)fluoranthene	12.10	-0.01	0.00	252	248343	568.64	2.53		
5	Benzo(k)fluoranthene	12.17	-0.01	0.00	252	235921	549.98	2.44		
5	Benzo(e)pyrene	12.82	-0.01	0.00	252	232101	557.14	2.48		
5	Benzo(a)pyrene	12.97	-0.01	0.00	252	219234	574.28	2.55		
5	Perylene	13.22		0.00	252	220505	586.34	2.61		
5	Indeno(1,2,3-cd)pyrene	15.39	-0.01	0.00	276	200592	584.89	2.60		
5	Dibenz(a,h)anthracene	15.44		0.00	278	191910	549.59	2.44		
5	Benzo(g,h,i)perylene	15.78		0.00	276	218248	571.97	2.54		

Prep Amount: 450 ml Dilution: 1.0
 Prep Final Vol: 2 ml Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL, also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Tue Mar 13 13:24:49 2018

Response via : Initial Calibration

DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.72	136	50680m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.29	164	25791	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.53	188	55214	200.00	ng/ml	0.00
23) Chrysene-d12	10.06	240	62573	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	69179	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.36	152	87	0.64	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.06%	
13) Fluorene-d10	6.73	176	161712	916.57	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	91.66%	
22) Fluoranthene-d10	8.52	212	352181	1015.14	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	101.51%	
25) Terphenyl-d14	8.86	244	229135	868.49	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	86.85%	

Target Compounds

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.74	128	150029m	519.70	ng/ml	
4) 2-Methylnaphthalene	5.39	142	106631	530.55	ng/ml#	82
5) 1-Methylnaphthalene	5.48	142	98826	556.31	ng/ml	93
6) Biphenyl	5.80	154	133999	526.76	ng/ml	100
7) 2,6-Dimethylnaphthalene	5.94	156	95967	530.85	ng/ml	94
9) Acenaphthylene	6.17	152	181435	574.90	ng/ml	100
10) Acenaphthene	6.32	154	101432	571.56	ng/ml	100
11) Dibenzofuran	6.47	168	168115	602.90	ng/ml	80
12) 2,3,5-Trimethylnaphthalene	6.64	170	98131	546.72	ng/ml	94
14) Fluorene	6.75	166	125407	573.36	ng/ml	100
16) Dibenzothiophene	7.44	184	203287	580.68	ng/ml	99
17) Phenanthrene	7.55	178	196467	573.83	ng/ml	100
18) Anthracene	7.59	178	200353	593.33	ng/ml	99
19) Carbazole	7.72	167	97296	317.91	ng/ml	99
20) 1-Methylphenanthrene	8.06	192	153836	590.94	ng/ml	98
21) Fluoranthene	8.53	202	225357	554.41	ng/ml	99
24) Pyrene	8.72	202	242627	642.41	ng/ml	99
26) Benz(a)anthracene	10.04	228	230575	611.07	ng/ml	99
27) Chrysene	10.09	228	211473	599.38	ng/ml	99
29) Benzo(b)fluoranthene	12.10	252	248343	568.64	ng/ml	97
30) Benzo(k)fluoranthene	12.17	252	235921	549.98	ng/ml	97
31) Benzo(e)pyrene	12.82	252	232101	557.14	ng/ml	96
32) Benzo(a)pyrene	12.97	252	219234	574.28	ng/ml	96
33) Perylene	13.22	252	220505	586.34	ng/ml	96
34) Indeno(1,2,3-cd)pyrene	15.39	276	200592	584.89	ng/ml	96
35) Dibenz(a,h)anthracene	15.44	278	191910	549.59	ng/ml	96
36) Benzo(g,h,i)perylene	15.78	276	218248	571.97	ng/ml	95

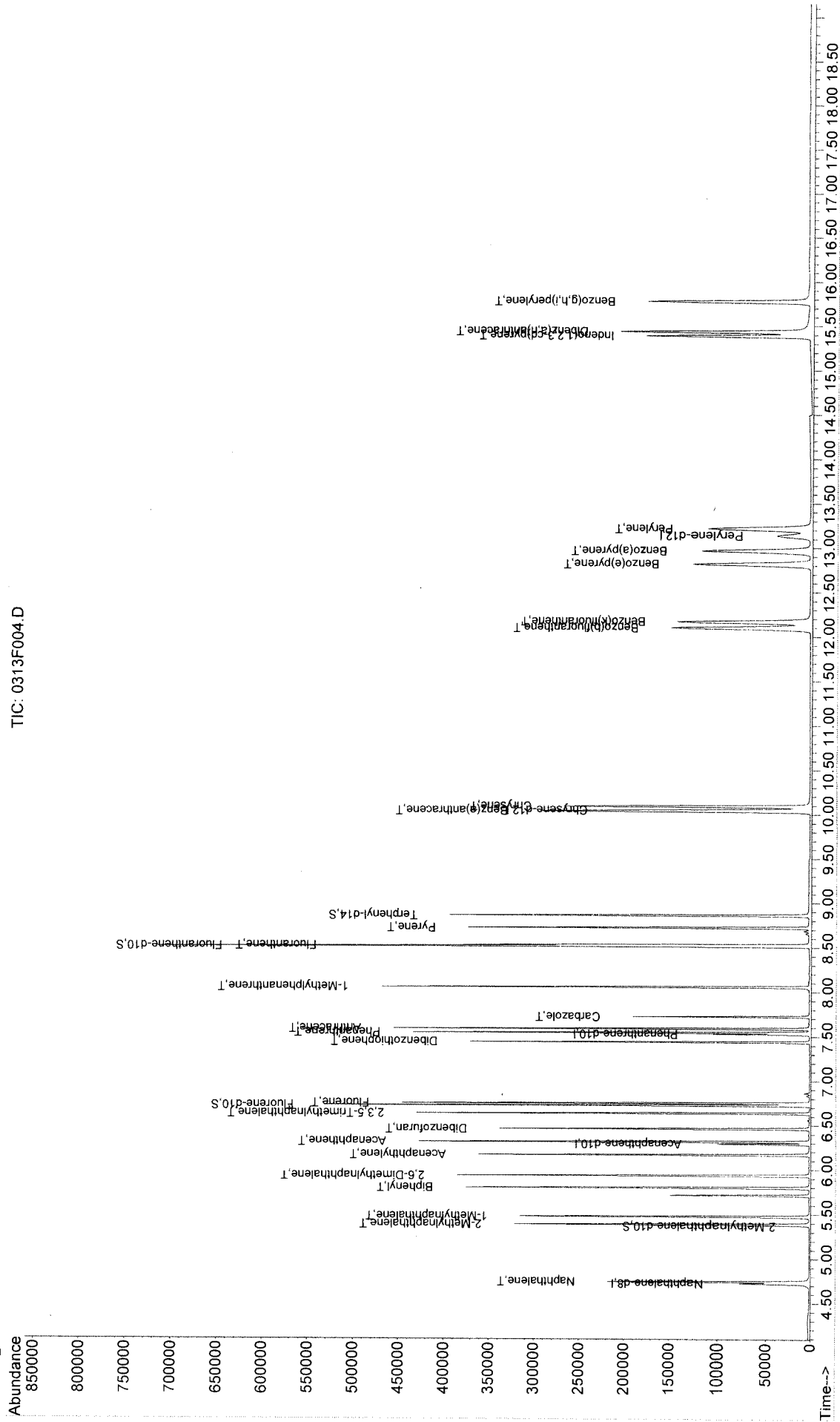
(#) = qualifier out of range (m) = manual integration

0313F004.D 101317PAH.M Tue Mar 13 13:27:52 2018

Data File : J:\MS14\DATA\031318\0313F004.D
Acq On : 13 Mar 2018 6:57 am
Sample : KWG1801347-1 LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:26 2018

Vial: 4
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Initial Calibration



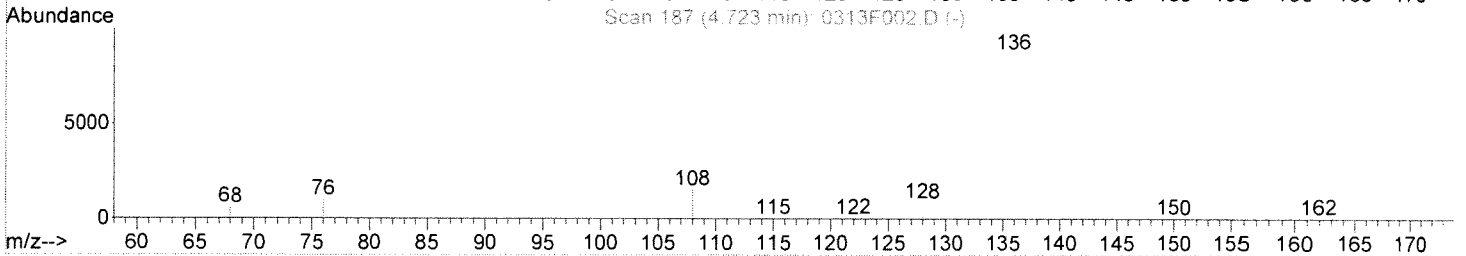
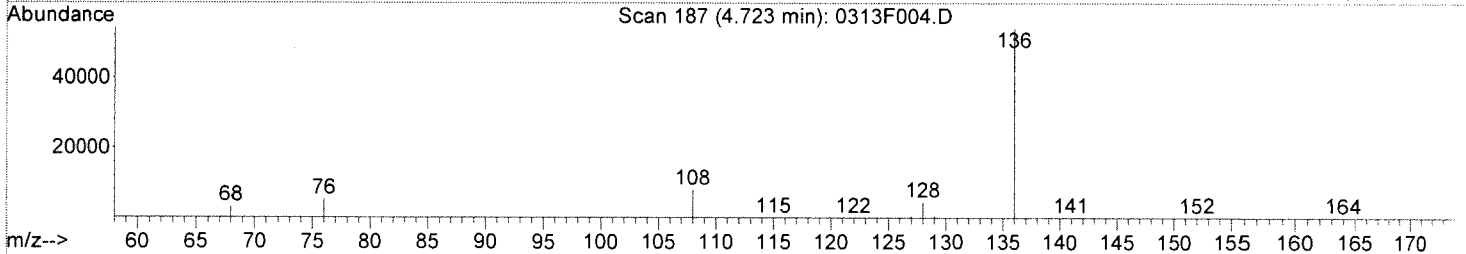
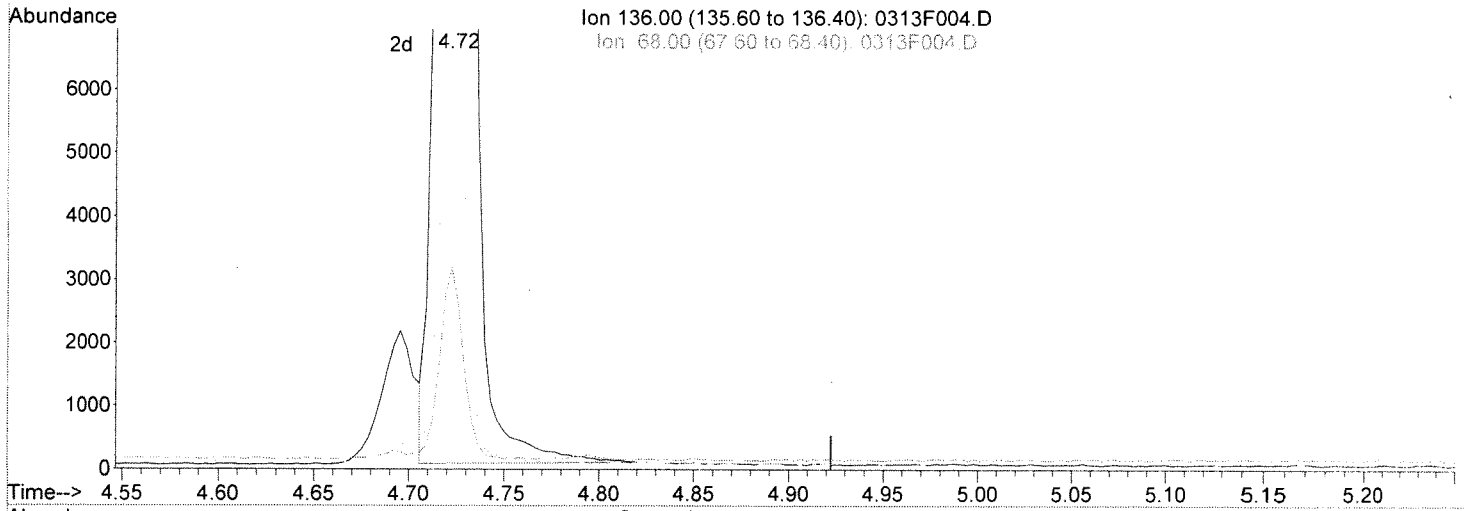
TIC: 0313F004.D

Data File : J:\MS14\DATA\031318\0313F004.D
 Acq On : 13 Mar 2018 6:57 am
 Sample : KWG1801347-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25 2018

Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F004.D

(1) Naphthalene-d8 (I)

4.72min 200.00ng/ml

response 47933

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.61
108.00	11.60	14.69
0.00	0.00	0.00

Manual Integration:

Before

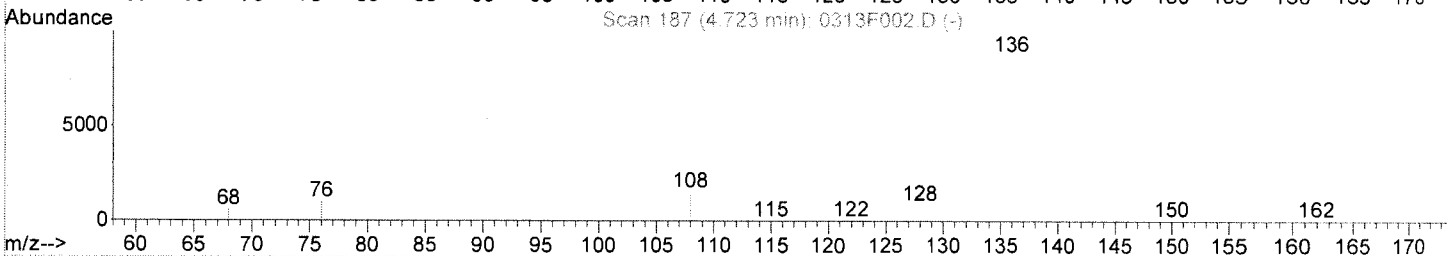
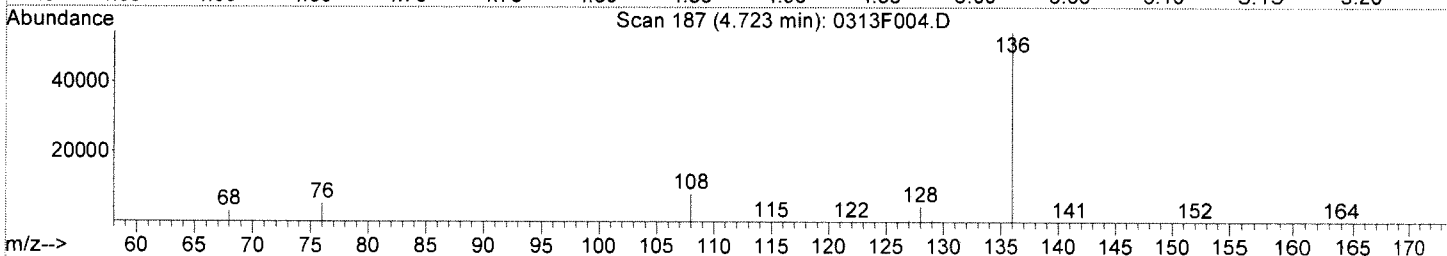
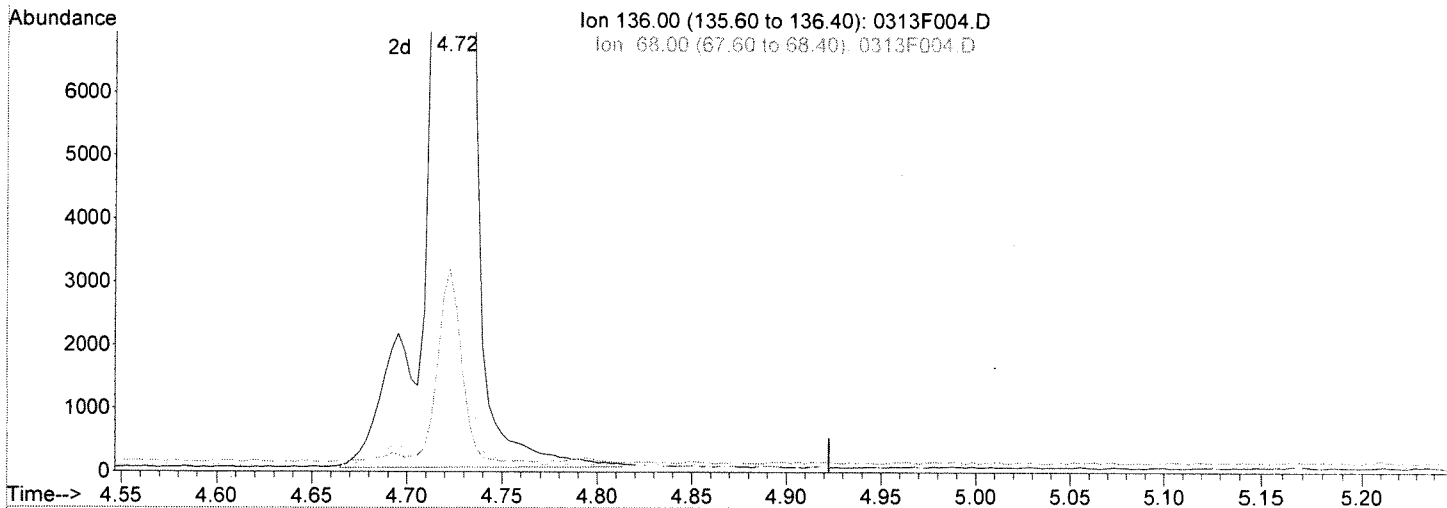
03/13/18

Data File : J:\MS14\DATA\031318\0313F004.D
 Acq On : 13 Mar 2018 6:57 am
 Sample : KWG1801347-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:26 2018

Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F004.D

(1) Naphthalene-d8 (I)
 4.72min 200.00ng/ml m
 response 50680

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.89
108.00	11.60	14.85
0.00	0.00	0.00

Manual Integration:
 After
 IC-Incomplete
 03/13/18

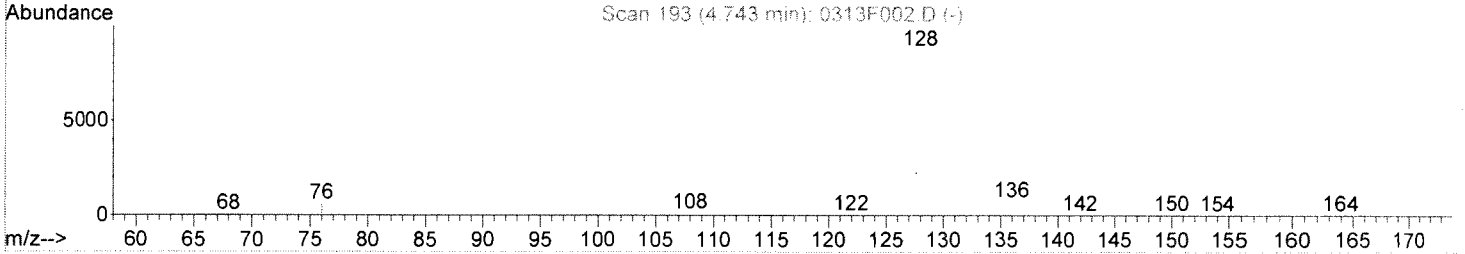
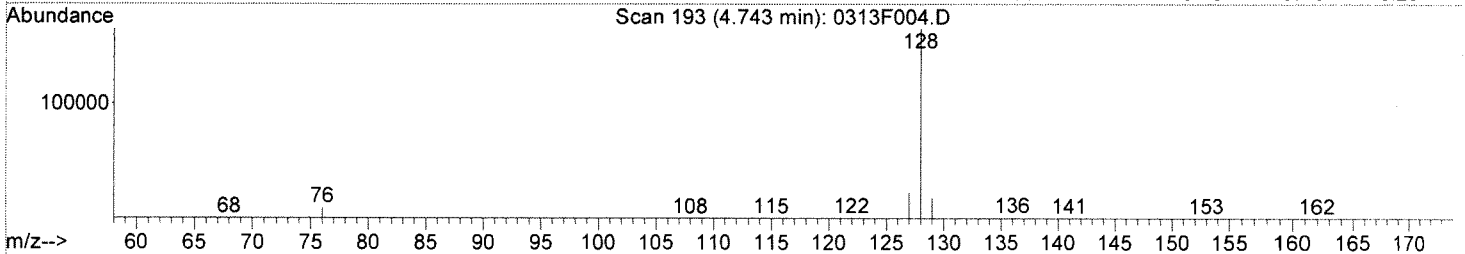
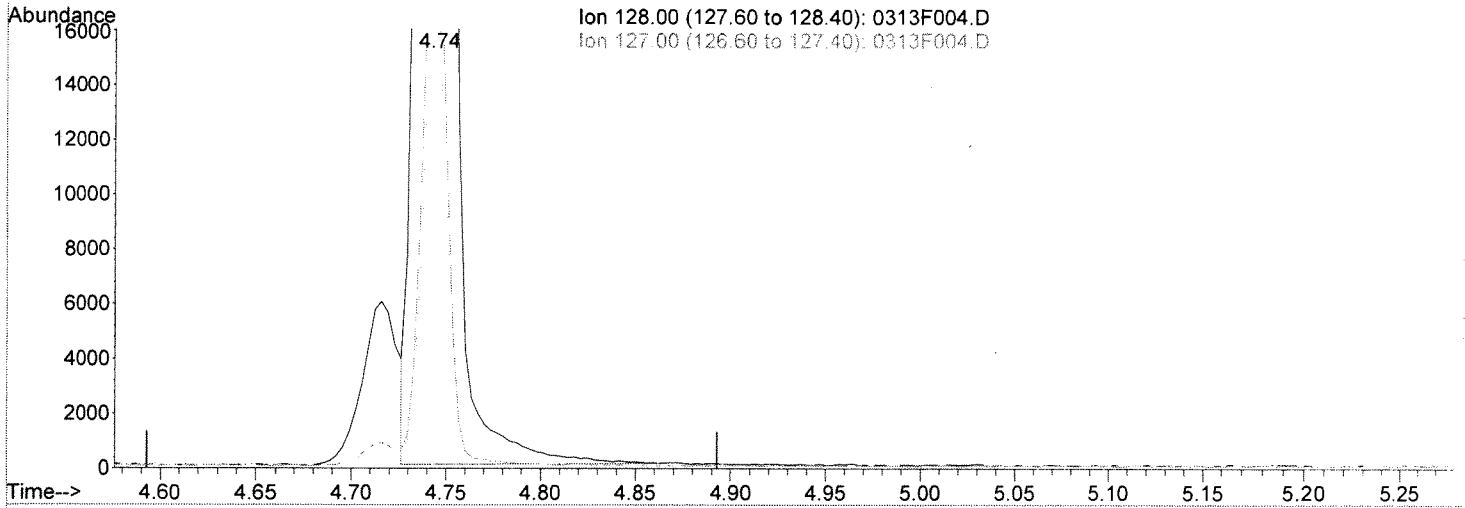
AM

Data File : J:\MS14\DATA\031318\0313F004.D
 Acq On : 13 Mar 2018 6:57 am
 Sample : KWG1801347-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:26 2018

Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F004.D

(2) Naphthalene (T)

4.74min 491.39ng/ml

response 141858

Ion	Exp%	Act%
128.00	100	100
127.00	14.10	13.50
129.00	10.40	10.82
0.00	0.00	0.00

Manual Integration:

Before

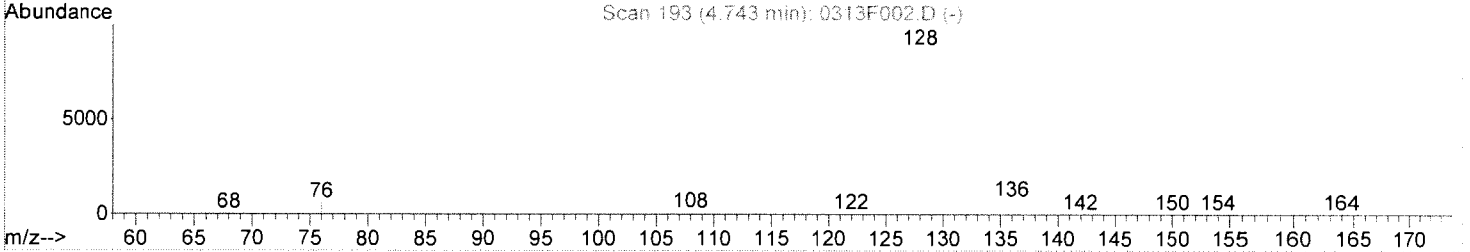
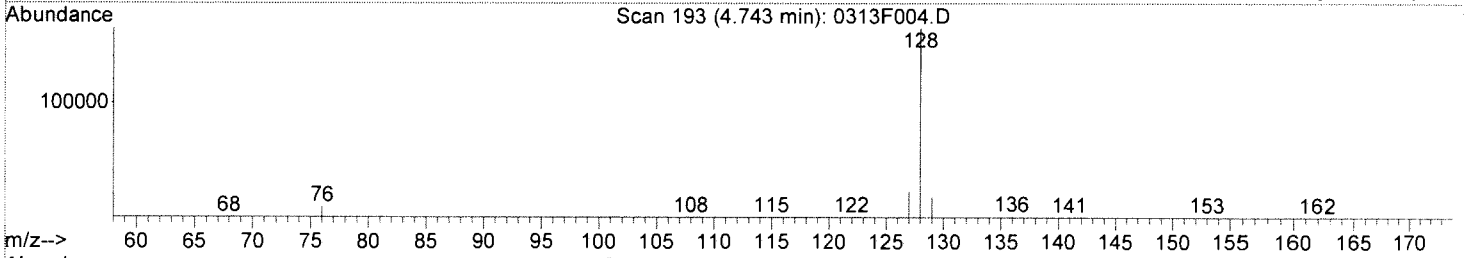
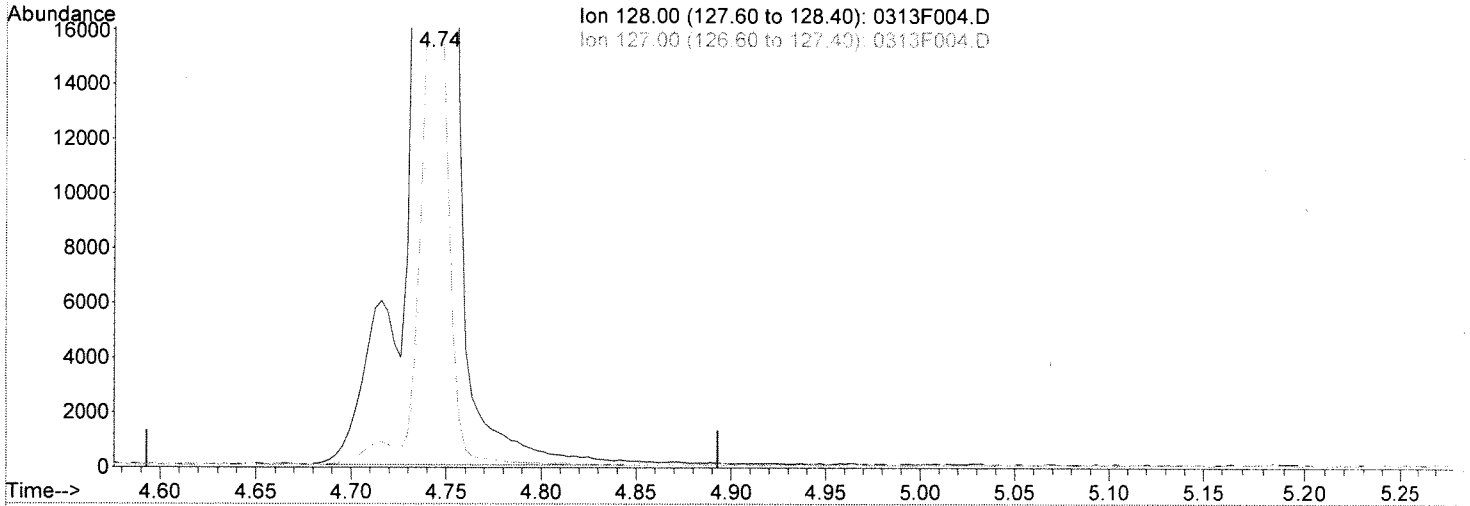
03/13/18

Data File : J:\MS14\DATA\031318\0313F004.D
 Acq On : 13 Mar 2018 6:57 am
 Sample : KWG1801347-1 LCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:26 2018

Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F004.D

(2) Naphthalene (T)
 4.74min 519.70ng/ml m
 response 150029

Ion	Exp%	Act%
128.00	100	100
127.00	14.10	13.54
129.00	10.40	10.89
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 03/13/18

la *AP*

Quantitation Report

Data File:	J:\MS14\DATA\031318\0313F005.D	Instrument:	MS14
Acqu Date:	03/13/2018 07:20	Quant Date:	03/13/2018 13:27
Run Type:	DLCS	MethodJoinID:	MJ1638
Lab ID:	KWG1801347-2	Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	GROUND WATER
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	03/09/2018

Analysis Lot:	KWG1801409	Prep Lot:	KWG1801347	Report Group:	
Analysis Method:	8270D SIM	Prep Method:	EPA 3511		
Prep Ref:	1666769	Prep Date:	03/09/2018		

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:		Method ID:	MJ1638
Tune Ref:	J:\MS14\DATA\031318\0313F001.D	Quant based on Method	
MB Ref:	J:\MS14\DATA\031318\0313F003.D		

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.72	0.00	136	50489m	200.00	OK
2	Acenaphthene-d10	6.29	0.00	164	25644	200.00	OK
3	Phenanthrene-d10	7.53	0.00	188	55026	200.00	OK
4	Chrysene-d12	10.05	-0.01	240	62103	200.00	OK
5	Perylene-d12	13.13	-0.01	264	68006	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.73	0.00	0.00	176	165446	943.11	94	42-131	OK
3	Fluoranthene-d10	8.52	0.00	0.00	212	363307	1,051	105	42-133	OK
4	Terphenyl-d14	8.86	-0.01	0.00	244	237585	907.33	91	32-129	OK

Target Compounds

							Final Conc. Units: ug/L			
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.74		0.00	128	159460m	554.46	2.46		
1	2-Methylnaphthalene	5.39		0.00	142	112355	561.15	2.49		
1	1-Methylnaphthalene	5.48		0.00	142	104456	590.23	2.62		
1	Biphenyl	5.80		0.00	154	142029	560.44	2.49		
1	2,6-Dimethylnaphthalene	5.93	-0.01	0.00	156	101850	565.53	2.51		
2	Acenaphthylene	6.17		0.00	152	192559	613.65	2.73		
2	Acenaphthene	6.31	-0.01	0.00	154	108223	613.32	2.73		
2	Dibenzofuran	6.46	-0.01	0.00	168	179555	647.62	2.88		
2	2,3,5-Trimethylnaphthalene	6.64		0.00	170	104046	582.99	2.59		
2	Fluorene	6.75		0.00	166	134143	616.82	2.74		
3	Dibenzothiophene	7.44	-0.01	0.00	184	215365	617.28	2.74		
3	Phenanthrene	7.55		0.00	178	208516	611.10	2.72		
3	Anthracene	7.59		0.00	178	210928	626.78	2.79		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\031318\0313F005.D
Acqu Date: 03/13/2018 07:20
Run Type: DLCS
Lab ID: KWG1801347-2

Quant Date: 03/13/2018 13:27
MethodJoinID: MJ1638

Instrument: MS14
Vial: 5
Dilution: 1.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units: ug/L

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole	7.72	-0.01	0.00	167	103540	339.47	1.51		
3	1-Methylphenanthrene	8.06		0.00	192	164113	632.57	2.81		
3	Fluoranthene	8.53		0.00	202	244788	604.27	2.69		
4	Pyrene	8.72	-0.01	0.00	202	262253	699.63	3.11		
4	Benz(a)anthracene	10.04		0.00	228	247585	661.11	2.94		
4	Chrysene	10.09	-0.01	0.00	228	228028	651.19	2.89		
5	Benzo(b)fluoranthene	12.09	-0.02	0.00	252	263327	613.34	2.73		
5	Benzo(k)fluoranthene	12.16	-0.02	0.00	252	252977	599.91	2.67		
5	Benzo(e)pyrene	12.81	-0.02	0.00	252	247861	605.23	2.69		
5	Benzo(a)pyrene	12.96	-0.02	0.00	252	233477	622.14	2.77		
5	Perylene	13.21	-0.01	0.00	252	235566	637.19	2.83		
5	Indeno(1,2,3-cd)pyrene	15.39	-0.01	0.00	276	213239	632.49	2.81		
5	Dibenz(a,h)anthracene	15.43	-0.01	0.00	278	202619	590.27	2.62		
5	Benzo(g,h,i)perylene	15.77	-0.01	0.00	276	228985	610.46	2.71		

Prep Amount: 450 ml **Dilution:** 1.0
Prep Final Vol: 2 ml **Unit Factor:** 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / Prep Amount) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F005.D
 Acq On : 13 Mar 2018 7:20 am
 Sample : KWG1801347-2 DLCS
 Misc :

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25:10 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.72	136	50489m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.29	164	25644	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.53	188	55026	200.00	ng/ml	0.00
23) Chrysene-d12	10.05	240	62103	200.00	ng/ml	0.00
28) Perylene-d12	13.13	264	68006	200.00	ng/ml	-0.02

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
3) 2-Methylnaphthalene-d10	5.36	152	65	0.48	ng/ml	0.00
Spiked Amount	1000.000					
Recovery						0.05%
13) Fluorene-d10	6.73	176	165446	943.11	ng/ml	0.00
Spiked Amount	1000.000					
Recovery						94.31%
22) Fluoranthene-d10	8.52	212	363307	1050.79	ng/ml	0.00
Spiked Amount	1000.000					
Recovery						105.08%
25) Terphenyl-d14	8.86	244	237585	907.33	ng/ml	0.00
Spiked Amount	1000.000					
Recovery						90.73%

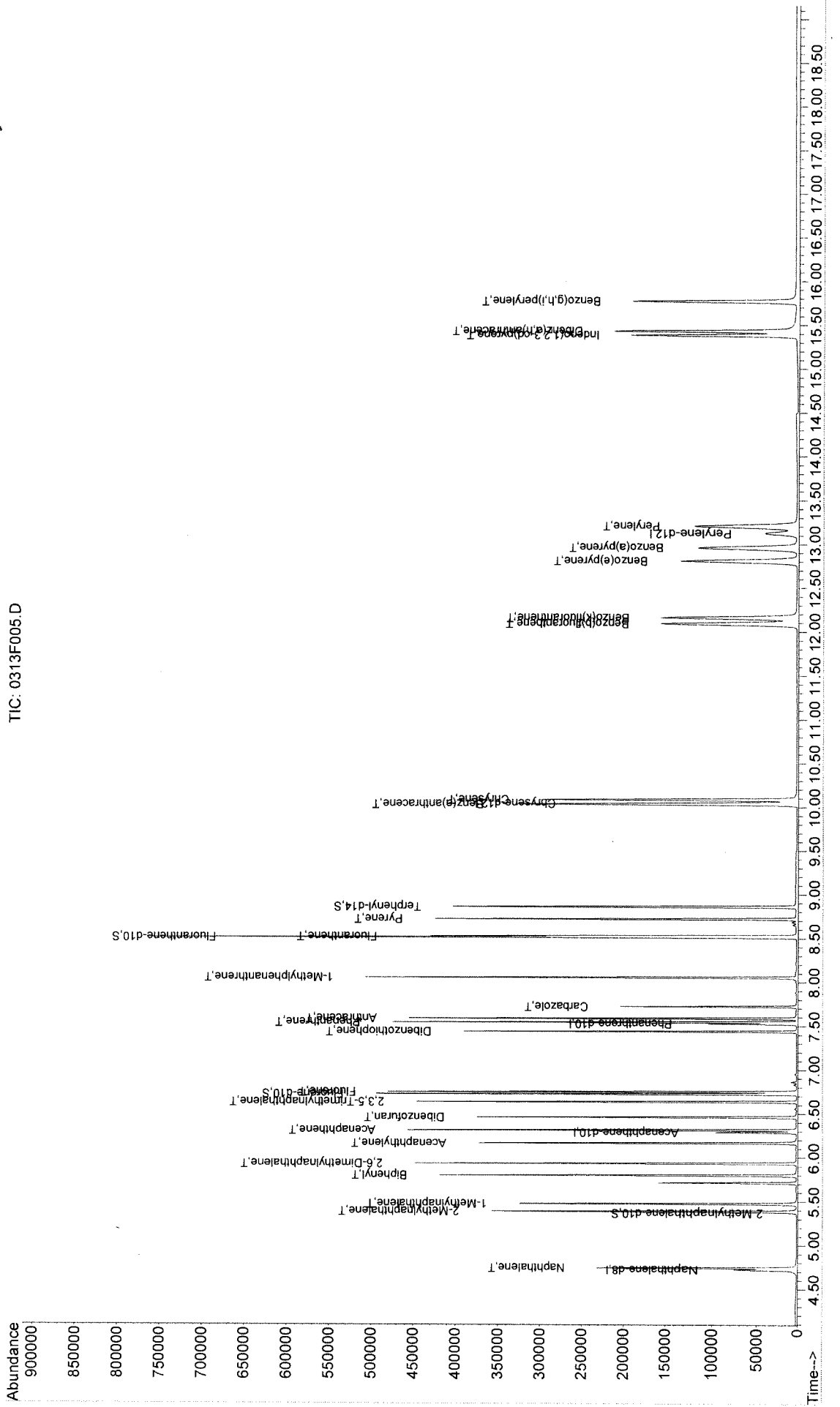
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.74	128	159460m	554.46	ng/ml	
4) 2-Methylnaphthalene	5.39	142	112355	561.15	ng/ml#	83
5) 1-Methylnaphthalene	5.48	142	104456	590.23	ng/ml	94
6) Biphenyl	5.80	154	142029	560.44	ng/ml	100
7) 2,6-Dimethylnaphthalene	5.93	156	101850	565.53	ng/ml	90
9) Acenaphthylene	6.17	152	192559	613.65	ng/ml	99
10) Acenaphthene	6.31	154	108223	613.32	ng/ml	97
11) Dibenzofuran	6.46	168	179555	647.62	ng/ml	92
12) 2,3,5-Trimethylnaphthalene	6.64	170	104046	582.99	ng/ml	90
14) Fluorene	6.75	166	134143	616.82	ng/ml	99
16) Dibenzothiophene	7.44	184	215365	617.28	ng/ml	89
17) Phenanthrene	7.55	178	208516	611.10	ng/ml	99
18) Anthracene	7.59	178	210928	626.78	ng/ml	99
19) Carbazole	7.72	167	103540	339.47	ng/ml	99
20) 1-Methylphenanthrene	8.06	192	164113	632.57	ng/ml	100
21) Fluoranthene	8.53	202	244788	604.27	ng/ml	99
24) Pyrene	8.72	202	262253	699.63	ng/ml	99
26) Benz(a)anthracene	10.04	228	247585	661.11	ng/ml	100
27) Chrysene	10.09	228	228028	651.19	ng/ml	99
29) Benzo(b)fluoranthene	12.09	252	263327	613.34	ng/ml	97
30) Benzo(k)fluoranthene	12.16	252	252977	599.91	ng/ml	98
31) Benzo(e)pyrene	12.81	252	247861	605.23	ng/ml	96
32) Benzo(a)pyrene	12.96	252	233477	622.14	ng/ml	96
33) Perylene	13.21	252	235566	637.19	ng/ml	95
34) Indeno(1,2,3-cd)pyrene	15.39	276	213239	632.49	ng/ml	95
35) Dibenz(a,h)anthracene	15.43	278	202619	590.27	ng/ml	96
36) Benzo(g,h,i)perylene	15.77	276	228985	610.46	ng/ml	94

(#) = qualifier out of range (m) = manual integration
 0313F005.D 101317PAH.M Tue Mar 13 13:27:55 2018

Data File : J:\MS14\DATA\031318\0313F005.D
Acq On : 13 Mar 2018 7:20 am
Sample : KWG1801347-2 DLCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:27 2018

Vial: 5
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Initial Calibration



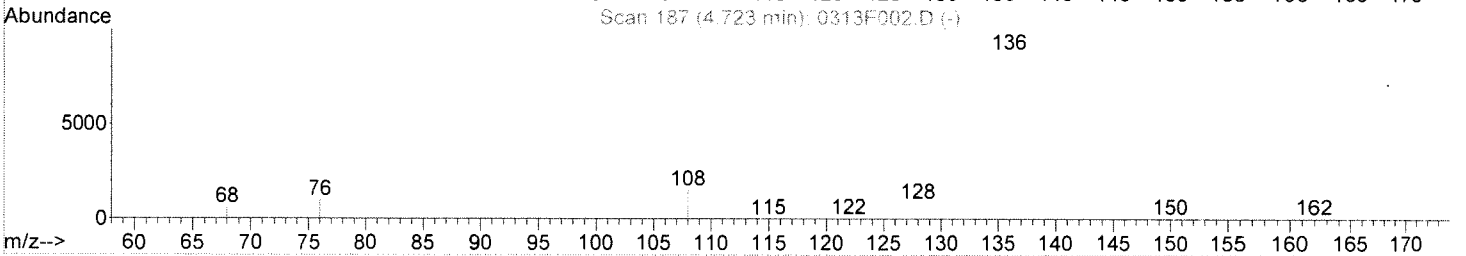
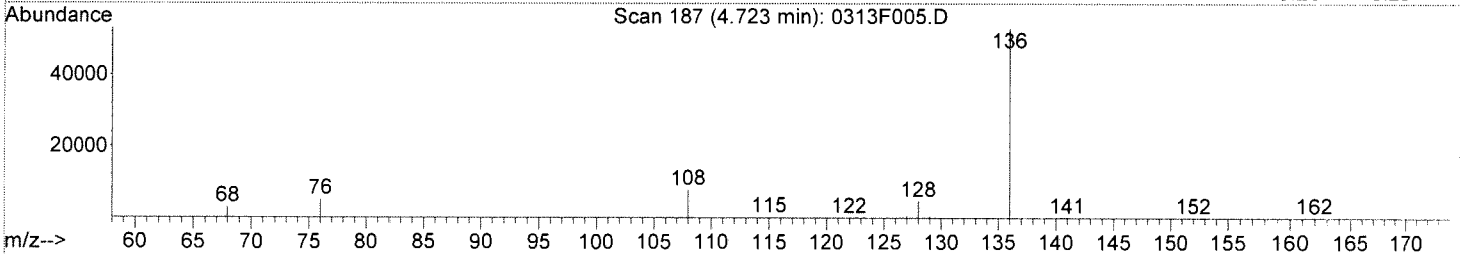
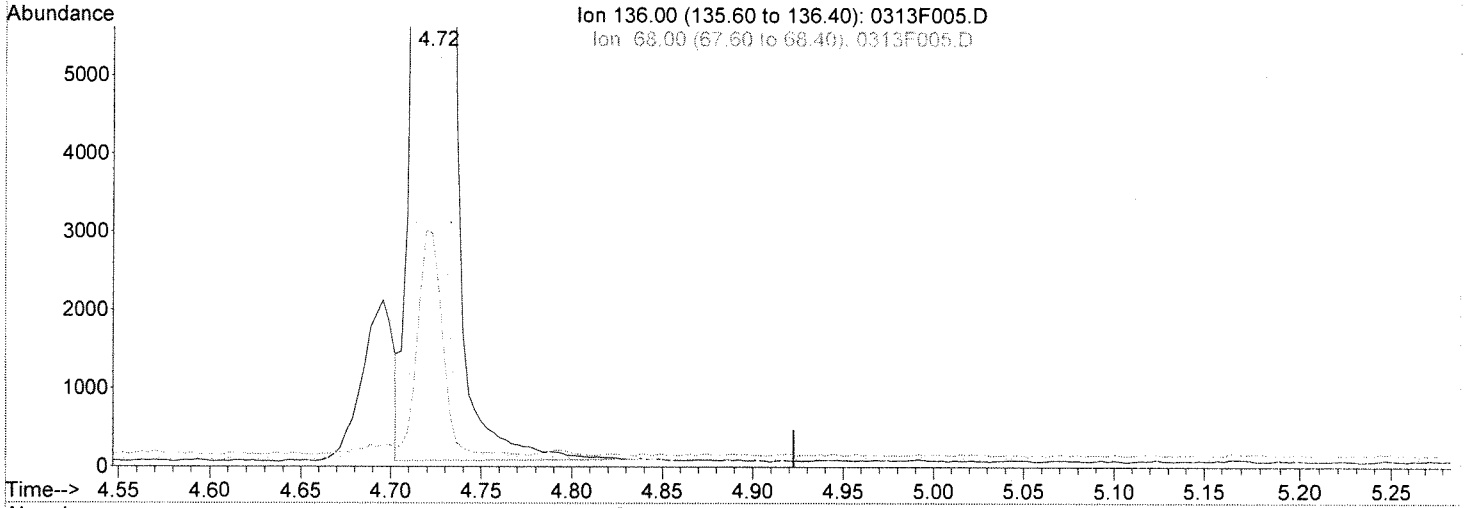
TIC: 0313F005.D

Data File : J:\MS14\DATA\031318\0313F005.D
 Acq On : 13 Mar 2018 7:20 am
 Sample : KWG1801347-2 DLCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:25 2018

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F005.D

(1) Naphthalene-d8 (I)

4.72min 200.00ng/ml

response 47789

Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.38
108.00	11.60	14.56
0.00	0.00	0.00

Manual Integration:

Before

la W

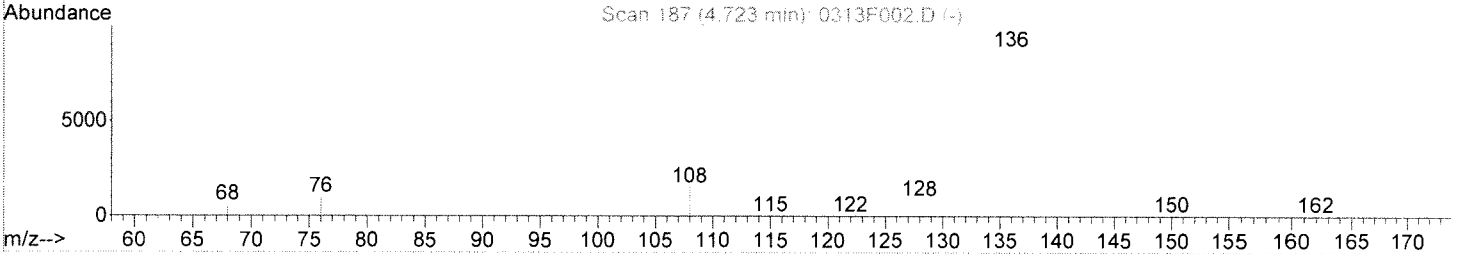
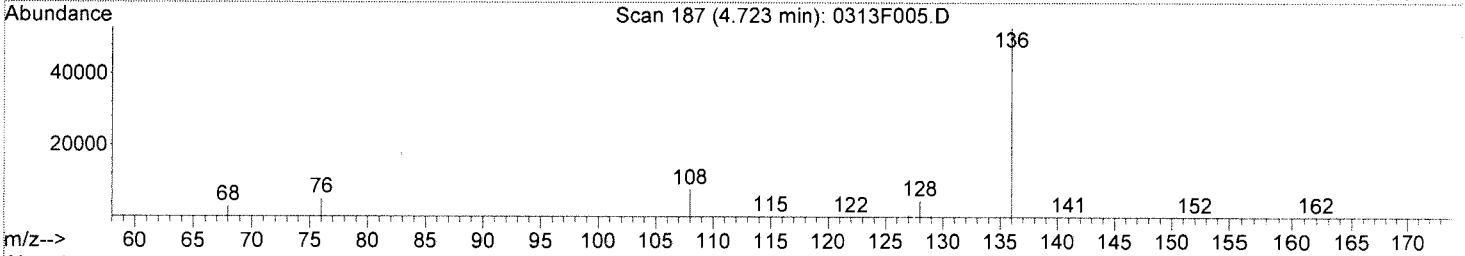
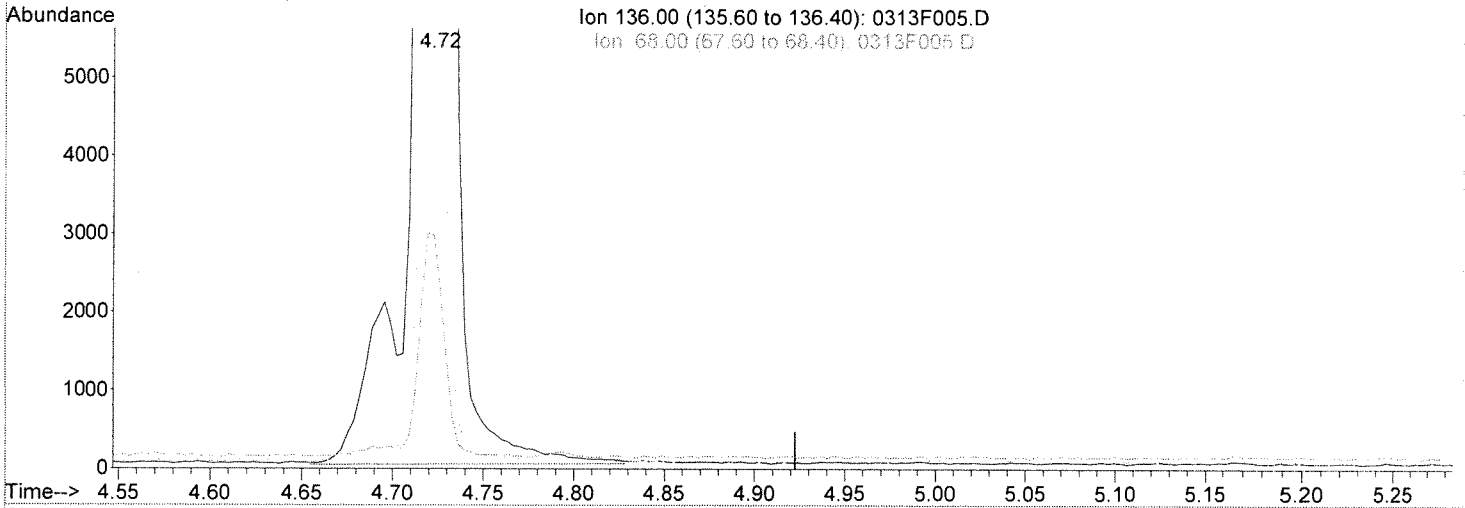
03/13/18

Data File : J:\MS14\DATA\031318\0313F005.D
 Acq On : 13 Mar 2018 7:20 am
 Sample : KWG1801347-2 DLCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:26 2018

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F005.D

(1) Naphthalene-d8 (I)

4.72min	200.00ng/ml	m
response	50489	
Ion	Exp%	Act%
136.00	100	100
68.00	6.20	5.63
108.00	11.60	14.72
0.00	0.00	0.00

Manual Integration:

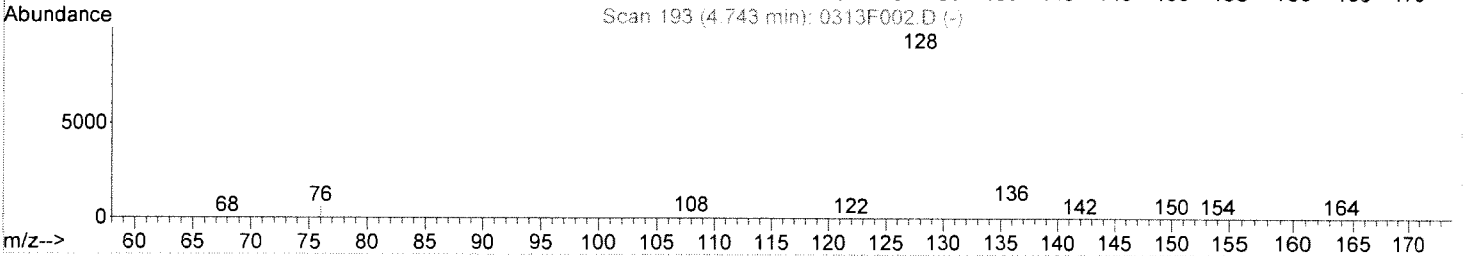
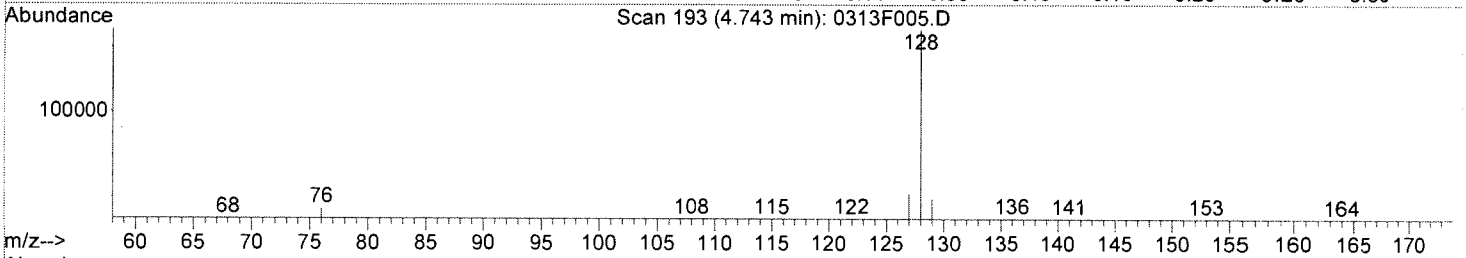
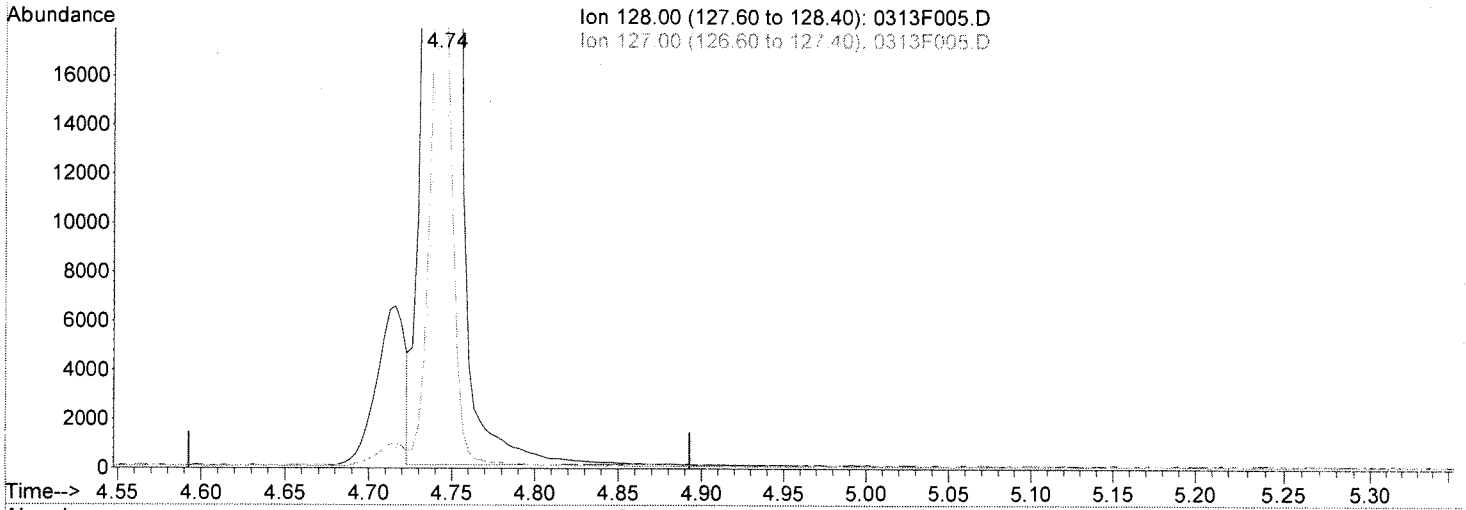
After
 IC-Incomplete
 03/13/18

Data File : J:\MS14\DATA\031318\0313F005.D
 Acq On : 13 Mar 2018 7:20 am
 Sample : KWG1801347-2 DLCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:26 2018

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F005.D

(2) Naphthalene (T)

4.74min 525.18ng/ml

response 151040

Ion	Exp%	Act%
128.00	100	100
127.00	14.10	13.52
129.00	10.40	10.83
0.00	0.00	0.00

Manual Integration:

Before

03/13/18

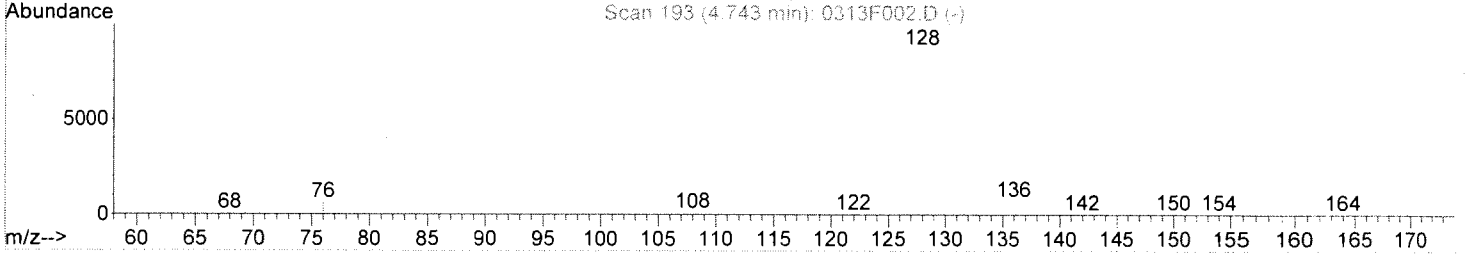
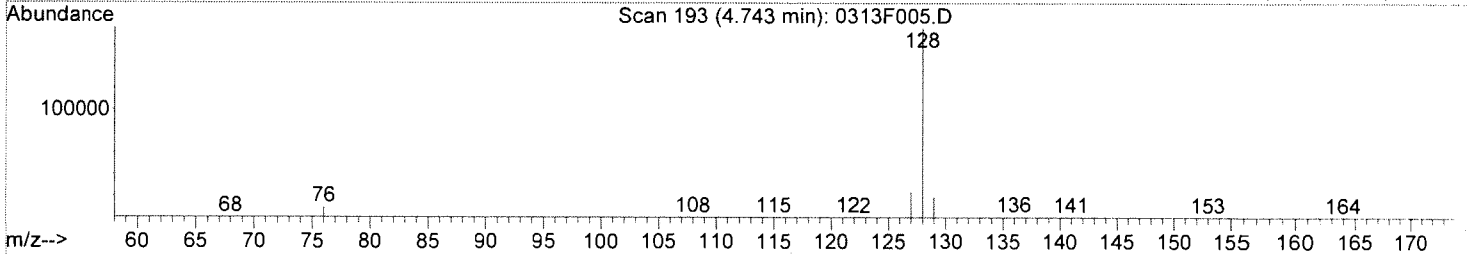
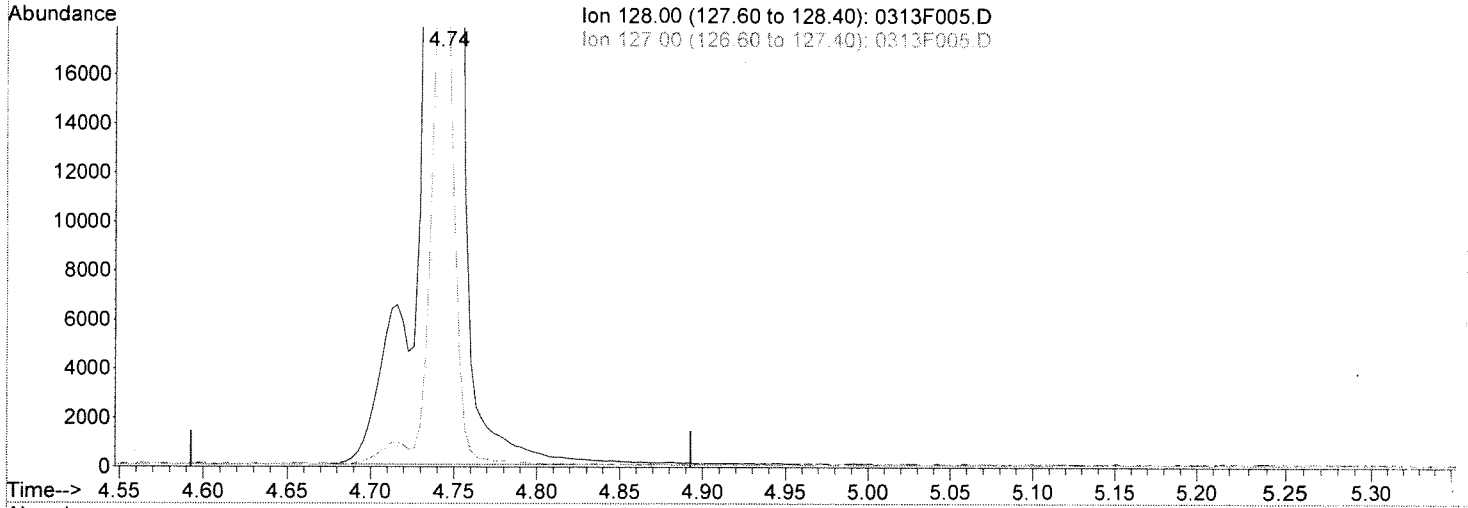
Handwritten signatures and initials.

Data File : J:\MS14\DATA\031318\0313F005.D
 Acq On : 13 Mar 2018 7:20 am
 Sample : KWG1801347-2 DLCS
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:27 2018

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:49 2018
 Response via : Multiple Level Calibration



TIC: 0313F005.D

(2) Naphthalene (T)

4.74min	554.46ng/ml	m
response	159460	
Ion	Exp%	Act%
128.00	100	100
127.00	14.10	13.56
129.00	10.40	10.89
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 03/13/18

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F004.D	Instrument: MS20
Acqu Date: 02/27/2018 11:56	Quant Date: 02/28/2018 08:53
Run Type: LCS	Vial: 4
Lab ID: KWG1801007-3	MethodJoinID: MJ1651
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier:	Matrix: SOIL
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/28/2018

Analysis Lot: KWG1801193	Prep Lot: KWG1801007	Report Group:
Analysis Method: 8270D SIM	Prep Method: EPA 3546	
Prep Ref: 1664511	Prep Date: 02/19/2018	

Quant Method: J:\MS20\METHODS\110217PAH.M	Calibration ID: CAL15594
Title:	
Tune Ref: J:\MS20\DATA\022718\0227F001.D	Method ID: MJ1651
MB Ref: J:\MS20\DATA\022718\0227F003.D	Quant based on Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	0.00	136	98752	200.00	OK
2	Acenaphthene-d10	8.30	0.00	164	48558	200.00	OK
3	Phenanthrene-d10	11.50	0.00	188	98792	200.00	OK
4	Chrysene-d12	18.85	0.01	240	112412	200.00	OK
5	Perylene-d12	23.14	0.00	264	117719	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	6.72	0.00	0.00	152	40686	164.58	82	70-130	OK
2	Fluorene-d10	9.31	0.00	0.00	176	44016	141.83	71	38-104	OK
3	Fluoranthene-d10	14.67	0.00	0.00	212	85464	149.87	75	39-109	OK
4	Terphenyl-d14	15.99	0.01	0.00	244	76208	159.01	80	38-113	OK

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00		0.00	128	180831	358.47	358		
1	2-Methylnaphthalene	6.76		0.00	142	121627	361.04	361		
1	1-Methylnaphthalene	6.89		0.00	142	112093	373.66	374		
1	Biphenyl	7.39		0.00	154	151029	374.27	374		
1	2,6-Dimethylnaphthalene	7.62	-0.01	0.00	156	108753	372.11	372		
1	C1-Naphthalenes				142	0		5.0		U
1	C2-Naphthalenes				156	0		5.0		U
1	C3-Naphthalenes				170	0		5.0		U
1	C4-Naphthalenes				184	0		5.0		U
2	Acenaphthylene	8.06		0.00	152	185044	376.05	376		
2	Acenaphthene	8.36		0.00	154	108403	357.35	357		
2	Dibenzofuran	8.69		0.00	168	168336	368.83	369		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F004.D
 Acqu Date: 02/27/2018 11:56
 Run Type: LCS
 Lab ID: KWG1801007-3

Quant Date: 02/28/2018 08:53
 MethodJoinID: MJ1651

Instrument: MS20
 Vial: 4
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

							Final Conc. Units:	ug/Kg Wet Weight		
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
2	2,3,5-Trimethylnaphthalene	9.11		0.00	170	111141	396.75	397		
2	Fluorene	9.37		0.00	166	134814	371.28	371		
2	C1-Fluorenes				180	0		5.0	U	
2	C2-Fluorenes				194	0		5.0	U	
2	C3-Fluorenes				208	0		5.0	U	
3	Dibenzothiophene	11.24		0.00	184	178572	338.63	339		
3	C1-Dibenzothiophenes				198	0		5.0	U	
3	C2-Dibenzothiophenes				212	0		5.0	U	
3	C3-Dibenzothiophenes				226	0		5.0	U	
3	C4-Dibenzothiophenes				240	0		5.0	U	
3	Phenanthrene	11.56		0.00	178	210156	363.34	363		
3	Anthracene	11.68		0.00	178	201881	374.92	375		
3	Carbazole	12.16		0.00	167	189344	402.36	402		
3	1-Methylphenanthrene	13.17		0.00	192	160840	391.48	391		
3	C1-Phenanthrenes/Anthracenes				192	0		5.0	U	
3	C2-Phenanthrenes/Anthracenes				206	0		5.0	U	
3	C3-Phenanthrenes/Anthracenes				220	0		5.0	U	
3	C4-Phenanthrenes/Anthracenes				234	0		5.0	U	
3	Fluoranthene	14.73		0.00	202	251871	400.06	400		
4	Pyrene	15.33		0.00	202	260376	410.46	410		
4	C1-Fluoranthenes/Pyrenes				216	0		5.0	U	
4	C2-Fluoranthenes/Pyrenes				230	0		5.0	U	
4	C3-Fluoranthenes/Pyrenes				244	0		5.0	U	
4	C4-Fluoranthenes/Pyrenes				258	0		5.0	U	
4	Benz(a)anthracene	18.83		0.00	228	263732	432.20	432		
4	Chrysene	18.92		0.00	228	250312	411.57	412		
4	C1-Chrysenes				242	0		5.0	U	
4	C2-Chrysenes				256	0		5.0	U	
4	C3-Chrysenes				270	0		5.0	U	
4	C4-Chrysenes				284	0		5.0	U	
5	Benzo(b)fluoranthene	21.92		0.00	252	287552	428.21	428		
5	Benzo(k)fluoranthene	22.01		0.00	252	283344	417.71	418		
5	Benzo(e)pyrene	22.77		0.00	252	268852	412.30	412		
5	Benzo(a)pyrene	22.94		0.00	252	249995	431.69	432		
5	Perylene	23.23		0.00	252	247704	405.74	406		
5	Indeno(1,2,3-cd)pyrene	27.00		0.00	276	266422	445.42	445		
5	Dibenz(a,h)anthracene	27.12		0.00	278	267813	432.25	432		
5	Benzo(g,h,i)perylene	27.57		0.00	276	280575	391.50	392		

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F004.D
Acqu Date: 02/27/2018 11:56
Run Type: LCS
Lab ID: KWG1801007-3

Quant Date: 02/28/2018 08:53
MethodJoinID: MJ1651

Instrument: MS20
Vial: 4
Dilution: 1.0
Soln Conc. Units: ng/ml

Prep Amount: 10.000 g
Prep Final Vol: 10 mL
Solids: %
Dilution: 1.0
Unit Factor: 1

Final Concentration = ((Soln Conc x Prep Final Vol x Dilution) / (Prep Amount x Solids)) x Unit Factor

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F004.D
 Acq On : 27 Feb 2018 11:56 am
 Sample : KWG1801007-3 LCS
 Misc :

Vial: 4
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 28 08:53:18 2018

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 08:52:31 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	98752	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.30	164	48558	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.50	188	98792	200.00	ng/ml	-0.02
38) Chrysene-d12	18.85	240	112412	200.00	ng/ml	-0.02
51) Perylene-d12	23.14	264	117719	200.00	ng/ml	-0.03

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	40686	164.58	ng/ml	-0.01
Spiked Amount	1000.000		Recovery	=	16.46%	
17) Fluorene-d10	9.31	176	44016	141.83	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	14.18%	
37) Fluoranthene-d10	14.67	212	85464	149.87	ng/ml	-0.03
Spiked Amount	1000.000		Recovery	=	14.99%	
44) Terphenyl-d14	15.99	244	76208	159.01	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	15.90%	

Target Compounds

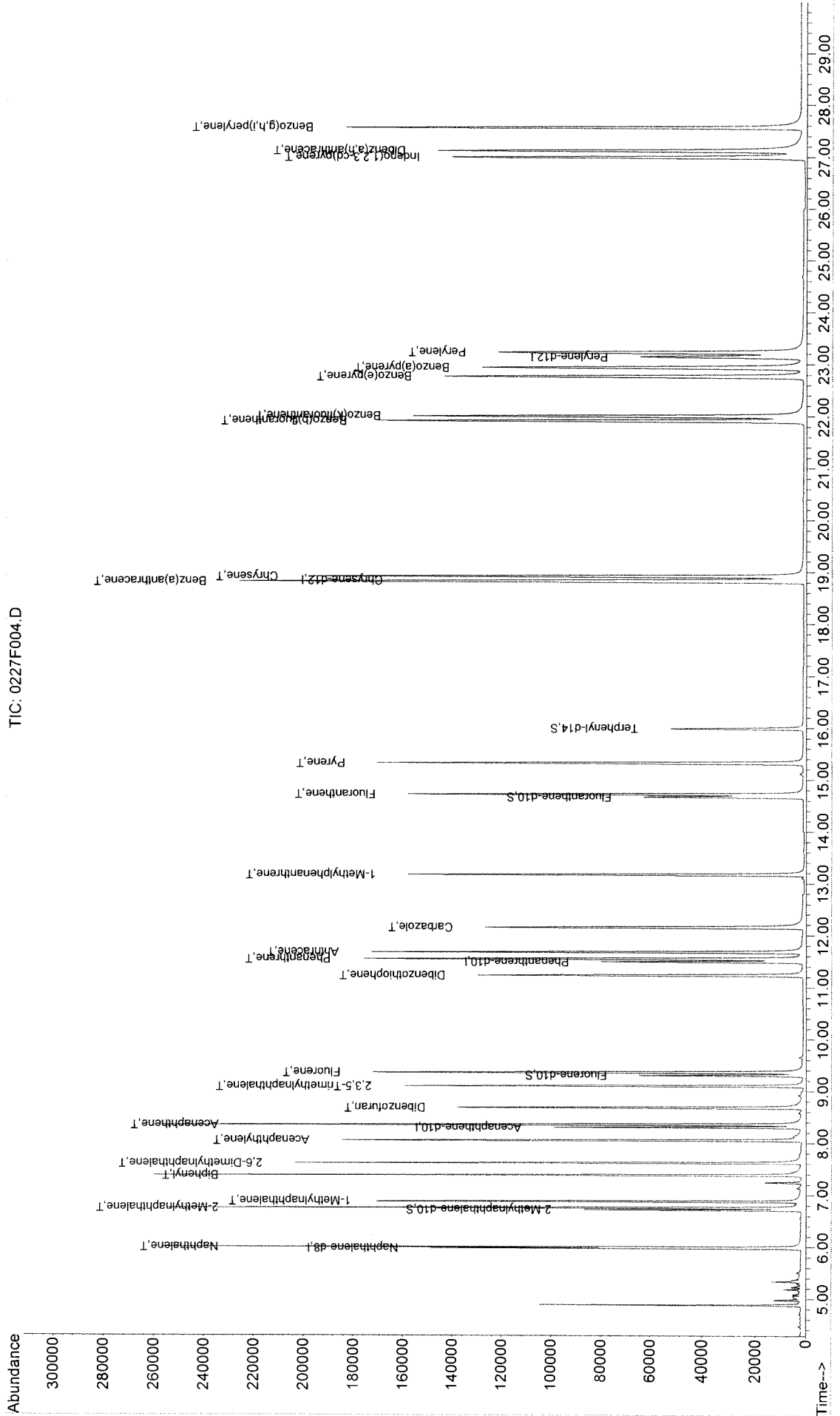
						Qvalue
2) Naphthalene	6.00	128	180831	358.47	ng/ml	99
4) 2-Methylnaphthalene	6.76	142	121627	361.04	ng/ml	93
5) 1-Methylnaphthalene	6.89	142	112093	373.66	ng/ml	84
6) Biphenyl	7.39	154	151029	374.27	ng/ml	98
7) 2,6-Dimethylnaphthalene	7.62	156	108753	372.11	ng/ml	86
13) Acenaphthylene	8.06	152	185044	376.05	ng/ml	99
14) Acenaphthene	8.36	154	108403	357.35	ng/ml	98
15) Dibenzofuran	8.69	168	168336	368.83	ng/ml	94
16) 2,3,5-Trimethylnaphthalene	9.11	170	111141	396.75	ng/ml	94
18) Fluorene	9.37	166	134814	371.28	ng/ml	98
23) Dibenzothiophene	11.24	184	178572	338.63	ng/ml	100
28) Phenanthrene	11.56	178	210156	363.34	ng/ml	99
29) Anthracene	11.68	178	201881	374.92	ng/ml	99
30) Carbazole	12.16	167	189344	402.36	ng/ml	99
31) 1-Methylphenanthrene	13.17	192	160840	391.48	ng/ml	98
36) Fluoranthene	14.73	202	251871	400.06	ng/ml	99
39) Pyrene	15.33	202	260376	410.46	ng/ml	95
45) Benz(a)anthracene	18.83	228	263732	432.20	ng/ml	99
46) Chrysene	18.92	228	250312	411.57	ng/ml	100
52) Benzo(b)fluoranthene	21.92	252	287552	428.21	ng/ml	100
53) Benzo(k)fluoranthene	22.01	252	283344	417.71	ng/ml	100
54) Benzo(e)pyrene	22.77	252	268852	412.30	ng/ml	99
55) Benzo(a)pyrene	22.94	252	249995	431.69	ng/ml	99
56) Perylene	23.23	252	247704	405.74	ng/ml	100
57) Indeno(1,2,3-cd)pyrene	27.00	276	266422	445.42	ng/ml	100
58) Dibenz(a,h)anthracene	27.12	278	267813	432.25	ng/ml	99
59) Benzo(g,h,i)perylene	27.57	276	280575	391.50	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 0227F004.D 110217PAH.M Wed Feb 28 08:57:19 2018

Data File : J:\MS20\DATA\022718\0227F004.D
Acq On : 27 Feb 2018 11:56 am
Sample : KW1801007-3 LCS
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 28 8:53 2018

Vial: 4
Operator: Lweiskopf
Inst : MS20
Multiplr: 1.00
Quant Results File: 110217PAH.RES

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 28 08:52:31 2018
Response via : Initial Calibration




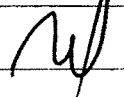
Exception Report

Data File: J:\MS14\DATA\021418\0214F001.D
Lab ID: KWG1800938-1
Run Type: DFTPP
Matrix: WATER

Date Acquired: 02/14/2018 05:44
Date Quantitated:
Batch ID: KWG1800938
Analysis Method: DFTPP
ListJoinID: LJ1965

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review:  **FEB 15 2018**
Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\021418\0214F001.D	Instrument: MS14
Acqu Date: 02/14/2018 05:44	Quant Date:
Run Type: DFTPP	ListJoinID: LJ1965
Lab ID: KWG1800938-1	Soln Conc. Units:

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/15/2018

Analysis Lot: KWG1800938	Prep Lot:	Report Group:
Analysis Method: DFTPP	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS14\METHODS\SIM\A_DFTPP.M	Calibration ID: CAL15579
Title:	Report List ID: LJ1965
Tune Ref:	Method ID: MJ190
MB Ref:	Quant based on Report List

Tune Results

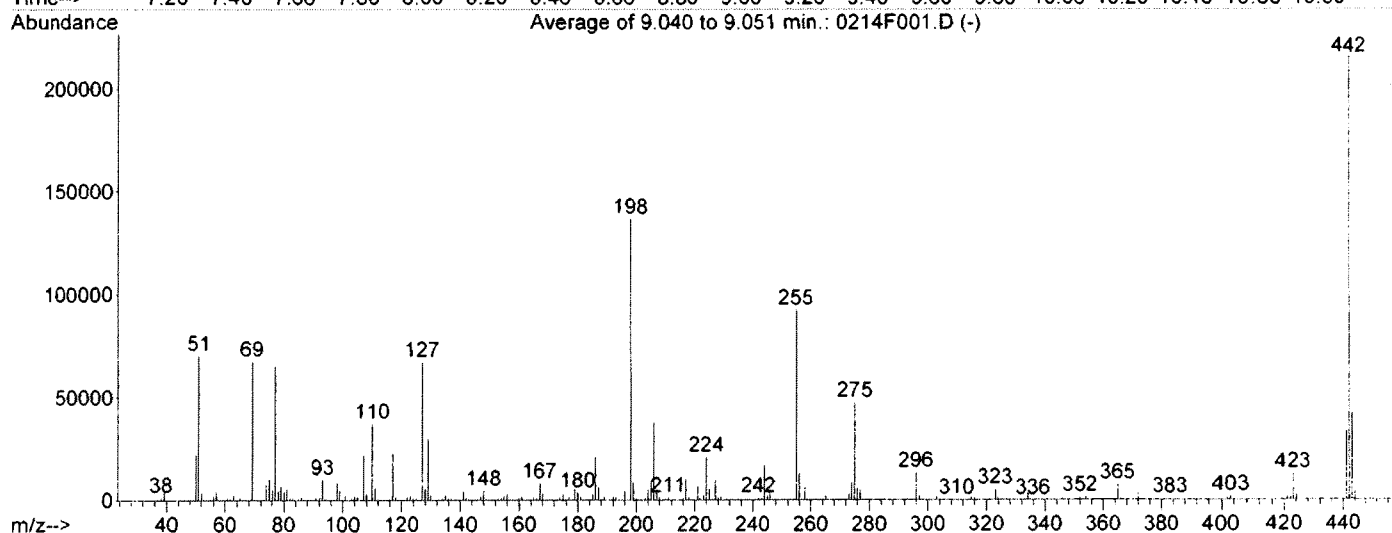
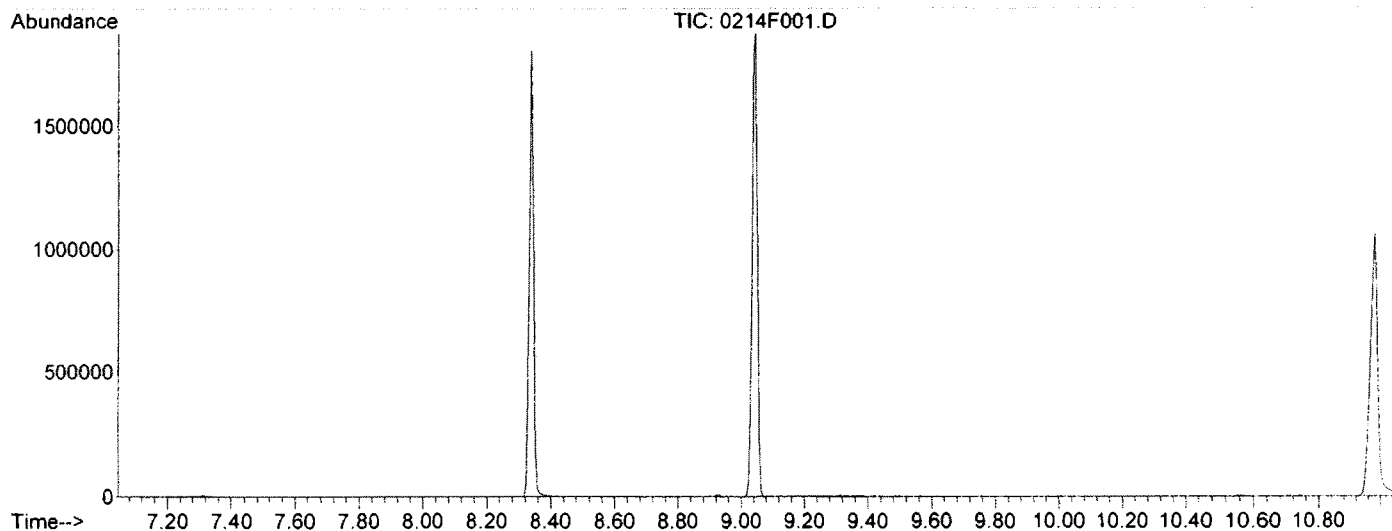
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	51.6	70653	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	49.5	67746	Pass
70	69	0	2	0.6	418	Pass
127	198	10	80	49.3	67538	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	63.3	136944	Pass
199	198	5	9	6.4	8771	Pass
275	198	10	60	34.9	47842	Pass
365	442	1	50	3.5	7494	Pass
441	443	0.01	100	79.5	33424	Pass
442	442	100	100	100.0	216426	Pass
443	442	15	24	19.4	42050	Pass

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS14\DATA\021418\0214F001.D Vial: 1
 Acq On : 14 Feb 2018 5:44 am Operator: LWeiskopf
 Sample : DFTPP @ 10ug/mL | SVM58-3B Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: rteint.p
 Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
 Title : dftpp tune mix



AutoFind: Scans 502, 503, 504; Background Corrected with Scan 494

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	51.6	70653	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	49.5	67746	PASS
70	69	0.00	2	0.6	418	PASS
127	198	10	80	49.3	67538	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	63.3	136944	PASS
199	198	5	9	6.4	8771	PASS
275	198	10	60	34.9	47842	PASS
365	442	1	50	3.5	7494	PASS
441	443	0.01	100	79.5	33424	PASS
442	442	30	100	100.0	216426	PASS
443	442	15	24	19.4	42050	PASS

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.05	535	53.05	118	69.00	67746	80.00	4396
38.10	1404	55.05	647	69.85	418	81.00	5535
39.10	6071	56.05	2170	70.20	79	82.05	1269
39.95	334	57.00	4329	72.30	79	83.00	1045
41.00	332	57.90	98	73.00	600	84.10	124
43.90	75	61.00	1062	74.05	7820	85.05	972
44.90	51	62.00	1161	75.00	10587	86.00	1736
49.20	321	63.00	2799	76.20	5119	87.00	828
50.10	22291	64.00	445	77.10	65674	88.00	235
51.10	70653	65.05	1188	78.05	4713	90.10	98
52.05	3574	67.10	128	79.00	6772	90.95	1401

Average of 9.040 to 9.051 min.: 0214F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
92.10	1593	104.00	2207	116.10	837	128.00	5597
93.00	10244	105.00	1875	117.00	22822	129.00	30027
93.95	654	106.00	495	118.00	1668	130.00	2544
95.05	198	107.00	21964	119.95	205	131.00	425
96.05	363	108.00	3160	120.85	157	132.00	309
98.00	8685	110.00	37474	121.10	60	133.00	54
99.00	5013	111.00	5968	122.00	1683	134.00	1053
100.00	414	112.05	730	123.00	2407	134.95	2579
101.00	2520	112.85	189	123.95	1144	136.00	1027
102.10	171	113.05	172	125.00	1025	137.00	1126
103.05	1146	114.90	119	127.00	67538	137.85	230

Average of 9.040 to 9.051 min.: 0214F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
138.80	122	148.95	884	158.00	877	168.95	593
139.00	140	150.00	252	159.00	728	169.85	235
140.10	677	151.00	579	160.00	1338	170.80	216
141.00	4407	151.80	58	160.95	1676	171.00	132
142.00	1383	152.05	245	162.00	419	171.20	50
143.00	802	153.00	1207	163.90	117	171.95	548
143.95	234	153.95	1082	164.05	133	172.95	889
145.05	210	155.00	2153	165.00	1626	174.00	1513
145.95	802	156.00	2996	166.00	1223	175.00	3164
147.00	2079	157.00	553	167.00	8325	176.00	753
148.00	4695	157.30	87	168.00	3400	177.00	1532

Average of 9.040 to 9.051 min.: 0214F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
178.00	543	189.00	1744	201.30	418	211.70	170
178.95	5545	190.00	224	201.50	304	213.00	53
180.00	3745	191.00	633	203.00	1251	215.00	665
181.00	1635	192.00	1726	204.00	5357	216.00	1154
182.00	183	193.00	1978	205.00	9360	217.00	10199
183.10	150	194.00	447	206.00	37952	217.95	1382
184.00	637	194.95	230	207.00	5110	218.90	70
185.05	2915	195.95	4470	208.00	1540	219.60	122
186.00	21168	198.00	136944	209.00	419	221.00	7007
187.00	6473	198.95	8771	210.05	613	221.80	1341
188.00	639	199.95	741	210.95	1346	222.10	208

Average of 9.040 to 9.051 min.: 0214F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
222.95	2513	233.95	661	246.00	4139	257.20	207
224.00	21109	234.95	806	246.95	790	258.00	6032
225.00	5661	235.95	506	247.90	54	258.95	1028
226.00	768	236.95	667	248.95	635	259.85	129
227.00	9908	239.00	449	249.90	78	264.00	103
228.00	1484	239.95	389	250.85	130	264.20	120

229.95	279	242.00	1118	253.00	642	265.90	360
231.00	795	243.05	1318	255.00	92690	270.00	127
232.00	50	244.00	16983	256.00	13197	271.00	182
232.90	108	245.00	2211	257.00	842	271.90	181

Average of 9.040 to 9.051 min.: 0214F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
272.10	120	283.95	369	297.95	168	317.05	175
272.30	69	285.05	735	300.95	232	321.00	499
273.00	2924	285.95	169	302.00	210	321.95	189
274.00	8751	288.85	184	303.00	1825	323.00	5165
275.00	47842	290.00	98	303.90	521	323.95	939
276.00	5968	291.90	151	307.95	250	325.90	51
276.95	4683	292.10	84	309.95	194	326.90	810
277.95	725	292.95	965	312.95	167	328.00	384
278.90	56	294.05	264	313.95	538	332.00	238
281.90	70	296.00	13419	314.95	1561	332.70	113
283.00	484	297.00	1989	316.00	1073	333.10	469

Average of 9.040 to 9.051 min.: 0214F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
334.00	3300	366.00	1160	390.95	286	438.95	155
335.00	976	366.80	61	392.05	176	439.40	107
335.90	69	370.00	73	401.00	81	440.20	362
341.00	626	371.05	442	401.95	1247	441.05	33424
346.00	911	372.00	3201	403.00	1858	442.05	216426
346.90	273	373.00	876	404.00	643	443.05	42050
352.00	1476	373.90	51	421.00	1694	444.00	3790
353.05	1086	382.95	747	422.05	1623	444.95	293
354.00	1868	383.90	125	423.00	12685		
355.00	528	384.20	62	424.05	2567		
365.00	7494	389.95	324	424.95	210		



Exception Report

Data File: J:\MS20\DATA\022718\0227F001.D
Lab ID: KWG1801193-1
RunType: DFTPP
Matrix: WATER

Date Acquired: 02/27/2018 09:58
Date Quantitated:
Batch ID: KWG1801193
Analysis Method: DFTPP
ListJoinID: LJ1965

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review:  **FEB 28 2018**
Secondary Review: 

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F001.D	Instrument: MS20
Acqu Date: 02/27/2018 09:58	Quant Date:
Run Type: DFTPP	Vial: 1
Lab ID: KWG1801193-1	Dilution: 1.0
	Soln Conc. Units:

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/28/2018

Analysis Lot: KWG1801193	Prep Lot:	Report Group:
Analysis Method: DFTPP	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS20\METHODS\DFTPLPLVI.M	Calibration ID: CAL15594
Title:	Report List ID: LJ1965
Tune Ref:	Method ID: MJ190
MB Ref:	Quant based on Report List

Tune Results

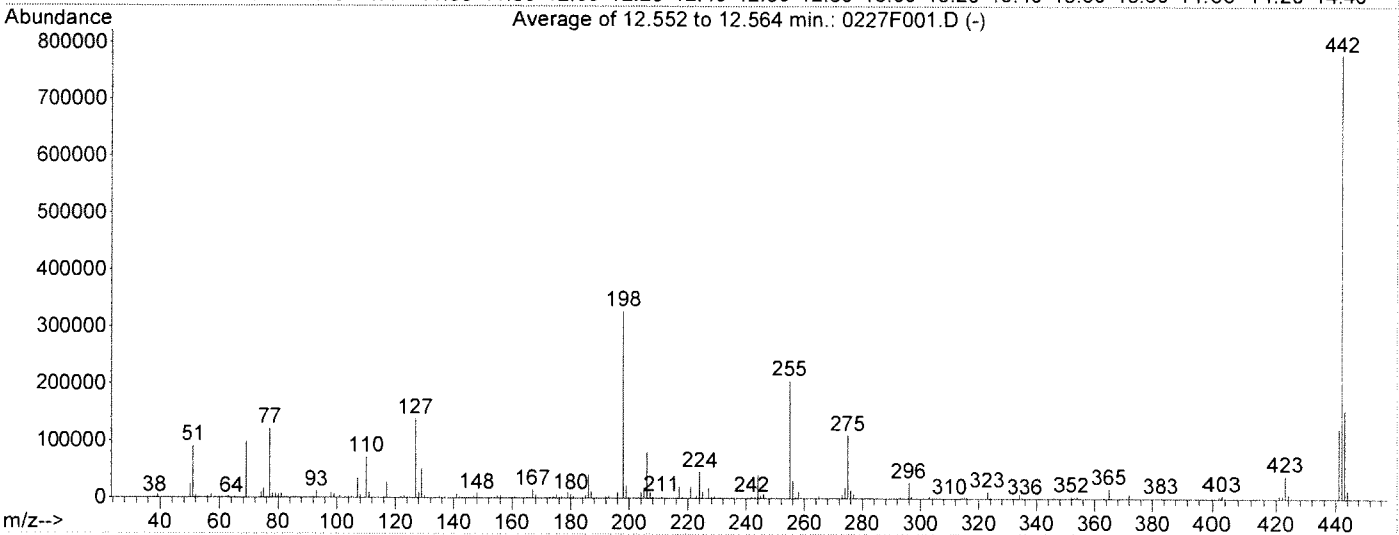
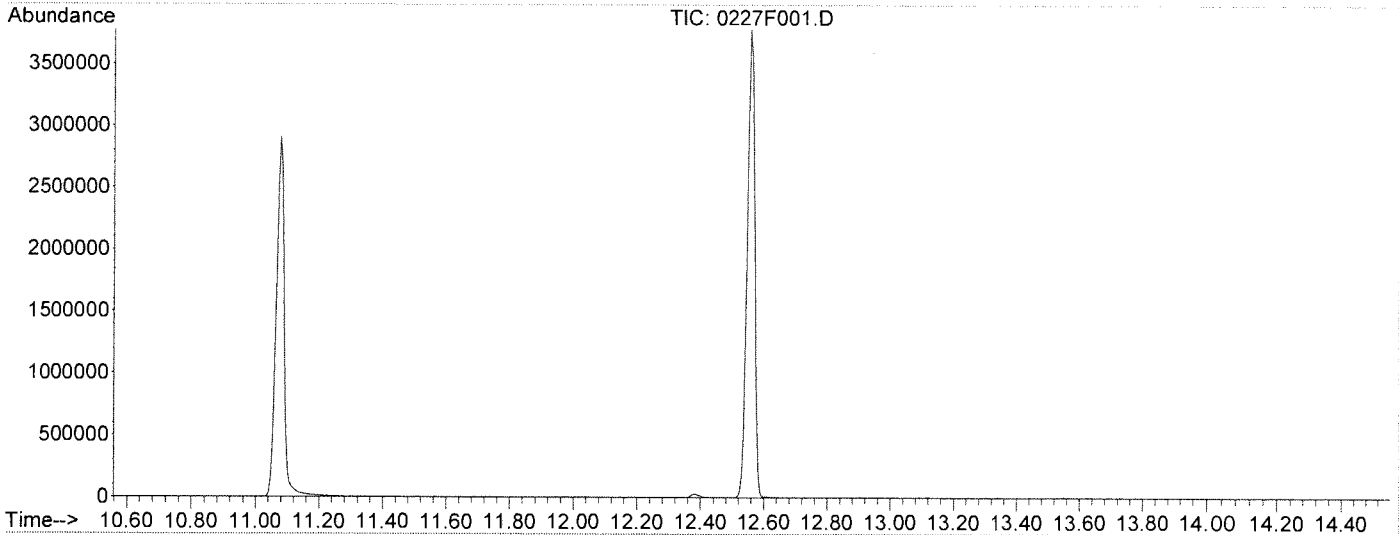
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	27.6	90733	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	29.9	98237	Pass
70	69	0	2	0.5	511	Pass
127	198	10	80	42.1	138272	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	42.0	328234	Pass
199	198	5	9	6.7	21840	Pass
275	198	10	60	33.6	110264	Pass
365	442	1	50	2.2	17257	Pass
441	443	0.01	100	79.3	123106	Pass
442	442	100	100	100.0	781482	Pass
443	442	15	24	19.9	155205	Pass

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F001.D Vial: 1
 Acq On : 27 Feb 2018 9:58 am Operator: LWeiskopf
 Sample : DFTPP @ 10ug/mL | SVM58-3C Inst : MS20
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Method : J:\MS20\METHODS\DFTPPLVI.M (RTE Integrator)
 Title : DFTPP



AutoFind: Scans 1408, 1409, 1410; Background Corrected with Scan 1399

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	27.6	90733	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	29.9	98237	PASS
70	69	0.00	2	0.5	511	PASS
127	198	10	80	42.1	138272	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	42.0	328234	PASS
199	198	5	9	6.7	21840	PASS
275	198	10	60	33.6	110264	PASS
365	442	1	50	2.2	17257	PASS
441	443	0.01	100	79.3	123106	PASS
442	442	30	100	100.0	781482	PASS
443	442	15	24	19.9	155205	PASS

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
37.05	360	55.05	292	69.00	98237	82.00	2040
38.10	1175	56.05	2529	70.05	511	83.05	1859
39.10	6773	57.10	5920	73.05	856	83.95	62
40.05	216	57.90	187	74.10	9933	85.05	1447
41.10	177	58.05	202	75.05	15585	86.00	2188
45.15	142	61.10	1140	76.20	2076	87.05	1082
49.00	70	62.05	1262	77.10	120930	88.05	445
50.10	23789	63.10	3647	78.10	7877	89.05	174
51.10	90733	64.10	524	79.05	7048	91.05	1697
52.10	4652	65.10	1847	80.05	5361	92.05	2179
53.00	259	67.15	151	81.00	8090	93.05	11702

Average of 12.552 to 12.564 min.: 0227F001.D

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
94.05	844	105.00	2532	118.00	2077	130.00	4350
95.05	307	107.00	35322	118.95	235	131.00	883
96.05	679	108.00	5848	120.00	454	132.05	531
98.00	9381	110.00	70920	121.10	68	132.70	77
99.00	7230	111.00	10109	122.00	2287	133.00	100
99.95	613	112.05	1211	123.00	3782	134.00	1472
101.00	4509	112.80	141	124.00	1551	135.05	4151
101.90	78	113.00	251	125.00	1571	136.05	1726
102.10	92	114.90	73	127.00	138272	137.05	2006
103.00	1539	116.05	2294	128.05	10297	138.00	363
104.00	3027	117.00	27682	129.00	51648	139.00	325

Average of 12.552 to 12.564 min.: 0227F001.D

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
140.10	433	151.20	971	161.95	857	173.05	1600
141.00	6524	151.90	600	162.95	264	174.00	3116
142.00	2226	153.00	2096	164.05	451	175.05	5397
143.00	1646	154.00	1719	165.00	2557	176.05	1802
144.05	368	155.00	3979	166.05	2256	176.95	2628
145.00	401	156.05	5648	167.00	14575	178.00	595
146.00	1176	157.05	1289	168.00	6376	179.00	10275
147.00	3423	157.95	1279	169.00	1170	180.00	6991
148.00	7816	159.05	943	170.05	456	181.00	3457
149.00	1580	160.00	1899	170.90	667	182.05	747
150.05	475	161.00	3143	172.00	1153	182.95	413

Average of 12.552 to 12.564 min.: 0227F001.D

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
184.05	907	195.00	401	208.00	2531	224.00	45752
185.05	5284	196.00	10600	209.00	705	225.00	11912
186.00	41597	198.00	328234	211.00	3481	226.00	432
187.05	11571	199.00	21840	213.05	167	227.00	18141
188.05	1123	200.00	1728	214.95	920	228.00	2505
189.00	2514	201.50	1767	216.05	1858	229.00	4001
190.00	442	203.00	1969	217.00	20250	229.90	547
191.05	1150	204.00	11150	218.00	2480	231.00	1761
192.00	3283	205.00	19309	219.00	181	232.00	390
193.00	3807	206.00	80800	221.00	20109	232.95	387
194.00	795	207.05	10393	223.00	5150	234.00	1261

Average of 12.552 to 12.564 min.: 0227F001.D

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
235.00	1446	246.00	7222	258.00	11274	272.05	446
235.90	870	246.95	1340	259.00	1803	273.00	7052
237.00	1374	248.05	398	259.95	394	274.00	19114
237.85	155	248.95	1463	261.00	371	275.00	110264
238.95	791	249.95	283	261.90	73	276.00	14739
239.95	629	251.00	292	263.95	397	277.00	8260

242.00	2840	253.00	928	265.95	693	278.95	294
243.10	3369	255.00	206464	269.90	111	281.95	180
244.00	41789	256.00	30354	270.95	293	283.00	1003
245.05	5656	257.00	2462	271.20	95	284.00	632

Average of 12.552 to 12.564 min.: 0227F001.D

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
285.05	1650	301.05	429	317.00	365	333.05	1224
286.00	282	302.05	602	321.05	1109	334.00	7888
288.95	402	303.05	3631	322.00	443	335.00	2034
289.95	396	304.00	1018	323.00	11575	336.00	252
290.80	102	308.05	517	324.00	2281	338.90	163
291.95	419	308.95	346	325.00	79	339.80	80
293.00	2011	310.00	462	325.90	191	340.10	87
293.95	540	313.00	359	326.95	1920	341.00	1331
296.00	27954	314.00	1752	327.95	1049	342.05	394
296.95	4035	315.00	3578	328.90	81	345.95	2452
298.05	282	316.00	2088	332.00	928	346.95	490

Average of 12.552 to 12.564 min.: 0227F001.D

DFTPP @ 10ug/mL | SVM58-3C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
351.00	104	373.00	1928	401.20	209	425.00	744
352.00	3901	373.90	107	402.00	3606	438.90	149
353.00	2787	376.95	135	403.00	5485	439.30	95
354.00	4168	383.00	2245	403.95	1835	441.05	123106
354.95	695	383.90	172	405.00	332	442.00	781482
359.00	335	384.05	395	409.90	76	443.00	155205
365.00	17257	384.95	266	415.00	195	444.00	14818
365.95	2445	389.95	1240	421.00	5198	444.95	664
370.05	406	391.00	893	422.05	4859		
371.00	1275	392.05	643	423.00	39906		
372.00	7728	401.00	382	424.00	8125		

Quantitation Report

Data File: J:\MS14\DATA\022818\0228F001.D	Instrument: MS14
Acqu Date: 02/28/2018 09:03	Quant Date:
Run Type: DFTPP	Vial: 1
Lab ID: KWG1801214-1	Dilution: 1.0
	Soln Conc. Units:
	ListJoinID: LJ1965

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 03/01/2018

Analysis Lot: KWG1801214	Prep Lot:	Report Group:
Analysis Method: DFTPP	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS14\METHODS\SIM\A_DFTPP.M	Calibration ID: CAL15579
Title:	Report List ID: LJ1965
Tune Ref:	Method ID: MJ190
MB Ref:	Quant based on Report List

Tune Results

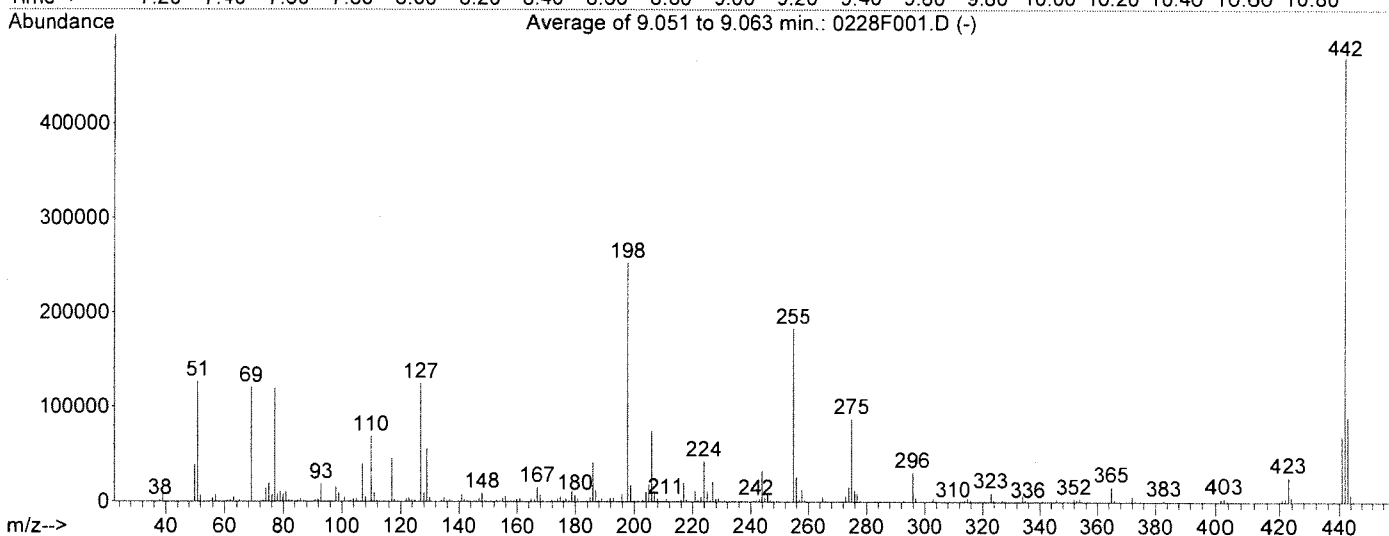
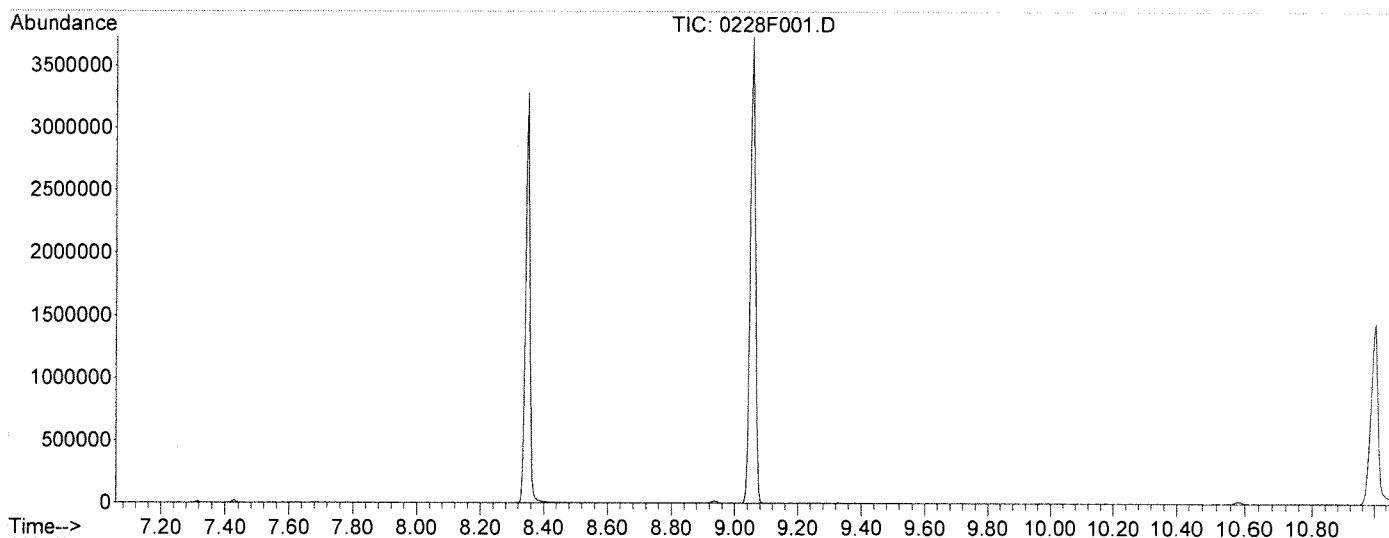
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	50.2	126845	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	47.8	120816	Pass
70	69	0	2	0.7	831	Pass
127	198	10	80	49.4	124821	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	53.7	252757	Pass
199	198	5	9	6.9	17370	Pass
275	198	10	60	34.7	87650	Pass
365	442	1	50	3.4	15988	Pass
441	443	0.01	100	76.9	68896	Pass
442	442	100	100	100.0	470826	Pass
443	442	15	24	19.0	89568	Pass

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS14\DATA\022818\0228F001.D Vial: 1
 Acq On : 28 Feb 2018 9:03 am Operator: LWeiskopf
 Sample : DFTPP @ 10ug/mL | SVM58-3B Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: rteint.p
 Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
 Title : dftpp tune mix



AutoFind: Scans 504, 505, 506; Background Corrected with Scan 497

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	50.2	126845	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	47.8	120816	PASS
70	69	0.00	2	0.7	831	PASS
127	198	10	80	49.4	124821	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	53.7	252757	PASS
199	198	5	9	6.9	17370	PASS
275	198	10	60	34.7	87650	PASS
365	442	1	50	3.4	15988	PASS
441	443	0.01	100	76.9	68896	PASS
442	442	30	100	100.0	470826	PASS
443	442	15	24	19.0	89568	PASS

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.90	67	48.90	615	59.90	175	72.20	58
36.95	752	50.00	38800	60.90	1601	73.00	1522
38.00	2140	51.00	126845	62.00	1846	73.90	14289
39.00	9856	52.00	6742	62.90	5092	74.90	19204
39.90	629	52.95	333	63.95	611	76.00	7777
40.90	64	53.90	67	64.95	2092	77.00	119509
42.80	60	54.90	981	65.90	56	77.90	7692
43.05	190	55.90	3631	67.10	189	78.90	10868
43.80	71	56.90	7562	68.90	120816	79.90	8070
44.90	282	57.90	341	69.85	831	80.90	10366
48.00	215	59.00	60	70.90	53	81.85	2113

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.95	1791	92.90	18887	103.90	3664	116.90	45704
83.70	76	93.90	1149	104.90	3479	117.85	2914
83.90	210	94.85	343	106.90	39968	118.95	338
84.95	1852	95.80	309	107.90	5734	119.90	460
85.90	3348	96.00	236	108.90	416	120.95	425
86.90	1370	97.90	15671	109.90	69141	121.85	3378
87.85	451	98.90	9615	110.90	10288	122.90	4562
88.90	334	99.90	1098	111.90	1323	123.85	1897
89.80	110	100.90	4692	112.85	527	124.85	2051
90.90	2229	101.70	66	114.80	159	126.90	124821
91.90	2802	102.90	1792	115.90	1145	127.90	10187

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
128.90	55888	139.05	177	149.85	436	159.85	2562
129.90	4968	139.80	1021	150.95	1114	160.95	3226
130.85	976	140.90	7915	151.60	373	161.85	934
132.00	426	141.80	2413	151.90	277	162.80	277
132.90	341	142.85	1685	152.85	2477	163.75	321
133.85	1987	143.90	478	153.90	1732	164.80	3139
134.90	4699	144.80	392	154.90	4258	165.85	2406
135.85	2134	145.85	1349	155.90	6046	166.90	15289
136.90	2449	146.90	3588	156.80	1047	167.85	7137
137.75	574	147.90	9412	157.85	1524	168.90	1197
138.80	300	148.85	1752	158.85	1215	169.65	468

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
170.80	742	181.85	454	191.90	3892	203.90	10608
171.80	1593	182.60	314	192.90	4115	204.90	18170
172.85	1740	182.90	106	193.95	729	205.90	74416
173.85	3338	183.85	1116	195.00	99	206.90	9596
174.90	5785	184.90	5246	195.85	7965	207.85	2949
175.90	1614	185.90	41592	197.80	252757	208.85	996
176.80	3077	186.90	12057	198.80	17370	209.80	377
177.85	1111	187.85	1229	199.90	1389	210.20	563
178.80	11337	188.85	3473	200.60	128	210.85	3122
179.90	7211	189.90	561	201.35	1259	211.70	106
180.85	3158	190.85	1465	202.80	2123	212.70	81

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
212.90	109	224.90	10958	235.85	913	246.80	1551
214.75	993	225.95	1464	236.80	1344	247.85	373
215.90	2122	226.85	20889	237.80	246	248.90	1290
216.80	19960	227.85	2989	238.85	913	249.70	168
217.85	2400	228.85	3843	239.85	676	250.70	509
218.90	326	229.85	649	240.85	1390	251.80	484

221.65	1738	231.90	198	242.95	2647	254.85	182912
221.90	1212	232.75	354	243.90	32405	255.90	25408
222.90	4930	233.80	1330	244.90	4306	256.85	2353
223.90	42469	234.80	1399	245.85	8448	257.80	12811

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
258.85	2045	272.85	5603	283.80	688	294.90	798
259.80	354	273.90	15565	284.85	1398	295.85	30842
260.75	385	274.90	87650	285.80	347	296.85	4171
262.80	75	275.85	12082	288.80	484	297.80	268
263.85	471	276.80	8769	289.80	291	300.80	434
264.85	5282	277.85	1457	290.80	121	301.65	375
265.85	948	278.75	191	291.10	62	301.90	123
269.80	377	279.00	55	291.70	258	302.85	3848
270.80	536	280.60	67	292.10	79	303.80	863
271.80	179	281.70	124	292.85	1765	304.95	194
271.95	406	282.85	948	293.95	446	307.75	406

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
308.70	58	321.85	597	334.80	2191	352.85	2401
308.95	251	322.90	9508	335.85	209	353.85	3542
309.80	536	323.85	1653	339.75	188	354.80	706
311.80	144	324.75	138	340.85	1408	358.70	148
312.80	388	325.75	222	341.80	341	358.90	62
313.85	1611	326.75	1859	345.85	2646	364.00	154
314.85	3759	327.90	1038	346.70	107	364.80	15988
315.85	2059	328.90	161	346.95	299	365.80	2427
316.80	387	331.85	815	350.70	140	366.90	118
319.75	165	332.85	1127	350.90	55	369.75	300
320.80	1105	333.90	6781	351.85	3482	370.85	907

Average of 9.051 to 9.063 min.: 0228F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
371.90	5864	391.90	443	423.85	4735		
372.85	1531	400.85	368	424.80	482		
376.80	123	401.85	2747	439.05	154		
382.80	1766	402.85	4105	440.90	68896		
383.80	343	403.80	1240	441.90	470826		
384.00	143	404.70	73	442.90	89568		
384.90	148	404.90	95	443.90	7957		
389.70	348	414.90	191	444.85	525		
389.90	584	420.85	3163				
390.80	405	421.85	3516				
391.00	173	422.90	26109				


Exception Report


Data File: J:\MS14\DATA\031318\0313F001.D
Lab ID: KWG1801409-1
RunType: DFTPP
Matrix: WATER

Date Acquired: 03/13/2018 04:54
Date Quantitated:
Batch ID: KWG1801409
Analysis Method: DFTPP
ListJoinID: LJ1965

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
Tune Ion Ratio	NA	NA	NA	x	

Primary Review:  **MAR 14 2018**

Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\031318\0313F001.D	Instrument: MS14
Acqu Date: 03/13/2018 04:54	Quant Date:
Run Type: DFTPP	Vial: 1
Lab ID: KWG1801409-1	Dilution: 1.0
	Soln Conc. Units:
ListJoinID: LJ1965	

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 03/14/2018

Analysis Lot: KWG1801409	Prep Lot:	Report Group:
Analysis Method: DFTPP	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS14\METHODS\SIMA_DFTPP.M	Calibration ID: CAL15579
Title:	Report List ID: LJ1965
Tune Ref:	Method ID: MJ190
MB Ref:	Quant based on Report List

Tune Results

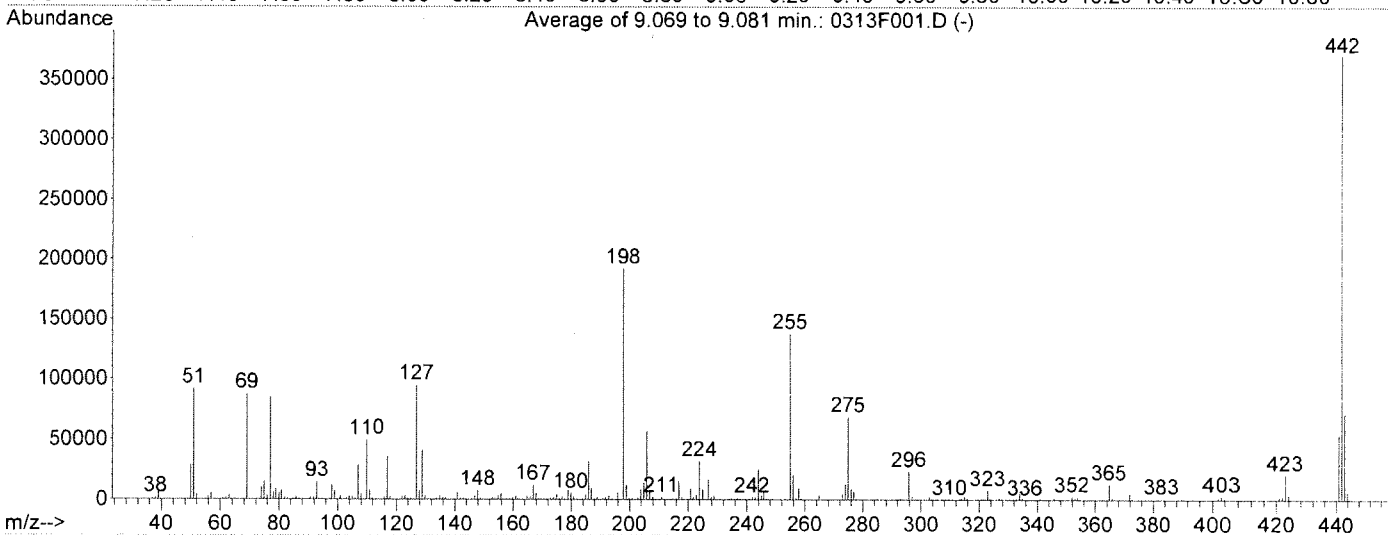
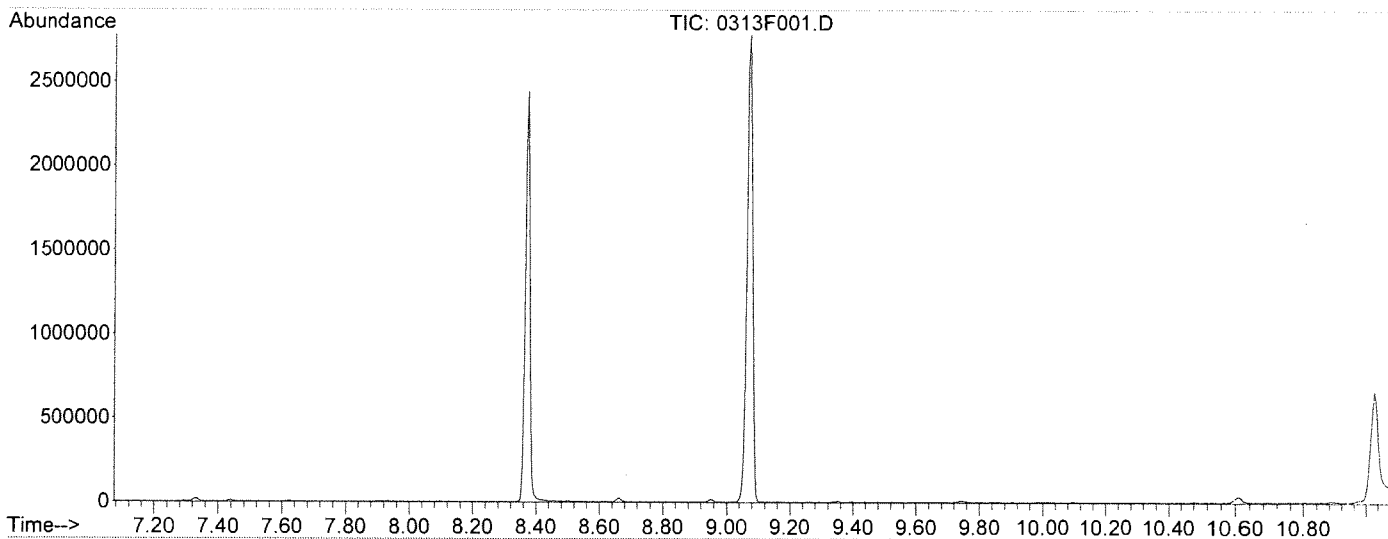
Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
51	198	10	80	47.8	91958	Pass
68	69	0	2	0.0	0	Pass
69	198	0	100	45.5	87620	Pass
70	69	0	2	0.7	606	Pass
127	198	10	80	49.4	94986	Pass
197	198	0	2	0.0	0	Pass
198	442	30	100	51.8	192466	Pass
199	198	5	9	6.4	12374	Pass
275	198	10	60	35.8	68901	Pass
365	442	1	50	3.4	12790	Pass
441	443	0.01	100	75.4	53954	Pass
442	442	100	100	100.0	371690	Pass
443	442	15	24	19.2	71544	Pass

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F001.D Vial: 1
 Acq On : 13 Mar 2018 4:54 am Operator: LWeiskopf
 Sample : DFTPP @ 10ug/mL | SVM58-3B Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: rteint.p
 Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
 Title : dftpp tune mix



AutoFind: Scans 507, 508, 509; Background Corrected with Scan 500

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	47.8	91958	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	45.5	87620	PASS
70	69	0.00	2	0.7	606	PASS
127	198	10	80	49.4	94986	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	51.8	192466	PASS
199	198	5	9	6.4	12374	PASS
275	198	10	60	35.8	68901	PASS
365	442	1	50	3.4	12790	PASS
441	443	0.01	100	75.4	53954	PASS
442	442	30	100	100.0	371690	PASS
443	442	15	24	19.2	71544	PASS

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.95	701	49.00	875	61.95	1563	72.90	816
38.00	1732	50.00	29035	62.95	3825	73.10	185
39.00	7087	50.95	91958	64.00	145	73.90	10526
39.90	498	51.95	4456	64.15	198	74.90	14978
40.90	315	52.90	147	64.90	1337	76.00	3404
42.00	90	53.10	77	65.90	53	77.00	84946
43.90	147	54.90	703	66.90	439	78.00	5682
44.90	205	55.95	2908	68.90	87620	78.90	8708
47.90	81	56.90	5650	69.85	606	79.90	5739
48.10	79	57.85	314	71.10	68	80.85	7522
48.50	86	60.95	1375	72.00	140	81.90	1993

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.90	1544	92.90	14583	104.90	2856	114.10	182
83.85	196	93.85	840	105.90	1368	114.80	287
84.85	1422	94.85	123	106.90	28882	115.10	101
85.90	2343	95.90	618	107.90	4501	115.95	2090
86.90	869	97.90	12047	108.90	277	116.90	35466
87.75	247	98.90	7257	109.90	49544	117.90	2456
88.00	73	99.85	793	110.90	7526	118.90	322
88.90	380	100.90	3492	111.90	1360	119.80	377
90.00	60	101.75	194	112.70	71	120.95	268
90.85	2096	102.85	1543	112.95	357	121.90	2712
91.90	2054	103.90	2952	113.80	60	122.90	3476

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
123.85	1351	134.90	3283	142.85	1248	151.10	119
124.85	1413	135.90	1522	143.85	431	151.50	162
126.90	94986	136.90	1666	144.70	230	151.85	344
127.90	7384	138.00	295	144.90	136	152.85	1843
128.90	41389	138.75	298	145.20	122	153.80	1486
129.85	3345	139.10	53	145.85	1199	154.90	3188
130.90	781	139.70	338	146.85	3280	155.90	4740
131.85	464	139.90	232	147.85	7733	156.90	752
132.30	54	140.20	302	148.85	1319	157.85	1085
132.85	235	140.85	6226	149.85	299	158.80	985
133.85	1323	141.90	1810	150.85	591	159.85	1861

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
160.90	2563	170.75	683	181.80	637	191.80	2444
161.80	687	171.80	968	182.75	194	192.90	3081
162.90	202	172.90	1366	183.00	71	193.90	775
163.10	121	173.85	2252	183.90	665	194.85	261
163.85	404	174.90	4664	184.90	4415	195.90	5823
164.80	2855	175.90	1166	185.90	31925	196.60	384
165.90	2701	176.85	2306	186.90	9287	197.80	192466
166.90	12130	177.90	919	187.90	933	198.80	12374
167.90	5331	178.85	7724	188.90	2254	199.85	1120
168.95	1092	179.85	5390	189.90	403	200.70	101
169.80	654	180.85	2482	190.80	1224	200.95	1321

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
201.30	149	210.15	817	221.75	2281	232.00	164
201.60	355	210.90	2061	222.90	4063	232.90	313
201.90	243	211.85	429	223.90	31992	233.80	959
202.90	2088	212.95	143	224.90	8481	234.75	1082
203.90	8462	214.90	932	225.85	918	235.90	1122
204.90	14370	215.90	1537	226.80	16503	236.90	1285

206.90	7388	217.85	2069	228.80	3313	238.80	712
207.85	2486	218.85	235	229.85	456	239.90	560
208.85	866	219.90	180	230.80	666	240.80	983
209.80	292	220.90	9024	231.00	454	241.90	2028

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
242.95	1907	254.90	137960	269.85	155	281.70	84
243.90	25064	255.90	20509	270.95	422	282.85	631
244.90	3265	256.85	1425	271.70	178	283.90	516
245.80	6521	257.85	9859	271.95	262	284.85	1228
246.90	1145	258.80	1405	272.90	4628	285.60	57
247.85	358	259.75	243	273.85	12476	285.85	213
248.85	789	260.80	172	274.90	68901	287.80	112
249.85	199	263.85	315	275.90	9062	288.70	151
250.85	349	264.85	3970	276.85	7032	288.90	155
251.90	358	265.90	650	277.80	1071	289.80	168
252.85	790	266.80	60	278.75	212	291.80	419

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
292.85	1334	307.80	390	322.90	7902	334.90	1538
293.85	493	308.85	292	323.80	1363	335.80	133
295.00	174	309.80	437	324.85	212	338.80	102
295.85	23666	312.80	262	325.75	221	340.85	892
296.85	3287	313.85	1294	326.80	1533	341.85	251
297.80	243	314.85	3024	327.70	252	345.80	1721
300.80	226	315.90	1472	327.85	505	346.70	273
301.00	122	316.80	266	328.85	189	346.90	111
301.80	493	320.80	687	331.90	716	350.90	122
302.90	2744	321.70	174	332.85	867	351.85	2888
303.85	701	322.00	331	333.90	5443	352.85	1646

Average of 9.069 to 9.081 min.: 0313F001.D

DFTPP @ 10ug/mL | SVM58-3B

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
353.85	2404	382.80	1296	414.80	157	443.90	6110
354.85	516	383.75	275	420.80	2769	444.80	562
358.60	73	389.80	727	421.85	2574		
358.80	121	390.80	480	422.90	20794		
364.00	98	391.80	244	423.90	3861		
364.80	12790	400.85	331	424.90	443		
365.80	1776	401.80	2216	438.80	64		
369.80	331	402.90	3119	439.00	64		
370.80	750	403.85	1017	440.90	53954		
371.85	5015	404.80	159	441.90	371690		
372.85	934	409.70	81	442.90	71544		


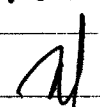
Exception Report

Data File: J:\MS14\DATA\021418\0214F002.D
Lab ID: KWG1800938-2
RunType: CCV
Matrix: WATER

Date Acquired: 02/14/2018 06:09
Date Quantitated: 02/14/2018 06:28
Batch ID: KWG1800938
Analysis Method: 8270D SIM
MethodJoinID: MJ1638

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review:  **FEB 15 2018**
Secondary Review: 

Quantitation Report

Data File: J:\MS14\DATA\021418\0214F002.D	Instrument: MS14
Acqu Date: 02/14/2018 06:09	Quant Date: 02/14/2018 06:28
Run Type: CCV	MethodJoinID: MJ1651
Lab ID: KWG1800938-2	Vial: 2
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/15/2018

Analysis Lot: KWG1800938	Prep Lot:	Report Group:
Analysis Method: 8270D SIM	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID: CAL15579
Title:	
Tune Ref: J:\MS14\DATA\021418\0214F001.D	Method ID: MJ1651
MB Ref:	Quant based on Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.72	-0.06	136	40889	200.00	OK
2	Acenaphthene-d10	6.28	-0.05	164	19453	200.00	OK
3	Phenanthrene-d10	7.51	-0.05	188	42645	200.00	OK
4	Chrysene-d12	10.02	-0.06	240	45484	200.00	OK
5	Perylene-d12	13.03	-0.11	264	44446	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	5.35			152	47798	436.01		70-130	NA
2	Fluorene-d10	6.72			176	52239	392.56		38-104	NA
3	Fluoranthene-d10	8.49			212	102943	384.18		39-109	NA
4	Terphenyl-d14	8.84			244	73393	382.70		38-113	NA

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.74			128	93063	399.56			
1	2-Methylnaphthalene	5.38			142	59916	369.50			
1	1-Methylnaphthalene	5.47			142	56505	394.24			
1	Biphenyl	5.79			154	74228	361.67			
1	2,6-Dimethylnaphthalene	5.93			156	52201	357.90			
2	Acenaphthylene	6.16			152	100338	421.52			
2	Acenaphthene	6.31			154	55811	416.95			
2	Dibenzofuran	6.45			168	95970	456.31			
2	2,3,5-Trimethylnaphthalene	6.63			170	52330	386.53			
2	Fluorene	6.74			166	70194	425.49			
3	Dibenzothiophene	7.43			184	115173	425.95			
3	Phenanthrene	7.53			178	108044	408.57			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 †: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\021418\0214F002.D
 Acqu Date: 02/14/2018 06:09
 Run Type: CCV
 Lab ID: KWG1800938-2

Quant Date: 02/14/2018 06:28
 MethodJoinID: MJ1651

Instrument: MS14
 Vial: 2
 Dilution: 1.0
 Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Anthracene	7.57			178	106197	407.19			
3	Carbazole	7.71			167	97761	413.58			
3	1-Methylphenanthrene	8.04			192	81126	403.49			
3	Fluoranthene	8.51			202	124322	395.99			
4	Pyrene	8.70			202	130748	476.25			
4	Benz(a)anthracene	10.00			228	115393	420.71			
4	Chrysene	10.05			228	113905	444.14			
5	Benzo(b)fluoranthene	12.01			252	118363	421.83			
5	Benzo(k)fluoranthene	12.08			252	121894	442.29			
5	Benzo(e)pyrene	12.71			252	114302	427.05			
5	Benzo(a)pyrene	12.86			252	103428	421.69			
5	Perylene	13.10			252	107339	444.25			
5	Indeno(1,2,3-cd)pyrene	15.31			276	91407	414.84			
5	Dibenz(a,h)anthracene	15.37			278	91854	409.43			
5	Benzo(g,h,i)perylene	15.69			276	110494	450.72			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File : J:\MS14\DATA\021418\0214F002.D
 Acq On : 14 Feb 2018 6:09 am
 Sample : SIM-PAH CCV @ 0.4ug/mL | SVM58-5C
 Misc :

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Feb 14 06:28:58 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Feb 13 07:59:34 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.72	136	40889	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	19453	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.51	188	42645	200.00	ng/ml	0.00
23) Chrysene-d12	10.02	240	45484	200.00	ng/ml	0.00
28) Perylene-d12	13.03	264	44446	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.35	152	47798	436.01	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	43.60%	
13) Fluorene-d10	6.72	176	52239	392.56	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	39.26%	
22) Fluoranthene-d10	8.49	212	102943	384.18	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	38.42%	
25) Terphenyl-d14	8.84	244	73393	382.70	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	38.27%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.74	128	93063	399.56	ng/ml	81
4) 2-Methylnaphthalene	5.38	142	59916	369.50	ng/ml	97
5) 1-Methylnaphthalene	5.47	142	56505	394.24	ng/ml	97
6) Biphenyl	5.79	154	74228	361.67	ng/ml	100
7) 2,6-Dimethylnaphthalene	5.93	156	52201	357.90	ng/ml	97
9) Acenaphthylene	6.16	152	100338	421.52	ng/ml	99
10) Acenaphthene	6.31	154	55811	416.95	ng/ml	96
11) Dibenzofuran	6.45	168	95970	456.31	ng/ml	98
12) 2,3,5-Trimethylnaphthalene	6.63	170	52330	386.53	ng/ml	81
14) Fluorene	6.74	166	70194	425.49	ng/ml	99
16) Dibenzothiophene	7.43	184	115173	425.95	ng/ml	96
17) Phenanthrene	7.53	178	108044	408.57	ng/ml	100
18) Anthracene	7.57	178	106197	407.19	ng/ml	99
19) Carbazole	7.71	167	97761	413.58	ng/ml	100
20) 1-Methylphenanthrene	8.04	192	81126	403.49	ng/ml	99
21) Fluoranthene	8.51	202	124322	395.99	ng/ml	99
24) Pyrene	8.70	202	130748	476.25	ng/ml	97
26) Benz(a)anthracene	10.00	228	115393	420.71	ng/ml	100
27) Chrysene	10.05	228	113905	444.14	ng/ml	100
29) Benzo(b)fluoranthene	12.01	252	118363	421.83	ng/ml	97
30) Benzo(k)fluoranthene	12.08	252	121894	442.29	ng/ml	97
31) Benzo(e)pyrene	12.71	252	114302	427.05	ng/ml	97
32) Benzo(a)pyrene	12.86	252	103428	421.69	ng/ml	97
33) Perylene	13.10	252	107339	444.25	ng/ml	96
34) Indeno(1,2,3-cd)pyrene	15.31	276	91407	414.84	ng/ml	97
35) Dibenz(a,h)anthracene	15.37	278	91854	409.43	ng/ml	97
36) Benzo(g,h,i)perylene	15.69	276	110494	450.72	ng/ml	96

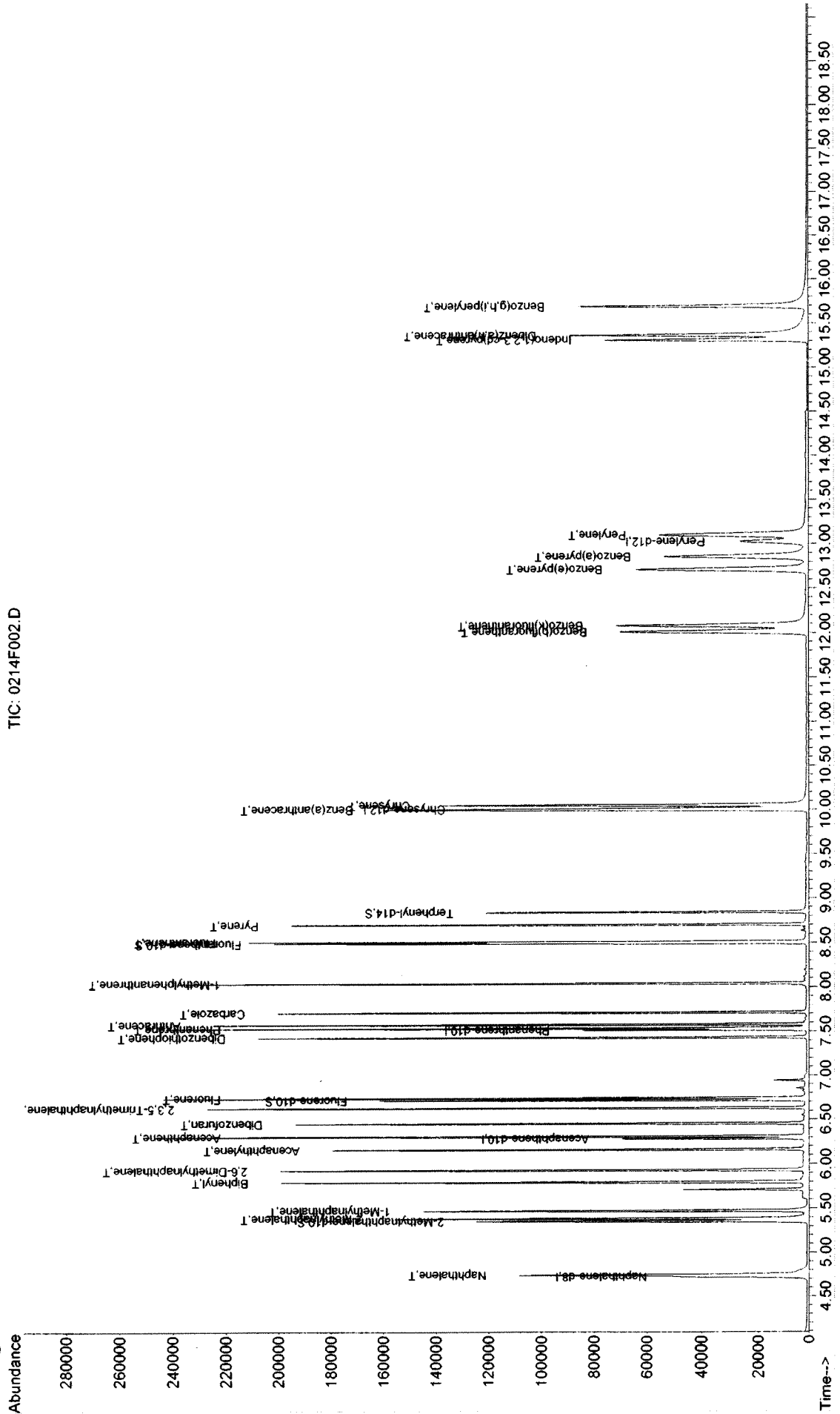
(#) = qualifier out of range (m) = manual integration
 0214F002.D 101317PAH.M Wed Feb 14 12:53:57 2018

Data File : J:\MS14\DATA\021418\0214F002.D
Acq On : 14 Feb 2018 6:09 am
Sample : SIM-PAH CCV @ 0.4ug/mL | SVM58-5C
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 14 6:28 2018

Vial: 2
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 14 12:53:50 2018
Response via : Initial Calibration

TIC: 0214F002.D



Exception Report

Data File: J:\MS20\DATA\022718\0227F002.D
Lab ID: KWG1801193-2
RunType: CCV
Matrix: WATER

Date Acquired: 02/27/2018 10:37
Date Quantitated: 02/27/2018 12:13
Batch ID: KWG1801193
Analysis Method: 8270D SIM
MethodJoinID: MJ1651

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: _____

FEB 28 2018

Secondary Review: _____

Quantitation Report

Data File: J:\MS20\DATA\022718\0227F002.D	Instrument: MS20
Acqu Date: 02/27/2018 10:37	Quant Date: 02/27/2018 12:13
Run Type: CCV	MethodJoinID: MJ1651
Lab ID: KWG1801193-2	Vial: 2
	Dilution: 1.0
	Soln Conc. Units: ng/ml

Bottle ID:	Tier:	Matrix: WATER
Prod Code: 8270D PAH SIM	Collect Date:	Receive Date: 02/28/2018

Analysis Lot: KWG1801193	Prep Lot:	Report Group:
Analysis Method: 8270D SIM	Prep Method:	
Prep Ref:	Prep Date:	

Quant Method: J:\MS20\METHODS\110217PAH.M	Calibration ID: CAL15594
Title:	
Tune Ref: J:\MS20\DATA\022718\0227F001.D	Method ID: MJ1651
MB Ref:	Quant based on Method

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	5.98	-0.08	136	96022	200.00	OK
2	Acenaphthene-d10	8.30	-0.12	164	50555	200.00	OK
3	Phenanthrene-d10	11.50	-0.14	188	103428	200.00	OK
4	Chrysene-d12	18.84	-0.16	240	119651	200.00	OK
5	Perylene-d12	23.14	-0.21	264	122069	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	6.72			152	120372	500.76		70-130	NA
2	Fluorene-d10	9.31			176	127982	396.09		38-104	NA
3	Fluoranthene-d10	14.67			212	243910	408.54		39-109	NA
4	Terphenyl-d14	15.98			244	205042	401.94		38-113	NA

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	6.00			128	203664	415.21			
1	2-Methylnaphthalene	6.76			142	132619	404.86			
1	1-Methylnaphthalene	6.89			142	123854	424.61			
1	Biphenyl	7.39			154	161785	412.32			
1	2,6-Dimethylnaphthalene	7.63			156	118681	417.63			
2	Acenaphthylene	8.06			152	191871	374.53			
2	Acenaphthene	8.36			154	118722	375.91			
2	Dibenzofuran	8.69			168	182073	383.17			
2	2,3,5-Trimethylnaphthalene	9.11			170	120055	411.64			
2	Fluorene	9.37			166	143553	379.73			
3	Dibenzothiophene	11.24			184	211040	382.26			
3	Phenanthrene	11.56			178	223297	368.76			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 C: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ? : Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS20\DATA\022718\0227F002.D
Acqu Date: 02/27/2018 10:37
Run Type: CCV
Lab ID: KWG1801193-2

Quant Date: 02/27/2018 12:13
MethodJoinID: MJ1651

Instrument: MS20
Vial: 2
Dilution: 1.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Anthracene	11.68			178	205891	365.22			
3	Carbazole	12.16			167	191831	389.37			
3	1-Methylphenanthrene	13.17			192	168696	392.19			
3	Fluoranthene	14.73			202	257294	390.36			
4	Pyrene	15.33			202	269353	398.92			
4	Benz(a)anthracene	18.83			228	265206	408.32			
4	Chrysene	18.92			228	250520	386.99			
5	Benzo(b)fluoranthene	21.92			252	284641	408.77			
5	Benzo(k)fluoranthene	22.01			252	280624	398.96			
5	Benzo(e)pyrene	22.77			252	267371	395.42			
5	Benzo(a)pyrene	22.94			252	245579	408.95			
5	Perylene	23.23			252	249153	393.57			
5	Indeno(1,2,3-cd)pyrene	27.00			276	266361	429.45			
5	Dibenz(a,h)anthracene	27.12			278	268461	417.86			
5	Benzo(g,h,i)perylene	27.57			276	280112	376.92			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS20\DATA\022718\0227F002.D
 Acq On : 27 Feb 2018 10:37 am
 Sample : SIM-PAH CCV @0.4ug/mL | SVM58-8G
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 27 12:13:10 2018

Vial: 2
 Operator: LWeiskopf
 Inst : MS20
 Multiplr: 1.00

Quant Results File: 110217PAH.RES

Quant Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Feb 27 07:40:19 2018
 Response via : Initial Calibration
 DataAcq Meth : SIMPAH

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	5.98	136	96022	200.00	ng/ml	-0.01
12) Acenaphthene-d10	8.30	164	50555	200.00	ng/ml	-0.02
22) Phenanthrene-d10	11.50	188	103428	200.00	ng/ml	-0.02
38) Chrysene-d12	18.84	240	119651	200.00	ng/ml	-0.03
51) Perylene-d12	23.14	264	122069	200.00	ng/ml	-0.03

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	6.72	152	120372	500.76	ng/ml	-0.01
Spiked Amount	1000.000		Recovery	=	50.08%	
17) Fluorene-d10	9.31	176	127982	396.09	ng/ml	-0.02
Spiked Amount	1000.000		Recovery	=	39.61%	
37) Fluoranthene-d10	14.67	212	243910	408.54	ng/ml	-0.03
Spiked Amount	1000.000		Recovery	=	40.85%	
44) Terphenyl-d14	15.98	244	205042	401.94	ng/ml	-0.03
Spiked Amount	1000.000		Recovery	=	40.19%	

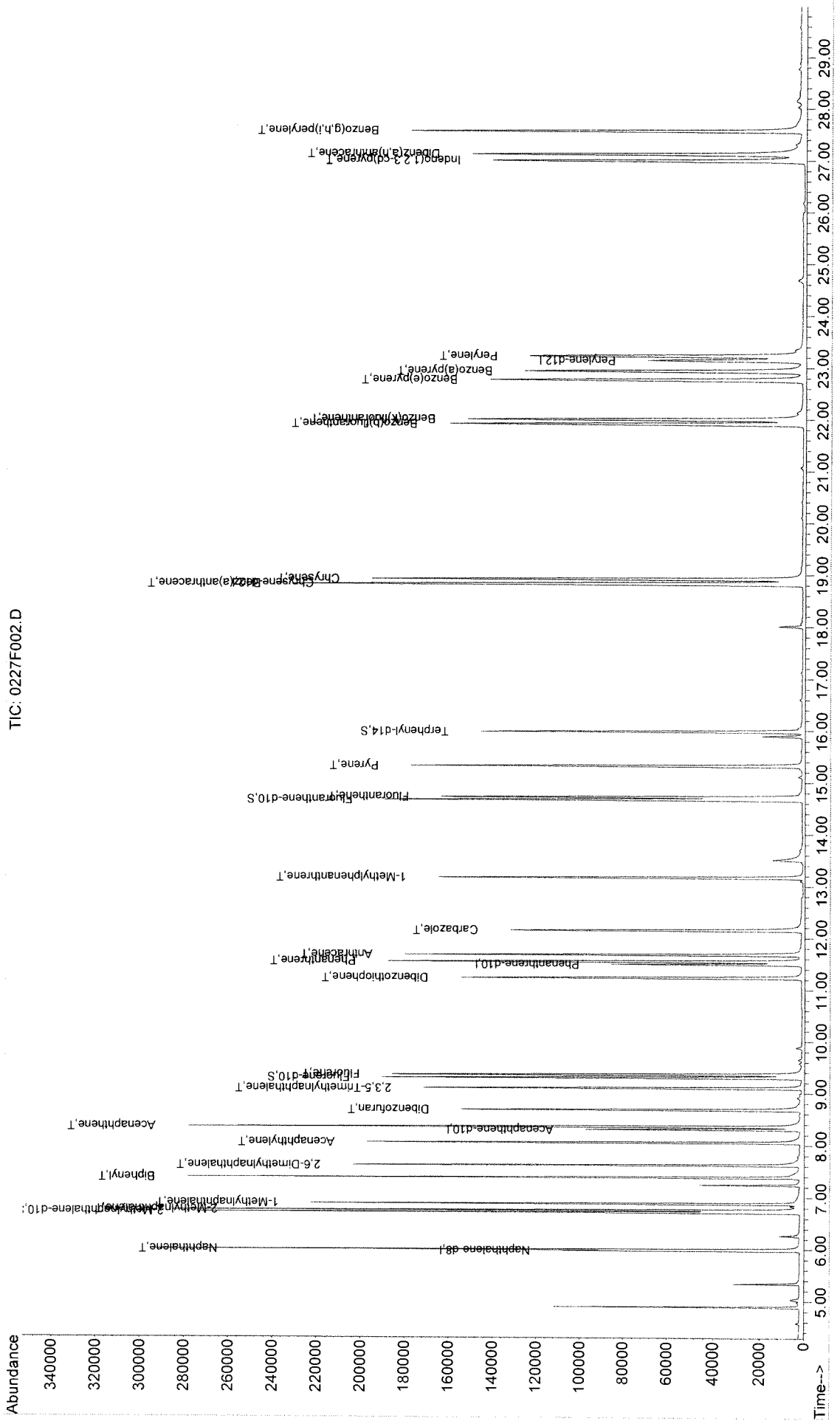
Target Compounds

						Qvalue
2) Naphthalene	6.00	128	203664	415.21	ng/ml	99
4) 2-Methylnaphthalene	6.76	142	132619	404.86	ng/ml	91
5) 1-Methylnaphthalene	6.89	142	123854	424.61	ng/ml	86
6) Biphenyl	7.39	154	161785	412.32	ng/ml	99
7) 2,6-Dimethylnaphthalene	7.63	156	118681	417.63	ng/ml	85
13) Acenaphthylene	8.06	152	191871	374.53	ng/ml	100
14) Acenaphthene	8.36	154	118722	375.91	ng/ml	98
15) Dibenzofuran	8.69	168	182073	383.17	ng/ml	91
16) 2,3,5-Trimethylnaphthalene	9.11	170	120055	411.64	ng/ml	93
18) Fluorene	9.37	166	143553	379.73	ng/ml	97
23) Dibenzothiophene	11.24	184	211040	382.26	ng/ml	100
28) Phenanthrene	11.56	178	223297	368.76	ng/ml	100
29) Anthracene	11.68	178	205891	365.22	ng/ml	99
30) Carbazole	12.16	167	191831	389.37	ng/ml	100
31) 1-Methylphenanthrene	13.17	192	168696	392.19	ng/ml	98
36) Fluoranthene	14.73	202	257294	390.36	ng/ml	99
39) Pyrene	15.33	202	269353	398.92	ng/ml	97
45) Benz(a)anthracene	18.83	228	265206	408.32	ng/ml	99
46) Chrysene	18.92	228	250520	386.99	ng/ml	100
52) Benzo(b)fluoranthene	21.92	252	284641	408.77	ng/ml	99
53) Benzo(k)fluoranthene	22.01	252	280624	398.96	ng/ml	100
54) Benzo(e)pyrene	22.77	252	267371	395.42	ng/ml	99
55) Benzo(a)pyrene	22.94	252	245579	408.95	ng/ml	100
56) Perylene	23.23	252	249153	393.57	ng/ml	100
57) Indeno(1,2,3-cd)pyrene	27.00	276	266361	429.45	ng/ml	100
58) Dibenz(a,h)anthracene	27.12	278	268461	417.86	ng/ml	98
59) Benzo(g,h,i)perylene	27.57	276	280112	376.92	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 0227F002.D 110217PAH.M Wed Feb 28 08:52:37 2018

Data File : J:\MS20\DATA\022718\0227F002.D
Acq On : 27 Feb 2018 10:37 am Vial: 2
Sample : SIM-PAH CCV @0.4ug/mL | SVM58-8G Operator: LWeiskopf
Misc : Inst : MS20
MS Integration Params: RTEINT.P Multiplr: 1.00
Quant Time: Feb 27 12:13 2018 Quant Results File: 110217PAH.RES

Method : J:\MS20\METHODS\110217PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Wed Feb 28 08:52:31 2018
Response via : Initial Calibration




Exception Report

Data File: J:\MS14\DATA\022818\0228F002.D
Lab ID: KWG1801214-2
RunType: CCV
Matrix: WATER


Date Acquired: 02/28/2018 09:28
Date Quantitated: 02/28/2018 10:05
Batch ID: KWG1801214
Analysis Method: 8270D SIM
MethodJoinID: MJ1638

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

MAR 01 2018

Secondary Review: 

Quantitation Report

Data File:	J:\MS14\DATA\022818\0228F002.D	Instrument:	MS14
Acqu Date:	02/28/2018 09:28	Quant Date:	02/28/2018 10:05
Run Type:	CCV	MethodJoinID:	MJ1651
Lab ID:	KWG1801214-2	Vial:	2
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	03/01/2018

Analysis Lot:	KWG1801214	Prep Lot:		Report Group:	
Analysis Method:	8270D SIM	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:		Method ID:	MJ1651
Tune Ref:	J:\MS14\DATA\022818\0228F001.D	Quant based on Method	
MB Ref:			

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.71	-0.07	136	59226	200.00	OK
2	Acenaphthene-d10	6.28	-0.05	164	27937	200.00	OK
3	Phenanthrene-d10	7.52	-0.04	188	58621	200.00	OK
4	Chrysene-d12	10.03	-0.05	240	75634	200.00	OK
5	Perylene-d12	13.07	-0.07	264	81793	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
1	2-Methylnaphthalene-d10	5.35			152	65562	412.89		70-130	NA
2	Fluorene-d10	6.72			176	69359	362.92		38-104	NA
3	Fluoranthene-d10	8.51			212	150252	407.92		39-109	NA
4	Terphenyl-d14	8.85			244	118399	371.27		38-113	NA

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
1	Naphthalene	4.73			128	129719	384.51			
1	2-Methylnaphthalene	5.38			142	81967	348.99			
1	1-Methylnaphthalene	5.47			142	78492	378.09			
1	Biphenyl	5.79			154	104581	351.79			
1	2,6-Dimethylnaphthalene	5.93			156	74063	350.57			
2	Acenaphthylene	6.16			152	137986	403.64			
2	Acenaphthene	6.31			154	77406	402.67			
2	Dibenzofuran	6.46			168	129698	429.40			
2	2,3,5-Trimethylnaphthalene	6.63			170	73531	378.19			
2	Fluorene	6.74			166	93648	395.27			
3	Dibenzothiophene	7.44			184	149988	403.53			
3	Phenanthrene	7.54			178	143565	394.94			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File: J:\MS14\DATA\022818\0228F002.D
Acqu Date: 02/28/2018 09:28
Run Type: CCV
Lab ID: KWG1801214-2

Quant Date: 02/28/2018 10:05
MethodJoinID: MJ1651

Instrument: MS14
Vial: 2
Dilution: 1.0
Soln Conc. Units: ng/ml

Target Compounds

Final Conc. Units:

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Anthracene	7.58			178	141880	395.75			
3	Carbazole	7.72			167	133534	410.96			
3	1-Methylphenanthrene	8.05			192	114255	413.39			
3	Fluoranthene	8.52			202	181659	420.93			
4	Pyrene	8.71			202	197716	433.10			
4	Benz(a)anthracene	10.02			228	189196	414.82			
4	Chrysene	10.07			228	181181	424.84			
5	Benzo(b)fluoranthene	12.05			252	205631	398.23			
5	Benzo(k)fluoranthene	12.12			252	204668	403.54			
5	Benzo(e)pyrene	12.76			252	199842	405.73			
5	Benzo(a)pyrene	12.90			252	180111	399.04			
5	Perylene	13.14			252	183063	411.71			
5	Indeno(1,2,3-cd)pyrene	15.35			276	159241	392.71			
5	Dibenz(a,h)anthracene	15.39			278	152422	369.19			
5	Benzo(g,h,i)perylene	15.73			276	187140	414.81			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\022818\0228F002.D
 Acq On : 28 Feb 2018 9:28 am
 Sample : SIM-PAH CCV @ 0.4ug/mL | SVM58-16D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Feb 28 10:05:57 2018

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Wed Feb 28 06:43:32 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.71	136	59226	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.28	164	27937	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.52	188	58621	200.00	ng/ml	0.00
23) Chrysene-d12	10.03	240	75634	200.00	ng/ml	0.00
28) Perylene-d12	13.07	264	81793	200.00	ng/ml	0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.35	152	65562	412.89	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	41.29%	
13) Fluorene-d10	6.72	176	69359	362.92	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	36.29%	
22) Fluoranthene-d10	8.51	212	150252	407.92	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	40.79%	
25) Terphenyl-d14	8.85	244	118399	371.27	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	37.13%	

Target Compounds

						Qvalue
2) Naphthalene	4.73	128	129719	384.51	ng/ml	99
4) 2-Methylnaphthalene	5.38	142	81967	348.99	ng/ml#	80
5) 1-Methylnaphthalene	5.47	142	78492	378.09	ng/ml	93
6) Biphenyl	5.79	154	104581	351.79	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.93	156	74063	350.57	ng/ml	99
9) Acenaphthylene	6.16	152	137986	403.64	ng/ml	100
10) Acenaphthene	6.31	154	77406	402.67	ng/ml	99
11) Dibenzofuran	6.46	168	129698	429.40	ng/ml	87
12) 2,3,5-Trimethylnaphthalene	6.63	170	73531	378.19	ng/ml	93
14) Fluorene	6.74	166	93648	395.27	ng/ml	99
16) Dibenzothiophene	7.44	184	149988	403.53	ng/ml	99
17) Phenanthrene	7.54	178	143565	394.94	ng/ml	100
18) Anthracene	7.58	178	141880	395.75	ng/ml	99
19) Carbazole	7.72	167	133534	410.96	ng/ml	98
20) 1-Methylphenanthrene	8.05	192	114255	413.39	ng/ml	100
21) Fluoranthene	8.52	202	181659	420.93	ng/ml	98
24) Pyrene	8.71	202	197716	433.10	ng/ml	97
26) Benz(a)anthracene	10.02	228	189196	414.82	ng/ml	100
27) Chrysene	10.07	228	181181	424.84	ng/ml	99
29) Benzo(b)fluoranthene	12.05	252	205631	398.23	ng/ml	97
30) Benzo(k)fluoranthene	12.12	252	204668	403.54	ng/ml	97
31) Benzo(e)pyrene	12.76	252	199842	405.73	ng/ml	97
32) Benzo(a)pyrene	12.90	252	180111	399.04	ng/ml	97
33) Perylene	13.14	252	183063	411.71	ng/ml	96
34) Indeno(1,2,3-cd)pyrene	15.35	276	159241	392.71	ng/ml	96
35) Dibenz(a,h)anthracene	15.39	278	152422	369.19	ng/ml	97
36) Benzo(g,h,i)perylene	15.73	276	187140	414.81	ng/ml	95

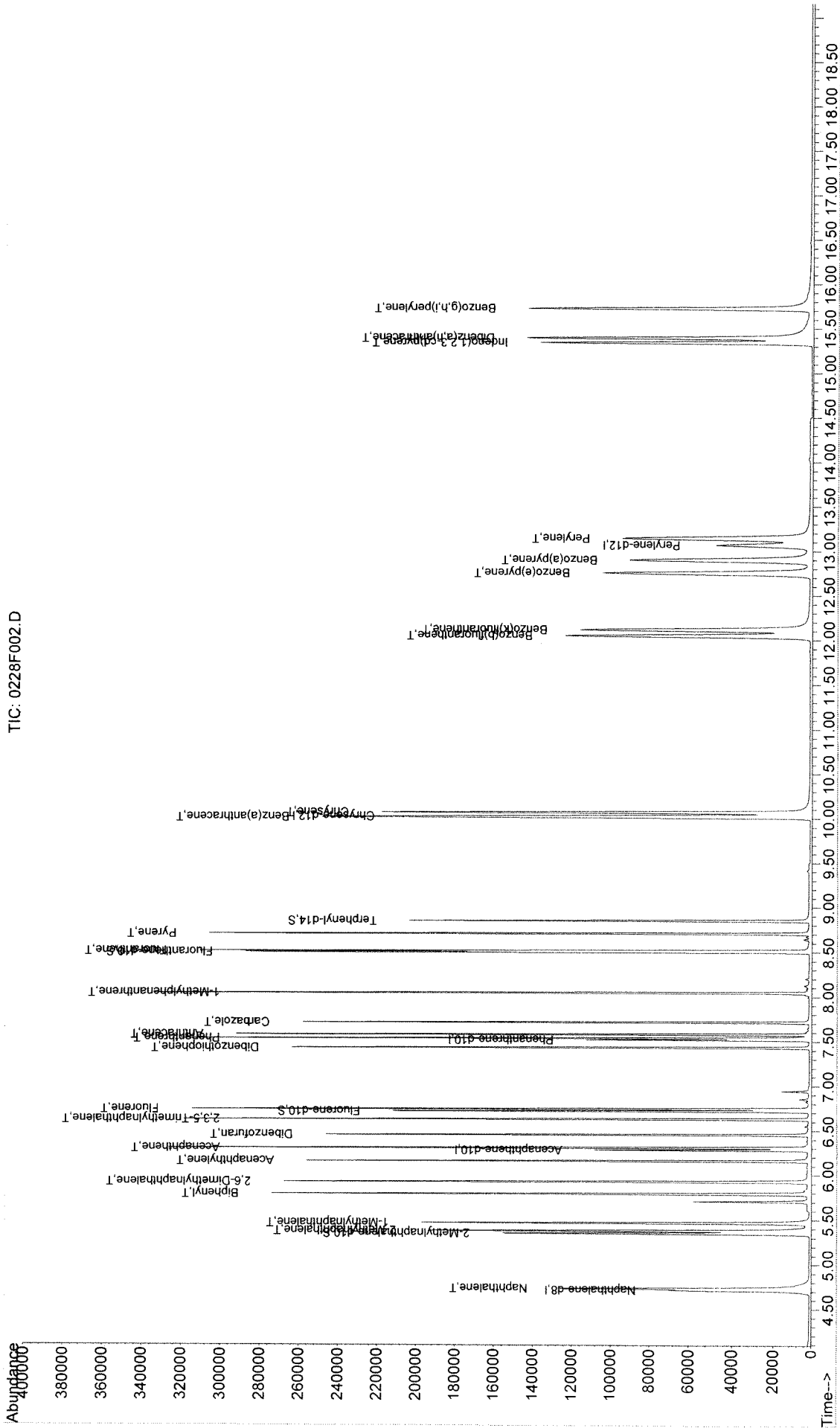
(#) = qualifier out of range (m) = manual integration
 0228F002.D 101317PAH.M Thu Mar 01 07:26:56 2018

Data File : J:\MS14\DATA\022818\0228F002.D
Acq On : 28 Feb 2018 9:28 am
Sample : SIM-PAH CCV @ 0.4ug/mL | SVM58-16D
Misc :
MS Integration Params: RTEINT.P
Quant Time: Feb 28 10:05 2018
Quant Results File: 101317PAH.RES

Vial: 2
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Thu Mar 01 07:26:50 2018
Response via : Initial Calibration

TIC: 0228F002.D




Exception Report

Data File: J:\MS14\DATA\031318\0313F002.D
Lab ID: KWG1801409-2
RunType: CCV
Matrix: WATER

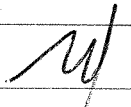
Date Acquired: 03/13/2018 05:18
Date Quantitated: 03/13/2018 13:24
Batch ID: KWG1801409
Analysis Method: 8270D SIM
MethodJoinID: MJ1638

Sample Exceptions

Exception Categories	Result	Low Limit	High Limit	Pass	Fail
ICAL Pass/Fail	NA	NA	NA	x	
ICAL Analyte Recovery	NA	NA	NA	x	
Initial Calibration Minimum RF	NA	NA	NA	x	
Initial Calibration SPCC/CCC	NA	NA	NA	x	
Second Source ICAL Verification	NA	NA	NA	x	
Internal Standards	NA	NA	NA	x	
Analyte Co-elution	NA	NA	NA	x	
Retention Time	NA	NA	NA	x	
Below Lowest ICAL Level	NA	NA	NA	x	
Above Highest ICAL Level	NA	NA	NA	x	
Enviroquant/Stealth Calibration Check	NA	NA	NA	x	

Primary Review: 

MAR 14 2018

Secondary Review: 

Quantitation Report

Data File:	J:\MS14\DATA\031318\0313F002.D	Instrument:	MS14
Acqu Date:	03/13/2018 05:18	Quant Date:	03/13/2018 13:24
Run Type:	CCV	MethodJoinID:	MJ1638
Lab ID:	KWG1801409-2	Vial:	2
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Bottle ID:		Tier:		Matrix:	WATER
Prod Code:	8270D PAH SIM	Collect Date:		Receive Date:	03/14/2018

Analysis Lot:	KWG1801409	Prep Lot:		Report Group:	
Analysis Method:	8270D SIM	Prep Method:			
Prep Ref:		Prep Date:			

Quant Method:	J:\MS14\METHODS\SIM\101317PAH.M	Calibration ID:	CAL15579
Title:		Method ID:	MJ1638
Tune Ref:	J:\MS14\DATA\031318\0313F001.D	Quant based on Method	
MB Ref:			

Internal Standard Compounds

IS Ref	Parameter Name	RT	RT Dev	Quant Mass	Response	Solution Conc	Area Criteria
1	Naphthalene-d8	4.72	-0.06	136	47439	200.00	OK
2	Acenaphthene-d10	6.29	-0.04	164	25241	200.00	OK
3	Phenanthrene-d10	7.53	-0.03	188	54158	200.00	OK
4	Chrysene-d12	10.06	-0.02	240	62363	200.00	OK
5	Perylene-d12	13.14	0.00	264	67350	200.00	OK

Surrogate Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	%Rec	%Rec Limits	Rpt?
2	Fluorene-d10	6.73			176	64382	372.86		42-131	NA
3	Fluoranthene-d10	8.52			212	124052	364.54		42-133	NA
4	Terphenyl-d14	8.87			244	100575	382.49		32-129	NA

Target Compounds

IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
								Final Conc. Units: ug/L		
1	Naphthalene	4.74			128	103309	382.31			
1	2-Methylnaphthalene	5.39			142	70325	373.82			
1	1-Methylnaphthalene	5.48			142	66954	402.65			
1	Biphenyl	5.80			154	90747	381.10			
1	2,6-Dimethylnaphthalene	5.94			156	66309	391.86			
2	Acenaphthylene	6.17			152	119468	386.80			
2	Acenaphthene	6.32			154	69496	400.14			
2	Dibenzofuran	6.47			168	113702	416.65			
2	2,3,5-Trimethylnaphthalene	6.64			170	67798	385.95			
2	Fluorene	6.75			166	86378	403.53			
3	Dibenzothiophene	7.45			184	135222	393.79			
3	Phenanthrene	7.55			178	131587	391.82			
3	Anthracene	7.59			178	125325	378.38			

U: Undetected at or above MDL
 J: Analyte detected above MDL, but below MRL
 B: Hit above MRL also found in Method Blank
 E: Analyte concentration above high point of ICAL
 N: Presumptive evidence of compound

D: Result from dilution
 m: Manual integration performed
 d: Compound manually deleted
 NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
 #: Acceptance criteria not applicable
 ?: Insufficient information to determine acceptance
 e: Result >= MRL, but MRL less than low point of ICAL
 c: check for co-elution

Data File:	J:\MS14\DATA\031318\0313F002.D	Instrument:	MS14
Acqu Date:	03/13/2018 05:18	Quant Date:	03/13/2018 13:24
Run Type:	CCV	MethodJoinID:	MJ1638
Lab ID:	KWG1801409-2	Vial:	2
		Dilution:	1.0
		Soln Conc. Units:	ng/ml

Target Compounds						Final Conc. Units:				
IS Ref	Parameter Name	RT	RT Dev	RRT Dev	Quant Mass	Response	Solution Conc	Final Conc	Q	Rpt?
3	Carbazole	7.73			167	118823	395.82			
3	1-Methylphenanthrene	8.06			192	100564	393.84			
3	Fluoranthene	8.53			202	146262	366.84			
4	Pyrene	8.73			202	157731	419.03			
4	Benz(a)anthracene	10.04			228	153615	408.48			
4	Chrysene	10.10			228	145428	413.57			
5	Benzo(b)fluoranthene	12.11			252	167824	394.71			
5	Benzo(k)fluoranthene	12.18			252	164082	392.89			
5	Benzo(e)pyrene	12.83			252	159855	394.14			
5	Benzo(a)pyrene	12.98			252	149747	402.91			
5	Perylene	13.22			252	149531	408.41			
5	Indeno(1,2,3-cd)pyrene	15.40			276	146516	438.82			
5	Dibenz(a,h)anthracene	15.44			278	142706	419.78			
5	Benzo(g,h,i)perylene	15.78			276	163647	440.52			

U: Undetected at or above MDL
J: Analyte detected above MDL, but below MRL
B: Hit above MRL also found in Method Blank
E: Analyte concentration above high point of ICAL
N: Presumptive evidence of compound

D: Result from dilution
m: Manual integration performed
d: Compound manually deleted
NR: Analyte not reported from this analysis

*: Result fails acceptance criteria
#: Acceptance criteria not applicable
?: Insufficient information to determine acceptance
e: Result >= MRL, but MRL less than low point of ICAL
c: check for co-elution

Data File : J:\MS14\DATA\031318\0313F002.D
 Acq On : 13 Mar 2018 5:18 am
 Sample : SIM-PAH CCV @ 0.4ug/mL | SVM58-24J
 Misc :

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Mar 13 13:24:37 2018

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Tue Mar 13 13:24:33 2018
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.72	136	47439	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.29	164	25241	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.53	188	54158	200.00	ng/ml	0.00
23) Chrysene-d12	10.06	240	62363	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	67350	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.36	152	56365	443.17	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	44.32%	
13) Fluorene-d10	6.73	176	64382	372.86	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	37.29%	
22) Fluoranthene-d10	8.52	212	124052	364.54	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	36.45%	
25) Terphenyl-d14	8.87	244	100575	382.49	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	38.25%	

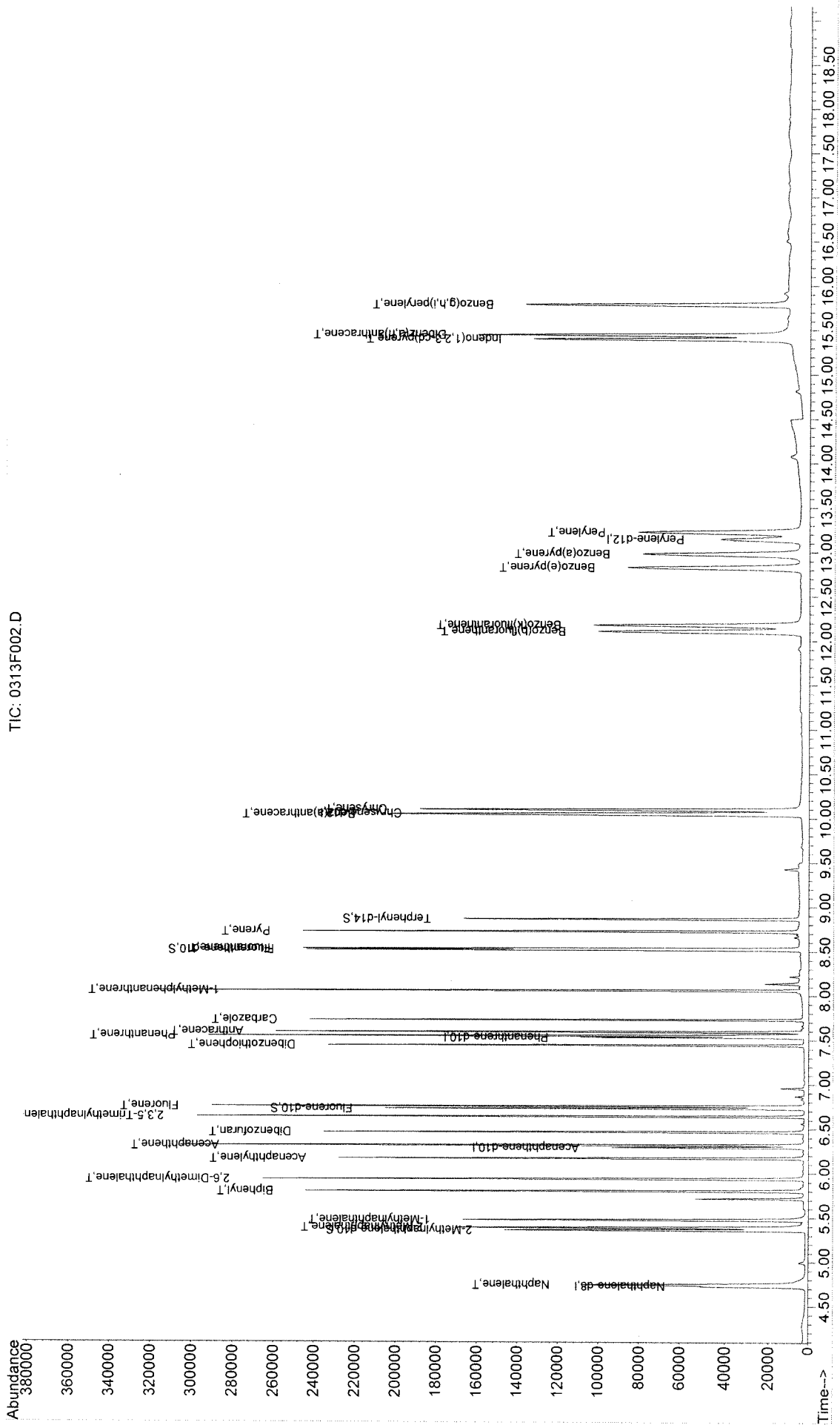
Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.74	128	103309	382.31	ng/ml	99
4) 2-Methylnaphthalene	5.39	142	70325	373.82	ng/ml#	84
5) 1-Methylnaphthalene	5.48	142	66954	402.65	ng/ml	91
6) Biphenyl	5.80	154	90747	381.10	ng/ml	100
7) 2,6-Dimethylnaphthalene	5.94	156	66309	391.86	ng/ml	94
9) Acenaphthylene	6.17	152	119468	386.80	ng/ml	100
10) Acenaphthene	6.32	154	69496	400.14	ng/ml	99
11) Dibenzofuran	6.47	168	113702	416.65	ng/ml	96
12) 2,3,5-Trimethylnaphthalene	6.64	170	67798	385.95	ng/ml	89
14) Fluorene	6.75	166	86378	403.53	ng/ml	99
16) Dibenzothiophene	7.45	184	135222	393.79	ng/ml	99
17) Phenanthrene	7.55	178	131587	391.82	ng/ml	100
18) Anthracene	7.59	178	125325	378.38	ng/ml	100
19) Carbazole	7.73	167	118823	395.82	ng/ml	99
20) 1-Methylphenanthrene	8.06	192	100564	393.84	ng/ml	100
21) Fluoranthene	8.53	202	146262	366.84	ng/ml	97
24) Pyrene	8.73	202	157731	419.03	ng/ml	98
26) Benz(a)anthracene	10.04	228	153615	408.48	ng/ml	100
27) Chrysene	10.10	228	145428	413.57	ng/ml	100
29) Benzo(b)fluoranthene	12.11	252	167824	394.71	ng/ml	97
30) Benzo(k)fluoranthene	12.18	252	164082	392.89	ng/ml	97
31) Benzo(e)pyrene	12.83	252	159855	394.14	ng/ml	96
32) Benzo(a)pyrene	12.98	252	149747	402.91	ng/ml	96
33) Perylene	13.22	252	149531	408.41	ng/ml	95
34) Indeno(1,2,3-cd)pyrene	15.40	276	146516	438.82	ng/ml	96
35) Dibenz(a,h)anthracene	15.44	278	142706	419.78	ng/ml	96
36) Benzo(g,h,i)perylene	15.78	276	163647	440.52	ng/ml	95

(#) = qualifier out of range (m) = manual integration
 0313F002.D 101317PAH.M Tue Mar 13 13:24:56 2018

Data File : J:\MS14\DATA\031318\0313F002.D Vial: 2
Acq On : 13 Mar 2018 5:18 am Operator: LWeiskopf
Sample : SIM-PAH CCV @ 0.4ug/mL | SVM58-24J Inst : MS14
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 13 13:24 2018 Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Tue Mar 13 13:24:49 2018
Response via : Initial Calibration



TIC: 0313F002.D

Preparation Information

Group ID: KWG1800892	Prep Method: EPA 3511	Prep Date: 02/13/18 15:05
Department: Semivoa GCMS		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
K1801041-002	WR-510-2-1-18 18:36	8270D PAH SIM	STORM	455ml	2ml
K1801267-004	EQB-SD-01	8270D PAH SIM	WATER	455ml	2ml
K1801267-018	EQB-PW-01	8270D PAH SIM	WATER	430ml	2ml
K1801300-001	PTC-MW-001	8270D PAH SIM	WATER	460ml	2ml
K1801300-002	PTC-MW-002	8270D PAH SIM	WATER	450ml	2ml
K1801300-003	PTC-MW-003	8270D PAH SIM	WATER	455ml	2ml
K1801300-004	PTC-MW-004	8270D PAH SIM	WATER	455ml	2ml
K1801300-005	PTC-MW-005	8270D PAH SIM	WATER	450ml	2ml
K1801300-006	PTC-MW-006	8270D PAH SIM	WATER	450ml	2ml
K1801300-007	PTC-MW-007	8270D PAH SIM	WATER	455ml	2ml
K1801300-008	PTC-MW-008	8270D PAH SIM	WATER	440ml	2ml
K1801300-009	PTC-MW-DUP1	8270D PAH SIM	WATER	450ml	2ml
K1801300-010	PTC-MW-002-FD	8270D PAH SIM	WATER	455ml	2ml
KWG1800892-1	Lab Control Sample	8270D PAH SIM	WATER	450ml	2ml
KWG1800892-2	Duplicate Lab Control Sample	8270D PAH SIM	WATER	450ml	2ml
KWG1800892-3	Method Blank	8270D PAH SIM	WATER	460ml	2ml

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K1801041-002	1663640					
K1801267-004	1663641					
K1801267-018	1663642					
K1801300-001	1663643					
K1801300-002	1663644					
K1801300-003	1663645					
K1801300-004	1663646					
K1801300-005	1663647					
K1801300-006	1663648					
K1801300-007	1663649					
K1801300-008	1663650					
K1801300-009	1663651					
K1801300-010	1663652					
KWG1800892-1	1663653					
KWG1800892-2	1663654					
KWG1800892-3	1663655					

#308289

Comments: IS=SVU56-3IK

Started By: AMcFarla Assisted By: _____ Training Yes No

Completed By: AMcFarla Assisted By: _____ Yes No

Reviewed By: # Date: 2/14/18 Storage: K-Tundra

Chain of Custody

Relinquished By: T McFarlane Date: 2-13-18 EE 2/13/18 Extracts Examined

Received By: [Signature] Date: 2/14/18 Yes No

Preparation Information

Group ID: KWG1800892	Prep Method: EPA 3511		Prep Date: 02/13/18 00:00
Department: Semivoa GCMS			

#	Lab Code	Client ID	B#	Product	Matrix	Amt. Ext. mL	pH	Int. Vol.	Final Vol. mL	Surr. Added mL	Spike Added mL
1	K1801041-002 <i>*E</i>	WR-510-2-1-18 18:36	.10	8270D PAH SIM	STORM WATER	455	7	N/A	2	20	—
2	K1801267-004	EQB-SD-01	.02	8270D PAH SIM	WATER	455	5		2		—
3	K1801267-018	EQB-PW-01	.01	8270D PAH SIM	WATER	430	5		2		—
4	K1801300-001	PTC-MW-001	.03	8270D PAH SIM	WATER	460	7		2		—
5	K1801300-002	PTC-MW-002	.02	8270D PAH SIM	WATER	480	7		2		—
6	K1801300-003	PTC-MW-003	.02	8270D PAH SIM	WATER	455	7		2		—
7	K1801300-004	PTC-MW-004	.02	8270D PAH SIM	WATER	455	7		2		—
8	K1801300-005	PTC-MW-005	.02	8270D PAH SIM	WATER	450	7		2		—
9	K1801300-006	PTC-MW-006	.03	8270D PAH SIM	WATER	480	7		2		—
10	K1801300-007	PTC-MW-007	.02	8270D PAH SIM	WATER	455	7		2		—
11	K1801300-008	PTC-MW-008	.03	8270D PAH SIM	WATER	440	7		2		—
12	K1801300-009	PTC-MW-DUP1	.02	8270D PAH SIM	WATER	450	7		2		—
13	K1801300-010	PTC-MW-002-FD	.03	8270D PAH SIM	WATER	455	5		2		—
14	KWG1800892-1	Lab Control Sample	—	8270D PAH SIM	WATER	450	5		2		50
15	KWG1800892-2	Duplicate Lab Control Sample	—	8270D PAH SIM	WATER	450	5		2		—
16	KWG1800892-3	Method Blank	—	8270D PAH SIM	WATER	460	5		2		—

Comments: Insufficient sample for MS/DMS on 2/13/18 prep run #308289
E-heavy emission on 2/13/18 * - took lesser volume from 100mL sample per PC HowardH-
on 2/13/18

Surrogate ID: SVM57-47B, 100/150 ppm, exp. 5/15/18, 20 mL, (syr)
 Spike ID: SVM57-330, 25 ppm, exp. 5/1/18, 50 mL, 4I
 Witness: _____

Started By: AMcFarla Assisted By: _____
 Completed By: AMcFarla Assisted By: _____

Pest/PCB/PAH by 3511

Service Request # K1801041, K1801267, K1801300 Work Group # Pest: _____
PCB: _____ PAH: KMG-1800892

Solvent Lot # 182436

Extraction Start (time/date/initial): 15:05 2/13/18 TM

Extraction Stop (time/date/initial): 15:35 2/13/18 TM

NaCL Lot# 176207
Sulfate Lot # 170862

Carbon Clean-up (Ext-Car)(time/date/initial): _____ Carbon Lot # _____
Hexane Lot # _____

Florisil Clean-up (Ext-Flor)(time/date/initial): _____ Florisil Lot # _____
Hexane Lot # _____

Sulfuric Acid Clean-up (3665) (time/date/initial): _____ Acid Lot # _____

Other Clean-up: _____ all samples some samples: _____

Pipette (2 mL) Lot # 13917646 Pipette (1 mL) Lot # 13617645

Pest Vial: _____ Vial Storage: _____
PCB Vial: _____ Vial Storage: _____
PAH Vial: Green Vial Storage: Tundra

Archived Extract Storage: St. Patty's

Additional Comments: _____

- Hold times met (if no, reason: _____)
- Prep date, time, method, department, product code correct in stealth
- Spike information and Q.C. correct (insufficient volume or mass recorded if no Q.C.)
- Weights/Volumes and units correct on raw and final bench sheets
- Sample IDs have been checked - bottle numbers appended if required
- Names present for: started by, completed by, relinquished by, and witnessed by. Training circled.
- Extract storage recorded
- Additional prep sheet completely filled out (NA or line out blanks)
- All clean-ups have been noted on additional prep sheet
- Signed service request with Form V, if applicable, has been attached

Preparation Information

Group ID: KWG1801347	Prep Method: EPA 3511	Prep Date: 03/09/18 14:51
Department: Semivoa GCMS		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.
K1801267-008	CO1-PW-3-5 (W)	8270D PAH SIM	WATER	86ml	2ml
K1801267-017	CO3-PW-3-5 (W)	8270D PAH SIM	WATER	128ml	2ml
K1802166-001	MW-2	8270D PAH SIM	WATER	445ml	2ml
K1802166-002	MW-5	8270D PAH SIM	WATER	445ml	2ml
K1802166-003	MW-6	8270D PAH SIM	WATER	455ml	2ml
K1802166-004	MW-9	8270D PAH SIM	WATER	460ml	2ml
K1802170-003	TW0727	8270D PAH SIM	GROUND	450ml	2ml
KWG1801347-1	Lab Control Sample	8270D PAH SIM	GROUND	450ml	2ml
KWG1801347-2	Duplicate Lab Control Sample	8270D PAH SIM	GROUND	450ml	2ml
KWG1801347-3	Method Blank	8270D PAH SIM	GROUND	460ml	2ml

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K1801267-008	1666761					
K1801267-017	1666762					
K1802166-001	1666763					
K1802166-002	1666764					
K1802166-003	1666765					
K1802166-004	1666766					
K1802170-003	1666767					
KWG1801347-1	1666768					
KWG1801347-2	1666769					
KWG1801347-3	1666770					

#309690

IS = SVM56-31K

Comments: _____

Started By: <u>AMcFarla</u>	Assisted By: _____	Training Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Completed By: <u>AMcFarla</u>	Assisted By: _____	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Reviewed By: <u></u>	Date: <u>3/13/18</u>	Storage: <u>K-Tuadron MS14</u>

Chain of Custody

Relinquished By: <u>T McFarlane</u>	Date: <u>3/9/18</u>	Extracts Examined Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Received By: <u></u>	Date: <u>3/14/18</u>	

Preparation Information

Group ID:	KWG1801347	Prep Method:	EPA 3511	Prep Date:	03/09/18 00:00
Department:	Semivoa GCMS				

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext. mL	pH	Int. Vol.	Final Vol. mL	Surr. Added mL	Spike Added mL
1	K1801267-008	CO1-PW-3-5 (W) <i>Xe</i>	1	✓	8270D PAH SIM	WATER	860	7	N/A	2	20	-
2	K1801267-017	CO3-PW-3-5 (W) <i>Xe</i>	1	✓	8270D PAH SIM	WATER	128	7		2		-
3	K1802166-001	MW-2 <i>e</i>	1	✓	8270D PAH SIM	WATER	445	6		2		-
4	K1802166-002	MW-5 <i>c</i>		✓	8270D PAH SIM	WATER	445	6		2		-
5	K1802166-003	MW-6 <i>e</i>	1	✓	8270D PAH SIM	WATER	455	6		2		-
6	K1802166-004	MW-9 <i>e</i>	1	✓	8270D PAH SIM	WATER	460	6		2		-
7	K1802170-003	TW0727		✓	8270D PAH SIM	GROUND WATER	450	7		2		-
8	KWG1801347-1	Lab Control Sample		✓	8270D PAH SIM	GROUND WATER	450	5		2		50
9	KWG1801347-2	Duplicate Lab Control Sample		✓	8270D PAH SIM	GROUND WATER	450	5		2		50
10	KWG1801347-3	Method Blank		✓	8270D PAH SIM	GROUND WATER	460	5		2		-

Comments: Insufficient sample for MS/DMS IM 3/6/18 prep run # 30969C
X - limited sample, brought to 450 mL w/ DI H₂O IM 3/9/18
e - light emission IM 3/9/18 *~* - marked vials have approximately 0.2 mL of sample in vial
 Surrogate ID: SVM58-25A, 100/150 ppm, exp. 2/6/18, 20 mL, (SVC) inserte
IM 3/9/18
 Spike ID: SVM57-33D, 25 ppm, exp. 5/1/18, 50 mL, 4I
 Witness: _____

Started By: AMcFarla Assisted By: _____
 Completed By: AMcFarla Assisted By: _____

Pest/PCB/PAH by 3511

Service Request # K1801267, K1802166, Work Group # Pest:
K1802170 PCB:
PAH: KW51801347

Solvent Lot # 182436

Extraction Start (time/date/initial): 14:51 3/9/18 TM

Extraction Stop (time/date/initial): 15:21 3/9/18 TM

NaCl Lot# 176207

Sulfate Lot # 170862

Carbon Clean-up (Ext-Car)(time/date/initial): Carbon Lot #

Hexane Lot #

Florisil Clean-up (Ext-Flor)(time/date/initial): Florisil Lot #

Hexane Lot #

Sulfuric Acid Clean-up (3665) (time/date/initial): Acid Lot #

Other Clean-up: all samples some samples:

Pipette (2 mL) Lot # 13917646 Pipette (1 mL) Lot # 13517645

Pest Vial: Vial Storage:

PCB Vial: Vial Storage:

PAH Vial: Green Vial Storage: K-Tundra

Archived Extract Storage: Ricky Ricardo

Additional Comments:

<input checked="" type="checkbox"/> Hold times met (if no, reason: <u> </u>)
<input checked="" type="checkbox"/> Prep date, time, method, department, product code correct in stealth
<input checked="" type="checkbox"/> Spike information and Q.C. correct (insufficient volume or mass recorded if no Q.C.)
<input checked="" type="checkbox"/> Weights/Volumes and units correct on raw and final bench sheets
<input checked="" type="checkbox"/> Sample IDs have been checked - bottle numbers appended if required
<input checked="" type="checkbox"/> Names present for: started by, completed by, relinquished by, and witnessed by. Training circled.
<input checked="" type="checkbox"/> Extract storage recorded
<input checked="" type="checkbox"/> Additional prep sheet completely filled out (NA or line out blanks)
<input checked="" type="checkbox"/> All clean-ups have been noted on additional prep sheet
<input checked="" type="checkbox"/> Signed service request with Form V, if applicable, has been attached

Preparation Information

Group ID: KWG1801007	Prep Method: EPA 3546	Prep Date: 02/19/18 17:40
Department: Semivoa GCMS		

Lab Code	Client ID	Product	Matrix	Amt. Ext.	Final Vol.	Solids
K1801257-001	ISOM-2-N-0218	8270D PAH SIM	SOIL	10.350g	10mL	82.3
K1801257-002	ISOM-2-E-0218	8270D PAH SIM	SOIL	10.367g	10mL	80.6
K1801257-003	ISOM-2-S-0218	8270D PAH SIM	SOIL	10.170g	10mL	79.4
K1801267-001	CO2-SD-3-5	8270D PAH SIM	SEDIMENT	10.372g	10mL	63.6
K1801267-009	CO3-SD-3-5	8270D PAH SIM	SEDIMENT	10.433g	10mL	75.9
K1801267-013	CO1-SD-3-5	8270D PAH SIM	SEDIMENT	10.440g	10mL	67.6
K1801291-021	CCP129-SS-00-10-180207	8270D PAH SIM	SEDIMENT	10.219g	10mL	9.14
K1801291-022	CCP129-SS-00-10-180207-D	8270D PAH SIM	SEDIMENT	10.293g	10mL	9.16
K1801322-023	CCP118-SS-00-10-180208	8270D PAH SIM	SEDIMENT	10.388g	10mL	8.67
KWG1801007-1	Matrix Spike	8270D PAH SIM	SEDIMENT	10.315g	10mL	82.3
KWG1801007-2	Duplicate Matrix Spike	8270D PAH SIM	SEDIMENT	10.098g	10mL	82.3
KWG1801007-3	Lab Control Sample	8270D PAH SIM	SOIL	10.000g	10mL	
KWG1801007-4	Method Blank	8270D PAH SIM	SOIL	10.440g	10mL	

Lab Code	Parent Lab Code	Comments
KWG1801007-1	K1801257-001	KQ1801967-01
KWG1801007-2	K1801257-001	KQ1801967-02

Lab Code	Prep Event ID	Surrogate Solution ID	Amount Added	Spike Solution ID	Amount Added	Witness
K1801257-001	1664508					
K1801257-002	1664509					
K1801257-003	1664510					
K1801267-001	1664502					
K1801267-009	1664503					
K1801267-013	1664504					
K1801291-021	1664500					
K1801291-022	1664501					
K1801322-023	1664505					
KWG1801007-1	1664506					
KWG1801007-2	1664507					
KWG1801007-3	1664511					
KWG1801007-4	1664512					

308579, 308375, 308385, 308284

Comments: _____ IS = SVM56-31K

Started By: KPrescot **Assisted By:** _____ **Training:** Yes No

Completed By: CWilliam **Assisted By:** _____ Yes No

Reviewed By: HA **Date:** 2/23/18 **Storage:** M520

Chain of Custody

Relinquished By: <u>CW</u>	Date: <u>2/23/18</u>	Extracts Examined: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Received By: _____	Date: <u>2/27/18</u>	

Preparation Information

Group ID:	KWG1801007	Prep Method:	EPA 3546	Prep Date:	02/19/18 00:00
Department:	Semivoa GCMS		WHITE		

#	Lab Code	Client ID	B#	✓	Product	Matrix	Amt. Ext.	pH	Int. Vol.	Final Vol.	Surr. Added	Spike Added
1	K1801257-001	ISOM-2-N-0218		✓	8270D PAH SIM	SOIL	9 10.350	N/A	20	10	20	—
2	K1801257-002	ISOM-2-E-0218		✓	8270D PAH SIM	SOIL	10.367	N/A	20	10	|	—
3	K1801257-003	ISOM-2-S-0218		✓	8270D PAH SIM	SOIL	10.170	N/A	20	10		—
4	K1801267-001	CO2-SD-3-5		✓	8270D PAH SIM	SEDIMENT	10.372	N/A	20	10		—
5	K1801267-009	CO3-SD-3-5		✓	8270D PAH SIM	SEDIMENT	10.433	N/A	20	10		—
6	K1801267-013	CO1-SD-3-5		✓	8270D PAH SIM	SEDIMENT	10.440	N/A	20	10		—
7	K1801291-021	CCP129-SS-00-10-180207		✓	8270D PAH SIM	SEDIMENT	10.219	N/A	20	10		—
8	K1801291-022	CCP129-SS-00-10-180207-D		✓	8270D PAH SIM	SEDIMENT	10.293	N/A	20	10		—
9	K1801322-023	CCP118-SS-00-10-180208		✓	8270D PAH SIM	SEDIMENT	10.388	N/A	20	10		—
10	KWG1801007-1	Matrix Spike K1801257-001		✓	8270D PAH SIM	SEDIMENT	10.315	N/A	20	10		|	200
11	KWG1801007-2	Duplicate Matrix Spike K1801257-001		✓	8270D PAH SIM	SEDIMENT	10.098	N/A	20	10	—	
12	KWG1801007-3	Lab Control Sample		—	8270D PAH SIM	SOIL	10.000	N/A	20	10	|	—
13	KWG1801007-4	Method Blank		—	8270D PAH SIM	SOIL	10.440	N/A	20	10		—

Comments: went a little low on Turbospa 2/22/18 CW 308579
PREPURNS: 308350, 308375,
308385, 308284

Surrogate ID: SVM57-47B 100/150ppm XP: 05/15/18 20ul app. DZ

Spike ID: SVM57-33D 25ppm XP: 05/01/18 200ul app. 10D

Witness: —

Started By: KPrescot Assisted By: —

Completed By: CWilliams Assisted By: —

Pre-Prep Information Benchsheet

Prep Run #: 308375

Prep Method:

Team:

Container Lot No: 090417-1TW

Prep Due Date: Feb-23-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	KI801322-023	.11	PAH SIM	10.388g		PrepComments:DMADDEN K-Balance-50
2	KI801322-023 MS KO1801967-01	.11	PAH SIM	10.413g		PrepComments:DMADDEN K-Balance-50
3	KI801322-023 DMS KO1801967-02	.11	PAH SIM	10.381g		PrepComments:DMADDEN K-Balance-50

Relinquished By: <i>GM</i>	Date/Time: 2/14/18 14:07	Received By: <i>REP</i>	Date/Time: 02/19/18
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Pre-Prep Information Benchsheet

Prep Run #: 308385

Prep Method:

Team:

Container Lot No: 082117-1TW

Prep Due Date: Feb-19-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801257-001	.05	PAH SIM	10.350g		PrepComments:DMADDEN K-Balance-50
2	K1801257-001 MS KQ1801976-01	.05	PAH SIM	10.315g		PrepComments:DMADDEN K-Balance-50
3	K1801257-001 DMS KQ1801976-02	.05	PAH SIM	10.098g		PrepComments:DMADDEN K-Balance-50
4	K1801257-002	.05	PAH SIM	10.367g		PrepComments:DMADDEN K-Balance-50
5	K1801257-003	.05	PAH SIM	10.170g		PrepComments:DMADDEN K-Balance-50

Relinquished By: <i>DM</i>	Date/Time: 2/14/18 5:54	Received By: <i>[Signature]</i>	Date/Time: 02/19/18
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Pre-Prep Information Benchsheet

Prep Run #: 308284

Prep Method:

Team:

Container Lot No: 090417-1TW

Prep Due Date: Feb-20-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	KI801291-021	.01	PAH SIM	10.219g		PrepComments:DMADDEN K-Balance-50
2	KI801291-021 MS KO1801881-01	.01	PAH SIM	10.159g		PrepComments:DMADDEN K-Balance-50
3	KI801291-021 DMS KO1801881-02	.01	PAH SIM	10.093g		PrepComments:DMADDEN K-Balance-50
4	KI801291-022	.01	PAH SIM	10.293g		PrepComments:DMADDEN K-Balance-50

Relinquished By: <i>DM</i>	Date/Time: 2/13/18 13:57	Received By: <i>[Signature]</i>	Date/Time: 02/19/18
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Pre-Prep Information Benchsheet

Prep Run #: 308579

Prep Method:

Team:

Container Lot No: 090417-1TW

Prep Due Date: Feb-19-2018

#	Lab Code	Bottle	Test Name	Weight	Sample Comments	Test Comments
1	K1801267-001	.01	PAH SIM	10.372g	2/14AP. Strong Fuel smell. Few large rocks sample is black and has black tar balls.	PrepComments: APOSEY K-BALANCE-48
2	K1801267-009	.01	PAH SIM	10.433g	Fuel smell and has black tar balls.	PrepComments: APOSEY K-BALANCE-48 wrong wt re wt 10g
3	K1801267-013	.01	PAH SIM	10.440g	Fuel smell. Few large rocks, sample is black and has black tar balls.	PrepComments: APOSEY K-BALANCE-48

Relinquished By: <i>[Signature]</i>	Date/Time: 2/19/18	Received By: <i>[Signature]</i>	Date/Time: 02/19/18
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Printed 2/19/2018 3:59:08 PM

Preparation Information Benchsheet

15/10

Page 1 of 1

WHITE

Additional Prep Information for EPA 3546

PAH in Soil

Service Request # K1801257/1267/1291/1322 Work Group # KWG1801007

Weighed (time/date/initial): _____ Balance ID: K-Bal- _____ Calibration Verified

Storage Location (if not extracted same day): _____
4:1 Hexane:Acetone Lot # EXT002-76 ^{SULFATE} Hydromatrix Lot # 171696

Extraction Start (time/date/initial): 1740 02/19/18 ZRP

Pipette Lot # (2 mL) 13917646 Hexane Lot # 182436

Hexane Exchange for Silica Gel (Time/Date/Initial): 07:55 2/22/18 CW

N-Evap (time/date/initial): 07:40 2/22/18 CW N-Evap Thermometer ID: X-SUM-010

Temp as measured: 20 °C Correction factor: 0.0 °C Adjusted temp: 20 °C

Silica Gel Clean-up (3630) (Time/Date/Initial): 10:30 2/22/18 CW

Silica Column Lot # Ext002 99W 1:1 Hexane/DCM Reagent Lot # Ext002-32J

Turbovap (Time/Date/Initial): 10:46 2/22/18 CW Turbovap Therm. ID: K-TurboVap-05

Temp as measured: 27 °C Correction factor: 0.0 °C Adjusted temp: 27 °C

DCM Lot # D5742

Pipette Lot # (1 mL) 13917645

Vial: Green Vial Storage: K-tundra

Archived Extract Storage: VORTEX

Additional Comments: DE-E ZRP 02/19/18.

Bench Sheet Review Check List	
<input checked="" type="checkbox"/>	Hold times met (if no, reason: _____)
<input checked="" type="checkbox"/>	Prep date, time, method, department, product code correct in stealth
<input checked="" type="checkbox"/>	Spike information and Q.C. correct (insufficient volume or mass recorded if no Q.C.)
<input checked="" type="checkbox"/>	Weights/Volumes and units correct on raw and final bench sheets
<input checked="" type="checkbox"/>	Sample IDs have been checked - bottle numbers appended if required
<input checked="" type="checkbox"/>	Names present for: started by, completed by, relinquished by, and witnessed by. Training circled.
<input checked="" type="checkbox"/>	Extract storage recorded
<input checked="" type="checkbox"/>	Additional prep sheet completely filled out (NA or line out blanks)
<input checked="" type="checkbox"/>	All clean-ups have been noted on additional prep sheet
<input checked="" type="checkbox"/>	Signed service request with Form V, if applicable, has been attached

DILUTION LOG MS 14

Date: 3/13/18 Prepared by: L Weiskopf Solvent Lot #: DS524

LAB ID.	ALIQUOT	FINAL VOLUME	DILUTION FACTOR	COMMENTS
K1801267-017	50 μ l	0.5 mL	10X	
<i>[The entire table body is crossed out with a large diagonal line.]</i>				

[Handwritten Signature]
[Handwritten Initials]
 3/14/18

Injection Log

Directory: J:\MS14\DATA\021418

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0214F001.D	1.	DFTPP @ 10ug/mL | SVM58-3B		14 Feb 2018 05:44
2	2	0214F002.D	1.	SIM-PAH CCV @ 0.4ug/mL | SVM58-5C		14 Feb 2018 06:09
3	3	0214F003.D	1.	KWG1800828-3 MB		14 Feb 2018 06:32
4	4	0214F004.D	1.	KWG1800828-1 LCS		14 Feb 2018 06:55
5	5	0214F005.D	1.	KWG1800828-2 DLCS		14 Feb 2018 07:18
6	6	0214F006.D	1.	KWG1800892-3 MB		14 Feb 2018 07:41
7	7	0214F007.D	1.	KWG1800892-1 LCS		14 Feb 2018 08:04
8	8	0214F008.D	1.	KWG1800892-2 DLCS		14 Feb 2018 08:27
9	9	0214F009.D	1.	K1801260-003		14 Feb 2018 08:50
10	10	0214F010.D	1.	K1801205-001		14 Feb 2018 09:13
11	11	0214F011.D	1.	K1801205-002		14 Feb 2018 09:36
12	12	0214F012.D	1.	K1801205-003		14 Feb 2018 09:59
13	13	0214F013.D	1.	K1801205-004		14 Feb 2018 10:22
14	14	0214F014.D	1.	K1801205-005		14 Feb 2018 10:45
15	15	0214F015.D	1.	K1801205-006		14 Feb 2018 11:09
16	16	0214F016.D	1.	K1801205-007		14 Feb 2018 11:32
17	17	0214F017.D	1.	K1801267-004		14 Feb 2018 11:55
18	18	0214F018.D	1.	K1801267-018		14 Feb 2018 12:18
19	19	0214F019.D	1.	K1801300-003		14 Feb 2018 12:41
20	20	0214F020.D	1.	K1801300-005		14 Feb 2018 13:05
21	21	0214F021.D	1.	K1801300-006		14 Feb 2018 13:28
22	22	0214F022.D	1.	K1801300-007		14 Feb 2018 13:51
23	23	0214F023.D	1.	K1801300-009		14 Feb 2018 14:14
24	24	0214F024.D	1.	K1801300-010		14 Feb 2018 14:37
25	25	0214F025.D	1.	K1801300-001		14 Feb 2018 15:01
26	26	0214F026.D	1.	K1800833-008		14 Feb 2018 15:24
27	27	0214F027.D	1.	K1801300-002		14 Feb 2018 15:47
28	28	0214F028.D	1.	K1801300-004		14 Feb 2018 16:10
29	29	0214F029.D	1.	K1801300-008		14 Feb 2018 16:33
30	30	0214F030.D	1.	K1801041-002		14 Feb 2018 16:56
31	31	0214F031.D	1.	KWG1800610-4MB		14 Feb 2018 17:19
32	100	0214F032.D	1.	DCM		14 Feb 2018 17:42
33	100	0214F033.D	1.	DCM		14 Feb 2018 18:05
34	100	0214F034.D	1.	DCM		14 Feb 2018 18:28

NR

CAL 15579

*GMS # 580363 \$
580428

M

FEB 15 2018

M 2/22/18

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0228F001.D	1.	DFTPP @ 10ug/mL | SVM58-3B		28 Feb 2018 09:03
2	2	0228F002.D	1.	SIM-PAH CCV @ 0.4ug/mL | SVM58-16D		28 Feb 2018 09:28
3	3	0228F003.D	1.	IB		28 Feb 2018 09:51
4	4	0228F004.D	1.	K1801267-001DIL 5X		28 Feb 2018 10:14
5	5	0228F005.D	1.	K1801267-009DIL 20X		28 Feb 2018 10:37
6	6	0228F006.D	1.	K1801267-013DIL 2X		28 Feb 2018 11:00
7	7	0228F007.D	1.	KWG1801182-3 MB		28 Feb 2018 12:12
8	8	0228F008.D	1.	KWG1801182-1 LCS		28 Feb 2018 12:35
9	9	0228F009.D	1.	KWG1801182-2 DLCS		28 Feb 2018 12:58
10	10	0228F010.D	1.	K1801822-001		28 Feb 2018 13:21
11	11	0228F011.D	1.	K1801823-001		28 Feb 2018 13:44

CAZ15579

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ALms # 581977 #
582021

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0313F001.D	1.	DFTPP @ 10ug/mL | SVM58-3B		13 Mar 2018 04:54
2	2	0313F002.D	1.	SIM-PAH CCV @ 0.4ug/mL | SVM58-24J		13 Mar 2018 05:18
3	3	0313F003.D	1.	KWG1801347-3 MB		13 Mar 2018 06:34
4	4	0313F004.D	1.	KWG1801347-1 LCS		13 Mar 2018 06:57
5	5	0313F005.D	1.	KWG1801347-2 DLCS		13 Mar 2018 07:20
6	6	0313F006.D	1.	K1801267-008		13 Mar 2018 07:43
7	7	0313F007.D	1.	K1801267-017 <i>see also dil</i>	<i>CAZ 15579</i>	13 Mar 2018 08:06
8	8	0313F008.D	1.	K1802166-001	<i>*LIMS #583344</i>	13 Mar 2018 08:29
9	9	0313F009.D	1.	K1802166-002		13 Mar 2018 08:53
10	10	0313F010.D	1.	K1802166-003	<i>LA 3/14/18</i>	13 Mar 2018 09:16
11	11	0313F011.D	1.	K1802166-004	<i>M 3/14/18</i>	13 Mar 2018 09:39
12	12	0313F012.D	1.	K1802170-003		13 Mar 2018 10:02
13	5	0313F013.D	1.	K1801267-017DIL 10X		13 Mar 2018 10:26
14	1	0313F014.D	1.	DFTPP @ 10ug/mL | SVM58-3B		13 Mar 2018 12:14
15	2	0313F015.D	1.	SIM-PAH CCV @ 0.4ug/mL | SVM58-24J		13 Mar 2018 12:39

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	0227F001.D	1.	DFTPP @ 10ug/mL | SVM58-3C		27 Feb 2018 09:58
2	2	0227F002.D	1.	SIM-PAH CCV @0.4ug/mL | SVM58-8G		27 Feb 2018 10:37
3	3	0227F003.D	1.	KWG1801007-4 MB		27 Feb 2018 11:17
4	4	0227F004.D	1.	KWG1801007-3 LCS		27 Feb 2018 11:56
5	5	0227F005.D	1.	K1801257-001MS		27 Feb 2018 13:15
3	6	0227F006.D	1.	K1801257-001DMS		27 Feb 2018 13:54
7	7	0227F007.D	1.	K1801257-001		27 Feb 2018 14:34
8	8	0227F008.D	1.	K1801257-002		27 Feb 2018 15:13
9	9	0227F009.D	1.	K1801257-003		27 Feb 2018 15:53
10	10	0227F010.D	1.	K1801267-001 - see also dil.		27 Feb 2018 16:32
11	11	0227F011.D	1.	K1801267-009 - see also dil.		27 Feb 2018 17:12
12	12	0227F012.D	1.	K1801267-013 - see also dil.		27 Feb 2018 17:51
13	13	0227F013.D	1.	K1801291-021		27 Feb 2018 18:31
14	14	0227F014.D	1.	K1801291-022		27 Feb 2018 19:10
15	15	0227F015.D	1.	K1801291-023 K1801322-023		27 Feb 2018 19:50
16	95	0227F100.D	1.	AP SURR QC SVM58-16E NR		27 Feb 2018 12:36

CAZ 15594
**Gius #581909*
ca FEB 28 2018

Injection Log

Directory: J:\MS14\DATA\101317

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	1013F001.D	1.	DFTPP @ 10ug/mL | SVM56-77C		13 Oct 2017 07:56
2	2	1013F002.D	1.	IB		13 Oct 2017 08:17
3	3	1013F003.D	1.	SIM-PAH ICAL @0.004ug/mL | SVM55-65B		13 Oct 2017 08:48
4	4	1013F004.D	1.	SIM-PAH ICAL @0.008ug/mL | SVM55-65C		13 Oct 2017 09:18
5	5	1013F005.D	1.	SIM-PAH ICAL @0.02ug/mL | SVM55-65D		13 Oct 2017 09:36
6	6	1013F006.D	1.	SIM-PAH ICAL @0.1ug/mL | SVM55-65E		13 Oct 2017 10:00
7	7	1013F007.D	1.	SIM-PAH ICAL @0.2ug/mL | SVM55-65F		13 Oct 2017 10:24
8	8	1013F008.D	1.	SIM-PAH ICAL @0.4ug/mL | SVM55-65G		13 Oct 2017 10:48
9	9	1013F009.D	1.	SIM-PAH ICAL @1.0ug/mL | SVM55-65H		13 Oct 2017 11:12
10	10	1013F010.D	1.	SIM-PAH ICAL @1.6ug/mL | SVM55-65I		13 Oct 2017 11:36
11	11	1013F011.D	1.	SIM-PAH ICAL @2.0ug/mL | SVM55-65J		13 Oct 2017 12:00
12	1	1013F012.D	1.	DFTPP @ 10ug/mL | SVM56-77C		13 Oct 2017 12:24
13	2	1013F013.D	1.	SIM-PAH ICV @0.4ug/mL SVM57-20D		13 Oct 2017 12:48

CAZ 15579
SIM-PAH ICAL

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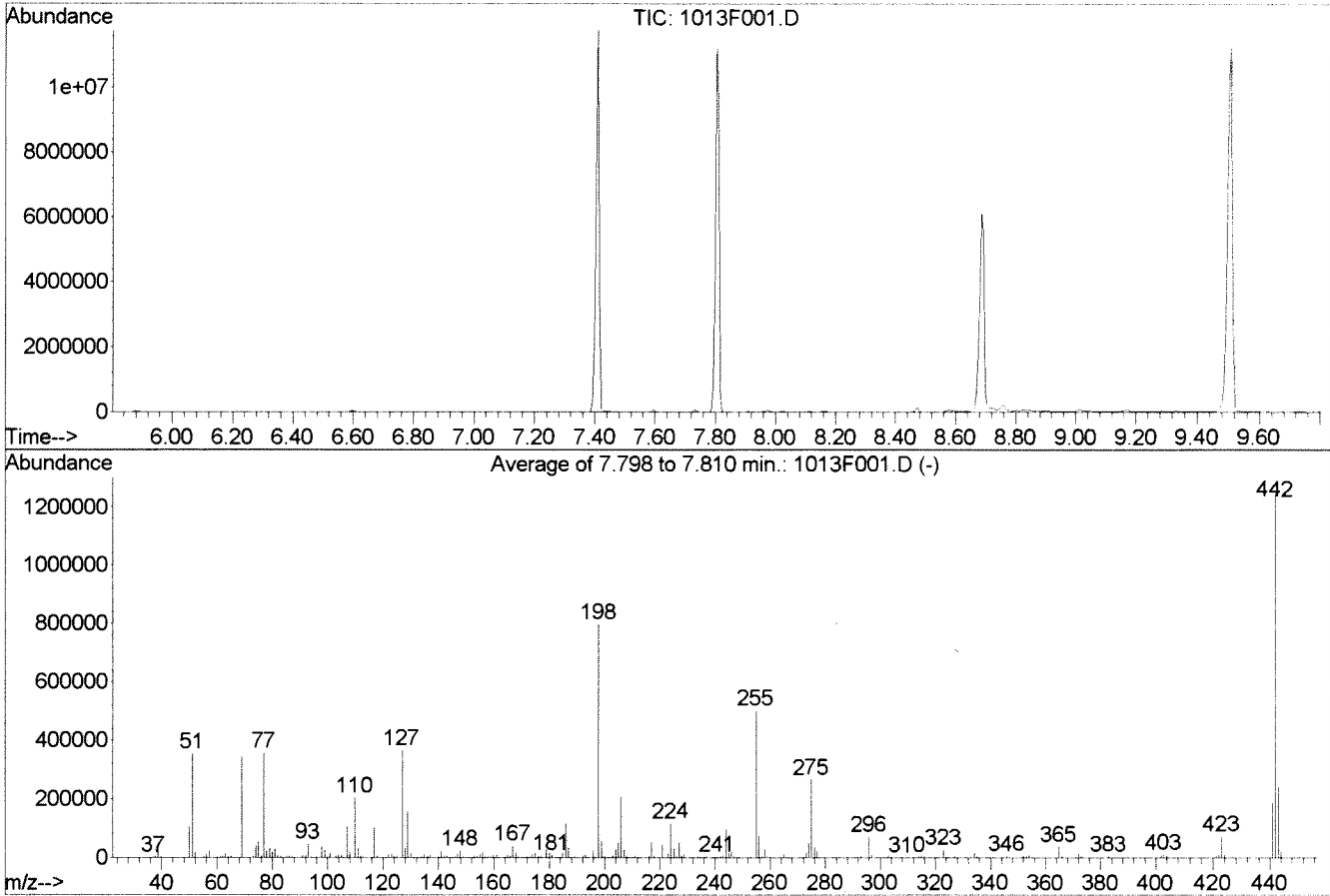
OCT 16 2017

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DFTPP

Data File : J:\MS14\DATA\101317\1013F001.D
 Acq On : 13 Oct 2017 7:53 am
 Sample : DFTPP @ 10ug/mL | SVM56-77C
 Misc :
 MS Integration Params: rteint.p
 Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
 Title : dftpp tune mix

Vial: 1
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00



AutoFind: Scans 631, 632, 633; Background Corrected with Scan 626

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	44.3	352981	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.1	343472	PASS
70	69	0.00	2	0.7	2461	PASS
127	198	10	80	46.0	366570	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	64.1	797440	PASS
199	198	5	9	6.9	54976	PASS
275	198	10	60	33.3	265160	PASS
365	442	1	50	2.9	36638	PASS
441	443	0.01	100	76.8	186981	PASS
442	442	30	100	100.0	1243434	PASS
443	442	15	24	19.6	243432	PASS

[Signature] OCT 16 2017 *[Signature]*

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	478	47.00	133	58.90	122	71.90	105
37.05	2210	50.00	104898	59.90	280	72.10	285
38.00	6031	51.00	352981	61.00	4939	73.10	4054
38.95	28372	52.00	18252	62.00	5590	74.00	39565
39.95	1551	53.00	873	63.00	13716	75.00	55232
41.00	746	53.80	53	64.00	1777	76.10	5592
42.00	115	54.10	53	65.00	6639	77.00	355200
42.95	136	54.95	2404	65.95	538	78.00	24696
44.00	516	56.00	10783	68.90	343472	79.00	30620
44.95	678	57.00	22384	69.90	2461	79.95	20772
45.80	90	57.90	1050	70.95	185	80.95	27594

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
81.95	6384	93.95	2957	104.90	9048	116.90	101957
82.95	5951	94.95	842	107.00	108565	117.90	7425
83.90	803	96.00	1782	107.95	17054	118.90	856
85.00	4983	96.90	327	109.90	204160	119.95	1530
85.95	8226	97.95	37834	110.95	30522	120.95	814
86.95	3740	98.95	24797	111.90	3836	121.95	8527
87.95	1195	99.95	2253	112.90	1312	122.95	11864
88.95	699	100.95	13383	113.90	160	123.90	5557
90.95	6898	101.95	993	114.10	241	124.95	5121
92.00	8170	102.95	5444	114.95	387	126.95	366570
92.95	46944	103.95	10319	116.00	2370	128.00	30696

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted


m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
128.90	155189	139.95	2194	151.05	2614	161.90	2381
129.95	12907	140.90	21521	151.85	1834	162.95	778
130.90	2457	141.95	6694	152.95	6562	163.90	1360
131.95	1424	142.95	4392	153.90	4861	164.90	8191
132.95	795	143.95	1211	154.95	11248	165.95	6698
133.90	5043	144.90	1154	156.00	16599	166.90	39322
134.90	12317	145.90	4325	156.95	3300	167.90	16509
135.95	5128	146.90	10631	157.90	4308	168.95	3061
136.95	5963	147.90	22725	158.95	2968	169.95	1453
137.95	1385	148.95	4313	159.90	6563	170.90	1836
138.85	929	149.95	1404	160.90	8849	171.90	3710

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
172.95	4625	183.90	2691	195.00	524	207.90	7774
173.95	8361	184.95	15544	195.90	24658	208.90	2433
175.00	15197	186.00	115112	197.90	797440	209.95	3152
175.95	4517	186.95	33290	198.90	54976	210.90	8053
176.90	8045	187.95	3527	199.95	4289	212.90	693
178.00	2992	188.90	7921	201.40	3398	213.90	443
178.90	28960	189.95	1302	202.90	6248	214.90	2764
179.90	18535	190.95	3170	203.95	28412	216.00	5107
180.95	8580	191.90	8545	205.00	50698	216.90	53005
181.95	1478	192.90	10054	206.00	208122	217.90	6713
182.95	868	193.90	2203	206.95	27460	218.90	800

 OCT 16 2017

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
220.90	43805	231.95	757	243.00	7648	254.90	501973
221.80	1443	232.90	1148	244.00	96818	255.90	73781
222.95	13270	233.90	3648	245.00	12726	256.95	6112
224.00	116818	234.90	3573	245.90	19927	257.90	30495
225.00	30598	235.90	2640	246.90	3981	258.90	5014
226.00	3693	236.90	3784	247.95	984	259.90	907
226.90	51504	238.00	508	248.85	3484	260.90	959
227.90	7367	238.90	2495	249.95	780	262.80	315
228.90	10220	239.90	1610	250.95	910	264.00	411
229.85	1508	240.90	2916	251.95	1030	264.95	11868
230.90	4021	241.90	6156	252.95	2607	265.85	1749

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
266.90	176	277.90	4078	290.90	627	302.95	8772
267.85	180	278.95	839	291.90	1124	303.95	2645
268.90	50	280.95	243	292.90	4569	304.95	350
269.90	699	281.95	625	293.95	1370	307.00	111
270.90	1205	282.95	2351	295.90	70253	307.90	1182
271.95	1582	283.95	1745	296.90	9409	308.85	772
272.90	15595	284.95	3918	297.90	622	309.95	1049
273.95	47586	285.90	1012	298.80	72	310.85	161
274.90	265160	287.90	261	298.95	145	311.90	309
275.90	35088	288.85	823	300.90	965	312.90	690
276.90	22776	289.90	746	301.95	1450	313.95	3839

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
314.90	7932	325.80	74	335.90	602	350.00	276
315.95	4826	325.95	465	336.80	50	350.95	795
316.90	988	326.90	4770	338.90	416	352.00	8447
318.00	125	327.90	2623	339.80	56	352.95	6394
318.90	69	328.90	447	340.00	363	354.00	9485
319.95	286	329.80	53	340.90	3114	354.95	1751
320.95	2661	331.10	88	342.00	923	355.90	86
322.00	1737	331.90	1905	344.90	107	356.80	122
323.00	26596	333.00	2842	345.90	5721	357.85	141
324.00	4435	334.00	17907	346.90	1110	358.20	54
324.90	466	334.95	4823	348.00	76	358.90	708

Average of 7.798 to 7.810 min.: 1013F001.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
360.00	140	372.95	4106	392.95	208	421.00	8911
360.80	133	373.90	563	394.95	139	422.00	9583
362.10	78	376.90	342	395.90	79	423.00	71981
362.60	61	382.00	94	396.95	189	424.00	14337
363.00	251	382.90	4410	400.90	1177	424.95	1326
364.90	36638	383.90	1218	401.90	7123	426.00	53
365.90	5526	384.85	312	402.90	10208	436.40	75
366.90	468	388.95	136	403.95	3771	437.30	153
369.90	815	389.90	2312	404.85	467	438.05	395
370.95	2340	390.90	1595	409.95	333	438.70	244
372.00	16063	391.95	1275	414.90	493	439.60	166

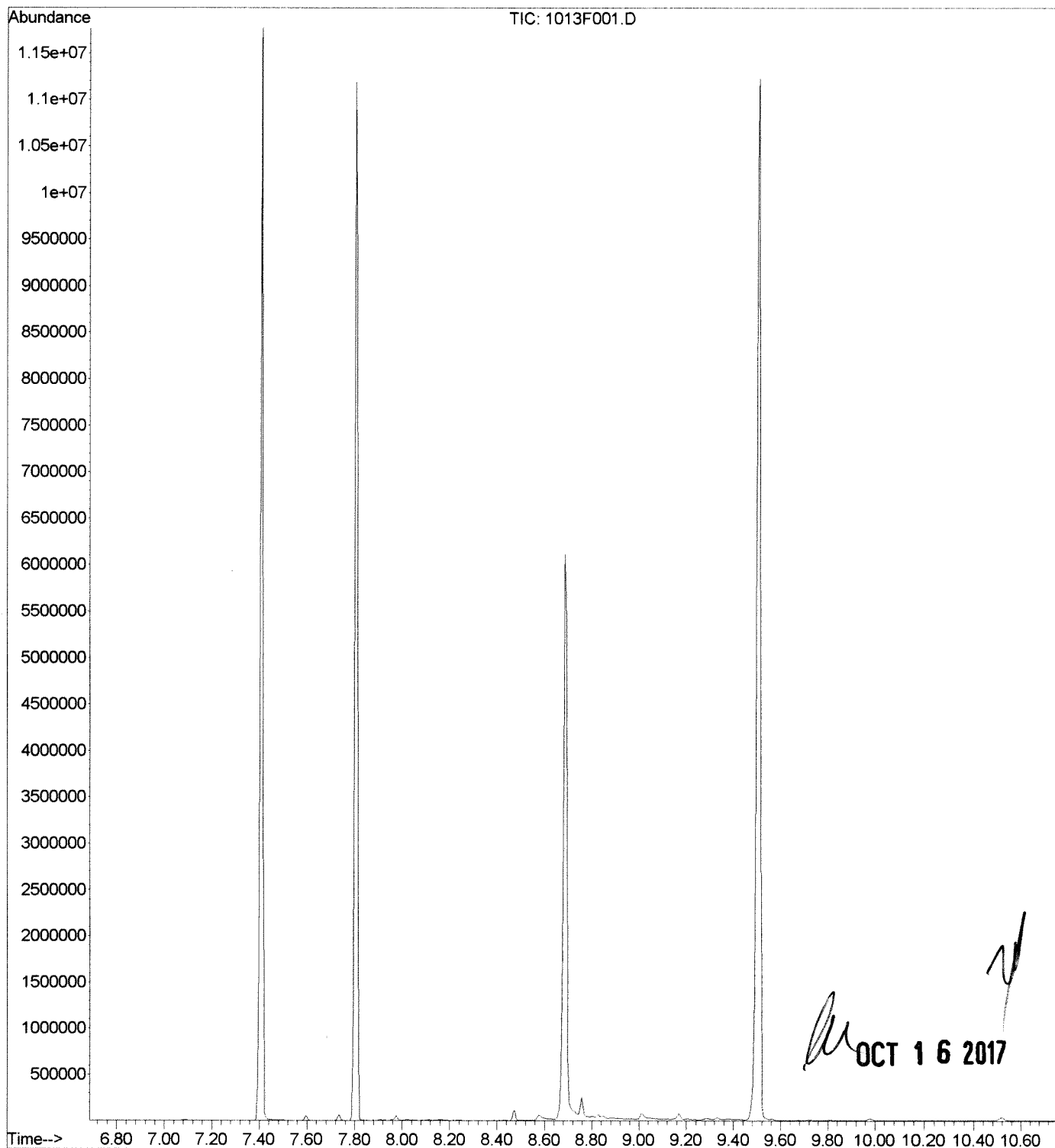
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Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
441.00	186981						
442.00	1243434						
443.00	243432						
444.00	22556						
444.95	1249						

 OCT 16 2017

File : J:\MS14\DATA\101317\1013F001.D
Operator : LWeiskopf
Acquired : 13 Oct 2017 7:53 am using AcqMethod SIMLOC
Instrument : MS14
Sample Name: DFTPP @ 10ug/mL | SVM56-77C
Misc Info :
Vial Number: 1



1	4.187	rVB	0.088	26608	4.163	4.251
2	4.563	rVB	0.100	8130	4.551	4.651
3	5.040	rVB	0.047	5807	5.022	5.069
4	5.346	rBV	0.029	2968	5.328	5.357
5	5.475	rBV	0.047	3200	5.457	5.504
6	5.540	rVV	0.053	2232	5.504	5.557
7	5.675	rVB	0.053	2656	5.651	5.704
8	5.757	rVB	0.041	2509	5.746	5.787
9	5.822	rBV	0.047	2641	5.804	5.851
10	5.881	rVV	0.071	24117	5.863	5.934
11	6.122	rBV	0.041	2445	6.110	6.151
12	6.181	rVV	0.047	2578	6.163	6.210
13	6.234	rVV	0.053	3719	6.210	6.263
14	6.298	rVB	0.053	2715	6.287	6.340
15	6.428	rVB	0.041	3166	6.410	6.451
16	6.528	rBV	0.041	3171	6.504	6.545
17	6.598	rVB	0.112	41928	6.545	6.657
18	6.687	rBV	0.053	4329	6.657	6.710
19	6.992	rBV	0.047	2099	6.969	7.016
20	7.087	rBV	0.076	7275	7.057	7.134
21	7.410	rBV	0.088	8673195	7.375	7.463
22	7.592	rVB	0.047	38533	7.569	7.616
23	7.734	rBV	0.059	49263	7.698	7.757
24	7.804	rVV	0.094	9329498	7.769	7.863
25	7.910	rVV	0.059	12416	7.887	7.945
26	7.975	rVV	0.053	50062	7.945	7.998
27	8.022	rVV	0.076	21669	7.998	8.075
28	8.116	rVV	0.035	9508	8.092	8.128
29	8.163	rVV	0.071	22842	8.128	8.198
30	8.228	rVB	0.059	4615	8.222	8.281
31	8.439	rVB	0.047	3583	8.404	8.451
32	8.475	rBV	0.059	94692	8.451	8.510
33	8.575	rBV	0.094	135542	8.545	8.639
34	8.686	rBV	0.100	6720597	8.639	8.739
35	8.757	rVB	0.047	189607	8.739	8.786
36	8.828	rVV	0.024	18161	8.816	8.839
37	9.010	rVB	0.106	105390	8.986	9.092
38	9.169	rVV	0.053	68351	9.134	9.186
39	9.204	rVB	0.035	10227	9.192	9.228
40	9.286	rBV	0.053	25911	9.257	9.310
41	9.334	rVB	0.041	22676	9.310	9.351
42	9.375	rVB	0.065	12288	9.357	9.422
43	9.510	rVV	0.100	12354451	9.451	9.551
44	9.563	rVB	0.059	17217	9.551	9.610
45	9.675	rBV	0.035	3266	9.669	9.704
46	9.716	rBV	0.053	7547	9.704	9.757
47	9.804	rVB	0.047	5164	9.786	9.833
48	9.981	rBV	0.065	27464	9.951	10.016
49	10.069	rBV	0.029	2253	10.057	10.086
50	10.169	rBV	0.041	2761	10.145	10.186
51	10.375	rVB	0.041	3444	10.369	10.410
52	10.516	rVB	0.071	54682	10.480	10.551
53	10.704	rBV	0.024	2137	10.692	10.716
54	10.904	rVB	0.053	4151	10.892	10.945
55	11.180	rBV	0.118	109399	11.128	11.245
56	11.851	rBV	0.129	41247	11.739	11.869
57	12.010	rVB	0.118	240459	11.957	12.075
58	12.933	rBV	0.029	2298	12.922	12.951
59	13.057	rBV	0.188	394589	12.974	13.163
60	13.392	rBV	0.047	3887	13.369	13.416
61	13.592	rVB	0.035	2624	13.580	13.616

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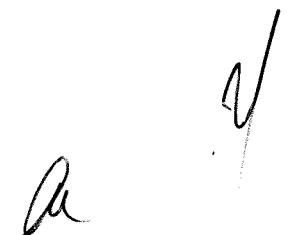
DOT Breakdown

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OCT 16 2017

62	14.168	rBV	0.176	623506	14.104	14.280
63	14.886	rBV	0.159	740664	14.839	14.998
64	15.433	rBV	0.141	946261	15.392	15.533
65	15.992	rBV	0.124	673666	15.951	16.074
66	16.592	rBV	0.129	607019	16.551	16.680
67	17.257	rBV	0.153	437167	17.209	17.362
68	18.004	rVB	0.118	283434	17.956	18.074
69	18.851	rVB	0.112	185955	18.815	18.927


OCT 16 2017

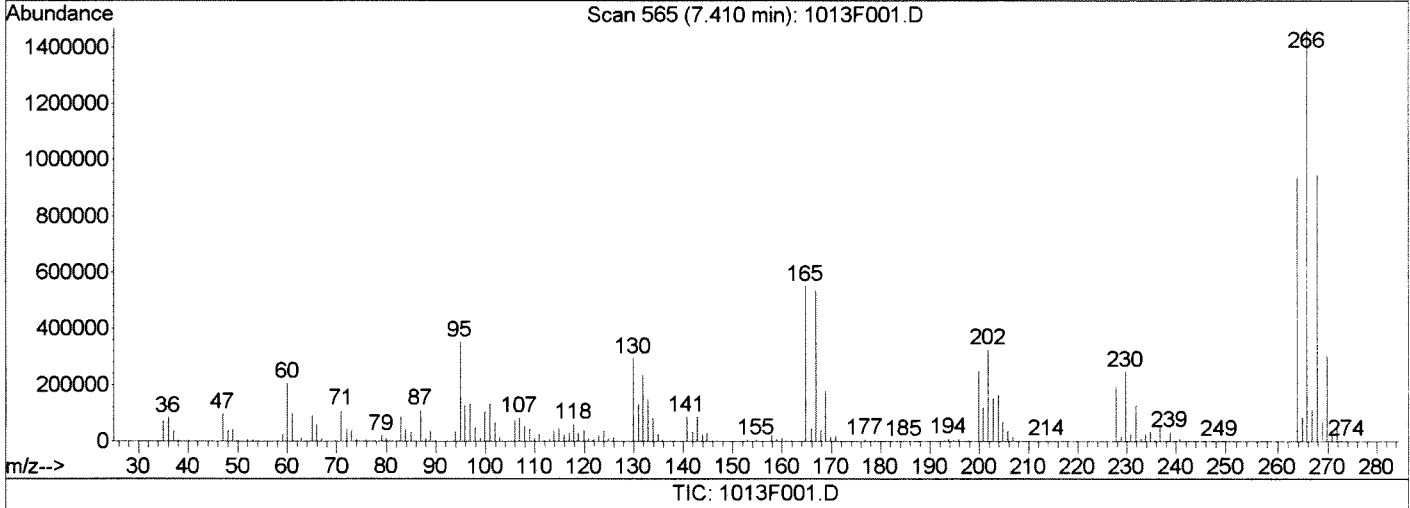
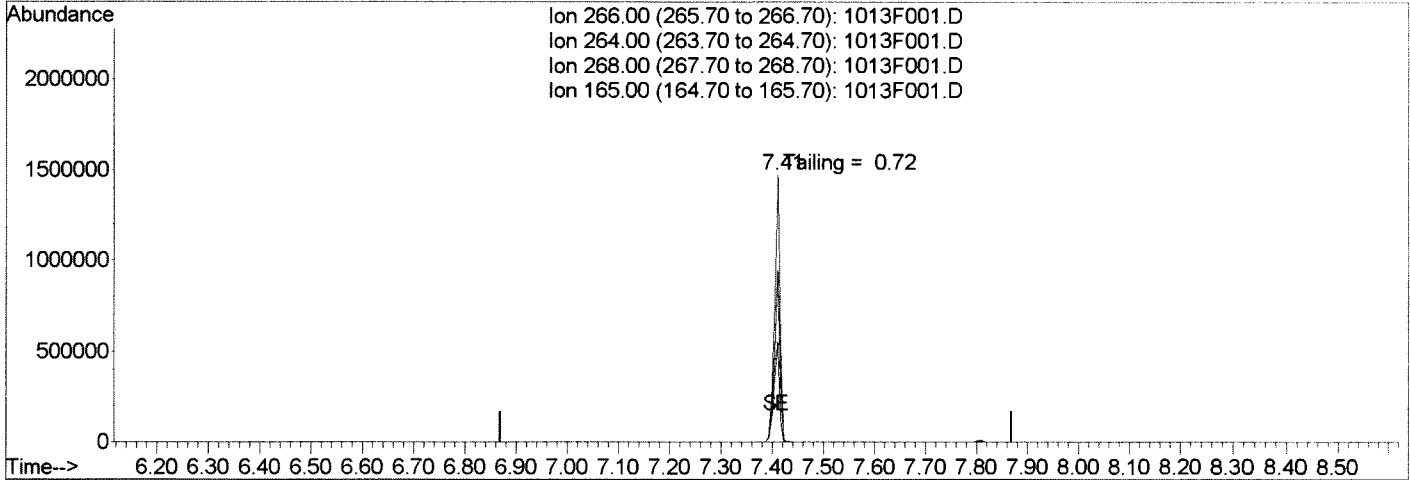
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F001.D
Acq On : 13 Oct 2017 7:53 am
Sample : DFTPP @ 10ug/mL | SVM56-77C
Misc :
MS Integration Params: rteint.p
Quant Time: Oct 13 12:55 2017

Vial: 1
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
Title : dftpp tune mix
Last Update : Fri Oct 06 15:31:14 2017
Response via : Single Level Calibration



(1) Pentachlorophenol

7.41min 46.23ng/ml

response 1063796

Ion	Exp%	Act%
266.00	100	100
264.00	62.30	63.76
268.00	72.30	64.27
165.00	42.00	37.43

OK *cy* *[Signature]*
OCT 16 2017

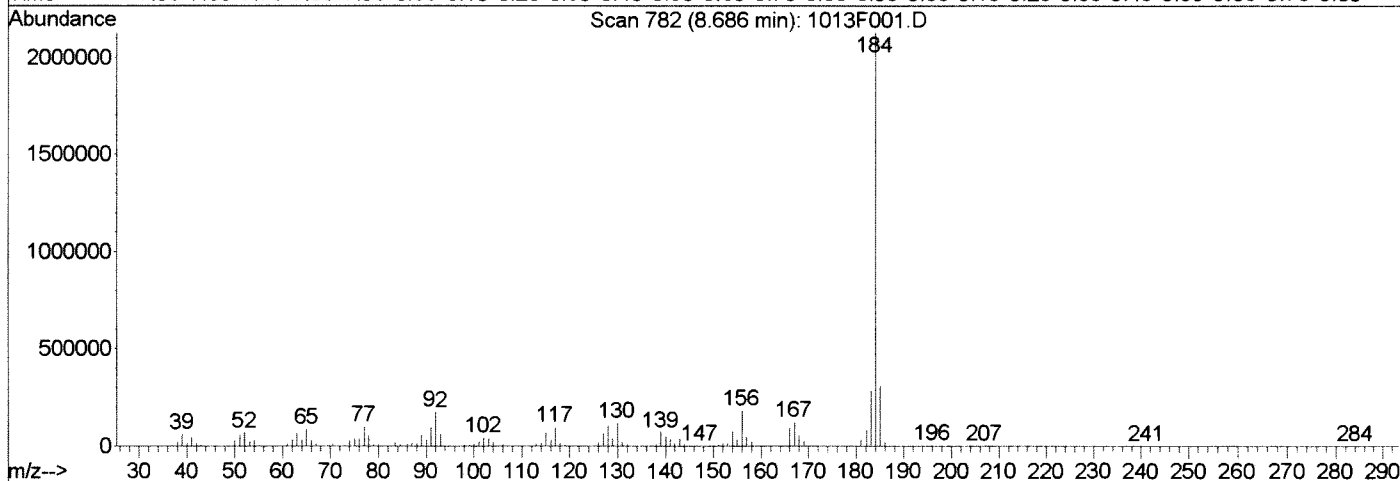
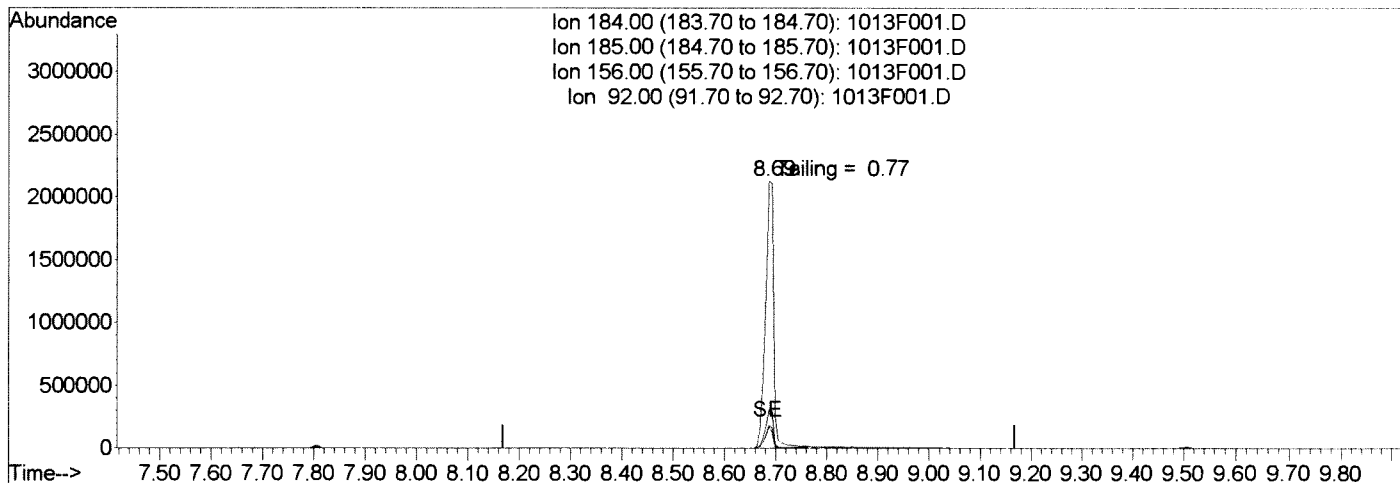
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F001.D
Acq On : 13 Oct 2017 7:53 am
Sample : DFTPP @ 10ug/mL | SVM56-77C
Misc :
MS Integration Params: rteint.p
Quant Time: Oct 13 12:55 2017

Vial: 1
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
Title : dftpp tune mix
Last Update : Fri Oct 06 15:31:14 2017
Response via : Single Level Calibration



TIC: 1013F001.D

(3) Benzidine (T)

8.69min 42.21ug/ml

response 2433027

Ion	Exp%	Act%
184.00	100	100
185.00	14.70	14.53
156.00	8.20	8.52
92.00	6.60	8.16

OK ← *[Signature]*
[Signature]
OCT 16 2017

Data File : J:\MS14\DATA\101317\1013F002.D
 Acq On : 13 Oct 2017 8:17 am
 Sample : IB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:32 2017

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	50953	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	28255	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	59442	200.00	ng/ml	0.00
23) Chrysene-d12	10.09	240	71142	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	74168	200.00	ng/ml	-0.01
System Monitoring Compounds						
3) 2-Methylnaphthalene-d10	0.00	152	0	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
13) Fluorene-d10	6.76	176	76	0.40	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.04%	
22) Fluoranthene-d10	0.00	212	0	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
25) Terphenyl-d14	0.00	244	0	0.00	ng/ml	
Spiked Amount	1000.000		Recovery	=	0.00%	
Target Compounds						
26) Benz(a)anthracene	10.09	228	190	0.44	ng/ml	67

1/2 MRL
 Qvalue

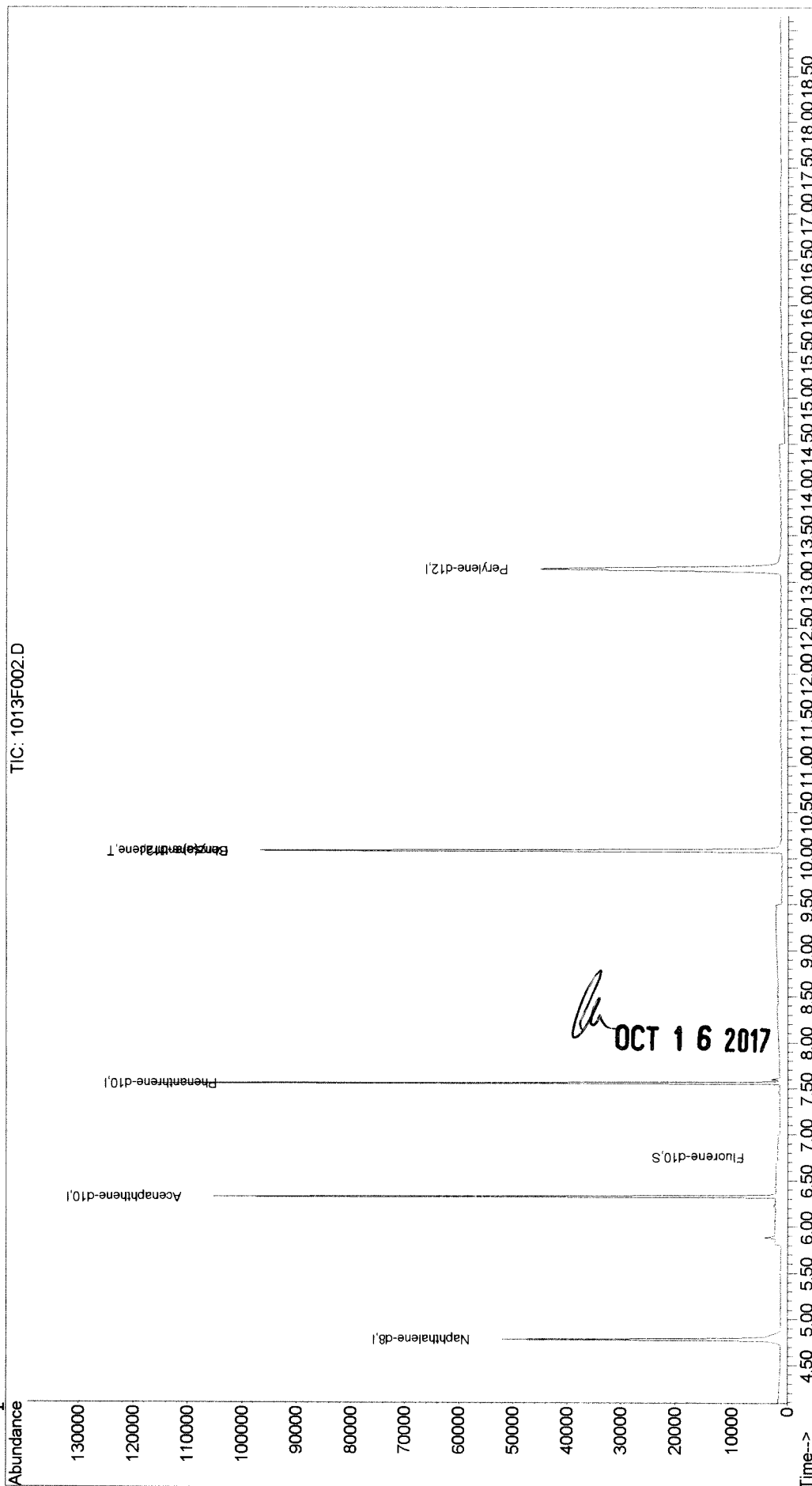
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OCT 16 2017

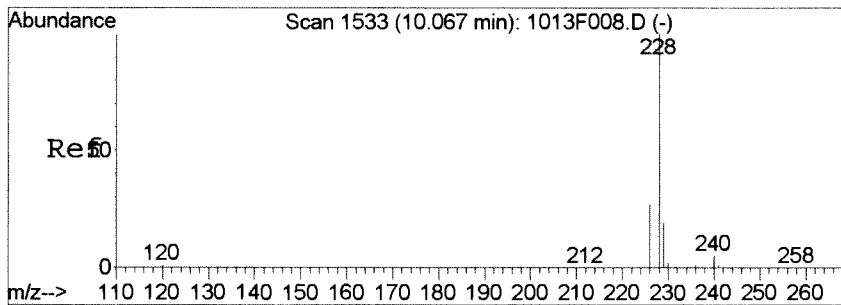
W

Data File : J:\MS14\DATA\101317\1013F002.D
 Acq On : 13 Oct 2017 8:17 am
 Sample : IB
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 16 6:55 2017
 Quant Results File: 101317PAH.RES

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

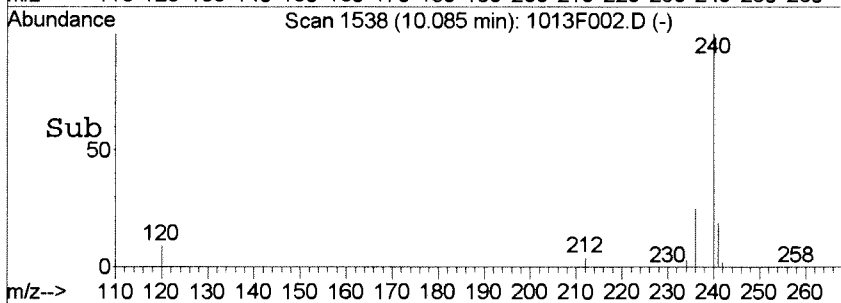
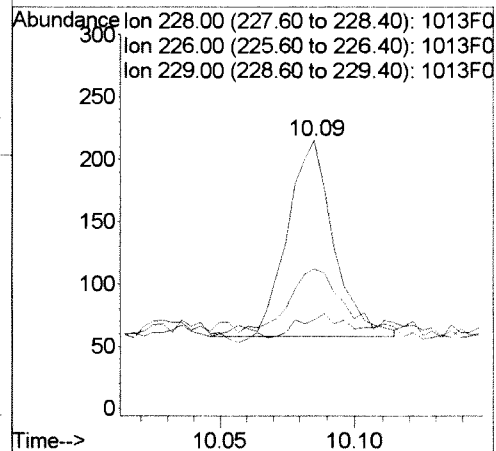
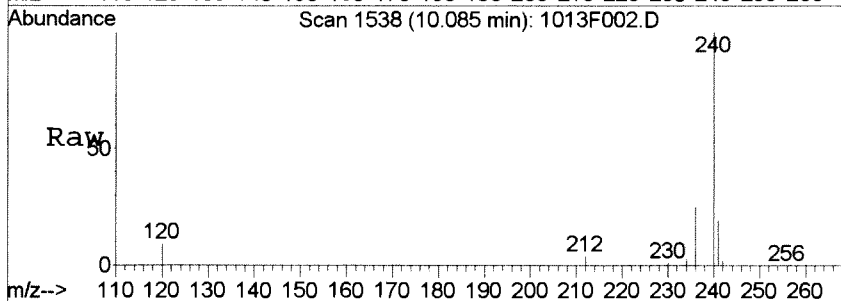
Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration





#26
 Benz (a) anthracene
 Concen: 0.44 ng/ml
 RT: 10.09 min Scan# 1538
 Delta R.T. 0.01 min
 Lab File: 1013F002.D
 Acq: 13 Oct 2017 8:17 am

Tgt Ion	Ratio	Lower	Upper
228	100		
226	7.0	0.0	56.6
229	31.8	0.0	39.7



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W

Data File : J:\MS14\DATA\101317\1013F003.D
 Acq On : 13 Oct 2017 8:48 am
 Sample : SIM-PAH ICAL @0.004ug/mL | SVM55-65B
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:33 2017

Vial: 3
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

lu **OCT 16 2017** *ml*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	41675	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	27104	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	57370	200.00	ng/ml	0.00
23) Chrysene-d12	10.09	240	71345	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	69520	200.00	ng/ml	-0.01

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.40	152	496	4.84	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.48%	
13) Fluorene-d10	6.76	176	895	4.89	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.49%	
22) Fluoranthene-d10	8.54	212	1385	3.96	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.40%	
25) Terphenyl-d14	8.90	244	1269	4.20	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.42%	

Target Compounds

						Qvalue
2) Naphthalene	4.79	128	987	4.31	ng/ml	95
4) 2-Methylnaphthalene	5.43	142	820	5.54	ng/ml	95
5) 1-Methylnaphthalene	5.52	142	719	5.48	ng/ml	95
6) Biphenyl	5.84	154	999	5.44	ng/ml	98
7) 2,6-Dimethylnaphthalene	5.97	156	748	5.61	ng/ml	96
9) Acenaphthylene	6.21	152	1345	4.21	ng/ml	98
10) Acenaphthene	6.35	154	728	4.03	ng/ml	99
11) Dibenzofuran	6.50	168	1159	4.06	ng/ml	94
12) 2,3,5-Trimethylnaphthalene	6.68	170	811	4.54	ng/ml	92
14) Fluorene	6.79	166	936	4.14	ng/ml	97
16) Dibenzothiophene	7.47	184	1404	3.94	ng/ml	88
17) Phenanthrene	7.58	178	1523	4.47	ng/ml	99
18) Anthracene	7.62	178	1412	4.13	ng/ml	99
19) Carbazole	7.75	167	1280	4.16	ng/ml	99
20) 1-Methylphenanthrene	8.09	192	1048m	3.97	ng/ml	
21) Fluoranthene	8.56	202	1697	4.21	ng/ml	95
24) Pyrene	8.76	202	1729	3.87	ng/ml	79
26) Benz(a)anthracene	10.07	228	1849	4.28	ng/ml	97
27) Chrysene	10.12	228	1619	3.98	ng/ml	99
29) Benzo(b)fluoranthene	12.11	252	1900	4.38	ng/ml	97
30) Benzo(k)fluoranthene	12.19	252	1796	4.14	ng/ml	98
31) Benzo(e)pyrene	12.83	252	1847	4.44	ng/ml	98
32) Benzo(a)pyrene	12.97	252	1547	3.95	ng/ml	95
33) Perylene	13.22	252	1563	4.11	ng/ml	97
34) Indeno(1,2,3-cd)pyrene	15.38	276	1485	4.23	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 1013F003.D 101317PAH.M Mon Oct 16 06:54:30 2017

Data File : J:\MS14\DATA\101317\1013F003.D Vial: 3
 Acq On : 13 Oct 2017 8:48 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.004ug/mL | SVM55-65B Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:33 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

LO OCT 16 2017

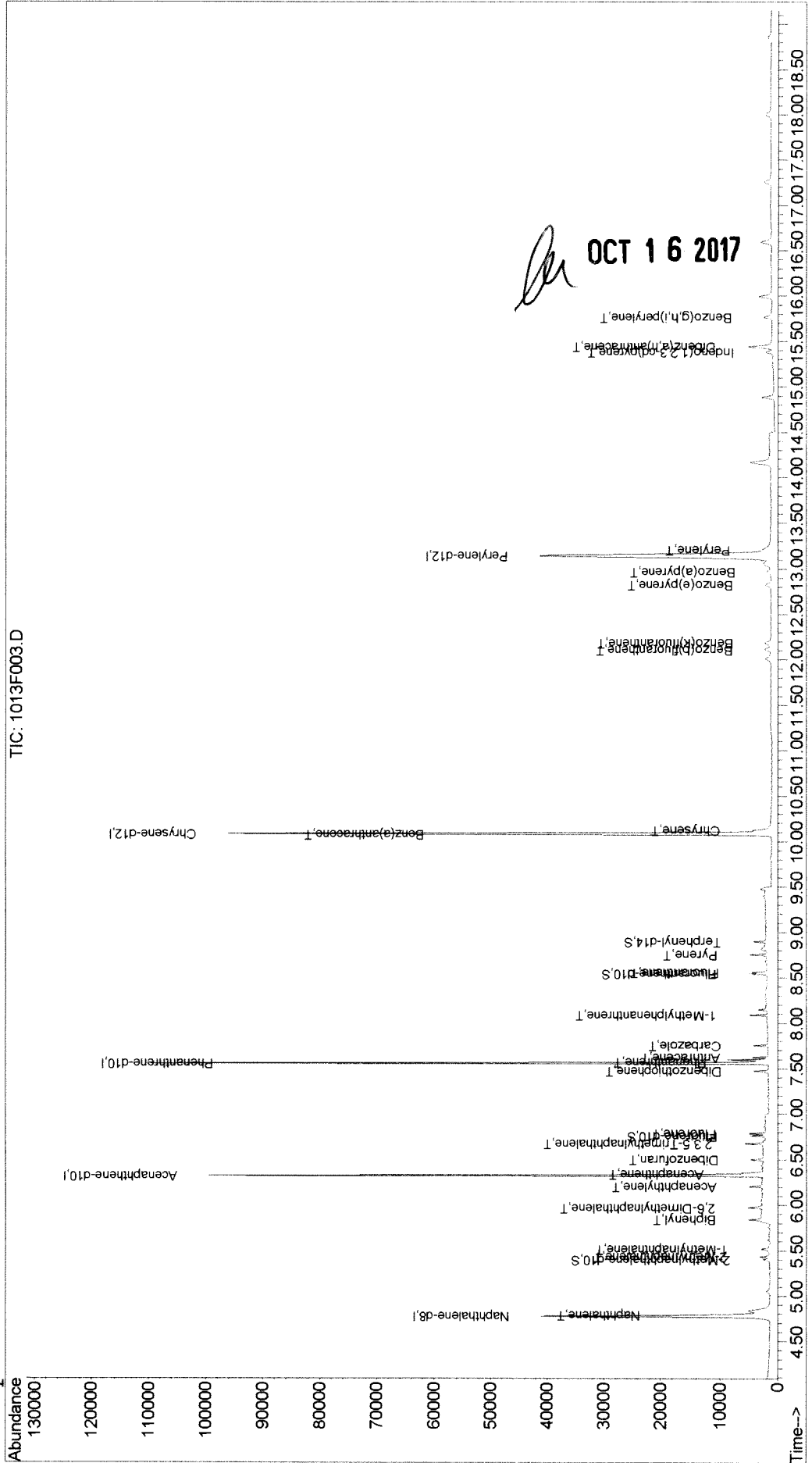
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	1587	4.60	ng/ml#	1
36) Benzo(g,h,i)perylene	15.76	276	1773	4.33	ng/ml	98

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F003.D
 Acq On : 13 Oct 2017 8:48 am
 Sample : SIM-PAH ICAL @0.004ug/mL | SVM55-65B
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017
 Quant Results File: 101317PAH.RES

Vial: 3
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration



[Signature]
OCT 16 2017

Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F003.D

Vial: 3

Acq On : 13 Oct 2017 8:48 am

Operator: LWeiskopf

Sample : SIM-PAH ICAL @0.004ug/mL | SVM55-65B

Inst : MS14

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Oct 13 12:07 2017

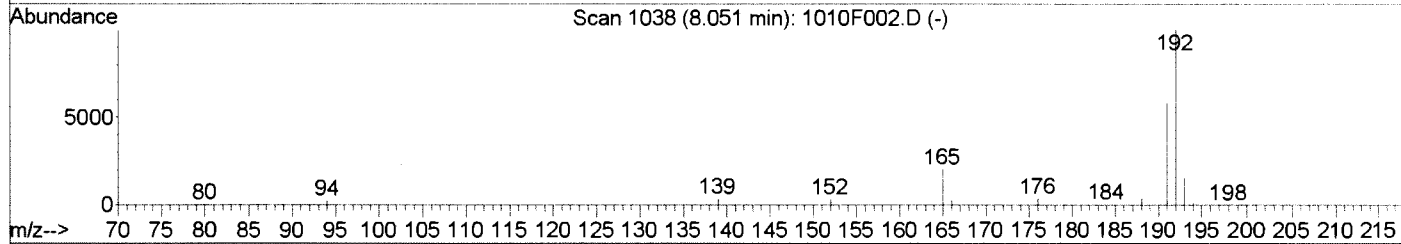
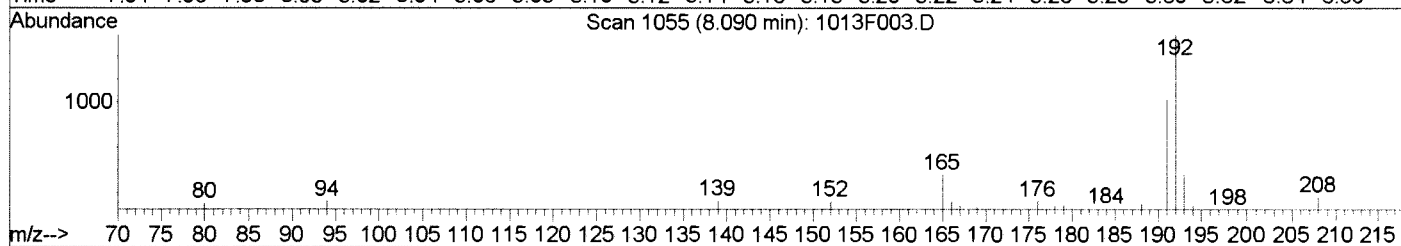
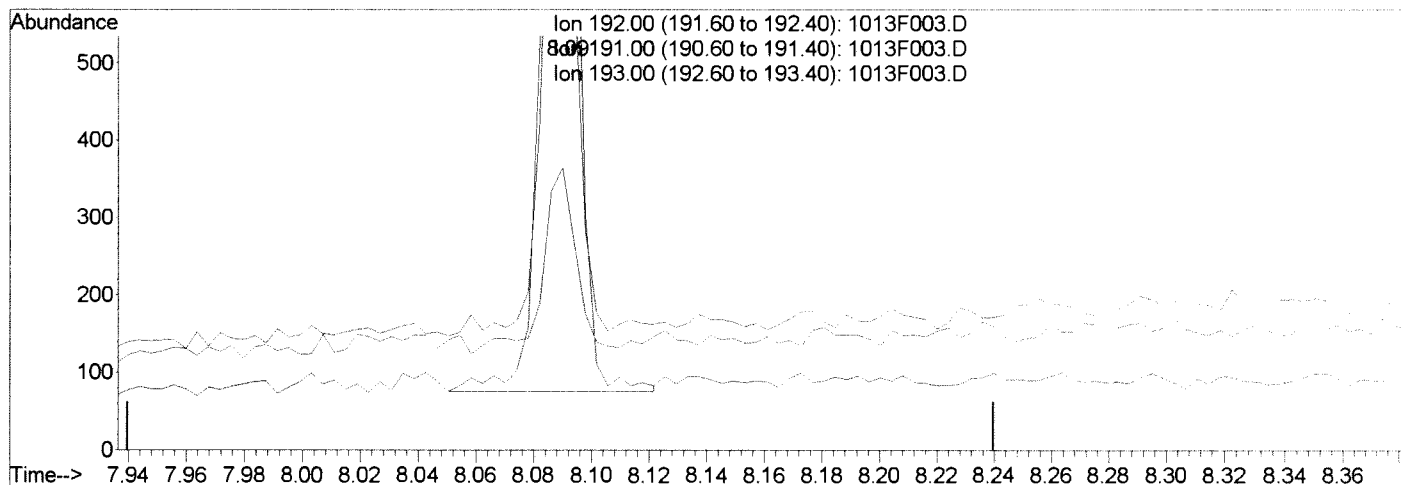
Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Oct 13 09:35:08 2017

Response via : Multiple Level Calibration



TIC: 1013F003.D

(20) 1-Methylphenanthrene (T)

8.09min 4.08ng/ml

response 1078

Ion	Exp%	Act%
192.00	100	100
191.00	57.20	58.28
193.00	15.60	14.70
0.00	0.00	0.00

Manual Integration:

Before

10/13/17

Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F003.D

Vial: 3

Acq On : 13 Oct 2017 8:48 am

Operator: LWeiskopf

Sample : SIM-PAH ICAL @0.004ug/mL | SVM55-65B

Inst : MS14

Misc :

Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Oct 13 12:07 2017

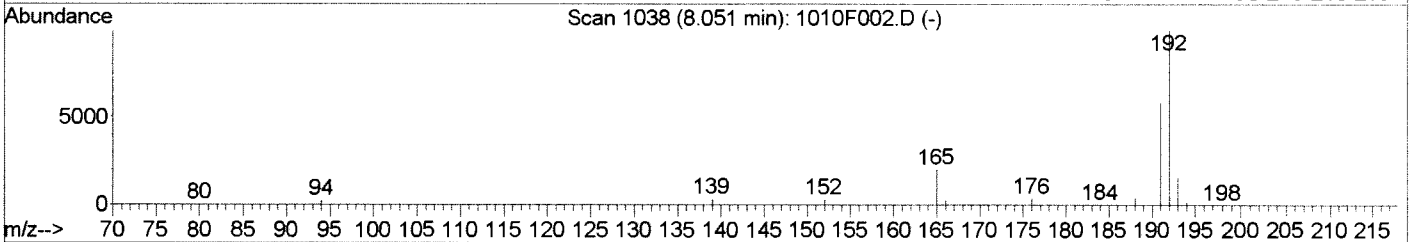
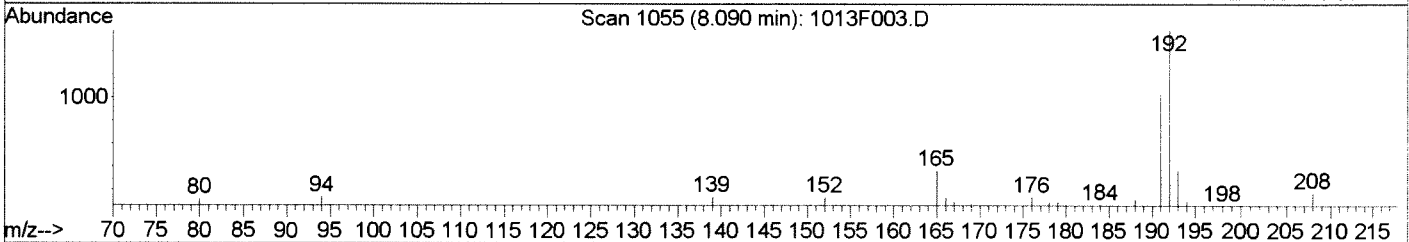
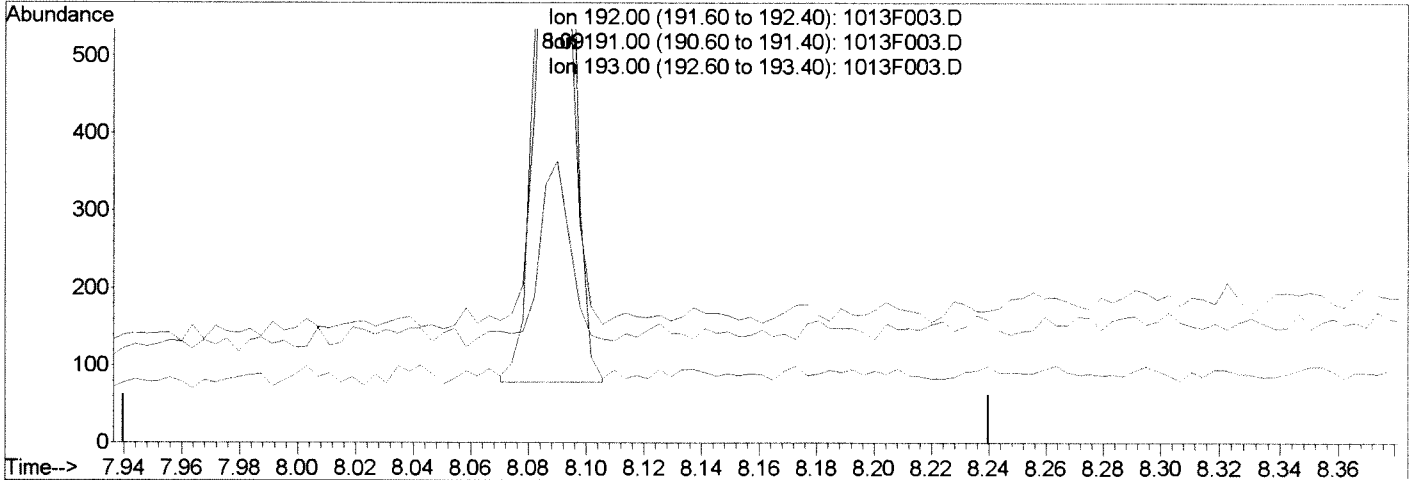
Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)

Title : PAHS and ALKYLATED HOMOLOGS

Last Update : Fri Oct 13 09:35:08 2017

Response via : Multiple Level Calibration



TIC: 1013F003.D

(20) 1-Methylphenanthrene (T)

8.09min 3.97ng/ml m

response 1048

Ion	Exp%	Act%
192.00	100	100
191.00	57.20	64.75
193.00	15.60	22.95
0.00	0.00	0.00

Manual Integration:

After

BLC

10/13/17

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Data File : J:\MS14\DATA\101317\1013F004.D Vial: 4
 Acq On : 13 Oct 2017 9:12 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.008ug/mL | SVM55-65C Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:33 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

a OCT 16 2017 *[Signature]*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	47787	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	26925	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	56670	200.00	ng/ml	0.00
23) Chrysene-d12	10.08	240	71427	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	72673	200.00	ng/ml	-0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	1080	9.19	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.92%	
13) Fluorene-d10	6.76	176	1554	8.55	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.85%	
22) Fluoranthene-d10	8.54	212	2675	7.75	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.78%	
25) Terphenyl-d14	8.90	244	2443	8.08	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	0.81%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	2273	8.65	ng/ml	99
4) 2-Methylnaphthalene	5.43	142	1555	9.17	ng/ml	96
5) 1-Methylnaphthalene	5.52	142	1429	9.50	ng/ml	95
6) Biphenyl	5.84	154	1941	9.21	ng/ml	98
7) 2,6-Dimethylnaphthalene	5.98	156	1395	9.13	ng/ml	95
9) Acenaphthylene	6.21	152	2555	8.05	ng/ml	99
10) Acenaphthene	6.35	154	1464	8.16	ng/ml	97
11) Dibenzofuran	6.50	168	2284	8.05	ng/ml	94
12) 2,3,5-Trimethylnaphthalene	6.68	170	1507	8.50	ng/ml	96
14) Fluorene	6.79	166	1801	8.02	ng/ml	98
16) Dibenzothiophene	7.47	184	2731	7.77	ng/ml	88
17) Phenanthrene	7.58	178	2843	8.45	ng/ml	98
18) Anthracene	7.62	178	2694	7.97	ng/ml	98
19) Carbazole	7.75	167	2438	8.02	ng/ml	98
20) 1-Methylphenanthrene	8.09	192	2024	7.75	ng/ml	94
21) Fluoranthene	8.56	202	3206	8.05	ng/ml	96
24) Pyrene	8.75	202	3351	7.49	ng/ml	86
26) Benz(a)anthracene	10.07	228	3447	7.98	ng/ml	99
27) Chrysene	10.12	228	3252	7.98	ng/ml	98
29) Benzo(b)fluoranthene	12.11	252	3468	7.65	ng/ml	98
30) Benzo(k)fluoranthene	12.17	252	3539	7.80	ng/ml	97
31) Benzo(e)pyrene	12.82	252	3615	8.31	ng/ml	99
32) Benzo(a)pyrene	12.96	252	3098	7.57	ng/ml	96
33) Perylene	13.21	252	3155	7.94	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.38	276	2750	7.49	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 1013F004.D 101317PAH.M Mon Oct 16 06:54:31 2017

Data File : J:\MS14\DATA\101317\1013F004.D Vial: 4
 Acq On : 13 Oct 2017 9:12 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.008ug/mL | SVM55-65C Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:33 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

ll OCT 16 2017

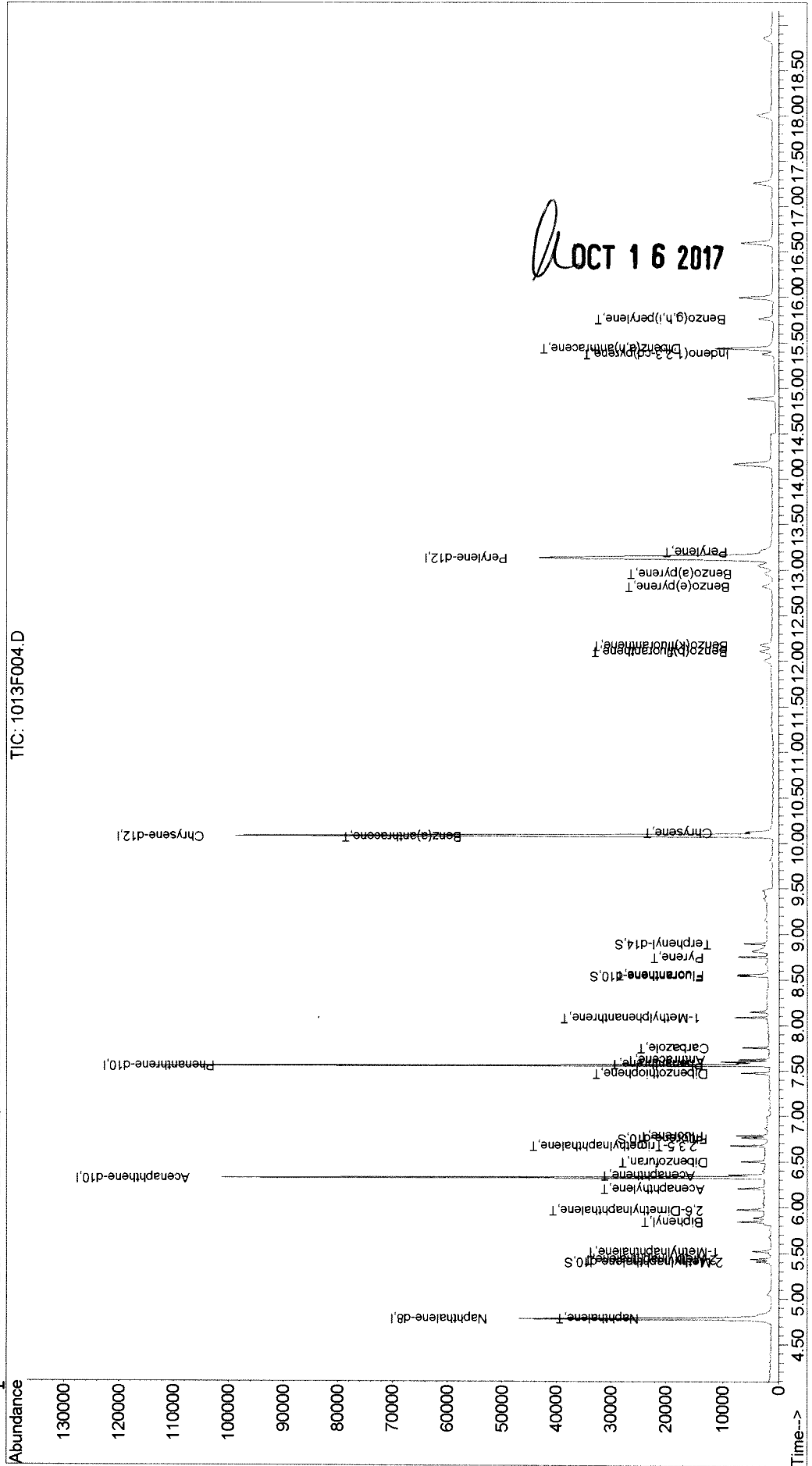
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	3288	9.12	ng/ml#	1
36) Benzo(g,h,i)perylene	15.76	276	3344	7.80	ng/ml	97

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F004.D
 Acq On : 13 Oct 2017 9:12 am
 Sample : SIM-PAH ICAL @0.008ug/mL | SVM55-65C
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017
 Quant Results File: 101317PAH.RES

Vial: 4
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration



Data File : J:\MS14\DATA\101317\1013F005.D
 Acq On : 13 Oct 2017 9:36 am
 Sample : SIM-PAH ICAL @0.02ug/mL | SVM55-65D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:33 2017

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

Q **OCT 16 2017** *W*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	45890	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	25817	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	53248	200.00	ng/ml	0.00
23) Chrysene-d12	10.09	240	68796	200.00	ng/ml	0.00
28) Perylene-d12	13.13	264	70435	200.00	ng/ml	-0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	2584	22.90	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	2.29%	
13) Fluorene-d10	6.76	176	3384	19.41	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	1.94%	
22) Fluoranthene-d10	8.54	212	6324	19.50	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	1.95%	
25) Terphenyl-d14	8.90	244	5674	19.49	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	1.95%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	5211	20.66	ng/ml	100
4) 2-Methylnaphthalene	5.43	142	3765	23.12	ng/ml	97
5) 1-Methylnaphthalene	5.52	142	3340	23.12	ng/ml	98
6) Biphenyl	5.84	154	4570	22.59	ng/ml	98
7) 2,6-Dimethylnaphthalene	5.98	156	3356	22.86	ng/ml	92
9) Acenaphthylene	6.21	152	6190	20.33	ng/ml	99
10) Acenaphthene	6.35	154	3463	20.13	ng/ml	98
11) Dibenzofuran	6.50	168	5412	19.90	ng/ml	94
12) 2,3,5-Trimethylnaphthalene	6.68	170	3486	20.50	ng/ml	97
14) Fluorene	6.79	166	4261	19.80	ng/ml	97
16) Dibenzothiophene	7.47	184	6528	19.76	ng/ml	89
17) Phenanthrene	7.58	178	6424	20.32	ng/ml	98
18) Anthracene	7.62	178	6388	20.11	ng/ml	99
19) Carbazole	7.75	167	5771	20.19	ng/ml	99
20) 1-Methylphenanthrene	8.09	192	4861	19.82	ng/ml	96
21) Fluoranthene	8.56	202	7645	20.42	ng/ml	96
24) Pyrene	8.75	202	8074	18.74	ng/ml	94
26) Benz(a)anthracene	10.07	228	8024	19.28	ng/ml	99
27) Chrysene	10.12	228	7563	19.28	ng/ml	100
29) Benzo(b)fluoranthene	12.11	252	8504	19.35	ng/ml	98
30) Benzo(k)fluoranthene	12.17	252	8388	19.08	ng/ml	99
31) Benzo(e)pyrene	12.82	252	8206	19.46	ng/ml	99
32) Benzo(a)pyrene	12.96	252	7628	19.23	ng/ml	99
33) Perylene	13.21	252	7307	18.97	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.38	276	6657	18.72	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 1013F005.D 101317PAH.M Mon Oct 16 06:54:31 2017

Data File : J:\MS14\DATA\101317\1013F005.D Vial: 5
 Acq On : 13 Oct 2017 9:36 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.02ug/mL | SVM55-65D Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:33 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

a
OCT 16 2017

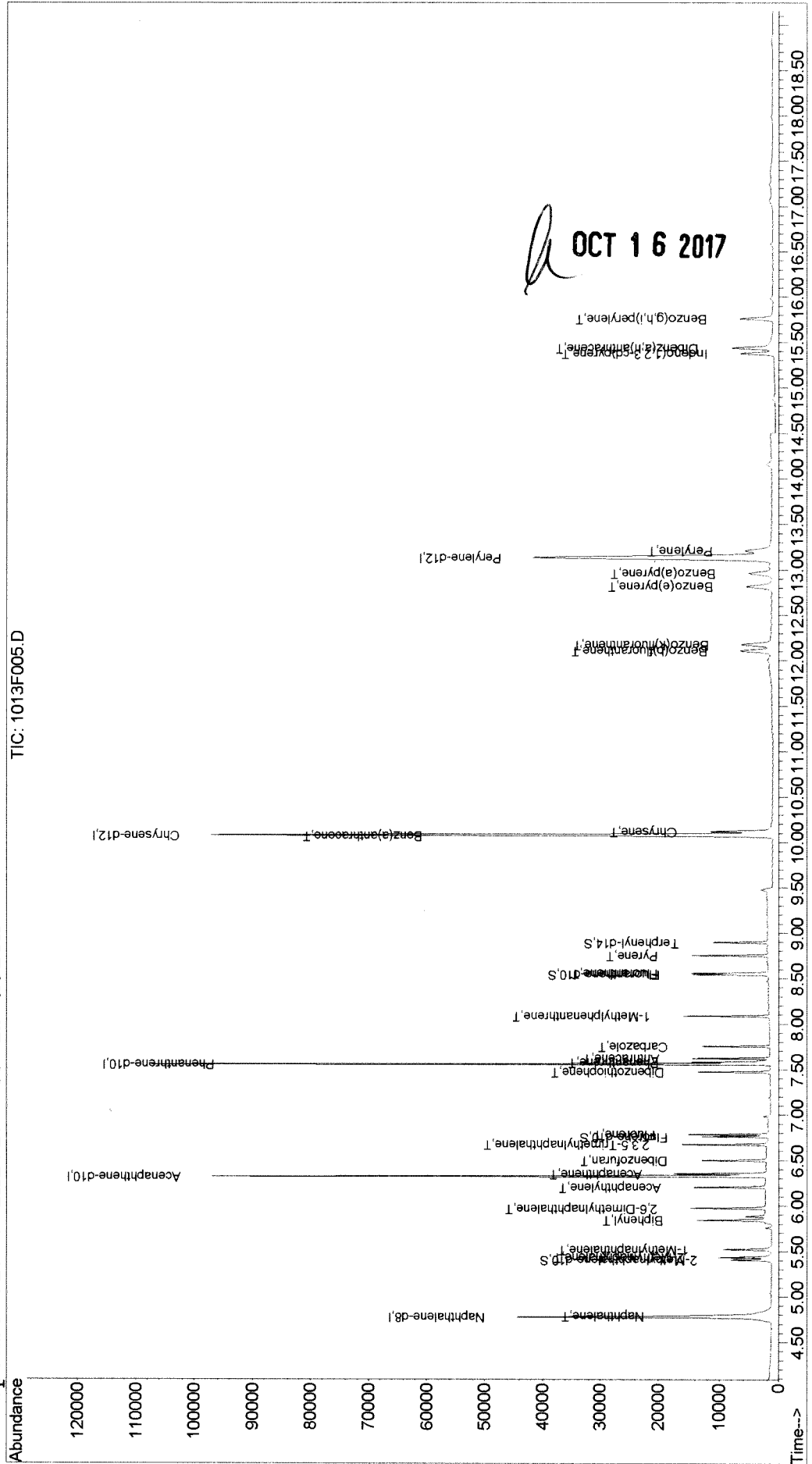
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	6895	19.73	ng/ml	92
36) Benzo(g,h,i)perylene	15.76	276	7540	18.16	ng/ml	99

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F005.D
 Acq On : 13 Oct 2017 9:36 am
 Sample : SIM-PAH ICAL @0.02ug/mL | SVM55-65D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017
 Quant Results File: 101317PAH.RES

Vial: 5
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration



Data File : J:\MS14\DATA\101317\1013F006.D
 Acq On : 13 Oct 2017 10:00 am
 Sample : SIM-PAH ICAL @0.1ug/mL | SVM55-65E
 Misc :

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:34 2017

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

a **OCT 16 2017** *W*

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	47748	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	25479	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	53623	200.00	ng/ml	0.00
23) Chrysene-d12	10.08	240	69353	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	70834	200.00	ng/ml	-0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	12390	105.51	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	10.55%	
13) Fluorene-d10	6.76	176	16004	93.01	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	9.30%	
22) Fluoranthene-d10	8.54	212	31793	97.37	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	9.74%	
25) Terphenyl-d14	8.90	244	27735	94.50	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	9.45%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.80	128	26255	100.03	ng/ml	99
4) 2-Methylnaphthalene	5.43	142	18453	108.90	ng/ml	98
5) 1-Methylnaphthalene	5.52	142	16156	107.46	ng/ml	96
6) Biphenyl	5.84	154	23328	110.82	ng/ml	97
7) 2,6-Dimethylnaphthalene	5.97	156	16147	105.72	ng/ml	94
9) Acenaphthylene	6.21	152	29548	98.34	ng/ml	100
10) Acenaphthene	6.35	154	16725m	98.52	ng/ml	
11) Dibenzofuran	6.50	168	26430	98.47	ng/ml	95
12) 2,3,5-Trimethylnaphthalene	6.68	170	16863	100.47	ng/ml	89
14) Fluorene	6.78	166	20820	98.01	ng/ml	99
16) Dibenzothiophene	7.47	184	32285	97.02	ng/ml	91
17) Phenanthrene	7.58	178	31290	98.30	ng/ml	99
18) Anthracene	7.62	178	31303	97.86	ng/ml	99
19) Carbazole	7.75	167	27927	97.03	ng/ml	99
20) 1-Methylphenanthrene	8.09	192	23701	95.94	ng/ml	99
21) Fluoranthene	8.56	202	37834	100.36	ng/ml	97
24) Pyrene	8.75	202	39428	90.78	ng/ml	97
26) Benzo(a)anthracene	10.07	228	38880	92.67	ng/ml	100
27) Chrysene	10.12	228	37506	94.83	ng/ml	99
29) Benzo(b)fluoranthene	12.11	252	41932	94.87	ng/ml	100
30) Benzo(k)fluoranthene	12.18	252	41991	94.96	ng/ml	100
31) Benzo(e)pyrene	12.82	252	39862	93.98	ng/ml	99
32) Benzo(a)pyrene	12.96	252	37198	93.24	ng/ml	100
33) Perylene	13.21	252	36683	94.70	ng/ml	99
34) Indeno(1,2,3-cd)pyrene	15.38	276	33875	94.70	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 1013F006.D 101317PAH.M Mon Oct 16 06:54:32 2017

Data File : J:\MS14\DATA\101317\1013F006.D Vial: 6
 Acq On : 13 Oct 2017 10:00 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.1ug/mL | SVM55-65E Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:34 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

h
OCT 16 2017

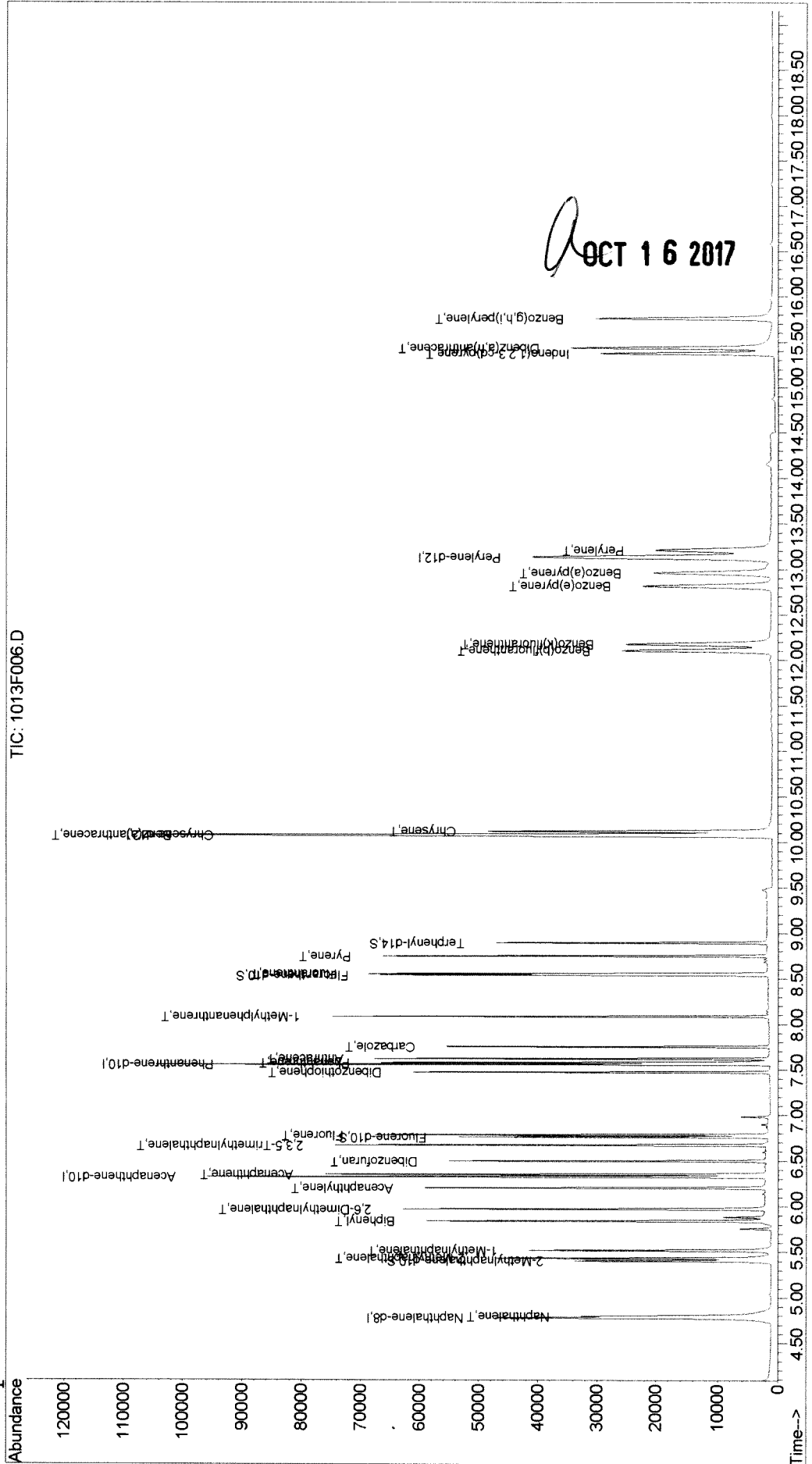
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	33526	95.39 ng/ml	98
36) Benzo(g,h,i)perylene	15.76	276	37956	90.89 ng/ml	99

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F006.D
 Acq On : 13 Oct 2017 10:00 am
 Sample : SIM-PAH ICAL @0.1ug/mL | SVM55-65E
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:08 2017
 Quant Results File: 101317PAH.RES

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration



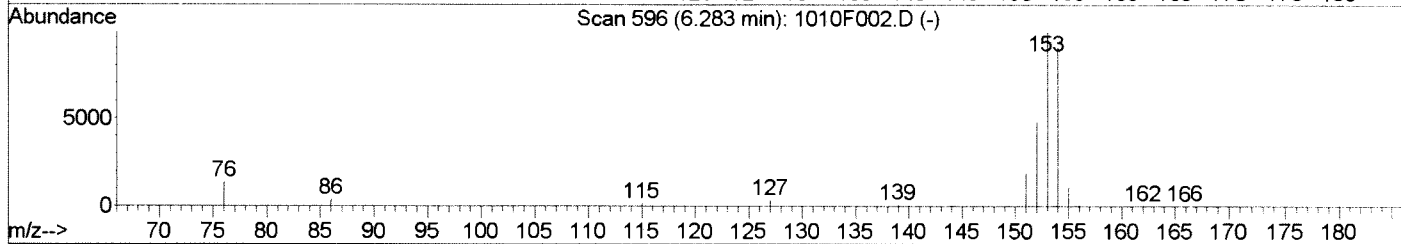
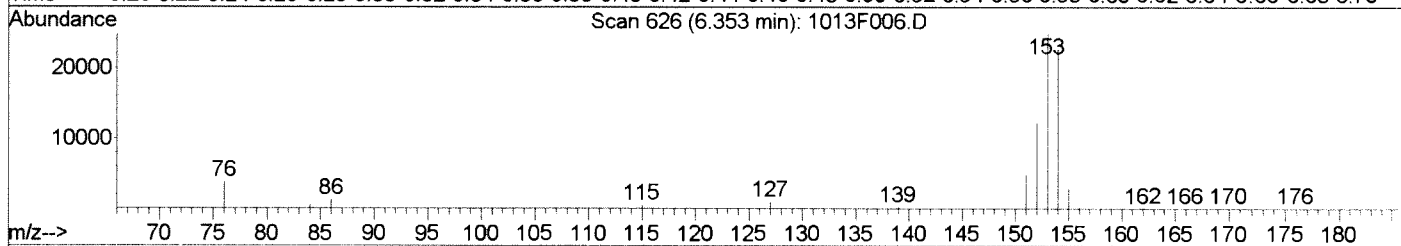
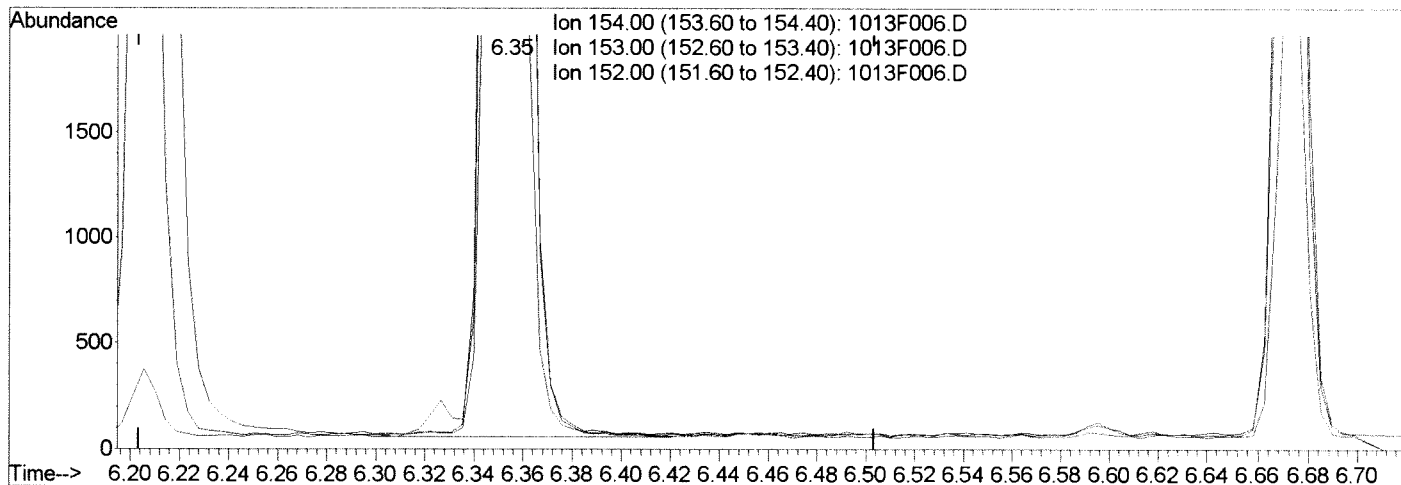
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F006.D
 Acq On : 13 Oct 2017 10:00 am
 Sample : SIM-PAH ICAL @0.1ug/mL | SVM55-65E
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F006.D

(10) Acenaphthene (T)

6.35min 99.42ng/ml

response 16878

Ion	Exp%	Act%
154.00	100	100
153.00	111.00	109.44
152.00	53.40	53.33
0.00	0.00	0.00

Manual Integration:

Before

10/13/17

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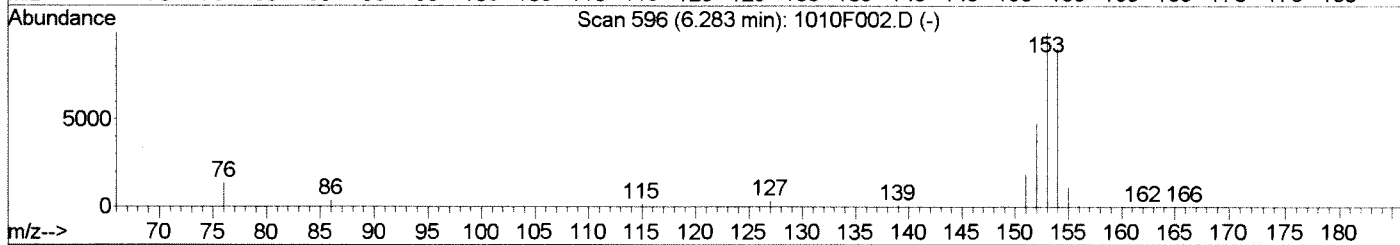
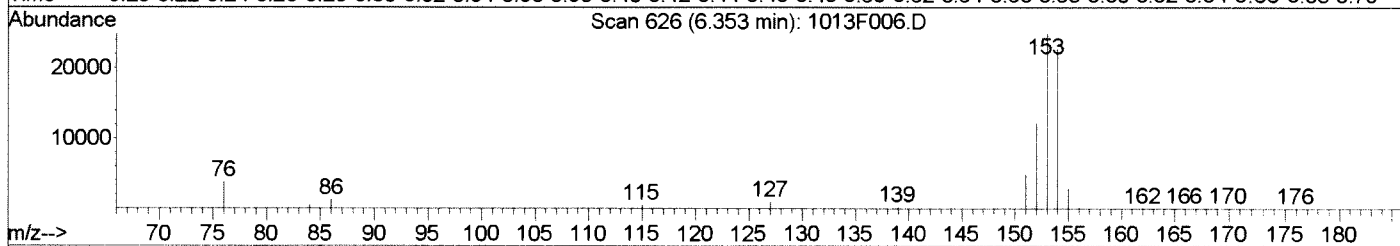
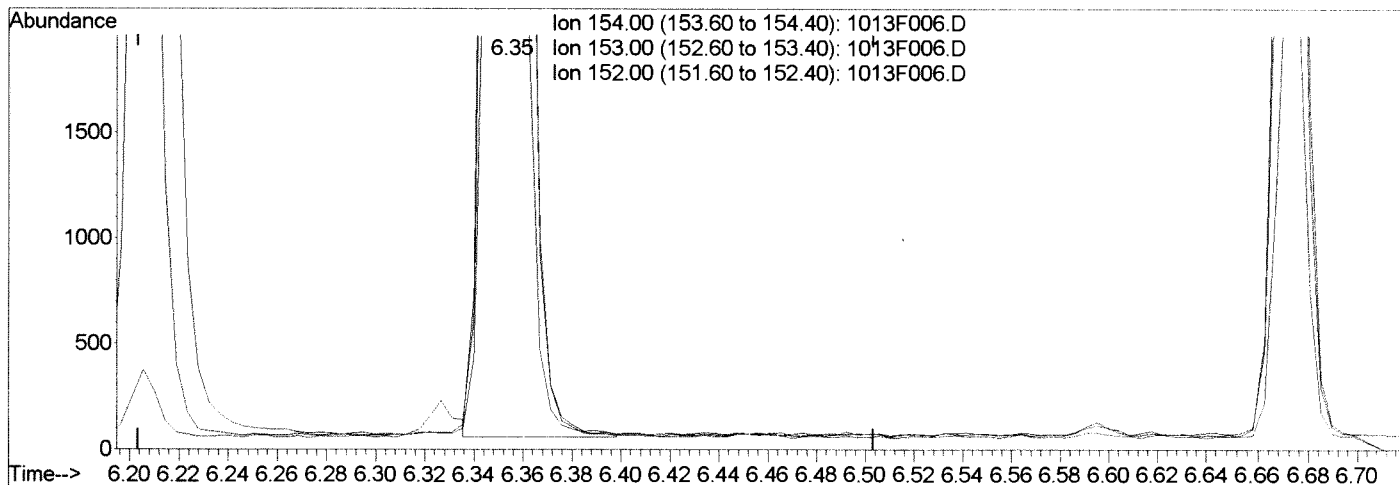
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F006.D
 Acq On : 13 Oct 2017 10:00 am
 Sample : SIM-PAH ICAL @0.1ug/mL | SVM55-65E
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:08 2017

Vial: 6
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F006.D

(10) Acenaphthene (T)

6.35min 98.52ng/ml m

response 16725

Ion	Exp%	Act%
154.00	100	100
153.00	111.00	109.45
152.00	53.40	53.50
0.00	0.00	0.00

Manual Integration:

After

IC-Overintegrated

10/13/17

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Data File : J:\MS14\DATA\101317\1013F007.D
 Acq On : 13 Oct 2017 10:24 am
 Sample : SIM-PAH ICAL @0.2ug/mL | SVM55-65F
 Misc :

Vial: 7
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:34 2017

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

W
 OCT 16 2017

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	48500	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	25401	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	53535	200.00	ng/ml	0.00
23) Chrysene-d12	10.08	240	68419	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	68823	200.00	ng/ml	-0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	25094	210.38	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	21.04%	
13) Fluorene-d10	6.76	176	32197	187.68	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	18.77%	
22) Fluoranthene-d10	8.54	212	64319	197.31	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	19.73%	
25) Terphenyl-d14	8.89	244	55720	192.45	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	19.24%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	54069	202.80	ng/ml	100
4) 2-Methylnaphthalene	5.43	142	37240	216.35	ng/ml	97
5) 1-Methylnaphthalene	5.52	142	32316	211.62	ng/ml	98
6) Biphenyl	5.84	154	47969	224.35	ng/ml	97
7) 2,6-Dimethylnaphthalene	5.97	156	32805	211.45	ng/ml	96
9) Acenaphthylene	6.21	152	59904	199.99	ng/ml	100
10) Acenaphthene	6.35	154	33808	199.76	ng/ml	99
11) Dibenzofuran	6.50	168	53538	200.08	ng/ml	95
12) 2,3,5-Trimethylnaphthalene	6.68	170	34139	204.03	ng/ml	90
14) Fluorene	6.78	166	41926	197.97	ng/ml	98
16) Dibenzothiophene	7.47	184	66193	199.25	ng/ml	92
17) Phenanthrene	7.58	178	63430	199.60	ng/ml	99
18) Anthracene	7.62	178	64212	201.08	ng/ml	99
19) Carbazole	7.75	167	57184	199.02	ng/ml	98
20) 1-Methylphenanthrene	8.09	192	48375	196.14	ng/ml	99
21) Fluoranthene	8.56	202	75412	200.36	ng/ml	98
24) Pyrene	8.75	202	78923	184.19	ng/ml	98
26) Benz(a)anthracene	10.07	228	77758	187.86	ng/ml	100
27) Chrysene	10.12	228	74442	190.80	ng/ml	99
29) Benzo(b)fluoranthene	12.11	252	84426	196.58	ng/ml	99
30) Benzo(k)fluoranthene	12.18	252	84139	195.84	ng/ml	100
31) Benzo(e)pyrene	12.82	252	79124	192.00	ng/ml	99
32) Benzo(a)pyrene	12.96	252	73735	190.23	ng/ml	100
33) Perylene	13.21	252	72554	192.78	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.38	276	66675	191.85	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 1013F007.D 101317PAH.M Mon Oct 16 06:54:33 2017

Data File : J:\MS14\DATA\101317\1013F007.D Vial: 7
 Acq On : 13 Oct 2017 10:24 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.2ug/mL | SVM55-65F Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:34 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

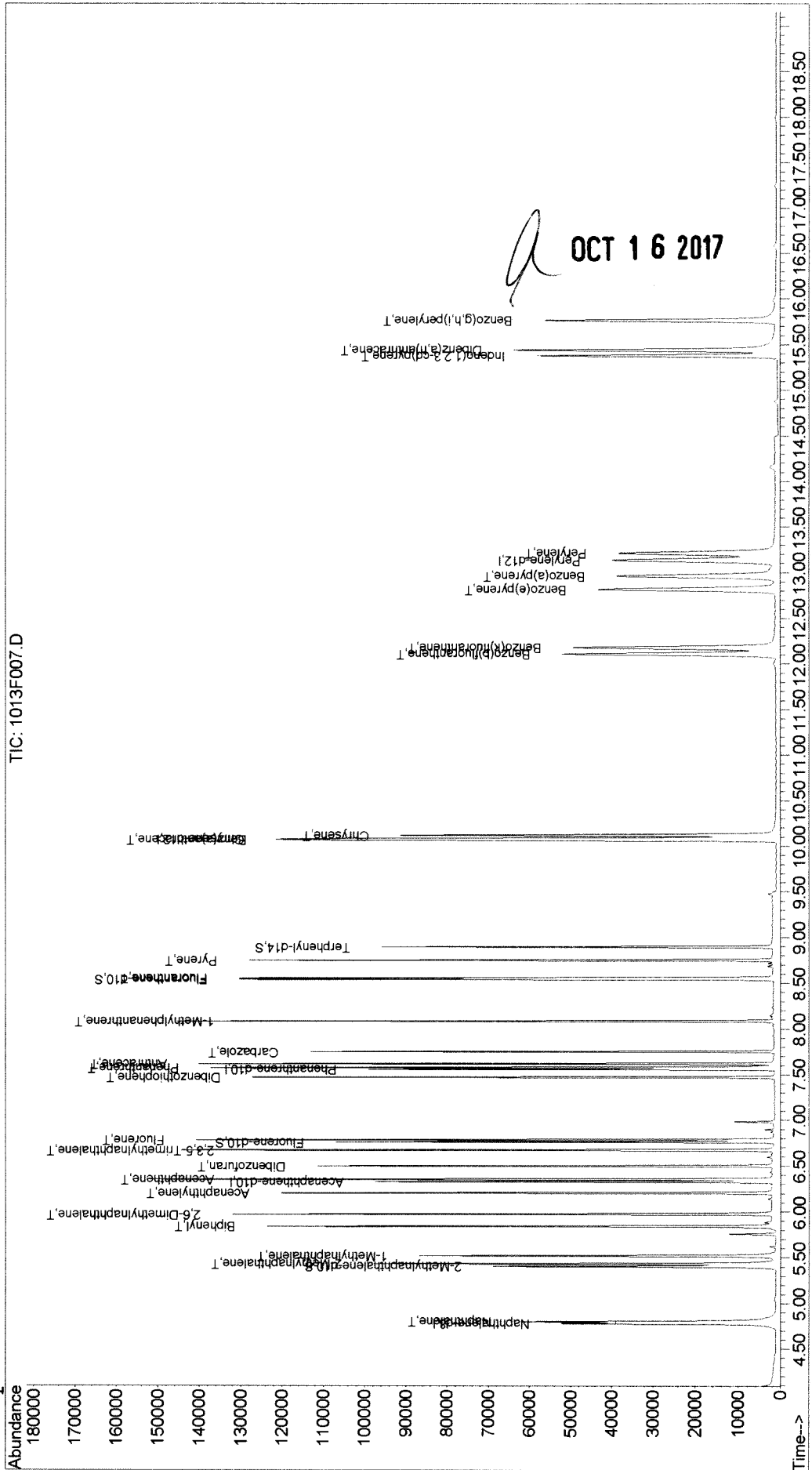
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Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	66153	193.72	ng/ml	99
36) Benzo(g,h,i)perylene	15.76	276	74465	183.53	ng/ml	100

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F007.D
Acq On : 13 Oct 2017 10:24 am
Sample : SIM-PAH ICAL @0.2ug/mL | SVM55-65F
Misc :
MS Integration Params: RTEINT.P
Quant Time: Oct 13 12:07 2017
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Oct 13 12:21:46 2017
Response via : Initial Calibration



Data File : J:\MS14\DATA\101317\1013F008.D
 Acq On : 13 Oct 2017 10:48 am
 Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G
 Misc :

Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:34 2017

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

W
 OCT 16 2017

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	45603m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	23247	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	49507	200.00	ng/ml	0.00
23) Chrysene-d12	10.08	240	64481	200.00	ng/ml	0.00
28) Perylene-d12	13.14	264	65038	200.00	ng/ml	-0.02

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.40	152	47750	425.76	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	42.58%	
13) Fluorene-d10	6.76	176	60987	388.45	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	38.84%	
22) Fluoranthene-d10	8.54	212	125900	417.64	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	41.76%	
25) Terphenyl-d14	8.89	244	107399	393.59	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	39.36%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.80	128	104721m	417.74	ng/ml	
4) 2-Methylnaphthalene	5.43	142	70048	432.81	ng/ml	97
5) 1-Methylnaphthalene	5.52	142	61086	425.42	ng/ml	97
6) Biphenyl	5.84	154	87341	434.44	ng/ml	98
7) 2,6-Dimethylnaphthalene	5.97	156	61925	424.50	ng/ml	96
9) Acenaphthylene	6.21	152	114707	418.43	ng/ml	100
10) Acenaphthene	6.35	154	63956	412.91	ng/ml	97
11) Dibenzofuran	6.50	168	101457	414.29	ng/ml	97
12) 2,3,5-Trimethylnaphthalene	6.68	170	65222	425.91	ng/ml	93
14) Fluorene	6.78	166	78823	406.68	ng/ml	99
16) Dibenzothiophene	7.47	184	127570	415.24	ng/ml	92
17) Phenanthrene	7.58	178	121006	411.76	ng/ml	99
18) Anthracene	7.62	178	121734	412.22	ng/ml	99
19) Carbazole	7.75	167	109164	410.83	ng/ml	99
20) 1-Methylphenanthrene	8.09	192	93592	410.36	ng/ml	99
21) Fluoranthene	8.56	202	146379	420.55	ng/ml	97
24) Pyrene	8.75	202	154422	382.41	ng/ml	97
26) Benz(a)anthracene	10.07	228	154204	395.29	ng/ml	99
27) Chrysene	10.12	228	144750	393.66	ng/ml	100
29) Benzo(b)fluoranthene	12.11	252	167112	411.76	ng/ml	100
30) Benzo(k)fluoranthene	12.18	252	165966	408.79	ng/ml	99
31) Benzo(e)pyrene	12.82	252	156411	401.62	ng/ml	100
32) Benzo(a)pyrene	12.97	252	146227	399.20	ng/ml	100
33) Perylene	13.22	252	143140	402.47	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.38	276	132633	403.85	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 1013F008.D 101317PAH.M Mon Oct 16 06:54:34 2017

Data File : J:\MS14\DATA\101317\1013F008.D Vial: 8
 Acq On : 13 Oct 2017 10:48 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:34 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

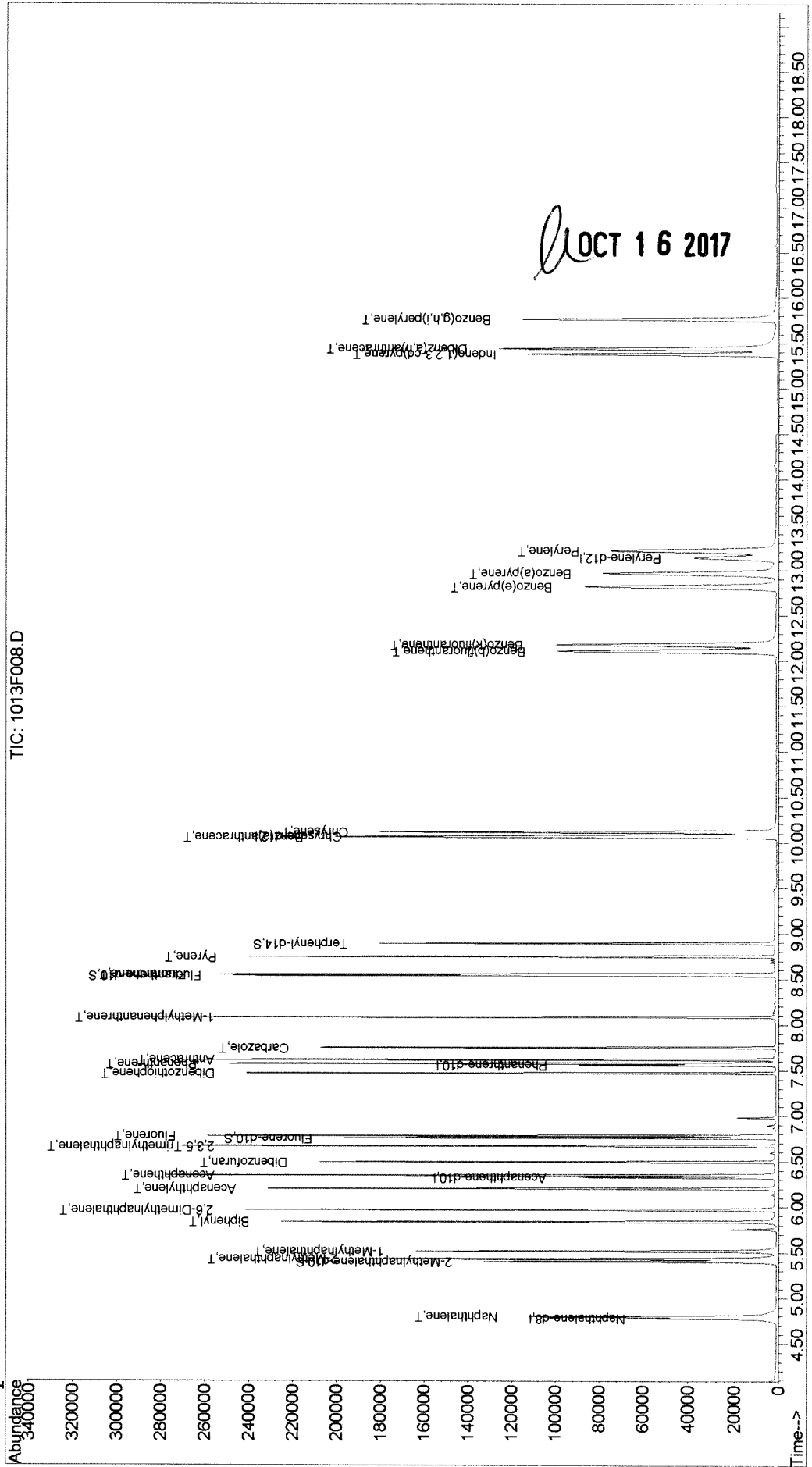
h OCT 16 2017

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	126889	393.20	ng/ml	100
36) Benzo(g,h,i)perylene	15.76	276	144822	377.70	ng/ml	100

Data File : J:\MS14\DATA\101317\1013F008.D
Acq On : 13 Oct 2017 10:48 am
Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G
Misc :
MS Integration Params: RTEINT.P
Quant Time: Oct 13 12:09 2017
Quant Results File: 101317PAH.RES

Vial: 8
Operator: Lweiskopf
Inst : MS14
Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Oct 13 12:21:46 2017
Response via : Initial Calibration



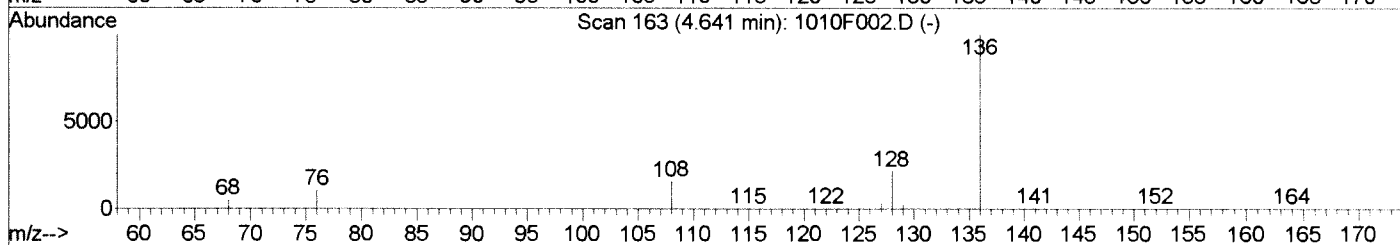
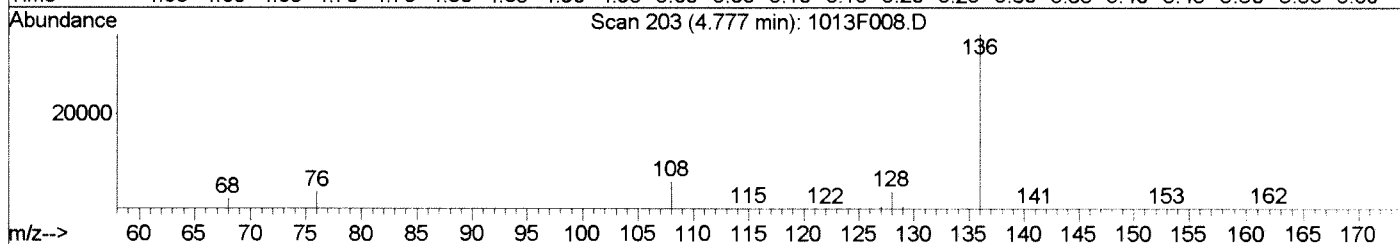
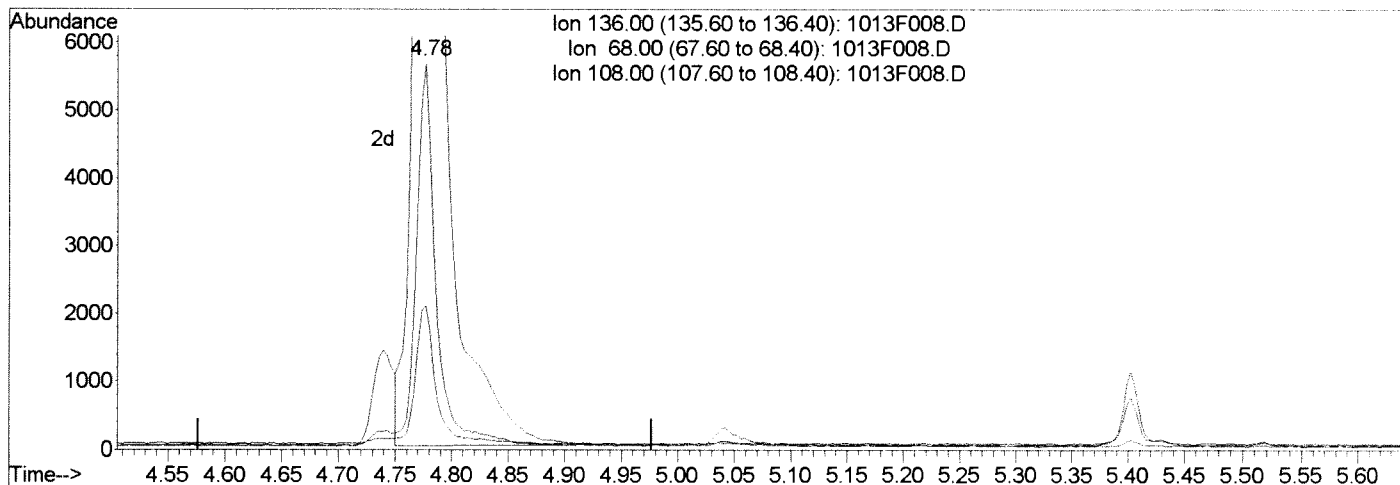
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F008.D
 Acq On : 13 Oct 2017 10:48 am
 Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017

Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F008.D

(1) Naphthalene-d8 (I)
 4.78min 200.00ng/ml
 response 43692

Ion	Exp%	Act%
136.00	100	100
68.00	12.00	5.51
108.00	14.00	15.31
0.00	0.00	0.00

Manual Integration:

Before

10/13/17

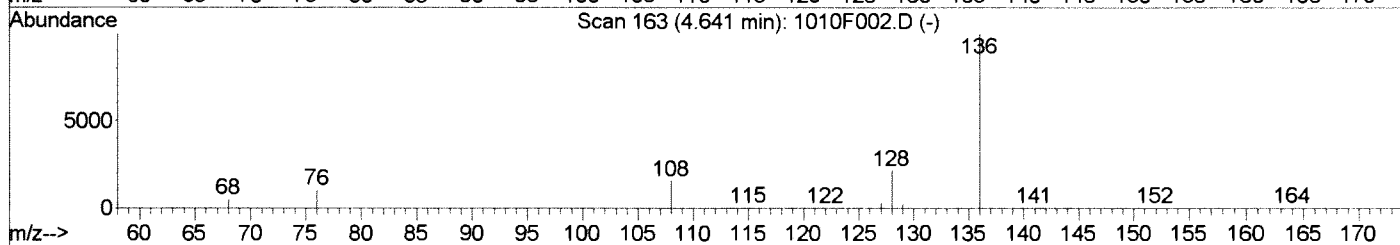
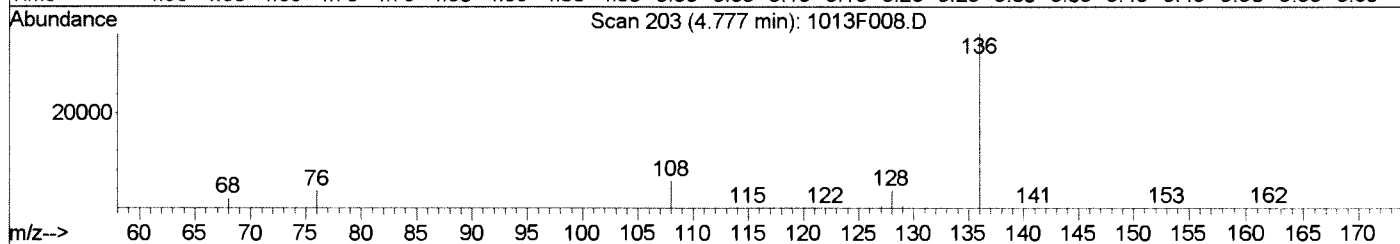
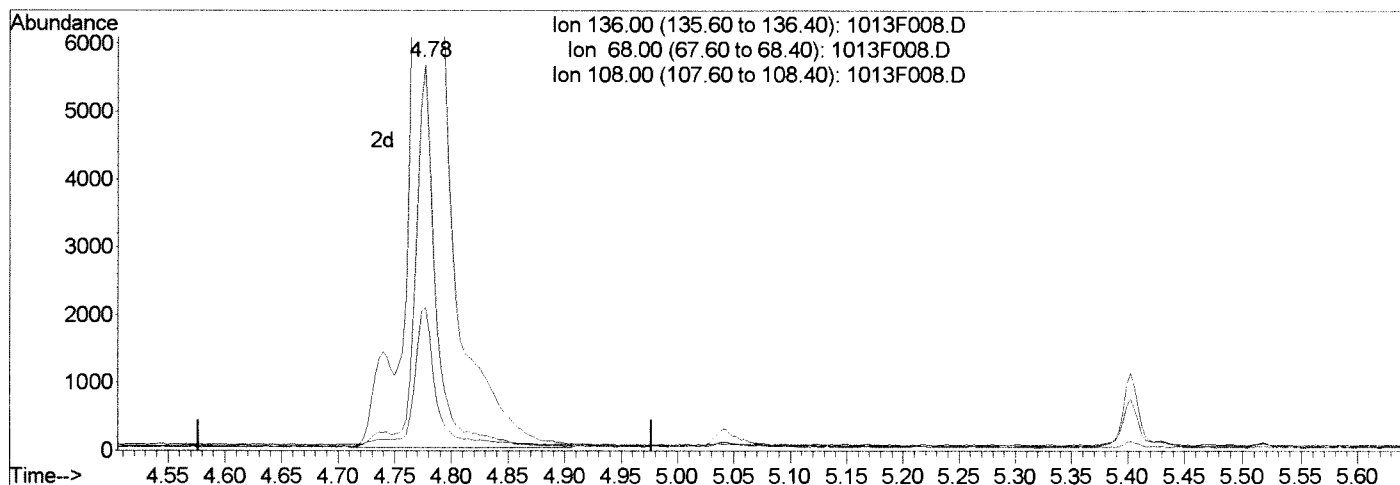
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F008.D
 Acq On : 13 Oct 2017 10:48 am
 Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:09 2017

Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



(1) Naphthalene-d8 (I)

4.78min 200.00ng/ml m
 response 45603

Ion	Exp%	Act%
136.00	100	100
68.00	12.00	5.74
108.00	14.00	15.46
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

10/13/17

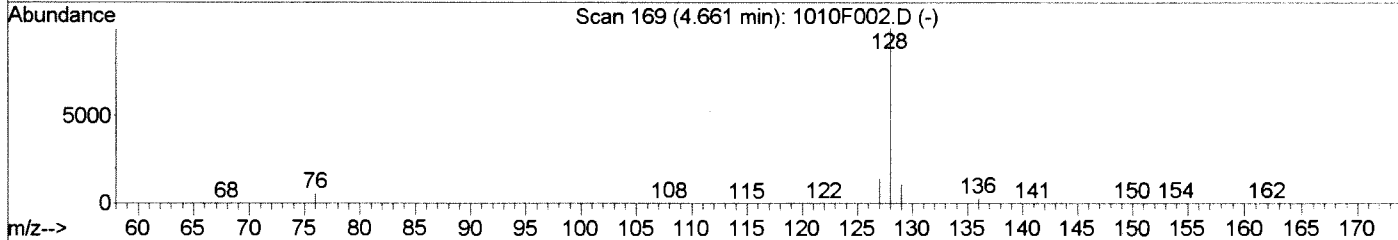
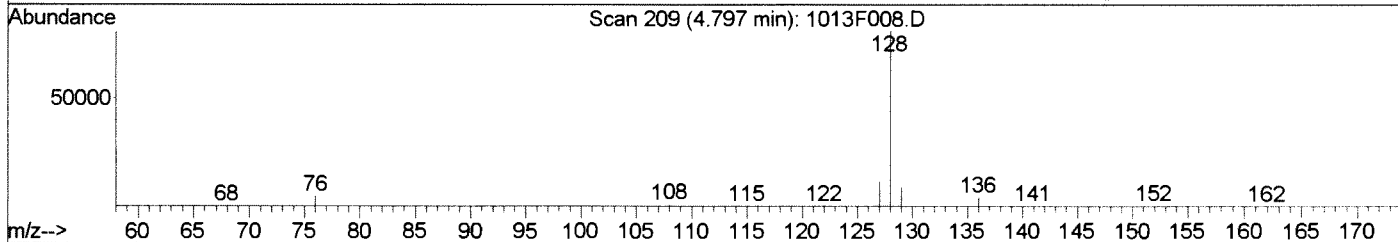
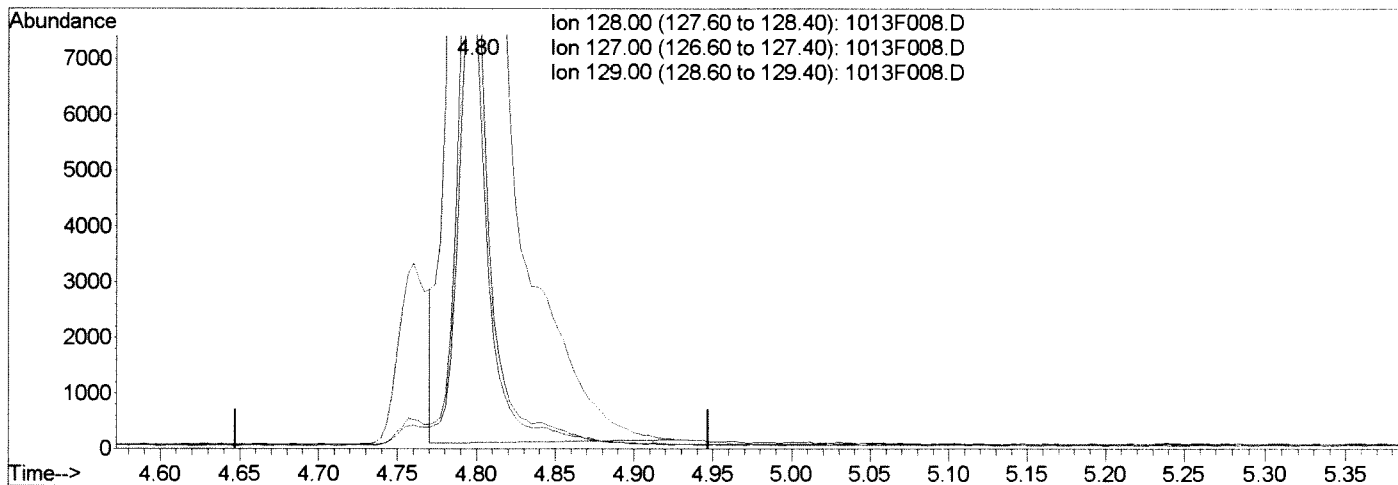
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F008.D
 Acq On : 13 Oct 2017 10:48 am
 Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:09 2017

Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F008.D

(2) Naphthalene (T)

4.80min 397.87ng/ml

response 99740

Ion	Exp%	Act%
128.00	100	100
127.00	13.90	13.89
129.00	10.60	10.62
0.00	0.00	0.00

Manual Integration:

Before

10/13/17

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Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F008.D
 Acq On : 13 Oct 2017 10:48 am
 Sample : SIM-PAH ICAL @0.4ug/mL | SVM55-65G
 Misc :

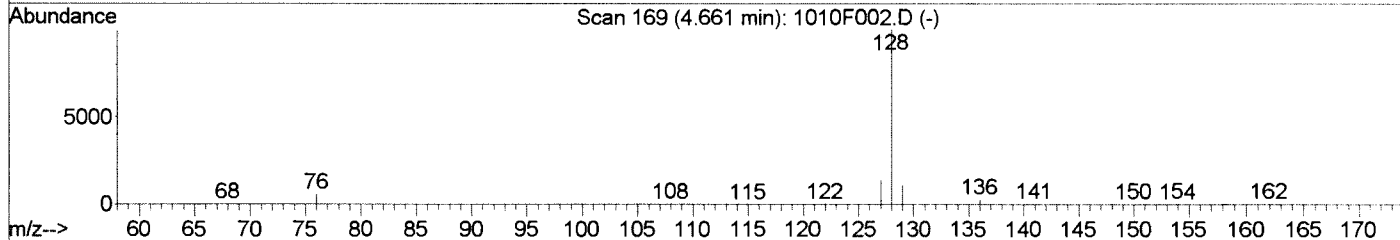
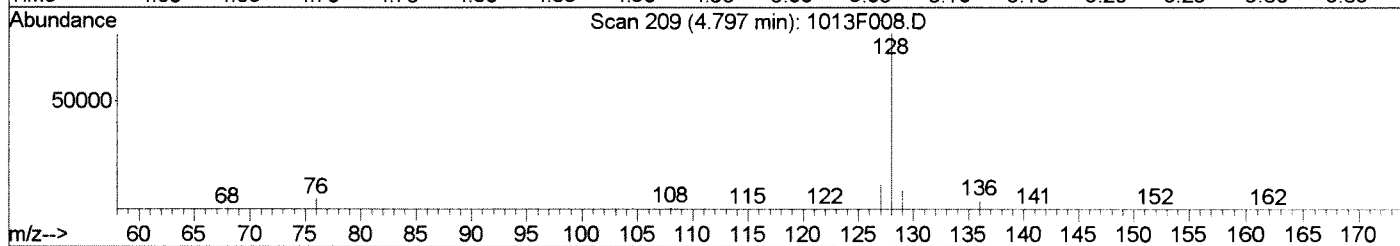
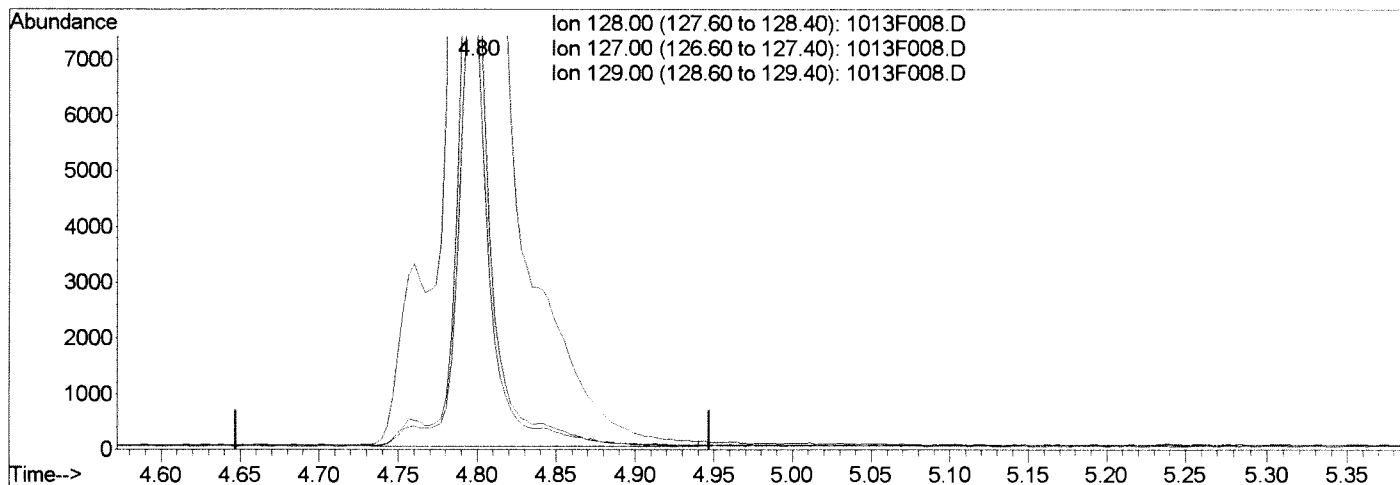
Vial: 8
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Oct 13 12:09 2017

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F008.D

(2) Naphthalene (T)
 4.80min 417.74ng/ml m
 response 104721

Ion	Exp%	Act%
128.00	100	100
127.00	13.90	13.95
129.00	10.60	10.70
0.00	0.00	0.00

Manual Integration:

After
 IC-Incomplete
 10/13/17

Data File : J:\MS14\DATA\101317\1013F009.D
 Acq On : 13 Oct 2017 11:12 am
 Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:35 2017

Vial: 9
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

W
OCT 16 2017

Internal Standards	R.T.	QI on	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.78	136	44893m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	22087	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	46733	200.00	ng/ml	0.00
23) Chrysene-d12	10.09	240	62080	200.00	ng/ml	0.00
28) Perylene-d12	13.15	264	63664	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	115406	1045.29	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	104.53%	
13) Fluorene-d10	6.76	176	146387	981.36	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	98.14%	
22) Fluoranthene-d10	8.54	212	314020	1103.52	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	110.35%	
25) Terphenyl-d14	8.90	244	262243	998.22	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	99.82%	

Target Compounds

	R.T.	QI on	Response	Conc	Units	Qvalue
2) Naphthalene	4.80	128	253888m	1028.78	ng/ml	
4) 2-Methylnaphthalene	5.43	142	165388	1038.06	ng/ml	97
5) 1-Methylnaphthalene	5.52	142	145690	1030.68	ng/ml	96
6) Biphenyl	5.84	154	211872	1070.54	ng/ml	98
7) 2,6-Dimethylnaphthalene	5.97	156	149459	1040.75	ng/ml	94
9) Acenaphthylene	6.21	152	276890	1063.10	ng/ml	100
10) Acenaphthene	6.35	154	156228	1061.60	ng/ml	99
11) Dibenzofuran	6.50	168	244656	1051.50	ng/ml	98
12) 2,3,5-Trimethylnaphthalene	6.68	170	154811	1064.02	ng/ml	95
14) Fluorene	6.79	166	189351	1028.25	ng/ml	96
16) Dibenzothiophene	7.47	184	309062	1065.70	ng/ml	88
17) Phenanthrene	7.58	178	290732	1048.02	ng/ml	100
18) Anthracene	7.62	178	291437	1045.46	ng/ml	100
19) Carbazole	7.75	167	266657	1063.12	ng/ml	99
20) 1-Methylphenanthrene	8.09	192	230416	1070.23	ng/ml	100
21) Fluoranthene	8.56	202	357374	1087.70	ng/ml	99
24) Pyrene	8.76	202	385995	992.83	ng/ml	99
26) Benz(a)anthracene	10.07	228	382879	1019.45	ng/ml	100
27) Chrysene	10.12	228	354458	1001.25	ng/ml	99
29) Benzo(b)fluoranthene	12.12	252	413090	1039.82	ng/ml	100
30) Benzo(k)fluoranthene	12.19	252	397941	1001.32	ng/ml	100
31) Benzo(e)pyrene	12.83	252	383914	1007.07	ng/ml	100
32) Benzo(a)pyrene	12.98	252	361012	1006.84	ng/ml	100
33) Perylene	13.23	252	352121	1011.42	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.39	276	319556	994.00	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 1013F009.D 101317PAH.M Mon Oct 16 06:54:35 2017

Data File : J:\MS14\DATA\101317\1013F009.D Vial: 9
 Acq On : 13 Oct 2017 11:12 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:35 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

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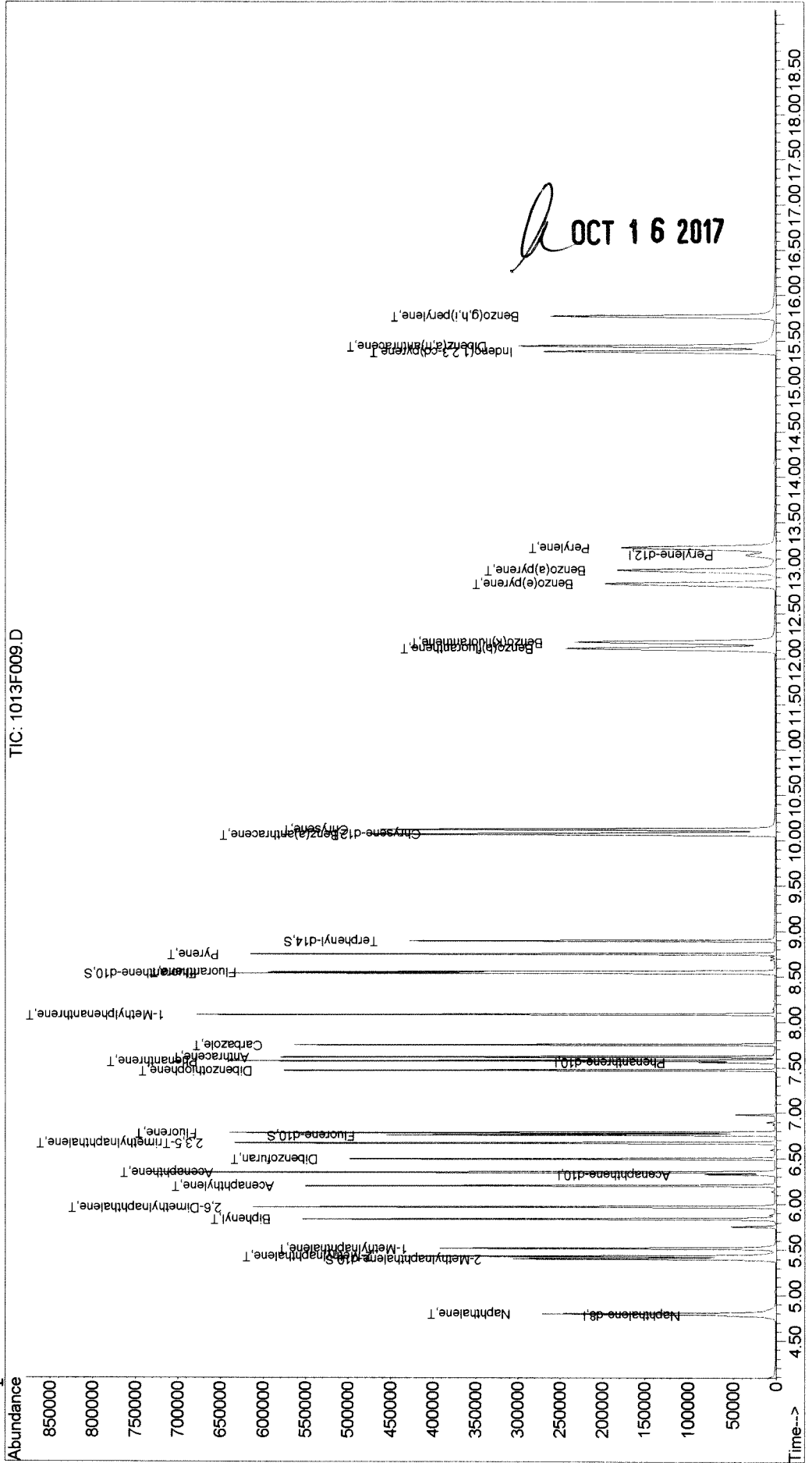
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.45	278	310315	982.36	ng/ml	98
36) Benzo(g,h,i)perylene	15.77	276	339534	904.62	ng/ml	99

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F009.D
Acq On : 13 Oct 2017 11:12 am
Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H
Misc :
MS Integration Params: RTEINT.P
Quant Time: Oct 13 12:10 2017
Quant Results File: 101317PAH.RES

Vial: 9
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Oct 13 12:21:46 2017
Response via : Initial Calibration



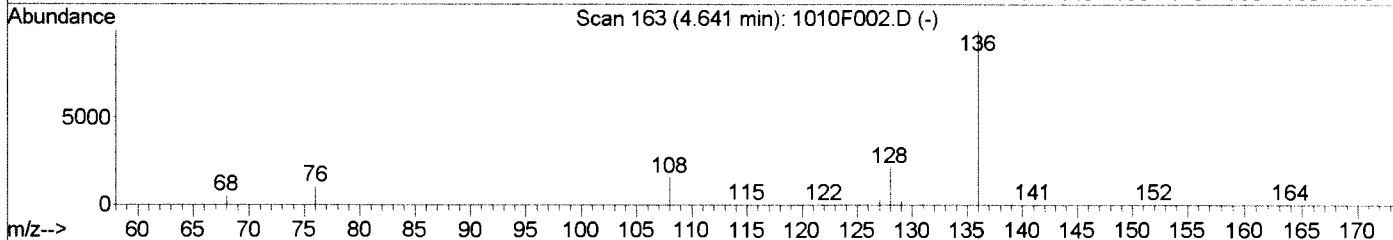
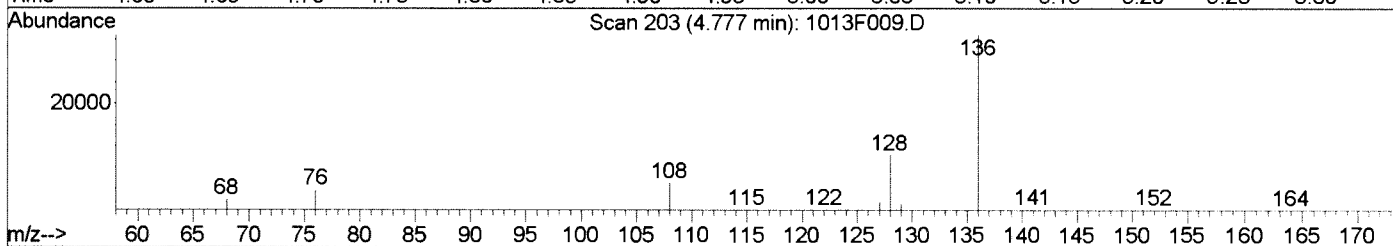
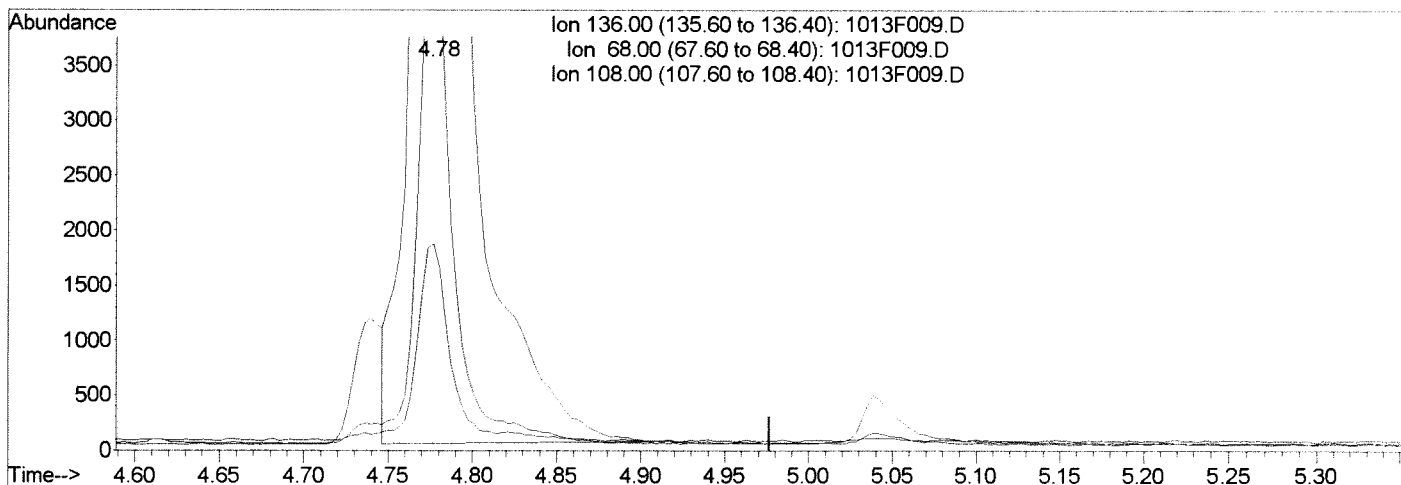
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F009.D
 Acq On : 13 Oct 2017 11:12 am
 Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017

Vial: 9
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



(1) Naphthalene-d8 (I)
 4.78min 200.00ng/ml
 response 43264

Ion	Exp%	Act%
136.00	100	100
68.00	12.00	5.44
108.00	14.00	15.16
0.00	0.00	0.00

Manual Integration:

Before

10/13/17

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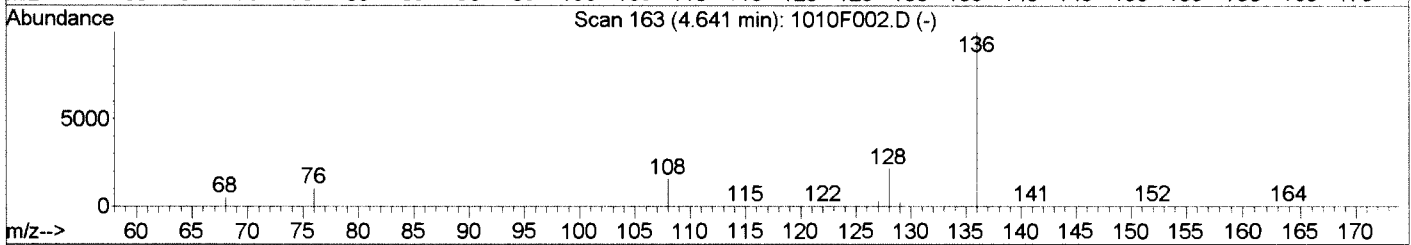
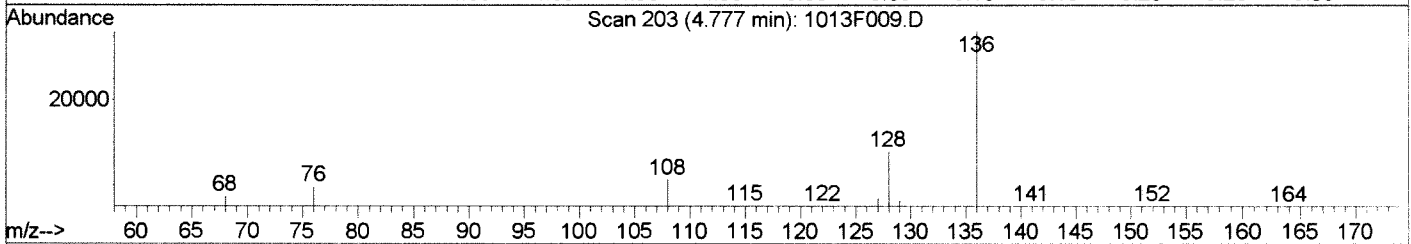
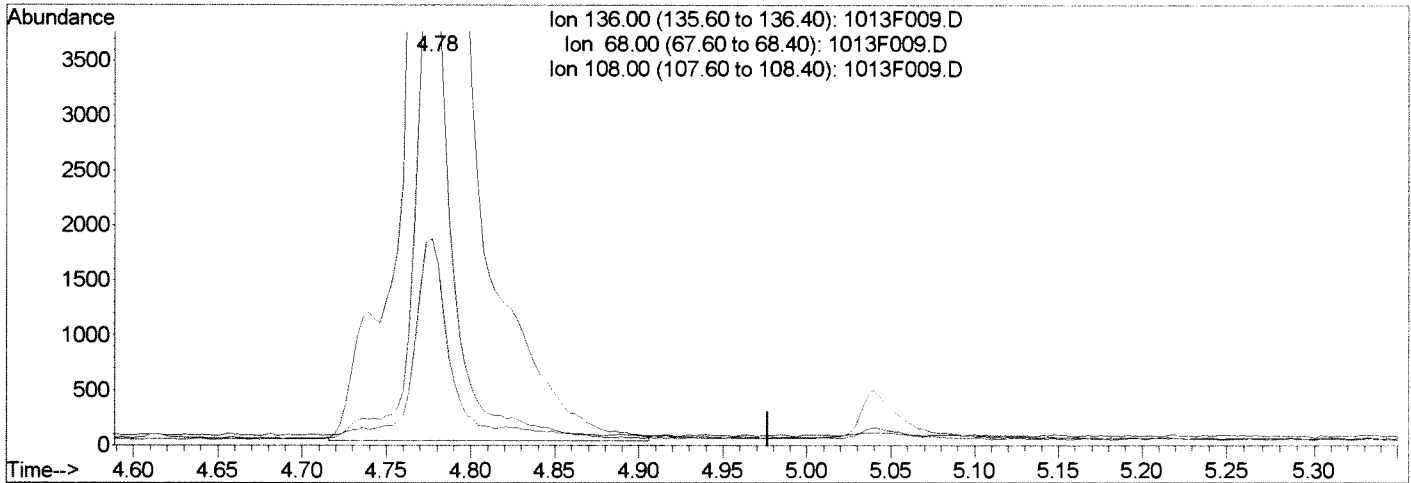
Quantitation report (Quant)

Data File : J:\MS14\DATA\101317\1013F009.D
 Acq On : 13 Oct 2017 11:12 am
 Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:10 2017

Vial: 9
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F009.D

(1) Naphthalene-d8 (I)
 4.78min 200.00ng/ml m
 response 44893

Ion	Exp%	Act%
136.00	100	100
68.00	12.00	5.69
108.00	14.00	15.34
0.00	0.00	0.00

Manual Integration:

After

IC-Incomplete

10/13/17

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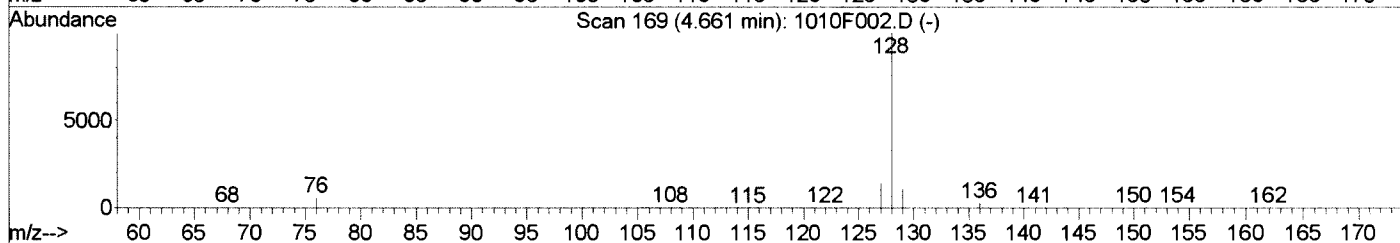
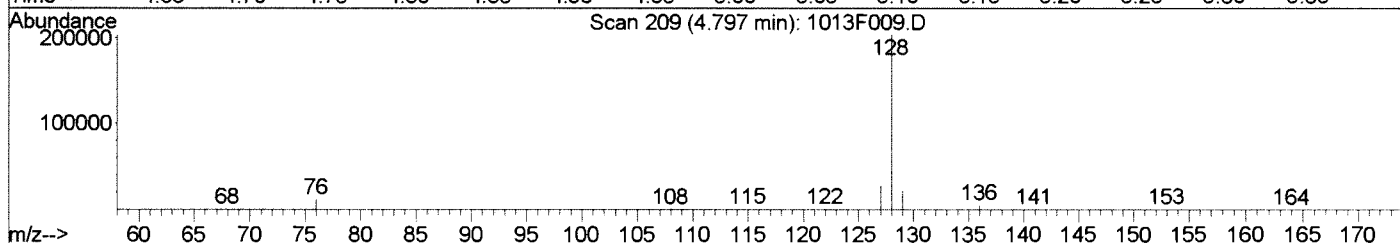
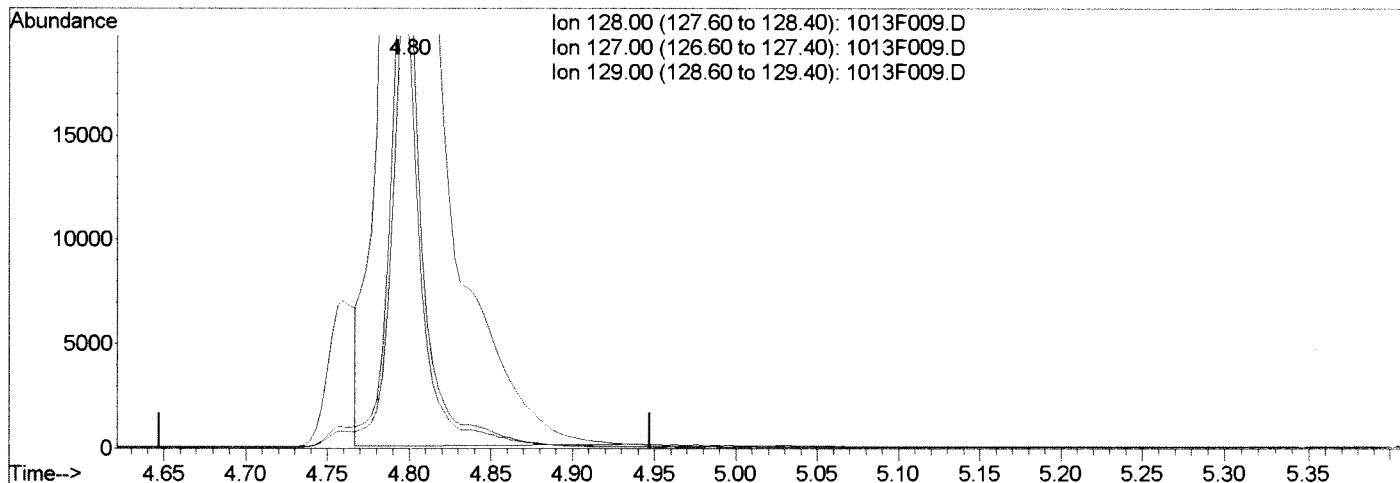
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Data File : J:\MS14\DATA\101317\1013F009.D
 Acq On : 13 Oct 2017 11:12 am
 Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:10 2017

Vial: 9
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F009.D

(2) Naphthalene (T)
 4.80min 993.35ng/ml
 response 245143

Ion	Exp%	Act%
128.00	100	100
127.00	13.90	13.66
129.00	10.60	10.79
0.00	0.00	0.00

Manual Integration:

Before

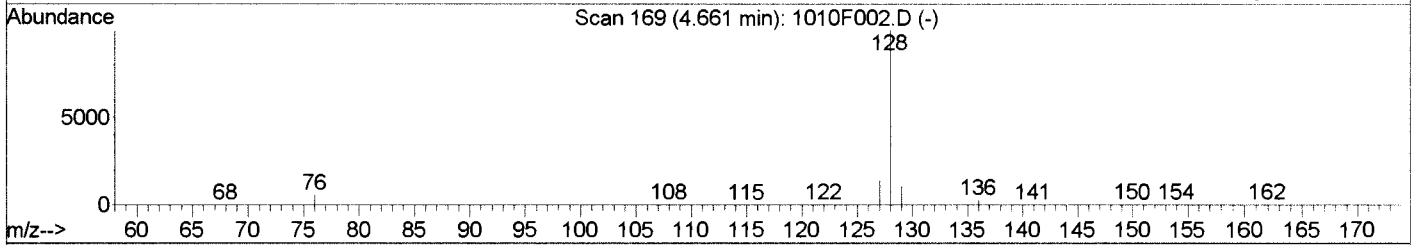
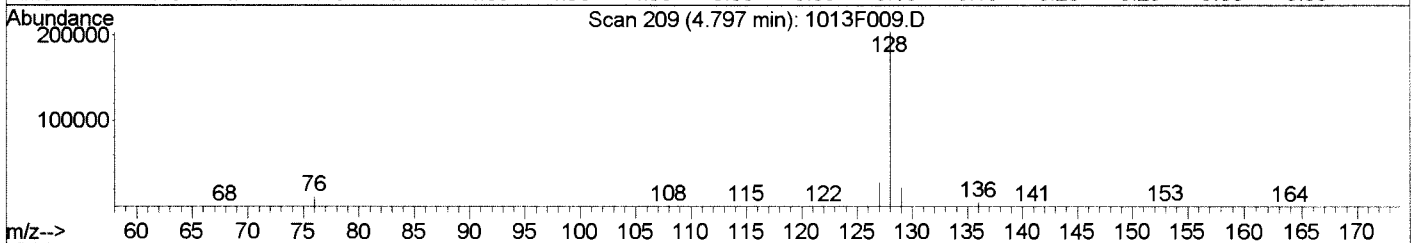
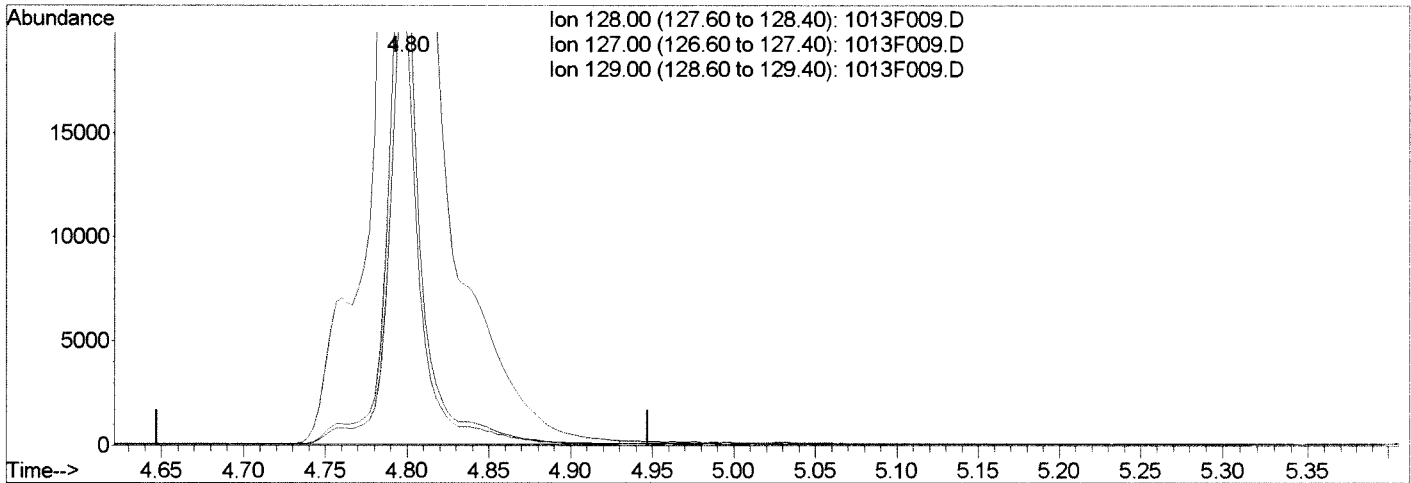
10/13/17

Data File : J:\MS14\DATA\101317\1013F009.D
 Acq On : 13 Oct 2017 11:12 am
 Sample : SIM-PAH ICAL @1.0ug/mL | SVM55-65H
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:10 2017

Vial: 9
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F009.D

(2) Naphthalene (T)
 4.80min 1028.78ng/ml m
 response 253888

Ion	Exp%	Act%
128.00	100	100
127.00	13.90	13.69
129.00	10.60	10.82
0.00	0.00	0.00

Manual Integration:
 After
 IC-Incomplete
 10/13/17

Data File : J:\MS14\DATA\101317\1013F010.D
 Acq On : 13 Oct 2017 11:37 am
 Sample : SIM-PAH ICAL @1.6ug/mL | SVM55-65I
 Misc :

Vial: 10
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:35 2017

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

W
 OCT 16 2017

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.78	136	43722m	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	21507	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	45685	200.00	ng/ml	0.00
23) Chrysene-d12	10.09	240	59649	200.00	ng/ml	0.00
28) Perylene-d12	13.15	264	61432	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	180131	1675.23	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	167.52%	
13) Fluorene-d10	6.76	176	235377	1620.50	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	162.05%	
22) Fluoranthene-d10	8.54	212	500574	1799.45	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	179.94%	
25) Terphenyl-d14	8.90	244	412340	1633.52	ng/ml	0.00
Spiked Amount	1000.000			Recovery =	163.35%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Naphthalene	4.80	128	394076	1639.61	ng/ml	99
4) 2-Methylnaphthalene	5.43	142	258392	1665.24	ng/ml	96
5) 1-Methylnaphthalene	5.52	142	229035	1663.70	ng/ml	96
6) Biphenyl	5.84	154	339189	1759.75	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.98	156	237233	1696.21	ng/ml	92
9) Acenaphthylene	6.21	152	439884	1734.45	ng/ml	99
10) Acenaphthene	6.35	154	249476	1740.96	ng/ml	98
11) Dibenzofuran	6.50	168	388315	1713.93	ng/ml	96
12) 2,3,5-Trimethylnaphthalene	6.68	170	236625	1670.20	ng/ml	98
14) Fluorene	6.79	166	301318	1680.40	ng/ml	97
16) Dibenzothiophene	7.48	184	491154	1732.44	ng/ml	96
17) Phenanthrene	7.58	178	463701	1709.88	ng/ml	99
18) Anthracene	7.62	178	463072	1699.27	ng/ml	99
19) Carbazole	7.75	167	428232	1746.45	ng/ml	98
20) 1-Methylphenanthrene	8.09	192	372850	1771.53	ng/ml	99
21) Fluoranthene	8.56	202	564616	1757.88	ng/ml	96
24) Pyrene	8.75	202	611625	1637.30	ng/ml	97
26) Benzo(a)anthracene	10.07	228	597794	1656.55	ng/ml	100
27) Chrysene	10.13	228	558084	1640.69	ng/ml	99
29) Benzo(b)fluoranthene	12.12	252	643040	1677.45	ng/ml	99
30) Benzo(k)fluoranthene	12.20	252	624734	1629.10	ng/ml	99
31) Benzo(e)pyrene	12.84	252	597408	1624.04	ng/ml	99
32) Benzo(a)pyrene	12.99	252	564147	1630.53	ng/ml	100
33) Perylene	13.24	252	552577	1644.88	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.40	276	497480	1603.67	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 1013F010.D 101317PAH.M Mon Oct 16 06:54:35 2017

Data File : J:\MS14\DATA\101317\1013F010.D Vial: 10
 Acq On : 13 Oct 2017 11:37 am Operator: LWeiskopf
 Sample : SIM-PAH ICAL @1.6ug/mL | SVM55-65I Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07:35 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

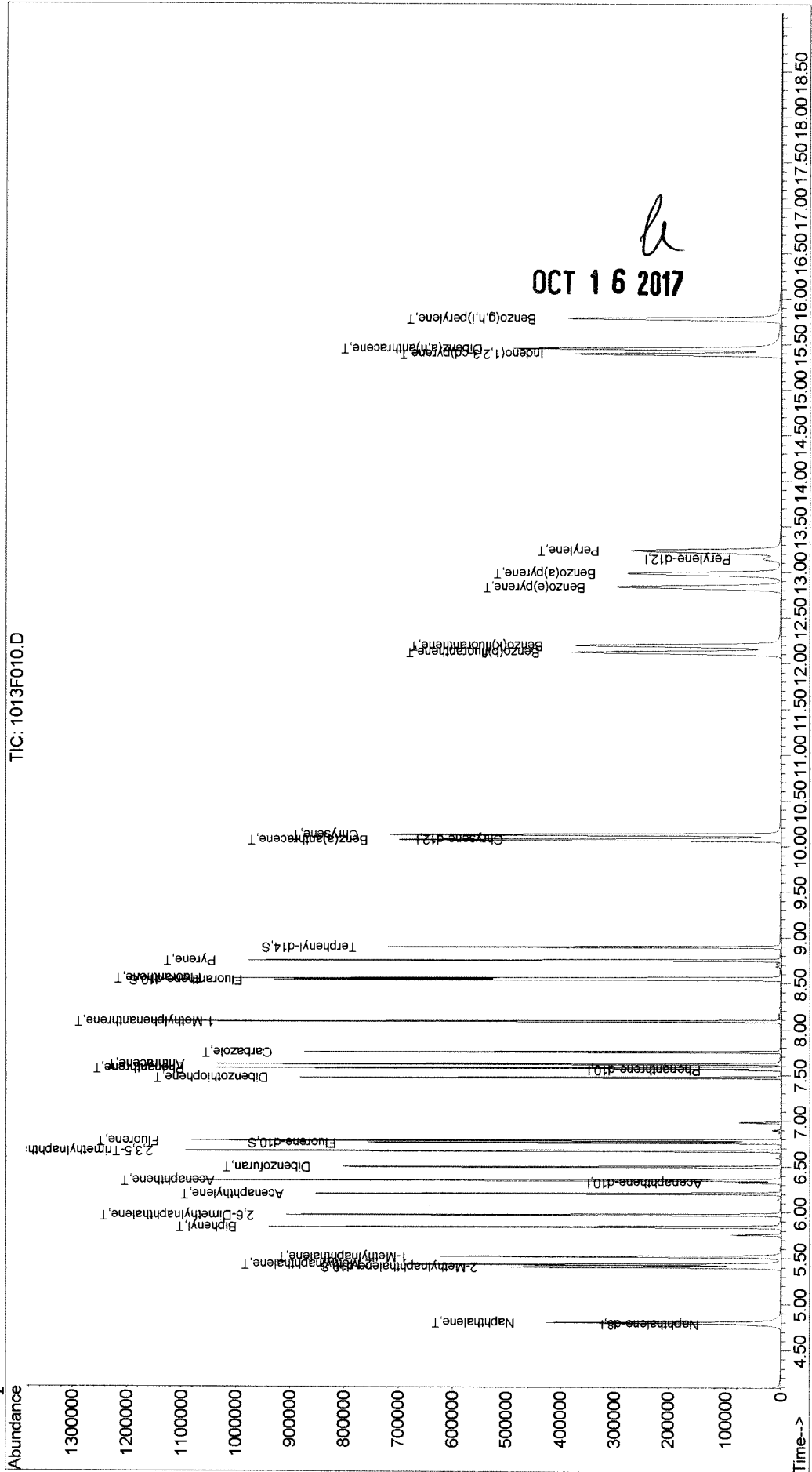

OCT 16 2017

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.45	278	488116	1601.36	ng/ml	98
36) Benzo(g,h,i)perylene	15.78	276	518975	1432.94	ng/ml	99

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F010.D
 Acq On : 13 Oct 2017 11:37 am
 Sample : SIM-PAH ICAL @1.6ug/mL | SVM55-65I
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:10 2017
 Vial: 10
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00
 Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration



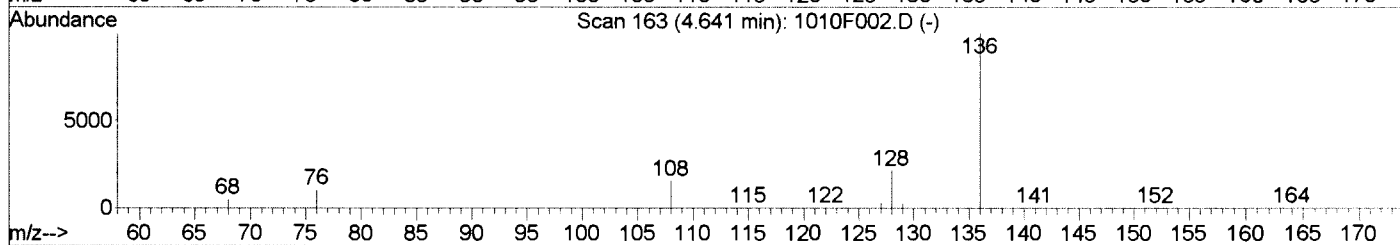
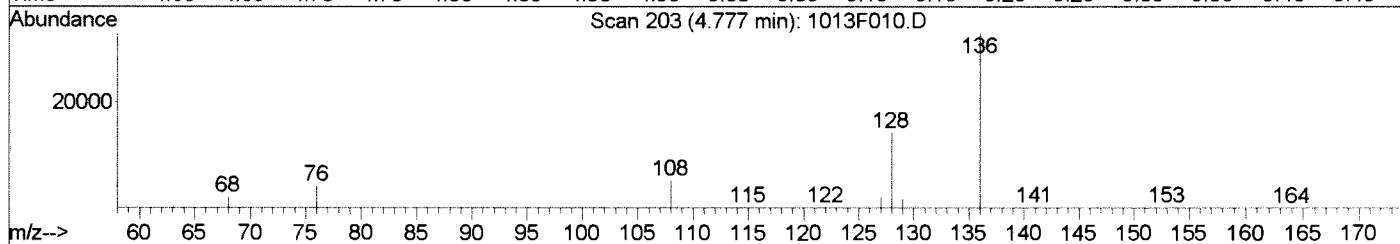
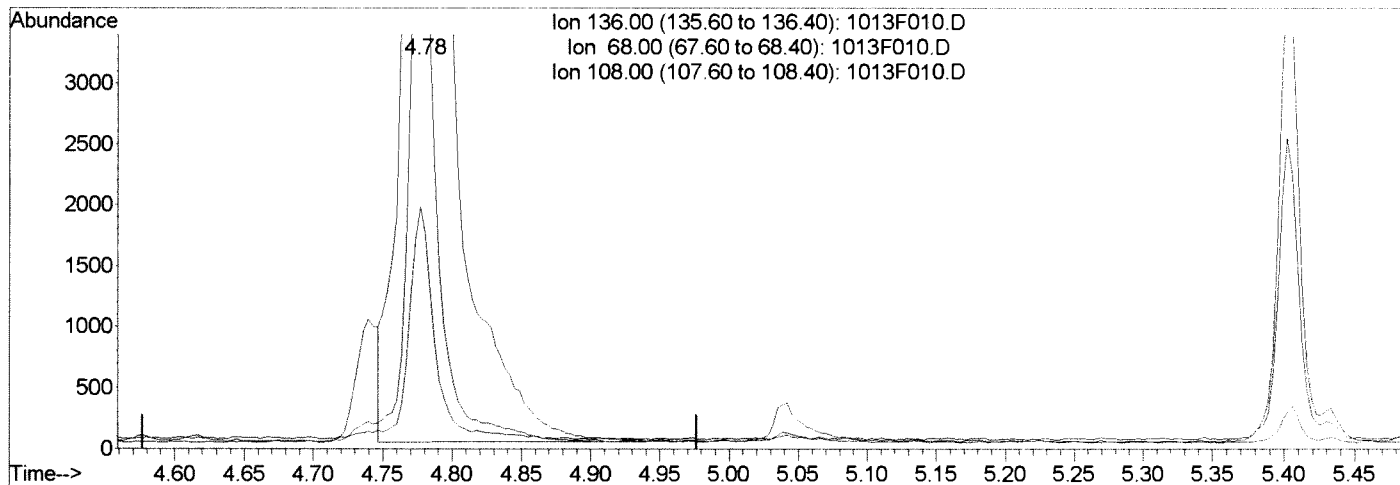
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F010.D
 Acq On : 13 Oct 2017 11:37 am
 Sample : SIM-PAH ICAL @1.6ug/mL | SVM55-65I
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:07 2017

Vial: 10
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F010.D

(1) Naphthalene-d8 (I)

4.78min 200.00ng/ml

response 42569

Ion	Exp%	Act%
136.00	100	100
68.00	12.00	5.75
108.00	14.00	15.32
0.00	0.00	0.00

Manual Integration:

Before

10/13/17

Data File : J:\MS14\DATA\101317\1013F010.D
 Acq On : 13 Oct 2017 11:37 am
 Sample : SIM-PAH ICAL @1.6ug/mL | SVM55-65I
 Misc :

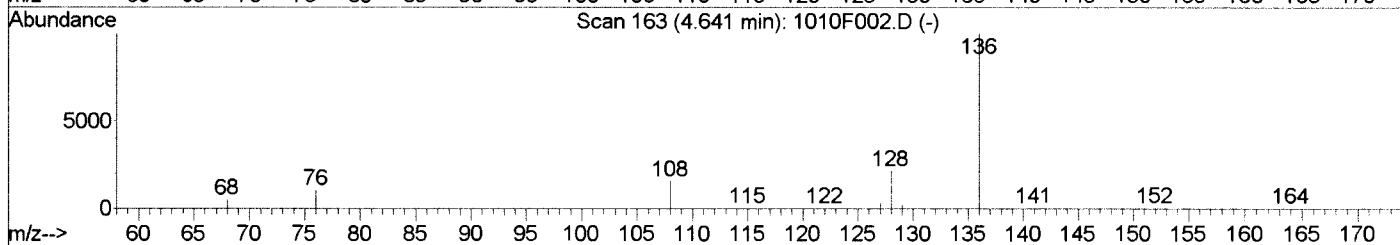
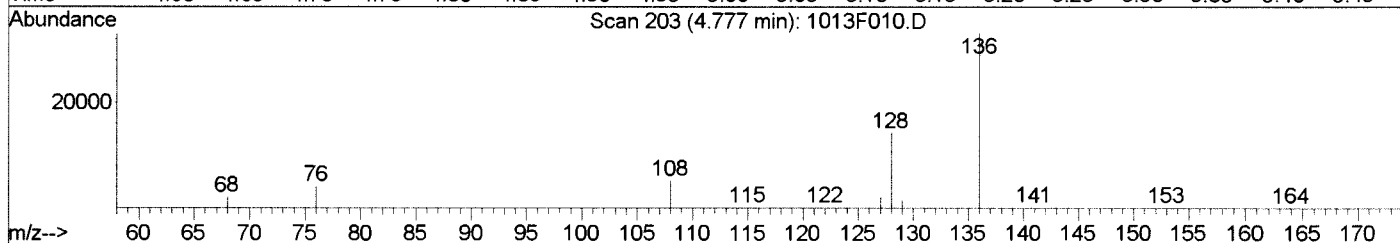
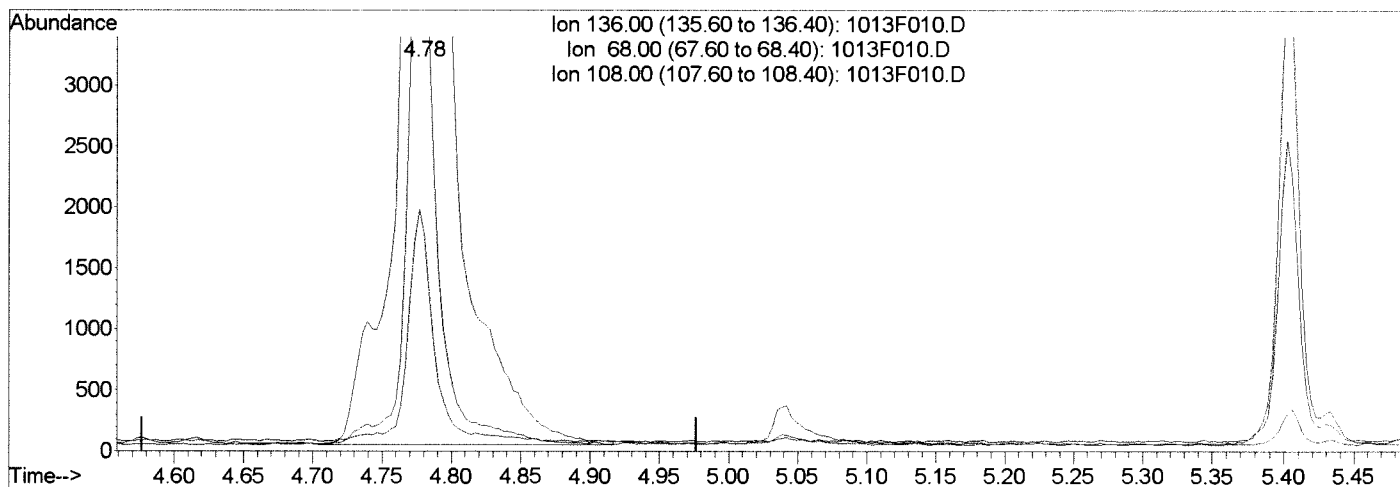
Vial: 10
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

MS Integration Params: RTEINT.P

Quant Time: Oct 13 12:10 2017

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 09:35:08 2017
 Response via : Multiple Level Calibration



TIC: 1013F010.D

(1) Naphthalene-d8 (I)
 4.78min 200.00ng/ml m
 response 43722

Ion	Exp%	Act%
136.00	100	100
68.00	12.00	5.99
108.00	14.00	15.49
0.00	0.00	0.00

Manual Integration:
 After
 IC-Incomplete
 10/13/17

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Data File : J:\MS14\DATA\101317\1013F011.D
 Acq On : 13 Oct 2017 12:01 pm
 Sample : SIM-PAH ICAL @2.0ug/mL | SVM55-65J
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:21:11 2017

Vial: 11
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:12:55 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

[Handwritten Signature]
OCT 16 2017

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	4.78	136	45212	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	22178	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	47390	200.00	ng/ml	0.00
23) Chrysene-d12	10.09	240	60996	200.00	ng/ml	0.00
28) Perylene-d12	13.15	264	62984	200.00	ng/ml	0.01

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	232234	1905.86	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	190.59%	
13) Fluorene-d10	6.76	176	305978	2018.91	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	201.89%	
22) Fluoranthene-d10	8.55	212	645892	2192.28	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	219.23%	
25) Terphenyl-d14	8.90	244	527242	2056.50	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	205.65%	

Target Compounds

						Qvalue
2) Naphthalene	4.80	128	508152	1969.80	ng/ml	99
4) 2-Methylnaphthalene	5.44	142	332821	1839.74	ng/ml	96
5) 1-Methylnaphthalene	5.52	142	296025	1852.62	ng/ml	98
6) Biphenyl	5.84	154	446540	1963.71	ng/ml	99
7) 2,6-Dimethylnaphthalene	5.98	156	310330	1915.17	ng/ml	93
9) Acenaphthylene	6.21	152	569057	2109.66	ng/ml	100
10) Acenaphthene	6.35	154	323337	2134.64	ng/ml	99
11) Dibenzofuran	6.50	168	503247	2111.81	ng/ml	93
12) 2,3,5-Trimethylnaphthalene	6.68	170	317998	2068.07	ng/ml	96
14) Fluorene	6.79	166	392445	2097.92	ng/ml	97
16) Dibenzothiophene	7.48	184	645944	2170.03	ng/ml	97
17) Phenanthrene	7.58	178	609842	2085.05	ng/ml	99
18) Anthracene	7.62	178	606088	2103.21	ng/ml	99
19) Carbazole	7.75	167	557870	2140.33	ng/ml	98
20) 1-Methylphenanthrene	8.09	192	487355	2206.18	ng/ml	100
21) Fluoranthene	8.56	202	734563	2119.44	ng/ml	94
24) Pyrene	8.76	202	788761	2161.66	ng/ml	94
26) Benz(a)anthracene	10.07	228	760087	2075.08	ng/ml	100
27) Chrysene	10.13	228	715908	2092.22	ng/ml	99
29) Benzo(b)fluoranthene	12.13	252	815756	2058.20	ng/ml	99
30) Benzo(k)fluoranthene	12.20	252	791073	2028.77	ng/ml	99
31) Benzo(e)pyrene	12.85	252	757848	1997.84	ng/ml	99
32) Benzo(a)pyrene	13.00	252	720447	2082.30	ng/ml	99
33) Perylene	13.24	252	703759	2062.54	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.40	276	631913	2026.79	ng/ml	99

(#) = qualifier out of range (m) = manual integration
 1013F011.D 101317PAH.M Mon Oct 16 06:54:36 2017

Data File : J:\MS14\DATA\101317\1013F011.D Vial: 11
 Acq On : 13 Oct 2017 12:01 pm Operator: LWeiskopf
 Sample : SIM-PAH ICAL @2.0ug/mL | SVM55-65J Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 13 12:21:11 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:12:55 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

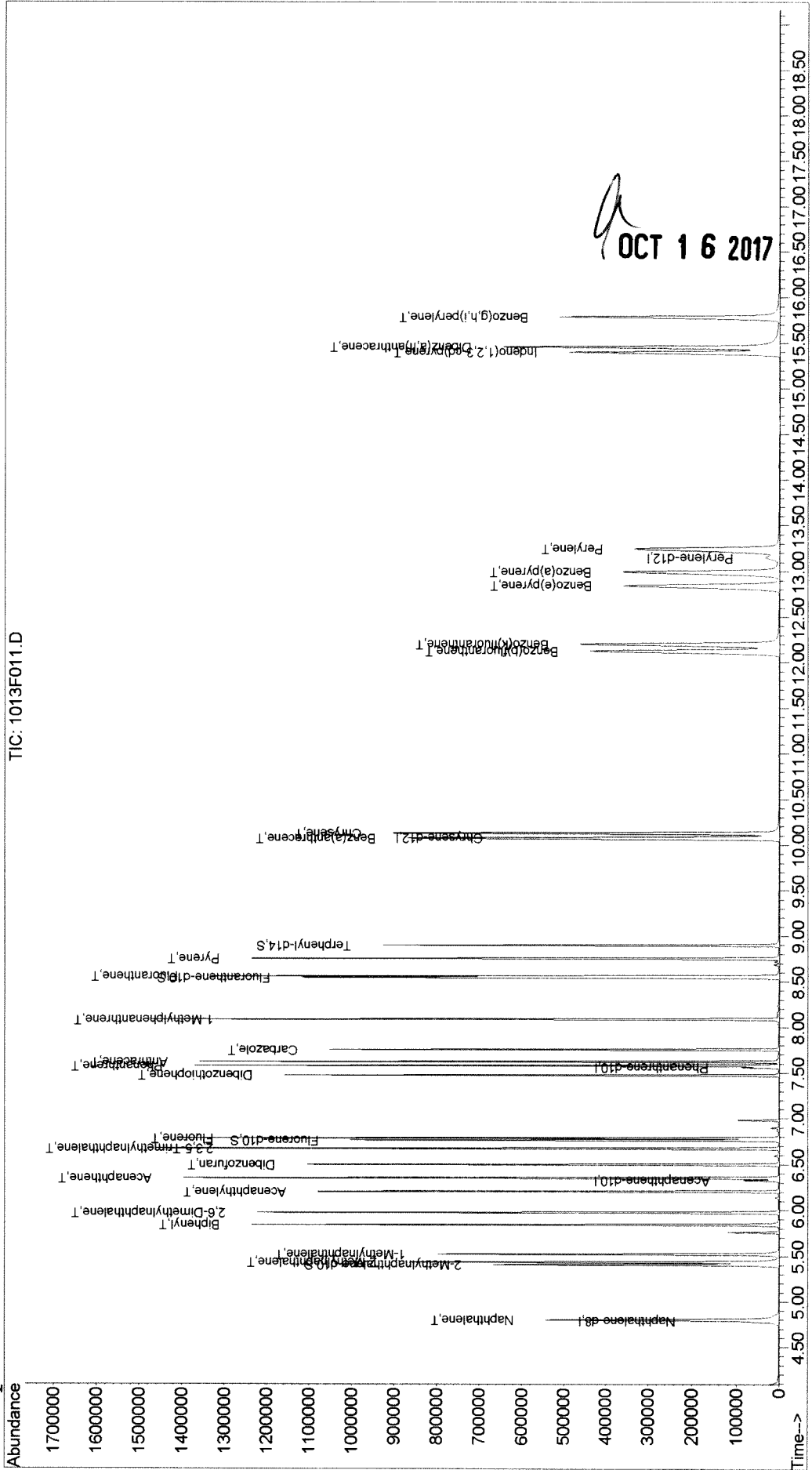
OCT 16 2017

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.46	278	619054	1940.82	ng/ml	99
36) Benzo(g,h,i)perylene	15.79	276	656647	1877.29	ng/ml	99

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F011.D
Acq On : 13 Oct 2017 12:01 pm
Sample : SIM-PAH ICAL @2.0ug/mL | SVM55-65J
Misc :
MS Integration Params: RTEINT.P
Quant Time: Oct 13 12:21 2017
Quant Results File: 101317PAH.RES

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
Title : PAHS and ALKYLATED HOMOLOGS
Last Update : Fri Oct 13 12:21:46 2017
Response via : Initial Calibration

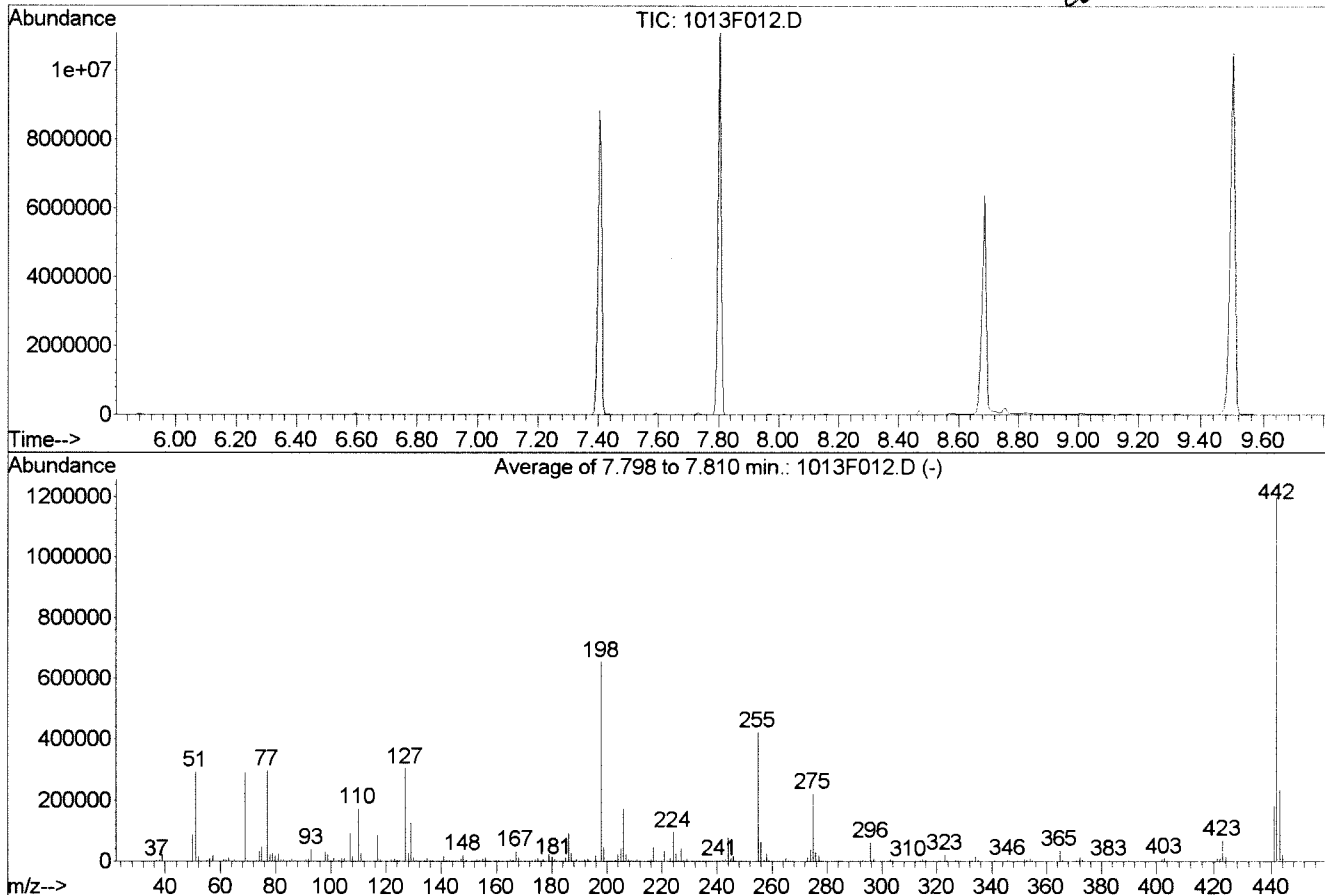


DFTPP

Data File : J:\MS14\DATA\101317\1013F012.D
 Acq On : 13 Oct 2017 12:25 pm
 Sample : DFTPP @ 10ug/mL | SVM56-77C
 Misc :
 MS Integration Params: rteint.p
 Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
 Title : dftpp tune mix

Vial: 1
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

A OCT 16 2017



AutoFind: Scans 631, 632, 633; Background Corrected with Scan 625

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	44.6	291853	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	44.3	289453	PASS
70	69	0.00	2	0.7	2075	PASS
127	198	10	80	46.4	303613	PASS
197	198	0.00	2	0.0	0	PASS
198	442	30	100	54.5	653760	PASS
199	198	5	9	6.9	45110	PASS
275	198	10	60	33.7	220589	PASS
365	442	1	50	2.9	34400	PASS
441	443	0.01	100	77.6	181341	PASS
442	442	30	100	100.0	1198848	PASS
443	442	15	24	19.5	233600	PASS

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	413	48.10	282	60.10	161	71.70	54
37.00	2103	49.05	148	61.00	4156	72.90	264
38.05	5113	50.00	87071	62.00	4704	73.20	3229
39.00	23005	51.00	291853	63.00	11567	74.00	32315
40.00	1159	52.00	14652	64.00	1560	75.00	47466
40.90	616	53.00	690	65.00	5439	76.10	1036
42.00	114	55.00	2211	65.95	505	77.00	297224
43.00	182	56.00	9123	66.80	79	78.00	20319
43.90	340	57.00	18940	68.90	289453	79.00	25647
45.00	487	57.90	834	69.90	2075	79.95	17932
46.90	113	58.95	215	70.95	329	81.00	23072

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.00	5380	92.90	38796	104.90	7594	116.90	84541
82.95	4852	93.90	2475	106.00	291	117.90	6087
83.95	463	94.90	770	106.95	90776	118.90	738
85.00	4606	95.95	1402	107.90	14226	119.95	1283
85.90	7270	97.90	31316	109.90	172840	120.90	348
86.95	3181	98.90	20594	110.90	25232	121.90	7039
88.00	1065	99.95	2052	111.90	3261	122.90	10019
88.95	575	100.95	10933	112.80	395	123.90	4439
90.00	105	101.90	750	113.00	753	124.95	4258
90.95	5401	102.90	4903	114.00	134	126.95	303613
92.00	6508	103.90	8756	115.00	304	128.00	25797

R OCT 16 2017

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
128.90	126741	139.95	2129	151.00	2277	161.90	1910
129.90	11104	140.90	18189	151.90	1422	162.95	516
130.90	2088	141.90	5763	152.90	5435	163.90	451
131.95	1260	142.90	3668	153.90	3964	164.10	538
132.85	607	143.95	911	154.95	8727	164.90	6769
133.90	4514	145.05	896	156.00	13621	166.00	5633
134.90	10485	145.90	3140	156.95	2865	166.95	33150
135.90	4220	147.00	9132	157.85	3069	167.90	13667
136.95	5062	147.90	19769	158.95	2606	168.95	2524
137.90	1089	148.90	3810	159.90	5353	170.00	1345
138.90	992	149.90	1111	160.90	7220	170.95	1535

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
171.95	3237	182.85	868	194.00	1696	204.00	23623
172.90	3741	183.90	2346	194.90	446	205.00	42218
173.95	6839	185.00	12921	195.20	164	206.00	171714
175.00	12243	186.00	93090	195.90	20440	206.95	22372
176.00	3637	186.95	26955	197.90	653760	207.90	6551
176.90	6967	188.00	2818	198.90	45110	208.90	2202
177.95	2602	188.90	6390	199.95	3426	209.90	1127
178.90	23658	189.90	1130	201.00	269	210.90	6640
179.95	15106	190.95	2965	201.45	3124	212.90	440
180.90	7119	191.90	7265	202.10	111	214.05	201
181.90	1320	192.95	8185	202.90	5239	214.90	2246

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
216.00	4222	227.90	5993	238.90	1826	249.85	648
216.90	43941	228.90	8533	239.90	1374	250.95	785
217.90	5810	229.95	1298	240.90	2598	251.90	1051
218.95	646	230.90	3392	241.90	5071	253.00	2000
220.95	34591	231.90	698	243.00	6364	254.90	421866
221.90	806	232.95	817	244.00	79194	255.90	62549
222.90	10606	233.90	2663	245.00	10737	256.95	4645
224.00	96397	234.90	3038	245.90	16564	257.90	25704
225.00	25052	235.90	2203	246.90	3440	258.95	4117
226.05	3415	236.90	3233	247.95	747	259.90	622
226.90	43234	237.85	643	248.90	2768	260.95	699

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
261.80	60	272.10	698	282.95	1716	295.00	355
262.95	264	272.90	12947	283.95	1582	295.90	61802
264.00	746	273.95	39085	285.00	3090	296.95	8550
264.90	10531	274.90	220589	285.90	572	297.85	561
265.90	1549	275.90	29453	287.90	226	298.90	112
266.95	165	276.90	18972	288.90	798	300.85	786
267.90	205	277.90	3083	289.95	584	301.95	1388
269.85	493	278.95	718	290.95	479	302.95	7192
270.90	516	279.95	119	291.95	970	303.95	2125
271.10	434	281.10	129	292.90	4223	304.95	319
271.90	758	281.85	488	293.90	1163	305.80	60

h OCT 16 2017

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
306.80	89	318.00	110	328.90	347	345.90	5019
307.90	896	318.95	138	330.85	180	346.90	985
308.90	668	320.00	381	331.90	1814	348.00	144
309.90	1041	321.00	2013	332.95	2628	349.90	121
310.85	142	321.95	1362	334.00	15281	350.90	555
311.90	135	323.00	22663	335.00	4105	352.00	7328
312.90	706	323.95	4107	336.00	605	352.95	5727
314.00	3267	324.95	347	338.95	428	354.00	8775
314.90	7483	325.85	545	339.90	468	354.95	1581
316.00	4402	326.90	4031	340.95	2808	355.90	132
316.95	768	327.90	2152	341.90	864	356.80	60

Average of 7.798 to 7.810 min.: 1013F012.D

DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
357.70	60	372.00	14601	393.00	70	420.95	8660
358.10	77	373.00	3644	394.85	117	421.95	8573
358.95	506	374.00	435	396.85	136	423.00	69122
361.00	151	376.90	351	400.85	998	424.00	13583
362.90	144	382.90	4141	401.95	6286	424.95	1342
363.40	52	383.95	1011	402.95	9540	437.70	61
364.90	34400	384.90	396	403.95	3388	438.10	93
365.90	4726	388.80	51	404.95	531	438.90	278
366.85	359	389.90	1769	409.95	238	439.20	152
369.95	861	390.95	1385	414.95	401	441.00	181341
371.00	2413	391.95	1052	419.95	175	442.00	1198848

Average of 7.798 to 7.810 min.: 1013F012.D

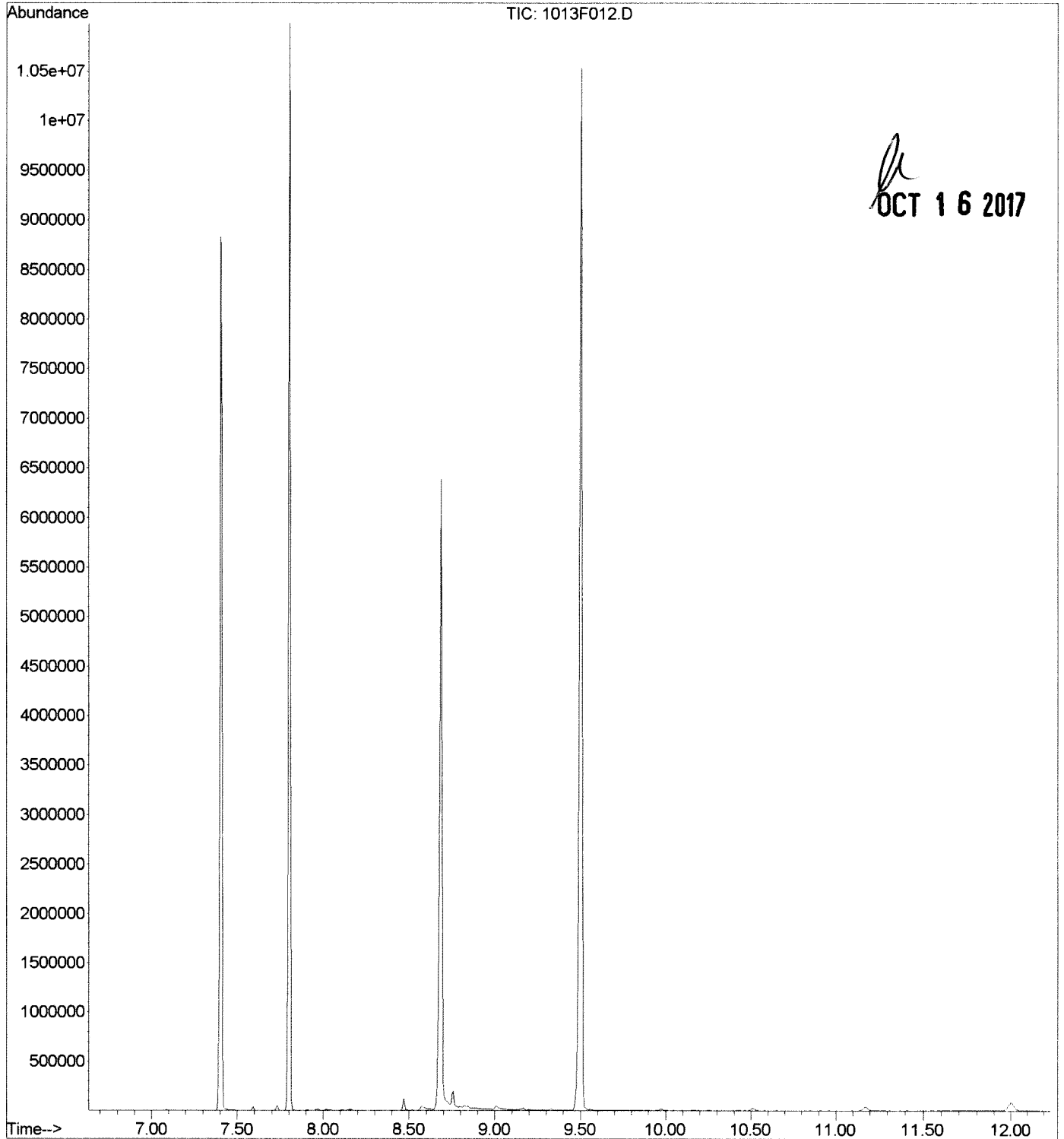
DFTPP @ 10ug/mL | SVM56-77C

Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
443.00	233600						
444.00	21101						
445.00	1225						
445.90	52						

R OCT 16 2017

File : J:\MS14\DATA\101317\1013F012.D
Operator : LWeiskopf
Acquired : 13 Oct 2017 12:25 pm using AcqMethod SIMLOC
Instrument : MS14
Sample Name: DFTPP @ 10ug/mL | SVM56-77C
Misc Info :
Vial Number: 1



1	4.181	rVB	0.100	24541	4.163	4.263
2	5.040	rBV	0.053	4115	5.016	5.069
3	5.881	rBV	0.071	18853	5.840	5.910
4	6.434	rVB	0.053	2494	6.410	6.463
5	6.598	rVB	0.047	25162	6.575	6.622
6	6.940	rBV	0.041	2201	6.928	6.969
7	7.087	rBV	0.065	4981	7.063	7.128
8	7.404	rBV	0.100	7595790	7.369	7.469
9	7.592	rBV	0.088	25896	7.551	7.639
10	7.734	rVB	0.059	39972	7.692	7.751
11	7.804	rBV	0.088	8209739	7.763	7.851
12	7.904	rVB	0.053	6721	7.887	7.939
13	7.969	rBV	0.059	17759	7.939	7.998
14	8.016	rVV	0.094	15338	7.998	8.092
15	8.110	rVV	0.035	5683	8.092	8.128
16	8.157	rVB	0.082	15806	8.128	8.210
17	8.469	rVB	0.065	88950	8.439	8.504
18	8.575	rBV	0.100	101473	8.539	8.639
19	8.686	rBV	0.100	6384593	8.639	8.739
20	8.757	rVV	0.047	200411	8.739	8.786
21	8.822	rVB	0.059	DOE 51995	8.810	8.869
22	9.010	rVB	0.129	87176	8.986	9.116
23	9.163	rVV	0.053	DOA 27210	9.133	9.186
24	9.198	rVB	0.035	5711	9.186	9.222
25	9.281	rBV	0.053	6231	9.257	9.310
26	9.328	rVV	0.035	15731	9.310	9.345
27	9.369	rVB	0.059	6524	9.357	9.416
28	9.504	rBV	0.100	DST 11254230	9.445	9.545
29	9.722	rVB	0.041	4011	9.704	9.745
30	9.798	rBV	0.035	3207	9.786	9.822
31	9.975	rBV	0.100	21706	9.933	10.033
32	10.157	rVB	0.047	3290	10.133	10.180
33	10.245	rBV	0.065	4215	10.216	10.280
34	10.510	rBV	0.082	43277	10.480	10.563
35	11.175	rBV	0.106	79263	11.133	11.239
36	11.275	rBV	0.041	2232	11.257	11.298
37	11.998	rVB	0.176	203226	11.939	12.116
38	12.633	rVB	0.047	2079	12.616	12.663
39	12.745	rBV	0.053	2375	12.727	12.780
40	13.039	rBV	0.194	323482	12.969	13.163
41	13.604	rBV	0.059	2497	13.574	13.633
42	14.151	rBV	0.200	516589	14.086	14.286
43	14.633	rVB	0.065	5739	14.604	14.668
44	14.874	rBV	0.176	612774	14.827	15.004
45	15.227	rBV	0.053	13115	15.204	15.257
46	15.427	rBV	0.176	734785	15.380	15.557
47	15.768	rVB	0.059	18312	15.751	15.810
48	15.980	rBV	0.135	576994	15.939	16.074
49	16.580	rBV	0.176	501677	16.533	16.709
50	17.245	rBV	0.171	347060	17.198	17.368
51	17.986	rBV	0.118	240460	17.939	18.056
52	18.839	rVB	0.135	156167	18.792	18.927

OCT 16 2017

DST
Breakdown
= 0.72

W

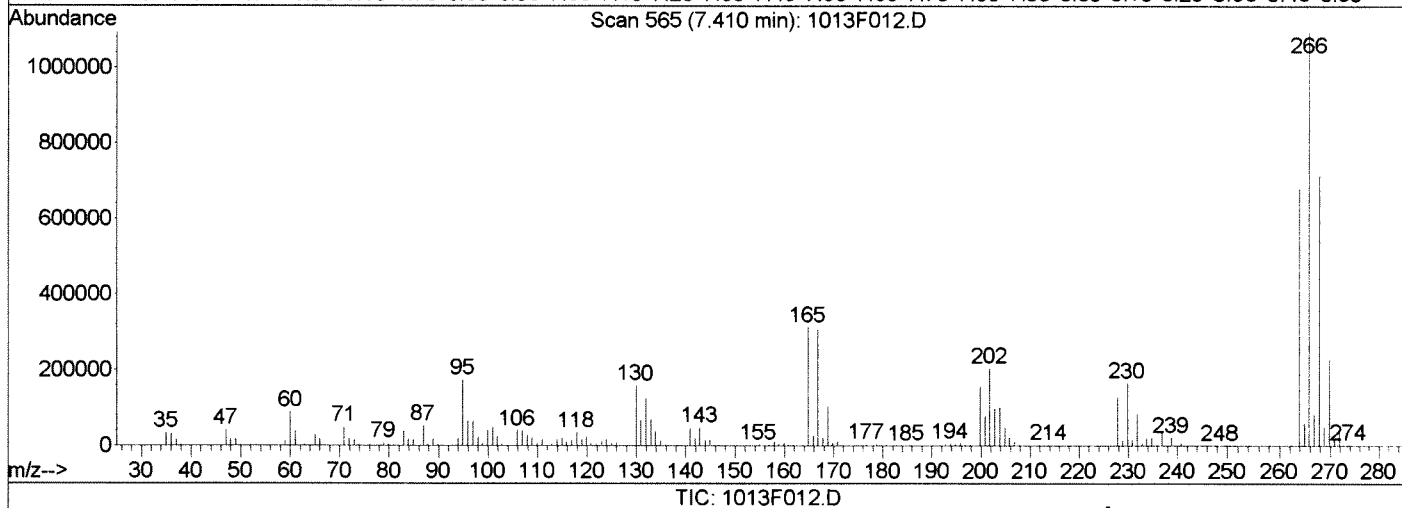
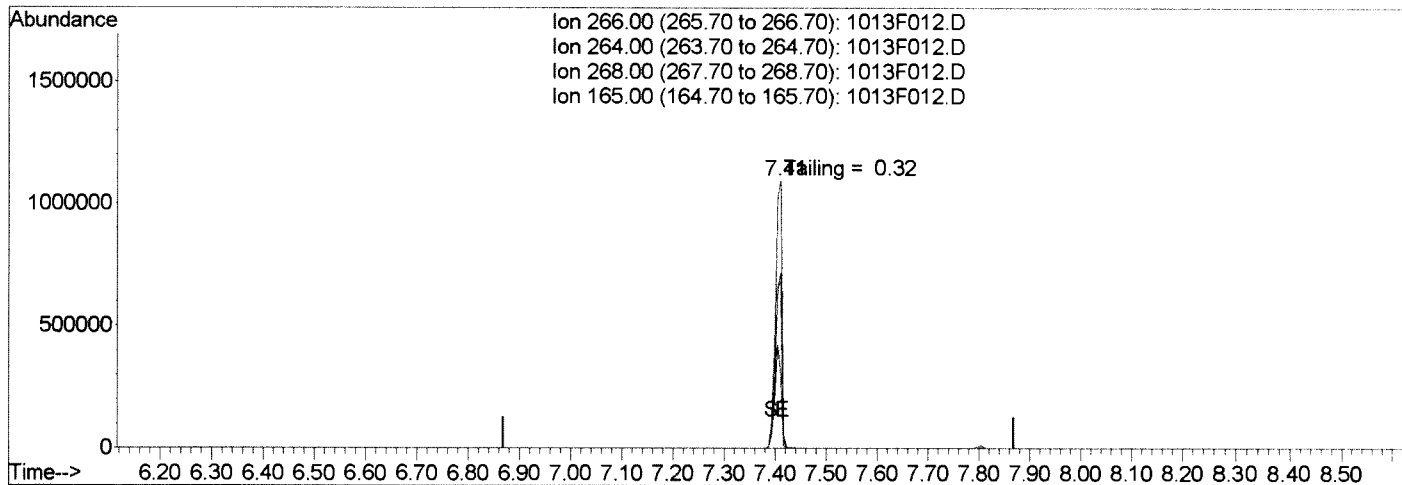
Quantitation Report (Qedit)

Data File : J:\MS14\DATA\101317\1013F012.D
Acq On : 13 Oct 2017 12:25 pm
Sample : DFTPP @ 10ug/mL | SVM56-77C
Misc :
MS Integration Params: rteint.p
Quant Time: Oct 13 12:56 2017

Vial: 1
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
Title : dftpp tune mix
Last Update : Fri Oct 06 15:31:14 2017
Response via : Single Level Calibration



(1) Pentachlorophenol
7.41min 41.34ng/ml
response 951429

Ion	Exp%	Act%
266.00	100	100
264.00	62.30	62.21
268.00	72.30	65.48
165.00	42.00	28.60

OCT 16 2017

OK *[Handwritten signature]*

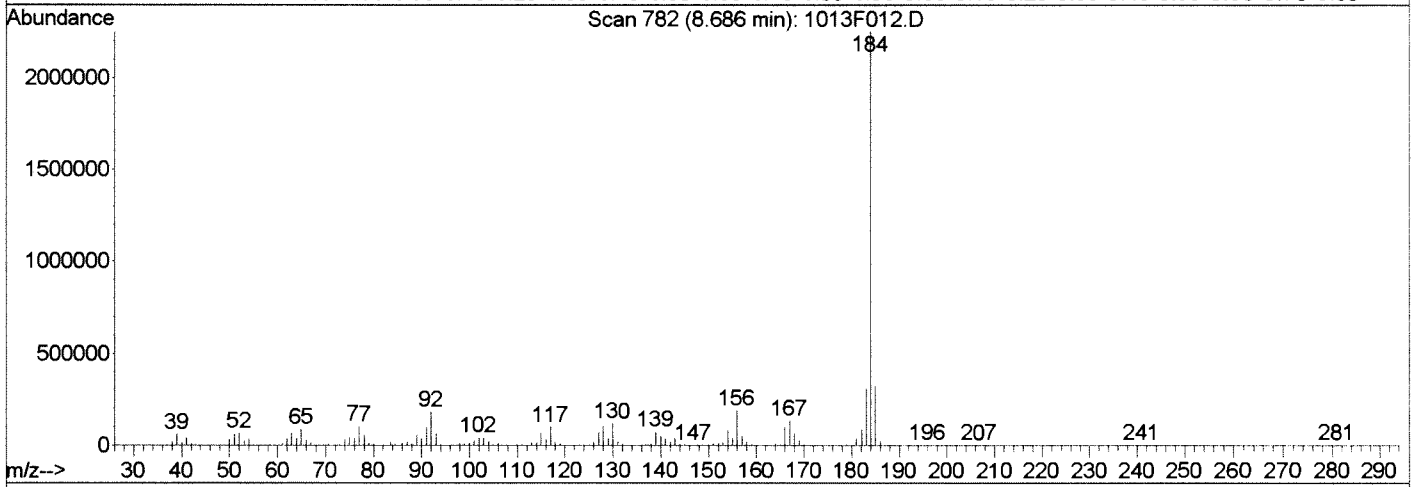
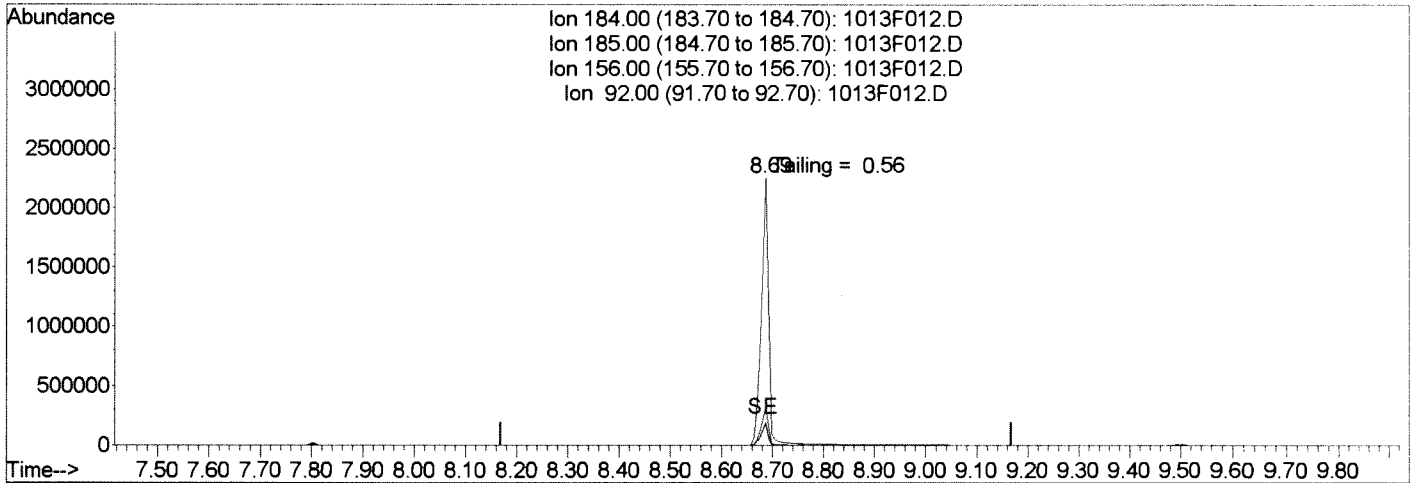
Quantitation report (Quant)

Data File : J:\MS14\DATA\101317\1013F012.D
Acq On : 13 Oct 2017 12:25 pm
Sample : DFTPP @ 10ug/mL | SVM56-77C
Misc :
MS Integration Params: rteint.p
Quant Time: Oct 13 12:56 2017

Vial: 1
Operator: LWeiskopf
Inst : MS14
Multiplr: 1.00

Quant Results File: temp.res

Method : J:\MS14\METHODS\SIM\A_DFTPP.M (RTE Integrator)
Title : dftpp tune mix
Last Update : Fri Oct 06 15:31:14 2017
Response via : Single Level Calibration



TIC: 1013F012.D

(3) Benzidine (T)
8.69min 39.77ug/ml
response 2292414

Ion	Exp%	Act%
184.00	100	100
185.00	14.70	14.34
156.00	8.20	8.43
92.00	6.60	8.14

A OCT 16 2017

OK *↙ ↘*
W

Data File : J:\MS14\DATA\101317\1013F013.D
 Acq On : 13 Oct 2017 12:49 pm
 Sample : SIM-PAH ICV @0.4ug/mL | SVM57-20D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 16 06:50:06 2017

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

A OCT 16 2017 *[Signature]*

Internal Standards	R.T.	QI on	Response	Conc	Units	Dev (Min)
1) Naphthalene-d8	4.78	136	42142	200.00	ng/ml	0.00
8) Acenaphthene-d10	6.33	164	21846	200.00	ng/ml	0.00
15) Phenanthrene-d10	7.56	188	47431	200.00	ng/ml	0.00
23) Chrysene-d12	10.08	240	59760	200.00	ng/ml	0.00
28) Perylene-d12	13.13	264	62224	200.00	ng/ml	0.00

System Monitoring Compounds

3) 2-Methylnaphthalene-d10	5.41	152	46016	407.28	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	40.73%	
13) Fluorene-d10	6.76	176	60906	407.55	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	40.76%	
22) Fluoranthene-d10	8.54	212	126607	424.82	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	42.48%	
25) Terphenyl-d14	8.89	244	105043	416.88	ng/ml	0.00
Spiked Amount	1000.000		Recovery	=	41.69%	

Target Compounds

	R.T.	QI on	Response	Conc	Units	Qvalue
2) Naphthalene	4.80	128	90612	377.47	ng/ml	100
4) 2-Methylnaphthalene	5.43	142	60329	360.99	ng/ml	97
5) 1-Methylnaphthalene	5.52	142	54681	370.17	ng/ml	97
6) Biphenyl	5.84	154	82377	389.44	ng/ml	98
7) 2,6-Dimethylnaphthalene	5.97	156	55619	370.00	ng/ml	94
9) Acenaphthylene	6.21	152	100630	376.44	ng/ml	99
10) Acenaphthene	6.35	154	57867	384.96	ng/ml	97
11) Dibenzofuran	6.50	168	81637	345.64	ng/ml	96
12) 2,3,5-Trimethylnaphthalene	6.68	170	60241	396.23	ng/ml	90
14) Fluorene	6.78	166	69750	376.49	ng/ml	100
16) Dibenzothiophene	7.47	184	116161	386.25	ng/ml	94
17) Phenanthrene	7.58	178	108432	368.67	ng/ml	99
18) Anthracene	7.62	178	109429	377.24	ng/ml	100
19) Carbazole	7.75	167	96845	368.36	ng/ml	98
20) 1-Methylphenanthrene	8.09	192	84377	377.31	ng/ml	100
21) Fluoranthene	8.56	202	136262	390.23	ng/ml	99
24) Pyrene	8.75	202	136201	377.60	ng/ml	98
26) Benz(a)anthracene	10.07	228	137505	381.57	ng/ml	99
27) Chrysene	10.12	228	129274	383.65	ng/ml	99
29) Benzo(b)fluoranthene	12.11	252	151965	386.85	ng/ml	100
30) Benzo(k)fluoranthene	12.18	252	149810	388.27	ng/ml	100
31) Benzo(e)pyrene	12.82	252	134002	357.61	ng/ml	100
32) Benzo(a)pyrene	12.96	252	130954	381.37	ng/ml	100
33) Perylene	13.21	252	133727	395.33	ng/ml	100
34) Indeno(1,2,3-cd)pyrene	15.38	276	113638	368.38	ng/ml	100

(#) = qualifier out of range (m) = manual integration
 1013F013.D 101317PAH.M Mon Oct 16 06:50:33 2017

Data File : J:\MS14\DATA\101317\1013F013.D Vial: 2
 Acq On : 13 Oct 2017 12:49 pm Operator: LWeiskopf
 Sample : SIM-PAH ICV @0.4ug/mL | SVM57-20D Inst : MS14
 Misc : Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Oct 16 06:50:06 2017 Quant Results File: 101317PAH.RES

Quant Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration
 DataAcq Meth : A_PAHAT05

A OCT 16 2017

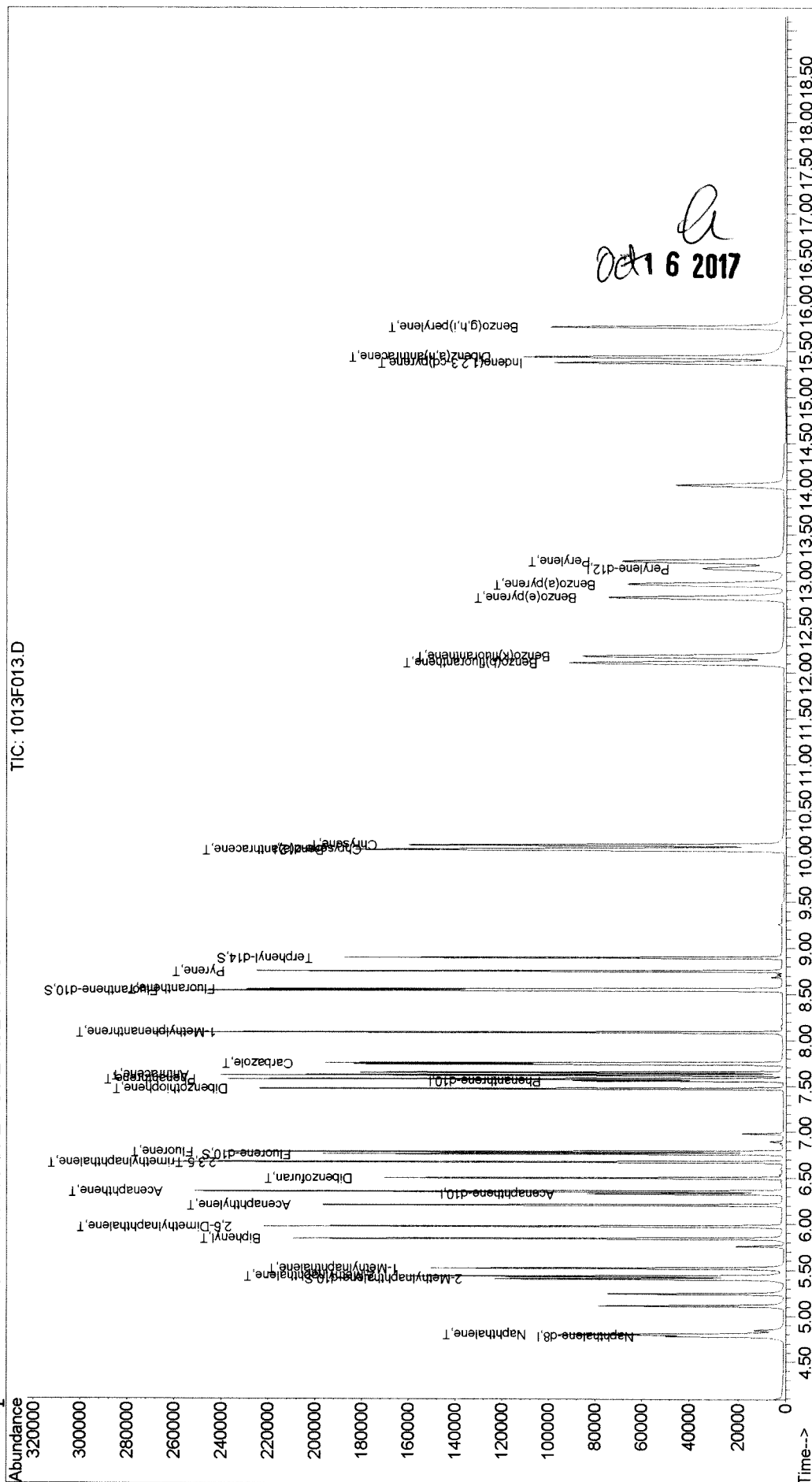
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
35) Dibenz(a,h)anthracene	15.44	278	115005	366.16	ng/ml	99
36) Benzo(g,h,i)perylene	15.76	276	127424	371.27	ng/ml	100

Quantitation Report (QT Reviewed)

Data File : J:\MS14\DATA\101317\1013F013.D
 Acq On : 13 Oct 2017 12:49 pm
 Sample : SIM-PAH ICV @0.4ug/mL | SVM57-20D
 Misc :
 MS Integration Params: RTEINT.P
 Quant Time: Oct 16 6:50 2017
 Quant Results File: 101317PAH.RES

Vial: 2
 Operator: LWeiskopf
 Inst : MS14
 Multiplr: 1.00

Method : J:\MS14\METHODS\SIM\101317PAH.M (RTE Integrator)
 Title : PAHS and ALKYLATED HOMOLOGS
 Last Update : Fri Oct 13 12:21:46 2017
 Response via : Initial Calibration





ALS Environmental
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March 09, 2018

Analytical Report for Service Request No: K1801267

Glenn Esler
Integral Consulting, Incorporated
319 SW Washington Street, Suite
1150
Portland, OR 97204

RE: Former Snopac Site RI/FS

Dear Glenn,

Enclosed are the results of the sample(s) submitted to our laboratory March 06, 2018
For your reference, these analyses have been assigned our service request number **K1801267**.

This is a preliminary report that contains only the TCLP results. The report in its
entirety will come at a later date.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program.
The test results meet requirements of the current NELAP standards, where applicable, and except as
noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes,
refer to the certifications section at www.alsglobal.com. All results are intended to be considered in
their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of
less than the complete report. Results apply only to the items submitted to the laboratory for analysis
and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via
email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Mark Harris
Project Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Chain of Custody

Metals

Semi-Volatile Organic Compounds by GC/MS

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Project: Former SNOBALL SITE R1/E5

Samplers: JSUND, SWDD0216

Integral Contact: Glenn Estler
 Phone: 503 943 3617
 Ship to: Lab Name: ALS
 Address: 1317 S 13th Ave
Kelso, WA 98626
 Contact: Mark Harris
 Phone: 360 577 7222

ANALYSES REQUESTED	
PAHs SW 846 50700 SIM	PCBs SW 846 30524
Metals, TOC (SD) DOC (water)	Water Content ASTM 2216
Specific Gravity ASTM D154-Axno. 1111	Atterberg ASTM 1318 Limits
TCLP SVOC/ metals	Pure water Extraction
Porewater Analysis	Extra Container
Archive	



Sample No.	Tag #	Date	Time	Matrix	PAHs	PCBs	Metals, TOC	Water Content	Specific Gravity	Atterberg	TCLP	Pure water	Porewater	Extra Container	Archive	Comments
C02-SD-3-5	-	2/6/18	1025	SD	X	X	X									
C02-GTB-5-8	-	2/6/18	1045					X	X	X						
C02-GTB-10-13	-	2/6/18	1111					X	X	X						
EQB-SD-01	-	2/7/18	0500	W	X	X	X									
C02-PW-3-5	-	2/6/18	1150	SD								X	X			Do not use top of core.
C01-PW-3-5	-	2/7/18	1000	SD								X	X			Use all volume
C03-SD-3-5	-	2/7/18	1118	SD	X	X	X									
TCLP-0-3	-	2/7/18	1105	SD							X					
C03-GTB-5-8	-	2/7/18	1204	SD				X	X	X						
C03-GTB-10-13	-	2/7/18	1221	SD				X	X	X						
C01-SD-3-5	-	2/6/18	1441	SD	X	X	X									
C01-GTB-5-8	-	2/6/18	1451	SD				X	X	X						
C01-GTB-10-13	-	2/6/18	1504	SD				X	X	X						
C03-PW-3-5	-	2/7/18	1314	SD								X	X			Use all volume
EQB-PN-01	-	2/8/18	0715	W	X	X	X									
C01-GTB-10-13	-	2/6/18	1504	SD	X	X	X									

Analysis Turn Time: Normal Rush Rush Results Needed By:

Matrix Code: GW - Groundwater
 SL - Soil SW - Surface water
 SD - Sediment Other:

Shipped by: Dropped off at lab Shipping Tracking No.

Condition of Samples Upon Receipt: Custody Seal Intact?

Relinquished by: [Signature] Date/Time: 2/8/18 1454 Received by: [Signature] Date/Time: 2/8/18 1455

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

Special Instructions:
 * Metals - SW 846 6010C / 6020A / 7471B (SED)
 SW 846 6010C / 6020A / 7470A (W)
 TOC - SW 846 9060 DOC - SW 846 9060
 TCLP SVOC: SW 846 1311 / 8270D
 Metals: SW 846 1311 / 6010C
 Porewater Analysis: PCB, PAH, Metals, DOC



Cooler Receipt and Preservation Form

Client Integral Service Request K18 01267
 Received: 2/8/18 Opened: 2/8/18 By: BR Unloaded: 2/8/18 By: BR

- Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- Samples were received in: (circle) Cooler Box Envelope Other NA
- Were custody seals on coolers? NA Y N If yes, how many and where? _____
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
13.1	13.0	—	—	0.0	328	<u>NA</u>		<u>NA</u>
0.4	0.2	—	—	-0.2	373			
1.0	1.2	—	—	+0.2	389			

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
- Were VOA vials received without headspace? Indicate in the table below. NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: Client did not provide bottle for DOC (water)
only received bottles for 3092, 3270, & metals. Lab will need to filter
from unpreserved bottles for DOC if enough volume.



Metals

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: TCLP-0-3
Lab Code: K1801267-010

Service Request: K1801267
Date Collected: 02/07/18 11:05
Date Received: 02/08/18 14:55
Basis: NA

TCLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	0.086	mg/L	0.050	0.020	5	02/20/18 12:23	02/14/18	
Barium	6010C	ND U	mg/L	1.0	0.5	5	02/20/18 12:23	02/14/18	
Cadmium	6010C	ND U	mg/L	0.050	0.001	5	02/20/18 12:23	02/14/18	
Chromium	6010C	ND U	mg/L	0.050	0.010	5	02/20/18 12:23	02/14/18	
Lead	6010C	ND U	mg/L	0.050	0.015	5	02/20/18 12:23	02/14/18	
Mercury	7470A	ND U	mg/L	0.0010	0.0001	1	02/19/18 15:13	02/15/18	
Selenium	6010C	ND U	mg/L	0.10	0.02	5	02/20/18 12:23	02/14/18	
Silver	6010C	ND U	mg/L	0.050	0.004	5	02/20/18 12:23	02/14/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: Method Blank
Lab Code: KQ1801951-02

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

TCLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6010C	ND U	mg/L	0.05	0.020	5	02/20/18 12:18	02/14/18	
Barium	6010C	ND U	mg/L	1	0.5	5	02/20/18 12:18	02/14/18	
Cadmium	6010C	ND U	mg/L	0.05	0.001	5	02/20/18 12:18	02/14/18	
Chromium	6010C	ND U	mg/L	0.05	0.010	5	02/20/18 12:18	02/14/18	
Lead	6010C	ND U	mg/L	0.05	0.015	5	02/20/18 12:18	02/14/18	
Selenium	6010C	ND U	mg/L	0.1	0.02	5	02/20/18 12:18	02/14/18	
Silver	6010C	0.041 J	mg/L	0.05	0.004	5	02/20/18 12:18	02/14/18	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: Method Blank
Lab Code: KQ1801999-01

Service Request: K1801267
Date Collected: NA
Date Received: NA
Basis: NA

TCLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	mg/L	0.001	0.0001	1	02/19/18 15:09	02/15/18	



Semi-Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment
Sample Name: Batch QC
Lab Code: K1800971-001

Service Request: K1801267
Date Collected: NA
Date Received: NA
Units: mg/L
Basis: NA

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-Trichlorophenol, TCLP	ND U	0.10	0.0087	1	02/19/18 14:58	2/14/18	
2,4,6-Trichlorophenol, TCLP	ND U	0.10	0.0069	1	02/19/18 14:58	2/14/18	
2,4-Dinitrotoluene, TCLP	ND U	0.10	0.013	1	02/19/18 14:58	2/14/18	
2-Methylphenol, TCLP	ND U	0.10	0.0086	1	02/19/18 14:58	2/14/18	
4-Methylphenol, TCLP	ND U	0.10	0.0047	1	02/19/18 14:58	2/14/18	
Hexachlorobenzene, TCLP	ND U	0.10	0.0094	1	02/19/18 14:58	2/14/18	
Hexachlorobutadiene, TCLP	ND U	0.10	0.0064	1	02/19/18 14:58	2/14/18	
Hexachloroethane, TCLP	ND U	0.10	0.0048	1	02/19/18 14:58	2/14/18	
Nitrobenzene, TCLP	ND U	0.10	0.0079	1	02/19/18 14:58	2/14/18	
Pentachlorophenol (PCP), TCLP	ND U	0.25	0.011	1	02/19/18 14:58	2/14/18	
Pyridine, TCLP	ND U	0.50	0.25	1	02/19/18 14:58	2/14/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	87	52 - 122	02/19/18 14:58	
2-Fluorobiphenyl	87	44 - 114	02/19/18 14:58	
Nitrobenzene-d5	94	45 - 122	02/19/18 14:58	
Phenol-d6	89	35 - 105	02/19/18 14:58	
p-Terphenyl-d14	90	50 - 145	02/19/18 14:58	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/18 11:05
Date Received: 02/08/18 14:55

Sample Name: TCLP-0-3
Lab Code: K1801267-010

Units: mg/L
Basis: NA

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/13/18

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-Trichlorophenol, TCLP	ND U	0.10	0.0087	1	02/19/18 16:20	2/14/18	
2,4,6-Trichlorophenol, TCLP	ND U	0.10	0.0069	1	02/19/18 16:20	2/14/18	
2,4-Dinitrotoluene, TCLP	ND U	0.10	0.013	1	02/19/18 16:20	2/14/18	
2-Methylphenol, TCLP	ND U	0.10	0.0086	1	02/19/18 16:20	2/14/18	
4-Methylphenol, TCLP	ND U	0.10	0.0047	1	02/19/18 16:20	2/14/18	
Hexachlorobenzene, TCLP	ND U	0.10	0.0094	1	02/19/18 16:20	2/14/18	
Hexachlorobutadiene, TCLP	ND U	0.10	0.0064	1	02/19/18 16:20	2/14/18	
Hexachloroethane, TCLP	ND U	0.10	0.0048	1	02/19/18 16:20	2/14/18	
Nitrobenzene, TCLP	ND U	0.10	0.0079	1	02/19/18 16:20	2/14/18	
Pentachlorophenol (PCP), TCLP	ND U	0.25	0.011	1	02/19/18 16:20	2/14/18	
Pyridine, TCLP	ND U	0.50	0.25	1	02/19/18 16:20	2/14/18	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81	52 - 122	02/19/18 16:20	
2-Fluorobiphenyl	79	44 - 114	02/19/18 16:20	
Nitrobenzene-d5	92	45 - 122	02/19/18 16:20	
Phenol-d6	83	35 - 105	02/19/18 16:20	
p-Terphenyl-d14	92	50 - 145	02/19/18 16:20	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ1802133-03

Units: mg/L
Basis: NA

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-Trichlorophenol, TCLP	ND U	0.10	0.0087	1	02/19/18 11:34	2/14/18	
2,4,6-Trichlorophenol, TCLP	ND U	0.10	0.0069	1	02/19/18 11:34	2/14/18	
2,4-Dinitrotoluene, TCLP	ND U	0.10	0.013	1	02/19/18 11:34	2/14/18	
2-Methylphenol, TCLP	ND U	0.10	0.0086	1	02/19/18 11:34	2/14/18	
4-Methylphenol, TCLP	ND U	0.10	0.0047	1	02/19/18 11:34	2/14/18	
Hexachlorobenzene, TCLP	ND U	0.10	0.0094	1	02/19/18 11:34	2/14/18	
Hexachlorobutadiene, TCLP	ND U	0.10	0.0064	1	02/19/18 11:34	2/14/18	
Hexachloroethane, TCLP	ND U	0.10	0.0048	1	02/19/18 11:34	2/14/18	
Nitrobenzene, TCLP	ND U	0.10	0.0079	1	02/19/18 11:34	2/14/18	
Pentachlorophenol (PCP), TCLP	ND U	0.25	0.011	1	02/19/18 11:34	2/14/18	
Pyridine, TCLP	ND U	0.50	0.25	1	02/19/18 11:34	2/14/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	69	52 - 122	02/19/18 11:34	
2-Fluorobiphenyl	80	44 - 114	02/19/18 11:34	
Nitrobenzene-d5	81	45 - 122	02/19/18 11:34	
Phenol-d6	77	35 - 105	02/19/18 11:34	
p-Terphenyl-d14	92	50 - 145	02/19/18 11:34	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ1802133-04

Units: mg/L
Basis: NA

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-Trichlorophenol, TCLP	ND U	0.10	0.0087	1	02/20/18 15:35	2/14/18	
2,4,6-Trichlorophenol, TCLP	ND U	0.10	0.0069	1	02/20/18 15:35	2/14/18	
2,4-Dinitrotoluene, TCLP	ND U	0.10	0.013	1	02/20/18 15:35	2/14/18	
2-Methylphenol, TCLP	ND U	0.10	0.0086	1	02/20/18 15:35	2/14/18	
4-Methylphenol, TCLP	ND U	0.10	0.0047	1	02/20/18 15:35	2/14/18	
Hexachlorobenzene, TCLP	ND U	0.10	0.0094	1	02/20/18 15:35	2/14/18	
Hexachlorobutadiene, TCLP	ND U	0.10	0.0064	1	02/20/18 15:35	2/14/18	
Hexachloroethane, TCLP	ND U	0.10	0.0048	1	02/20/18 15:35	2/14/18	
Nitrobenzene, TCLP	ND U	0.10	0.0079	1	02/20/18 15:35	2/14/18	
Pentachlorophenol (PCP), TCLP	ND U	0.25	0.011	1	02/20/18 15:35	2/14/18	
Pyridine, TCLP	ND U	0.50	0.25	1	02/20/18 15:35	2/14/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	79	52 - 122	02/20/18 15:35	
2-Fluorobiphenyl	80	44 - 114	02/20/18 15:35	
Nitrobenzene-d5	91	45 - 122	02/20/18 15:35	
Phenol-d6	82	35 - 105	02/20/18 15:35	
p-Terphenyl-d14	93	50 - 145	02/20/18 15:35	

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Analytical Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: KQ1802133-05

Units: mg/L
Basis: NA

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-Trichlorophenol, TCLP	ND U	0.10	0.0087	1	02/19/18 12:15	2/14/18	
2,4,6-Trichlorophenol, TCLP	ND U	0.10	0.0069	1	02/19/18 12:15	2/14/18	
2,4-Dinitrotoluene, TCLP	ND U	0.10	0.013	1	02/19/18 12:15	2/14/18	
2-Methylphenol, TCLP	ND U	0.10	0.0086	1	02/19/18 12:15	2/14/18	
4-Methylphenol, TCLP	ND U	0.10	0.0047	1	02/19/18 12:15	2/14/18	
Hexachlorobenzene, TCLP	ND U	0.10	0.0094	1	02/19/18 12:15	2/14/18	
Hexachlorobutadiene, TCLP	ND U	0.10	0.0064	1	02/19/18 12:15	2/14/18	
Hexachloroethane, TCLP	ND U	0.10	0.0048	1	02/19/18 12:15	2/14/18	
Nitrobenzene, TCLP	ND U	0.10	0.0079	1	02/19/18 12:15	2/14/18	
Pentachlorophenol (PCP), TCLP	ND U	0.25	0.011	1	02/19/18 12:15	2/14/18	
Pyridine, TCLP	ND U	0.50	0.25	1	02/19/18 12:15	2/14/18	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76	52 - 122	02/19/18 12:15	
2-Fluorobiphenyl	80	44 - 114	02/19/18 12:15	
Nitrobenzene-d5	82	45 - 122	02/19/18 12:15	
Phenol-d6	77	35 - 105	02/19/18 12:15	
p-Terphenyl-d14	89	50 - 145	02/19/18 12:15	

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267

SURROGATE RECOVERY SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol	2-Fluorobiphenyl	Nitrobenzene-d5
		52 - 122	44 - 114	45 - 122
Batch QC	K1800971-001	87	87	94
TCLP-0-3	K1801267-010	81	79	92
Batch QC MS	KQ1802133-01	87	90	91
TCLP-0-3 MS	KQ1802133-02	89	84	93
Method Blank	KQ1802133-03	69	80	81
Method Blank	KQ1802133-04	79	80	91
Method Blank	KQ1802133-05	76	80	82
Lab Control Sample	KQ1802133-06	88	85	87

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267

SURROGATE RECOVERY SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	Phenol-d6	p-Terphenyl-d14
		35 - 105	50 - 145
Batch QC	K1800971-001	89	90
TCLP-0-3	K1801267-010	83	92
Batch QC	KQ1802133-01	83	93
TCLP-0-3	KQ1802133-02	86	85
Method Blank	KQ1802133-03	77	92
Method Blank	KQ1802133-04	82	93
Method Blank	KQ1802133-05	77	89
Lab Control Sample	KQ1802133-06	76	87

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request:K1801267
Date Analyzed:02/19/18 10:53

Internal Standard Area and RT SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

File ID: J:\MS07\DATA\021918\0219F002.D\
Instrument ID: K-MS-07
Analysis Method: 8270D

Lab Code:KQ1802304-02
Analysis Lot:580807
Signal ID:

	1,4-Dichlorobenzene-d4		Acenaphthene-d10		Chrysene-d12	
	Area	RT	Area	RT	Area	RT
ICAL Result ==>	28,480	9.32	50,506	14.27	62,250	21.12
Upper Limit ==>	56,960	9.82	101,012	14.77	124,500	21.62
Lower Limit ==>	14,240	8.82	25,253	13.77	31,125	20.62

Associated Analyses

Method Blank	KQ1802133-03	29417	9.32	51897	14.27	66206	21.11
Method Blank	KQ1802133-05	29313	9.32	52219	14.28	64580	21.10
Batch QCMS	KQ1802133-01	30717	9.33	52331	14.28	64883	21.12
Batch QC	K1800971-001.R01	30007	9.32	52586	14.27	66599	21.11
TCLP-0-3	KQ1802133-02	30892	9.32	56138	14.28	66208	21.12
TCLP-0-3	K1801267-010	32809	9.32	55780	14.27	63357	21.11

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/19/18 10:53

Internal Standard Area and RT SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

File ID: J:\MS07\DATA\021918\0219F002.D\
Instrument ID: K-MS-07
Analysis Method: 8270D

Lab Code: KQ1802304-02
Analysis Lot: 580807
Signal ID:

	Naphthalene-d8		Perylene-d12		Phenanthrene-d10	
	Area	RT	Area	RT	Area	RT
ICAL Result ==>	105,376	11.43	65,454	24.30	82,806	16.69
Upper Limit ==>	210,752	11.93	130,908	24.80	165,612	17.19
Lower Limit ==>	52,688	10.93	32,727	23.80	41,403	16.19

Associated Analyses

Method Blank	KQ1802133-03	99620	11.41	65691	24.28	90863	16.68
Method Blank	KQ1802133-05	103615	11.42	64568	24.29	88941	16.68
Batch QCMS	KQ1802133-01	112423	11.42	72914	24.31	81684	16.69
Batch QC	K1800971-001.R01	107391	11.41	62564	24.29	84641	16.68
TCLP-0-3	KQ1802133-02	114222	11.42	65576	24.29	87082	16.68
TCLP-0-3	K1801267-010	117113	11.41	65343	24.29	92118	16.68

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/20/18 14:54

Internal Standard Area and RT SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

File ID: J:\MS07\DATA\022018\0220F002.D\
Instrument ID: K-MS-07
Analysis Method: 8270D

Lab Code: KQ1802314-02
Analysis Lot: 581311
Signal ID:

	1,4-Dichlorobenzene-d4		Acenaphthene-d10		Chrysene-d12		
	Area	RT	Area	RT	Area	RT	
ICAL Result ==>	29,174	9.33	55,163	14.29	68,967	21.12	
Upper Limit ==>	58,348	9.83	110,326	14.79	137,934	21.62	
Lower Limit ==>	14,587	8.83	27,582	13.79	34,484	20.62	
Associated Analyses							
Method Blank	KQ1802133-04	29906	9.33	54103	14.28	66552	21.11
Lab Control Sample	KQ1802133-06	33699	9.32	58233	14.29	69311	21.12

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/20/18 14:54

Internal Standard Area and RT SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

File ID: J:\MS07\DATA\022018\0220F002.D\
Instrument ID: K-MS-07
Analysis Method: 8270D

Lab Code: KQ1802314-02
Analysis Lot: 581311
Signal ID:

		Naphthalene-d8		Perylene-d12		Phenanthrene-d10	
		Area	RT	Area	RT	Area	RT
ICAL Result ==>		107,238	11.43	67,578	24.31	86,632	16.69
Upper Limit ==>		214,476	11.93	135,156	24.81	173,264	17.19
Lower Limit ==>		53,619	10.93	33,789	23.81	43,316	16.19
Associated Analyses							
Method Blank	KQ1802133-04	108276	11.42	68624	24.29	96361	16.68
Lab Control Sample	KQ1802133-06	118581	11.43	73633	24.31	93322	16.69

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Collected: 02/07/18
Date Received: 02/08/18
Date Analyzed: 02/19/18
Date Extracted: 02/14/18

Matrix Spike Summary
TCLP Semivolatile Organic Compounds by GC/MS

Sample Name: TCLP-0-3
Lab Code: K1801267-010
Analysis Method: 8270D
Prep Method: EPA 3510C

Units: mg/L
Basis: NA

Matrix Spike
KQ1802133-02

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
2,4,5-Trichlorophenol, TCLP	ND U	0.855	1.00	85	53-115
2,4,6-Trichlorophenol, TCLP	ND U	0.897	1.00	90	58-113
2,4-Dinitrotoluene, TCLP	ND U	0.876	1.00	88	70-130
2-Methylphenol, TCLP	ND U	0.936	1.00	94	49-109
4-Methylphenol, TCLP	ND U	0.947	1.00	95	39-112
Hexachlorobenzene, TCLP	ND U	0.769	1.00	77	57-114
Hexachlorobutadiene, TCLP	ND U	0.632	1.00	63	38-112
Hexachloroethane, TCLP	ND U	0.668	1.00	67	35-106
Nitrobenzene, TCLP	ND U	0.948	1.00	95	45-117
Pentachlorophenol (PCP), TCLP	ND U	0.797	1.00	80	57-128
Pyridine, TCLP	ND U	2.07 E	2.00	104	10-113

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/20/18
Date Extracted: 02/14/18

Lab Control Sample Summary
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Units: mg/L
Basis: NA
Analysis Lot: 581311

Lab Control Sample
KQ1802133-06

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
2,4,5-Trichlorophenol, TCLP	0.916	1.00	92	63-107
2,4,6-Trichlorophenol, TCLP	0.958	1.00	96	64-108
2,4-Dinitrotoluene, TCLP	0.973	1.00	97	55-121
2-Methylphenol, TCLP	0.897	1.00	90	51-104
4-Methylphenol, TCLP	0.919	1.00	92	53-101
Hexachlorobenzene, TCLP	0.878	1.00	88	59-113
Hexachlorobutadiene, TCLP	0.752	1.00	75	45-98
Hexachloroethane, TCLP	0.798	1.00	80	41-97
Nitrobenzene, TCLP	0.928	1.00	93	50-107
Pentachlorophenol (PCP), TCLP	0.915	1.00	92	52-122
Pyridine, TCLP	1.75	2.00	88	10-117

ALS Group USA, Corp.

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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/20/18 15:35
Date Extracted: 02/14/18

Method Blank Summary
TCLP Semivolatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KQ1802133-04
Analysis Method: 8270D
Prep Method: EPA 3510C

Instrument ID: K-MS-07
File ID: J:\MS07\DATA\022018\0220F003.D\
Analysis Lot: 580807
Extraction Lot: 308329

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Batch QC	KQ1802133-01	J:\MS07\DATA\021918\0219F007.D\	02/19/18 14:18
Batch QC	K1800971-001	J:\MS07\DATA\021918\0219F008.D\	02/19/18 14:58
TCLP-0-3	KQ1802133-02	J:\MS07\DATA\021918\0219F009.D\	02/19/18 15:39
TCLP-0-3	K1801267-010	J:\MS07\DATA\021918\0219F010.D\	02/19/18 16:20
Lab Control Sample	KQ1802133-06	J:\MS07\DATA\022018\0220F004.D\	02/20/18 16:15

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/20/18 15:35
Date Extracted: 02/14/18

Method Blank Summary
TCLP Semivolatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KQ1802133-04
Analysis Method: 8270D
Prep Method: EPA 3510C

Instrument ID: K-MS-07
File ID: J:\MS07\DATA\022018\0220F003.D\
Analysis Lot: 580807
Extraction Lot: 308329

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Batch QC	KQ1802133-01	J:\MS07\DATA\021918\0219F007.D\	02/19/18 14:18
Batch QC	K1800971-001	J:\MS07\DATA\021918\0219F008.D\	02/19/18 14:58
TCLP-0-3	KQ1802133-02	J:\MS07\DATA\021918\0219F009.D\	02/19/18 15:39
TCLP-0-3	K1801267-010	J:\MS07\DATA\021918\0219F010.D\	02/19/18 16:20
Lab Control Sample	KQ1802133-06	J:\MS07\DATA\022018\0220F004.D\	02/20/18 16:15

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request: K1801267
Date Analyzed: 02/20/18 16:15
Date Extracted: 02/14/18

Lab Control Sample Summary
TCLP Semivolatile Organic Compounds by GC/MS

Sample Name: Lab Control Sample
Lab Code: KQ1802133-06
Analysis Method: 8270D
Prep Method: EPA 3510C

Instrument ID: K-MS-07
File ID: J:\MS07\DATA\022018\0220F004.D\
Analysis Lot: 580807
Extraction Lot: 308329

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1802133-03	J:\MS07\DATA\021918\0219F003.D\	02/19/18 11:34
Method Blank	KQ1802133-05	J:\MS07\DATA\021918\0219F004.D\	02/19/18 12:15
Batch QC	KQ1802133-01	J:\MS07\DATA\021918\0219F007.D\	02/19/18 14:18
Batch QC	K1800971-001	J:\MS07\DATA\021918\0219F008.D\	02/19/18 14:58
TCLP-0-3	KQ1802133-02	J:\MS07\DATA\021918\0219F009.D\	02/19/18 15:39
TCLP-0-3	K1801267-010	J:\MS07\DATA\021918\0219F010.D\	02/19/18 16:20
Method Blank	KQ1802133-04	J:\MS07\DATA\022018\0220F003.D\	02/20/18 15:35

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/19/18 10:53

Tune Summary
TCLP Semivolatile Organic Compounds by GC/MS

File ID: J:\MS07\DATA\021918\0219A002.D\
Instrument ID: K-MS-07

Analytical Method: 8270D
Analysis Lot: 580807

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
443	442	15	24	19.77	957	Pass
51	198	30	80	39.99	1956	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	42.87	2097	Pass
70	69	0	2	0.00	0	Pass
127	198	25	75	39.03	1909	Pass
197	198	0	1	0.00	0	Pass
198	198	100	100	100.00	4891	Pass
199	198	5	9	6.26	306	Pass
275	198	10	30	25.41	1243	Pass
365	198	0.75	100	3.03	148	Pass
441	443	0.01	100	76.91	736	Pass
442	198	40	110	98.96	4840	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1802304-02	J:\MS07\DATA\021918\0219F002.D\	02/19/18 10:53	
Method Blank	KQ1802133-03	J:\MS07\DATA\021918\0219F003.D\	02/19/18 11:34	
Method Blank	KQ1802133-05	J:\MS07\DATA\021918\0219F004.D\	02/19/18 12:15	
Batch QC	KQ1802133-01	J:\MS07\DATA\021918\0219F007.D\	02/19/18 14:18	
Batch QC	K1800971-001	J:\MS07\DATA\021918\0219F008.D\	02/19/18 14:58	
TCLP-0-3	KQ1802133-02	J:\MS07\DATA\021918\0219F009.D\	02/19/18 15:39	
TCLP-0-3	K1801267-010	J:\MS07\DATA\021918\0219F010.D\	02/19/18 16:20	

ALS Group USA, Corp.
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QC/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/20/18 14:13

Tune Summary
TCLP Semivolatile Organic Compounds by GC/MS

File ID: J:\MS07\DATA\022018\0220F001.D\
Instrument ID: K-MS-07

Analytical Method: 8270D
Analysis Lot: 581311

Target Mass	Relative to Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result Pass/Fail
443	442	15	24	19.20	1941	Pass
51	198	30	80	61.55	9038	Pass
68	69	0	2	0.00	0	Pass
69	198	0	100	59.87	8791	Pass
70	69	0	2	0.00	0	Pass
127	198	25	75	49.67	7293	Pass
197	198	0	1	0.00	0	Pass
198	198	100	100	100.00	14684	Pass
199	198	5	9	6.99	1026	Pass
275	198	10	30	21.40	3142	Pass
365	198	0.75	100	2.50	367	Pass
441	443	0.01	100	75.63	1468	Pass
442	198	40	110	68.84	10109	Pass

Sample Name	Lab Code	File ID:	Date Analyzed:	Q
Continuing Calibration Verification	KQ1802314-02	J:\MS07\DATA\022018\0220F002.D\	02/20/18 14:54	
Method Blank	KQ1802133-04	J:\MS07\DATA\022018\0220F003.D\	02/20/18 15:35	
Lab Control Sample	KQ1802133-06	J:\MS07\DATA\022018\0220F004.D\	02/20/18 16:15	

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 2/6/2018

Initial Calibration Summary
TCLP Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800062
Instrument ID: K-MS-07

Signal ID: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	KC1800062-01	8270/P ICAL @ 1ppm | SVM57-75A	J:\MS07\DATA\020618\0206F003.D	02/06/2018 16:40
02	KC1800062-02	8270/P ICAL @ 5ppm | SVM57-98E	J:\MS07\DATA\020618\0206F004.D	02/06/2018 17:21
03	KC1800062-03	8270/P ICAL @ 10ppm | SVM57-98F	J:\MS07\DATA\020618\0206F005.D	02/06/2018 18:02
04	KC1800062-04	8270/P ICAL @ 20ppm | SVM57-98G	J:\MS07\DATA\020618\0206F006.D	02/06/2018 18:43
05	KC1800062-05	8270/P ICAL @ 50ppm | SVM57-98H	J:\MS07\DATA\020618\0206F007.D	02/06/2018 19:24
06	KC1800062-06	8270/P ICAL @ 80ppm | SVM57-98I	J:\MS07\DATA\020618\0206F008.D	02/06/2018 20:06
07	KC1800062-07	8270/P ICAL @ 100ppm | SVM57-98J	J:\MS07\DATA\020618\0206F009.D	02/06/2018 20:47
08	KC1800062-08	8270/P ICAL @ 120ppm | SVM57-98K	J:\MS07\DATA\020618\0206F010.D	02/06/2018 21:28
09	KC1800062-09	8270/P ICAL @ 160ppm | SVM57-98L	J:\MS07\DATA\020618\0206F011.D	02/06/2018 22:09
10	KC1800062-10	8270/P ICAL @ 200ppm | SVM57-98M	J:\MS07\DATA\020618\0206F012.D	02/06/2018 22:50

Analyte

2,4,5-Trichlorophenol, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	0.375	03	10.000	0.4492	04	20.000	0.4691	05	50.000	0.4836
06	80.000	0.4569	07	100.000	0.4818	08	120.000	0.4695	09	160.000	0.469
10	200.000	0.4856									

2,4,6-Trichlorophenol, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	0.3403	03	10.000	0.3986	04	20.000	0.4189	05	50.000	0.419
06	80.000	0.4195	07	100.000	0.4325	08	120.000	0.4257	09	160.000	0.4323
10	200.000	0.4607									

2,4-Dinitrotoluene, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	0.2781	03	10.000	0.3619	04	20.000	0.3796	05	50.000	0.3867
06	80.000	0.3578	07	100.000	0.3672	08	120.000	0.3564	09	160.000	0.3758
10	200.000	0.3983									

2-Methylphenol, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	0.8783	02	5.000	0.9215	03	10.000	0.9408	04	20.000	0.8995
05	50.000	0.8879	06	80.000	0.8723	07	100.000	0.8405	08	120.000	0.8084
09	160.000	0.8067	10	200.000	0.766						

4-Methylphenol, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	1.093	02	5.000	1.33	03	10.000	1.364	04	20.000	1.321
05	50.000	1.348	06	80.000	1.344	07	100.000	1.287	08	120.000	1.252
09	160.000	1.273	10	200.000	1.173						

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 2/6/2018

Initial Calibration Summary
TCLP Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800062
Instrument ID: K-MS-07

Signal ID: 1

Analyte

Hexachlorobenzene, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	0.2475	02	5.000	0.2431	03	10.000	0.2542	04	20.000	0.252
05	50.000	0.2449	06	80.000	0.2627	07	100.000	0.2438	08	120.000	0.2561
09	160.000	0.2574	10	200.000	0.2619						

Hexachlorobutadiene, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	0.2326	03	10.000	0.2274	04	20.000	0.2319	05	50.000	0.2214
06	80.000	0.2169	07	100.000	0.214	08	120.000	0.2122	09	160.000	0.2143
10	200.000	0.2227									

Hexachloroethane, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	0.6307	03	10.000	0.6791	04	20.000	0.6476	05	50.000	0.6251
06	80.000	0.6085	07	100.000	0.5931	08	120.000	0.5844	09	160.000	0.5739
10	200.000	0.5678									

Nitrobenzene, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	1.037	02	5.000	1.108	03	10.000	1.221	04	20.000	1.175
05	50.000	1.131	06	80.000	1.192	07	100.000	1.201	08	120.000	1.158
09	160.000	1.179	10	200.000	1.158						

Pentachlorophenol (PCP), TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
04	20.000	0.06943	05	50.000	0.09887	06	80.000	0.1234	07	100.000	0.122
08	120.000	0.1249	09	160.000	0.1397	10	200.000	0.1498			

Pyridine, TCLP

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	1.118	03	10.000	1.133	04	20.000	1.137	05	50.000	1.152
06	80.000	1.162	07	100.000	1.109	08	120.000	1.09	09	160.000	1.058
10	200.000	1.053									

2,4,6-Tribromophenol

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
03	10.000	0.09981	04	20.000	0.1167	05	50.000	0.1287	06	80.000	0.15
07	100.000	0.1421	08	120.000	0.1476	09	160.000	0.1437	10	200.000	0.1453

2-Fluorobiphenyl

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	1.371	03	10.000	1.443	04	20.000	1.428	05	50.000	1.281
06	80.000	1.345	07	100.000	1.365	08	120.000	1.298	09	160.000	1.332
10	200.000	1.374									

Nitrobenzene-d5

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	1.000	1.557	02	5.000	1.09	03	10.000	1.231	04	20.000	1.193

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 2/6/2018

Initial Calibration Summary
TCLP Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800062
Instrument ID: K-MS-07

Signal ID: 1

Analyte

Nitrobenzene-d5

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
05	50.000	1.211	06	80.000	1.261	07	100.000	1.244	08	120.000	1.26
09	160.000	1.256	10	200.000	1.204						

Phenol-d6

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	1.335	03	10.000	1.365	04	20.000	1.379	05	50.000	1.29
06	80.000	1.342	07	100.000	1.298	08	120.000	1.223	09	160.000	1.204
10	200.000	1.147									

p-Terphenyl-d14

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
02	5.000	0.8486	03	10.000	0.8573	04	20.000	0.8792	05	50.000	0.8242
06	80.000	0.8732	07	100.000	0.865	08	120.000	0.9	09	160.000	0.9258
10	200.000	0.891									

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 2/6/2018

Initial Calibration Summary
TCLP Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800062
Instrument ID: K-MS-07

Signal ID: 1

Analyte Name	Compound Type	Calibration Evaluation				Calibration Evaluation	
		Fit Type	Eval	Eval Result	Control Criteria	Average RRF	Minimum RRF
2,4,5-Trichlorophenol, TCLP	TRG	Average RF	% RSD	7.4	20	0.46	0.200
2,4,6-Trichlorophenol, TCLP	TRG	Average RF	% RSD	7.9	20	0.4164	0.200
2,4-Dinitrotoluene, TCLP	TRG	Average RF	% RSD	9.5	20	0.3624	0.200
2-Methylphenol, TCLP	TRG	Average RF	% RSD	6.4	20	0.8622	0.700
4-Methylphenol, TCLP	TRG	Average RF	% RSD	6.8	20	1.279	0.600
Hexachlorobenzene, TCLP	TRG	Average RF	% RSD	2.9	20	0.2524	0.100
Hexachlorobutadiene, TCLP	TRG	Average RF	% RSD	3.5	20	0.2215	0.010
Hexachloroethane, TCLP	TRG	Average RF	% RSD	6.0	20	0.6122	0.300
Nitrobenzene, TCLP	TRG	Average RF	% RSD	4.6	20	1.156	0.200
Pentachlorophenol (PCP), TCLP	TRG	Quadratic	COD	0.9988	0.990	0.1183	0.050
Pyridine, TCLP	TRG	Average RF	% RSD	3.5	20	1.112	0.010
2,4,6-Tribromophenol	SURR	Average RF	% RSD	13.3	20	0.1342	0.010
2-Fluorobiphenyl	SURR	Average RF	% RSD	3.9	20	1.36	0.010
Nitrobenzene-d5	SURR	Average RF	% RSD	9.5	20	1.251	0.010
Phenol-d6	SURR	Average RF	% RSD	6.2	20	1.287	0.010
p-Terphenyl-d14	SURR	Average RF	% RSD	3.4	20	0.8738	0.010

ALS Group USA, Corp.
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QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Calibration Date: 2/6/2018

Initial Calibration Verification Summary
TCLP Semivolatile Organic Compounds by GC/MS

Calibration ID: KC1800062
Instrument ID: K-MS-07

Signal ID: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
11	KC1800062-11	8270/P ICV @ 80ppm | SVM58-2A	J:\MS07\DATA\020618\0206F013.D	02/06/2018 23:31

Analyte Name	Expected	Result	Average RF	SSV RF	% D	Criteria	Curve Fit
2,4,5-Trichlorophenol, TCLP	80.0	103	4.6E-1	5.897E-1	28.21	±20	Average RF
2,4,6-Trichlorophenol, TCLP	80.0	100	4.164E-1	5.222E-1	25.41	±20	Average RF
2,4-Dinitrotoluene, TCLP	80.0	80.6	3.624E-1	3.652E-1	0.780	±20	Average RF
2-Methylphenol, TCLP	80.0	90.0	8.622E-1	9.7E-1	12.51	±20	Average RF
4-Methylphenol, TCLP	80.0	87.5	1.279E0	1.399E0	9.39	±20	Average RF
Hexachlorobenzene, TCLP	80.0	91.7	2.524E-1	2.892E-1	14.59	±20	Average RF
Hexachlorobutadiene, TCLP	80.0	81.7	2.215E-1	2.262E-1	2.15	±20	Average RF
Hexachloroethane, TCLP	80.0	82.1	6.122E-1	6.283E-1	2.62	±20	Average RF
Nitrobenzene, TCLP	80.0	80.5	1.156E0	1.163E0	0.593	±20	Average RF
Pentachlorophenol (PCP), TCLP	80.0	96.1	1.183E-1	1.456E-1	20.13	±20	Quadratic
Pyridine, TCLP	80.0	98.6	1.112E0	1.372E0	23.30	±20	Average RF
2,4,6-Tribromophenol	80.0	95.6	1.342E-1	1.603E-1	19.45	±20	Average RF
2-Fluorobiphenyl	80.0	82.3	1.36E0	1.398E0	2.85	±20	Average RF
Nitrobenzene-d5	80.0	80.6	1.251E0	1.259E0	0.700	±20	Average RF
Phenol-d6	80.0	75.8	1.287E0	1.219E0	-5.270	±20	Average RF
p-Terphenyl-d14	80.0	72.2	8.738E-1	7.886E-1	-9.749	±20	Average RF

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/19/18 10:53

**Continuing Calibration Verification (CCV) Summary
TCLP Semivolatile Organic Compounds by GC/MS**

Analysis Method: 8270D
File ID: J:\MS07\DATA\021918\0219F002.D\

Calibration Date: 2/6/2018
Calibration ID: KC1800062
Analysis Lot: 580807
Units: ug/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4,5-Trichlorophenol, TCLP	80.0	83.3	0.46	0.4789	4.1	NA	±20	Average RF
2,4,6-Trichlorophenol, TCLP	80.0	87.7	0.4164	0.4567	9.7	NA	±20	Average RF
2,4-Dinitrotoluene, TCLP	80.0	94.2	0.3624	0.4269	17.8	NA	±20	Average RF
2-Methylphenol, TCLP	80.0	93.0	0.8622	1.0021	16.2	NA	±20	Average RF
4-Methylphenol, TCLP	80.0	90.2	1.2785	1.4407	12.7	NA	±20	Average RF
Hexachlorobenzene, TCLP	80.0	79.3	0.2524	0.25	-0.9	NA	±20	Average RF
Hexachlorobutadiene, TCLP	80.0	74.9	0.2215	0.2075	-6.3	NA	±20	Average RF
Hexachloroethane, TCLP	80.0	84.2	0.6122	0.6445	5.3	NA	±20	Average RF
Nitrobenzene, TCLP	80.0	90.8	1.156	1.312	13.5	NA	±20	Average RF
Pentachlorophenol (PCP), TCLP	80.0	77.2	0.1183	0.1107	NA	-3.5	±20	Quadratic
Pyridine, TCLP	80.0	107	1.1125	1.4829	33.3*	NA	±20	Average RF
2,4,6-Tribromophenol	80.0	80.3	0.1342	0.1348	0.4	NA	±20	Average RF
2-Fluorobiphenyl	80.0	81.9	1.3597	1.3914	2.3	NA	±20	Average RF
Nitrobenzene-d5	80.0	81.6	1.2507	1.275	1.9	NA	±20	Average RF
Phenol-d6	80.0	92.6	1.2869	1.489	15.7	NA	±20	Average RF
p-Terphenyl-d14	80.0	82.9	0.8738	0.9052	3.6	NA	±20	Average RF

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request: K1801267
Date Analyzed: 02/20/18 14:54

**Continuing Calibration Verification (CCV) Summary
TCLP Semivolatile Organic Compounds by GC/MS**

Analysis Method: 8270D
File ID: J:\MS07\DATA\022018\0220F002.D\

Calibration Date: 2/6/2018
Calibration ID: KC1800062
Analysis Lot: 581311
Units: ug/mL

Analyte Name	Expected	Result	Average RF	CCV RF	% D	% Drift	Criteria	Curve Fit
2,4,5-Trichlorophenol, TCLP	80.0	85.4	0.46	0.4913	6.8	NA	±20	Average RF
2,4,6-Trichlorophenol, TCLP	80.0	87.4	0.4164	0.455	9.3	NA	±20	Average RF
2,4-Dinitrotoluene, TCLP	80.0	90.5	0.3624	0.4098	13.1	NA	±20	Average RF
2-Methylphenol, TCLP	80.0	93.7	0.8622	1.0097	17.1	NA	±20	Average RF
4-Methylphenol, TCLP	80.0	93.5	1.2785	1.4941	16.9	NA	±20	Average RF
Hexachlorobenzene, TCLP	80.0	82.3	0.2524	0.2595	2.8	NA	±20	Average RF
Hexachlorobutadiene, TCLP	80.0	76.4	0.2215	0.2116	-4.5	NA	±20	Average RF
Hexachloroethane, TCLP	80.0	84.4	0.6122	0.6461	5.5	NA	±20	Average RF
Nitrobenzene, TCLP	80.0	92.2	1.156	1.3324	15.3	NA	±20	Average RF
Pentachlorophenol (PCP), TCLP	80.0	87.1	0.1183	0.1287	NA	8.9	±20	Quadratic
Pyridine, TCLP	80.0	98.8	1.1125	1.3739	23.5*	NA	±20	Average RF
2,4,6-Tribromophenol	80.0	84.8	0.1342	0.1423	6.0	NA	±20	Average RF
2-Fluorobiphenyl	80.0	80.0	1.3597	1.3592	0.0	NA	±20	Average RF
Nitrobenzene-d5	80.0	85.8	1.2507	1.3417	7.3	NA	±20	Average RF
Phenol-d6	80.0	92.5	1.2869	1.4884	15.7	NA	±20	Average RF
p-Terphenyl-d14	80.0	79.0	0.8738	0.8623	-1.3	NA	±20	Average RF

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request:K1801267

Analysis Run Log
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D

Analysis Lot:580807
Instrument ID:K-MS-07

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
J:\MS07\DATA\021918\0219F002.D\	Continuing Calibration Verification	KQ1802304-02	2/19/2018	10:53:00	
J:\MS07\DATA\021918\0219A002.D\	ZZZZZZZ	ZZZZZZZ	2/19/2018	10:53:00	
J:\MS07\DATA\021918\0219F003.D\	Method Blank	KQ1802133-03	2/19/2018	11:34:00	
J:\MS07\DATA\021918\0219F004.D\	Method Blank	KQ1802133-05	2/19/2018	12:15:00	
J:\MS07\DATA\021918\0219F007.D\	Batch QC MS	KQ1802133-01	2/19/2018	14:18:00	
J:\MS07\DATA\021918\0219F008.D\	Batch QC	K1800971-001	2/19/2018	14:58:00	
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J:\MS07\DATA\021918\0219F010.D\	TCLP-0-3	K1801267-010	2/19/2018	16:20:00	
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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS

Service Request:K1801267

Analysis Run Log
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D

Analysis Lot:581311
Instrument ID:K-MS-07

Raw Data File	Sample Name	Lab Code	Date Analyzed	Time Analyzed	Q
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J:\MS07\DATA\022018\0220F004.D\	Lab Control Sample	KQ1802133-06	2/20/2018	16:15:00	

ALS Group USA, Corp.
dba ALS Environmental

Prep Summary Report

Client: Integral Consulting, Incorporated
Project: Former Snopac Site RI/FS
Sample Matrix: Sediment

Service Request:K1801267

TCLP Semivolatile Organic Compounds by GC/MS

Prep Method: EPA 3510C
Analytical Method: 8270D

Extraction Lot:308329

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
Batch QC	K1800971-001	NA	NA	100 mL	1 mL	
TCLP-0-3	K1801267-010	2/7/18	2/8/18	100 mL	1 mL	
Batch QC	KQ1802133-01MS	NA	NA	100 mL	1 mL	
Matrix Spike	KQ1802133-02MS	2/7/18	2/8/18	100 mL	1 mL	
Method Blank	KQ1802133-03MB	NA	NA	100 mL	1 mL	
Method Blank	KQ1802133-04MB	NA	NA	100 mL	1 mL	
Method Blank	KQ1802133-05MB	NA	NA	100 mL	1 mL	
Lab Control Sample	KQ1802133-06LCS	NA	NA	100 mL	1 mL	



HWA GEOSCIENCES INC.

Geotechnical & Pavement Engineering • Hydrogeology • Geoenvironmental • Inspection & Testing

March 12, 2018
HWA Project No. 2018-016-23 T100

Integral Consulting, Inc.
319 SW Washington Street, Suite 1150
Portland, Oregon 97204

Attention: Mr. Glenn Esler

Subject: **SOIL LABORATORY TESTING REPORT**
Grain Size, Unit Weight, Consolidation and Triaxial Strength Testing
Former Snopac Site
5055 East Marginal Way
Report Revision No. 1

Dear Mr. Esler;

As requested, HWA GeoSciences Inc. (HWA) performed laboratory testing for the above referenced project. Herein we present the results of our laboratory analyses, which are summarized on the attached Figures. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

SAMPLE DESCRIPTION: The samples were delivered to our laboratory on February 8, 2018 by Integral Consulting personnel. The samples were delivered in Shelby tubes and 2.4-inch diameter brass tubes designated with exploration ID, sample number and depth of sampling. The samples were extruded and tested according to the client's instructions. The samples were classified for engineering purposes in general accordance with ASTM D2487. The sample descriptions appear on the attached report Figures.

UNIT WEIGHT OF SOIL: The wet density of the soil extruded from the samples was measured in general accordance with ASTM D2937. The bulk density was converted to dry unit weight by dividing it by 1+ the moisture content of the sample. The results are shown as dry unit weight on Figure 1.

PARTICLE SIZE ANALYSIS OF SOILS: The samples were tested to determine the particle size distribution in general accordance with ASTM D6913. The results are plotted on the attached Particle Size Analysis of Soil report, Figures 2 and 3 which also indicates the moisture content of the soil samples at the time of testing.

ONE DIMENSIONAL CONSOLIDATION PROPERTIES OF SOIL: The consolidation properties of selected soil samples were measured in general accordance with ASTM D2435. Saturation was maintained by inundation of the sample throughout the test. The samples were subjected to increasing increments of total stress, the duration of which was selected to exceed the time required for completion of primary consolidation as defined in the Standard, Method B. Unloading of the sample was carried out incrementally. The test results are presented on the attached Figures 4A-8B.

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION OF SOILS: The unconsolidated, undrained strength of selected samples was tested in general accordance with method ASTM D2850 to determine the strength characteristics of the soil. Testing was requested to be run on four samples, however, upon extrusion only two of the four samples were found to be suitable for the test. Due to the presence of large gravels and organic matter that prevented trimming, as well as the inability to stand vertically inside a testing apparatus, samples C01-GTS-10-13 and C02-GTS-5-8 were not tested. Each of the remaining samples was extruded from the sample tube and a representative section was cut from the sample. The sample ends were trimmed to obtain a cylindrical test sample with a length to diameter ratio between 2:1 and 2.5:1. The bulk density of the sample was determined by careful weighing and dimensional measurement of the trimmed sample. The confining stresses used are indicated on the test plots. The results are summarized and plotted graphically on the attached Unconsolidated Undrained Triaxial Compression Test for Cohesive Soils reports, Figures 9-10.

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION OF SOILS: One specimen was tested in general accordance with method ASTM D 4767 to determine the shear strength characteristics of the soil. Prior to testing, the extruded sample was trimmed to obtain a cylindrical test specimen with a length to diameter ratio between 2:1 and 2.5:1. The bulk density of the specimen was determined by careful weighing and dimensional measurement of the trimmed section. The specimen was back-pressure saturated to dissolve entrapped air. After saturation was attained, but prior to vertical loading, the specimen was consolidated incrementally under effective consolidation pressures specified by the client. Loading was conducted until measured change in deviator stress over strain leveled off or decreased. The test results are presented on the attached Consolidated Undrained Triaxial Compression of Soil report, Figure 11.



March 12, 2018
HWA Project No. 2012-095-23 Task 100

CLOSURE: Experience has shown that laboratory test values for soil and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested sample may represent. HWA also makes no warranty as to how representative either the sample tested or the test results obtained are to actual field conditions. It is a well established fact that sampling methods present varying degrees of disturbance or variance that affect sample representativeness.

No copy should be made of this report, except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

Sincerely,

HWA GEOSCIENCES INC.



Daniel Walton
Laboratory Supervisor



Sandy Brodahl, P.E.
Principal Geotechnical Engineer

Attachments:

Figure 1	Summary of Material Properties
Figures 2-3	Particle-Size Analysis of Soils
Figures 4A-8B	One Dimensional Consolidation of Soils
Figures 9-10	Unconsolidated-Undrained Triaxial Compression Test for Cohesive Soils
Figure 11	Consolidated-Undrained Triaxial Compression Test for Cohesive Soils

EXPLORATION DESIGNATION	SAMPLE NUMBER	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	PENETRATION RESISTANCE (blows/6")	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%)			% GRAVEL	% SAND	% FINES	PROCTOR MAXIMUM DRY DENSITY (pcf)	OPTIMUM WATER CONTENT (%)	ASTM SOIL CLASSIFICATION	SAMPLE DESCRIPTION
							LL	PL	PI							
C01	GTS-5-8	5.0	8.0		45.2	76				2.5	13.8	83.7			ML	Black, SILT
C01	GTS-10-13	10.0	13.0		60.2	46				17.0	32.5	50.5			ML	Very dark brown, sandy SILT
C02	GTS-5-8	5.0	8.0		85.4	33				41.3	37.3	21.3			GM	Black, silty GRAVEL with sand
C03	GTS-5-8	5.0	8.0		77.1	37				3.2	77.0	19.8			SM	Black, silty SAND
C03	GTS-11-13	11.0	13.0		85.7	36					31.4	68.6			ML	Black, sandy SILT

- Notes:
1. This table summarizes information presented elsewhere in the report and should be used in conjunction with the report text, other graphs and tables, and the exploration logs.
 2. "Penetration Resistance" may represent the results of standard (SPT) or non-standard penetration tests. See exploration logs.



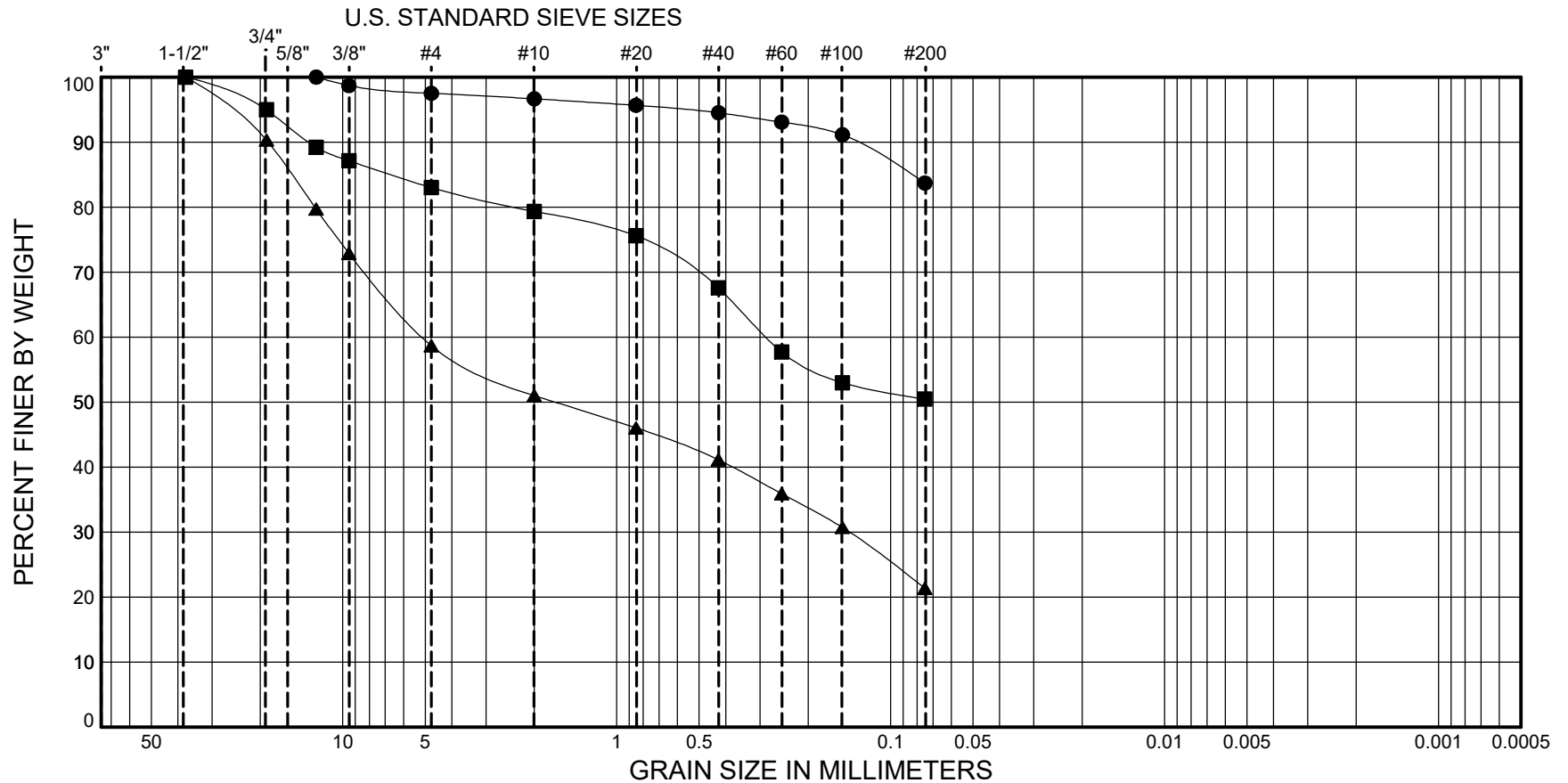
Laboratory Testing for Integral Consulting
Former Snopac Site
5055 East Marginal Way
Client Project No.: CF1774

SUMMARY OF
MATERIAL PROPERTIES

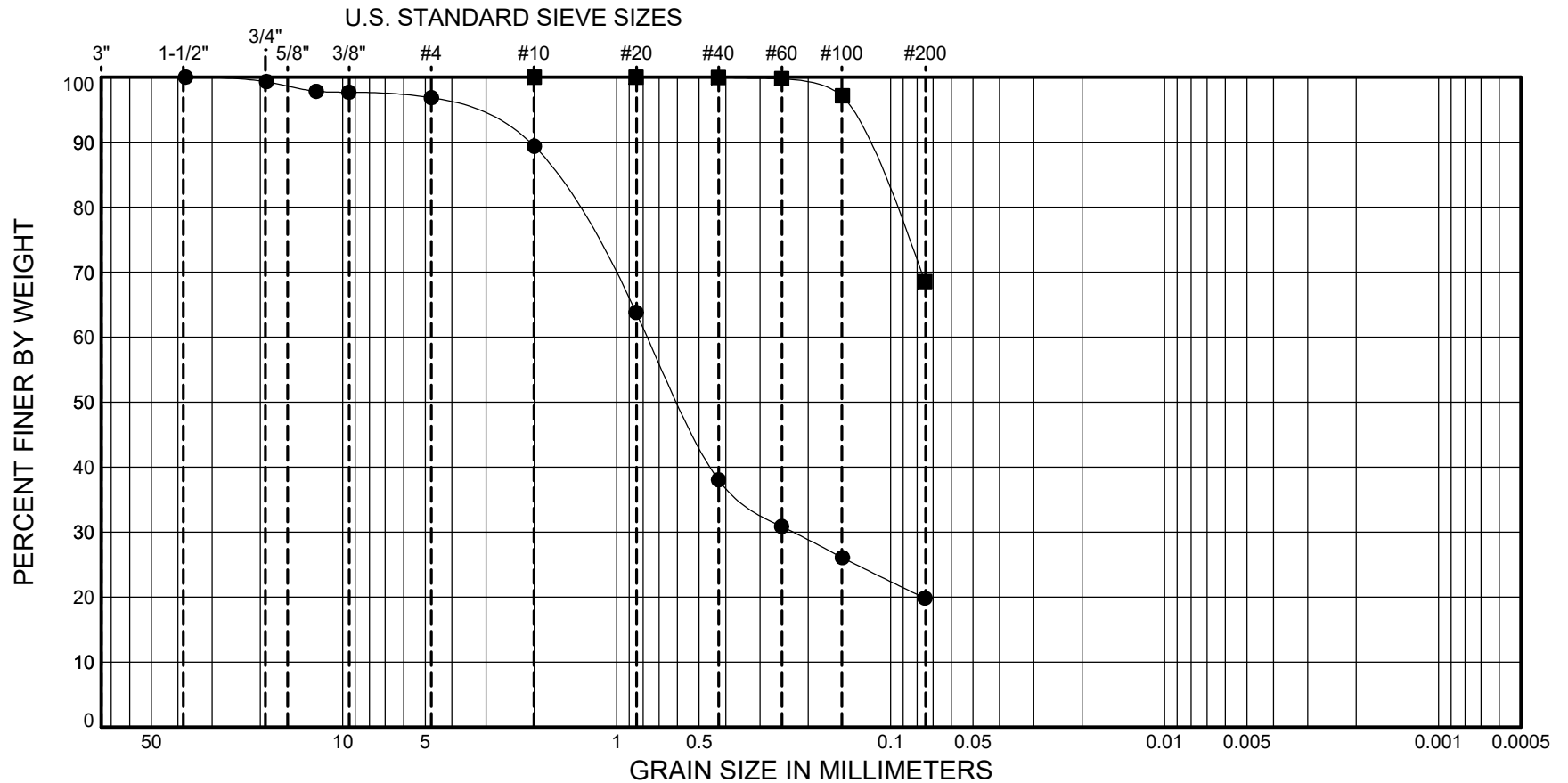
PAGE: 1 of 1

PROJECT NO.: 2018-016 T100 FIGURE: 1

GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		



GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		



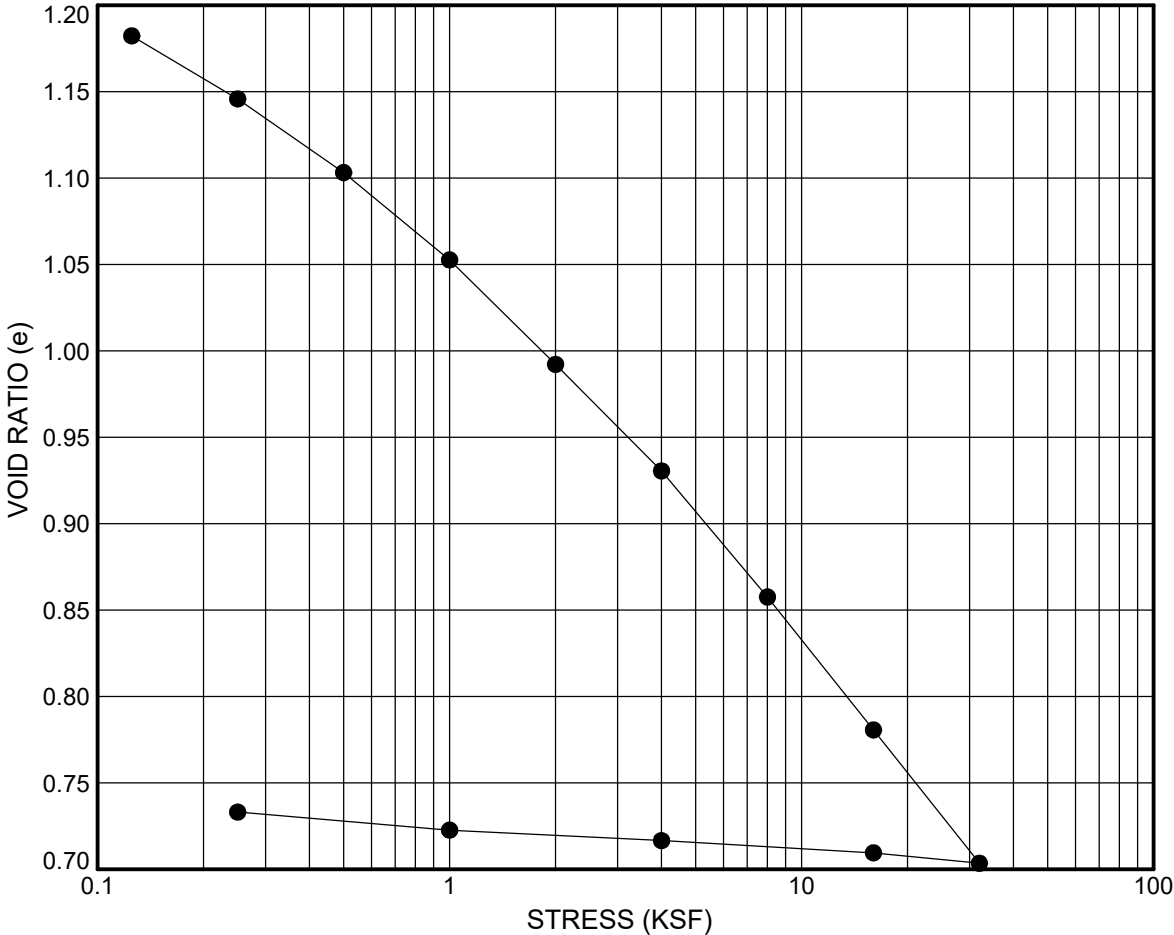
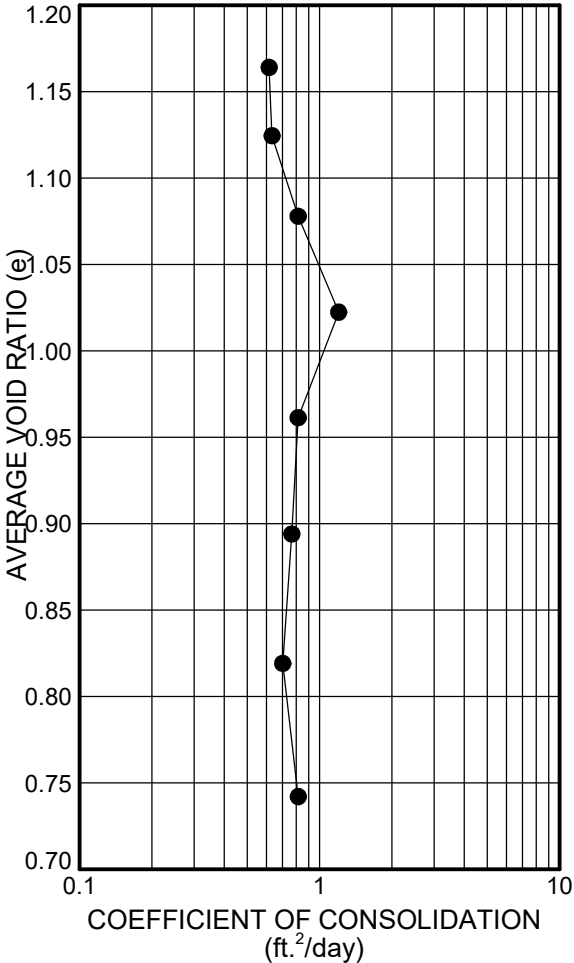
SYMBOL	SAMPLE		DEPTH (ft.)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	C03	GTS-5-8	5.0 - 8.0	(SM) Black, silty SAND	37				3.2	77.0	19.8
■	C03	GTS-11-13	11.0 - 13.0	(ML) Black, sandy SILT	36					31.4	68.6



Laboratory Testing for Integral Consulting
Former Snopac Site
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Client Project No.: CF1774

**PARTICLE-SIZE ANALYSIS
OF SOILS
METHOD ASTM D6913**

VOID RATIO VS. STRESS

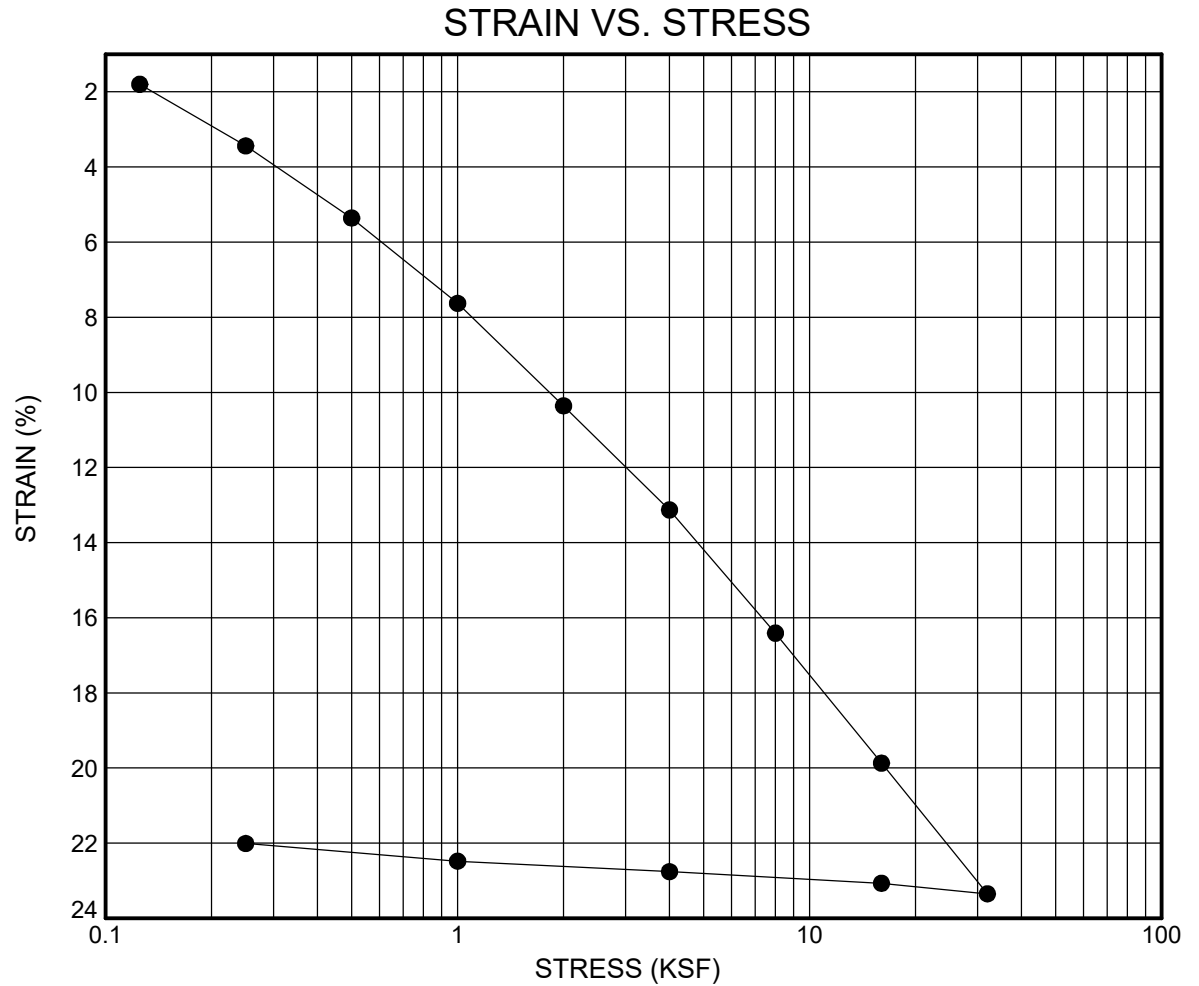
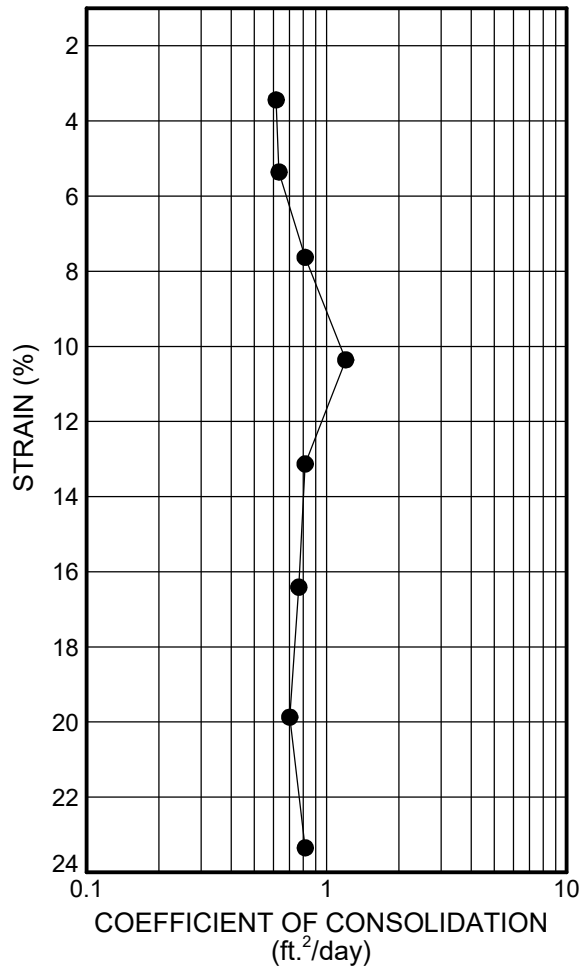


SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C01	GTS-5-8	5.0 - 8.0	(ML) Black, SILT	54.7	30.0	103.0	102.4	68.3	90.1	1.222	0.733



Laboratory Testing for Integral Consulting
 Former Snopac Site
 5055 East Marginal Way
 Client Project No.: CF1774

ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435



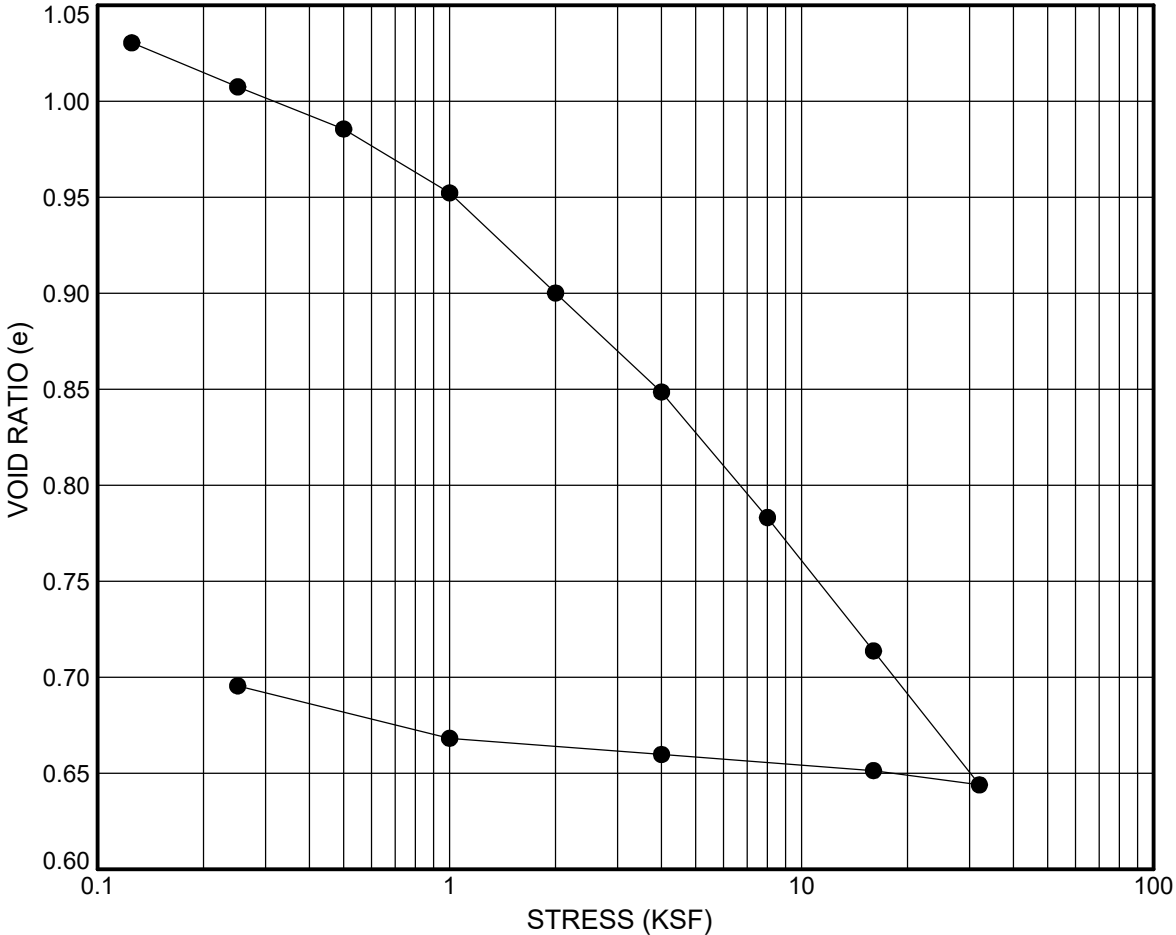
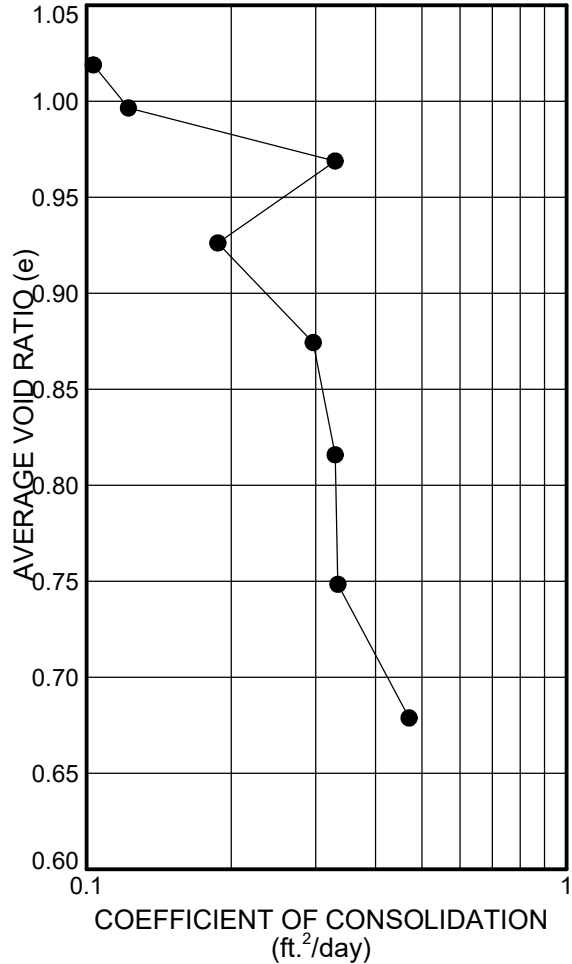
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				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C01	GTS-5-8	5.0 - 8.0	(ML) Black, SILT	54.7	30.0	103.0	102.4	68.3	90.1	1.222	0.733



Laboratory Testing for Integral Consulting
Former Snopac Site
5055 East Marginal Way
Client Project No.: CF1774

**ONE DIMENSIONAL
CONSOLIDATION OF SOILS
ASTM D2435**

VOID RATIO VS. STRESS



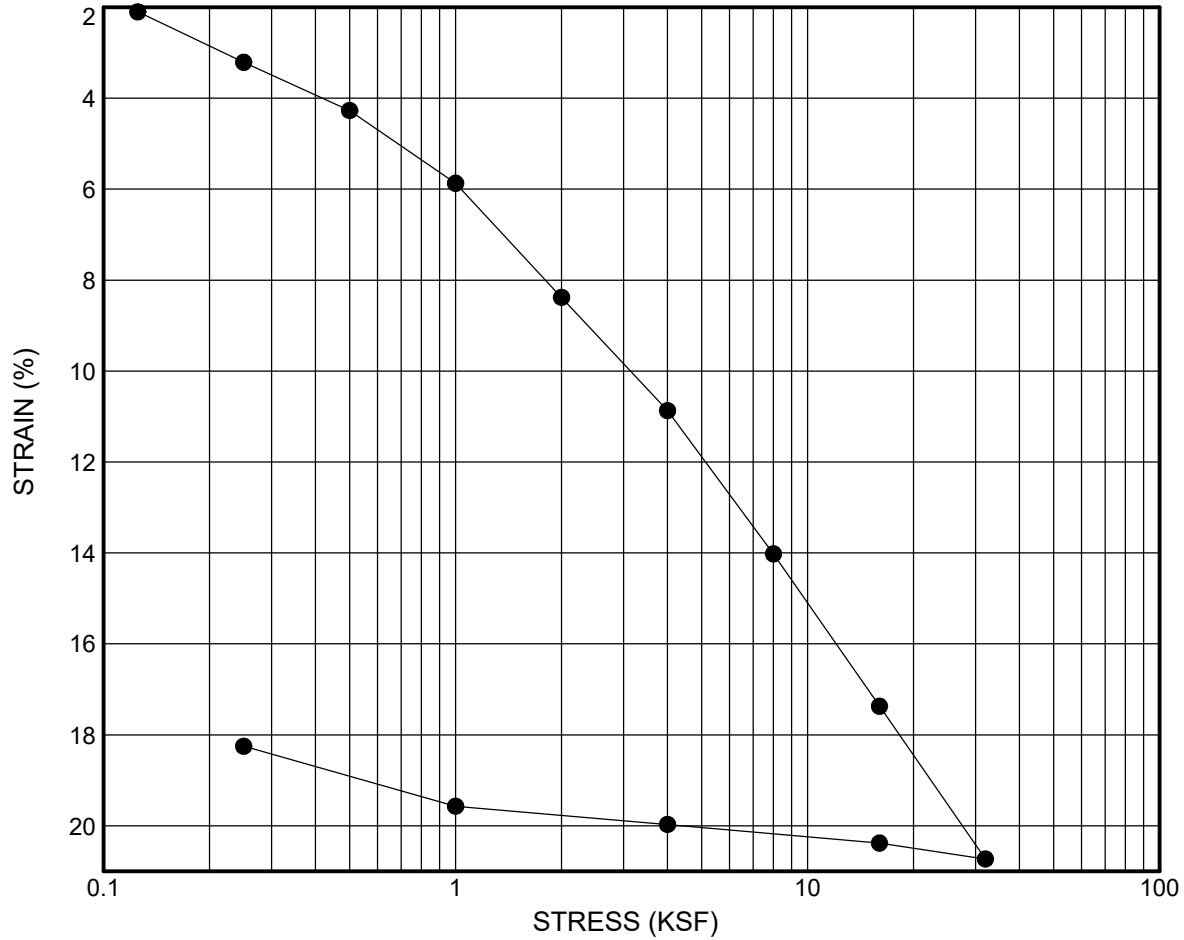
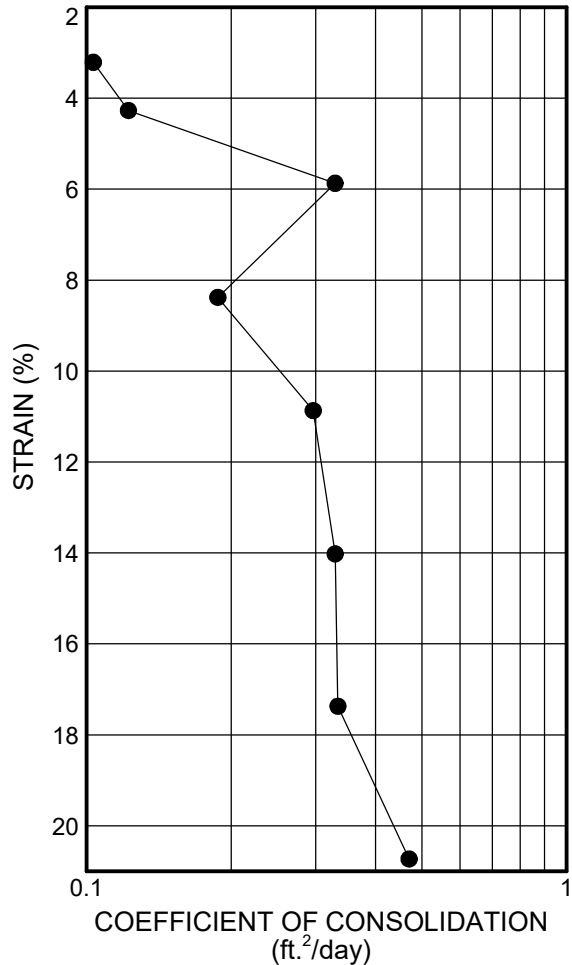
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C01	GTS-10-13	10.0 - 13.0	(ML) Very dark brown, sandy SILT	42.2	28.1	94.6	99.1	73.4	90.2	1.074	0.696



Laboratory Testing for Integral Consulting
 Former Snopac Site
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ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435

STRAIN VS. STRESS



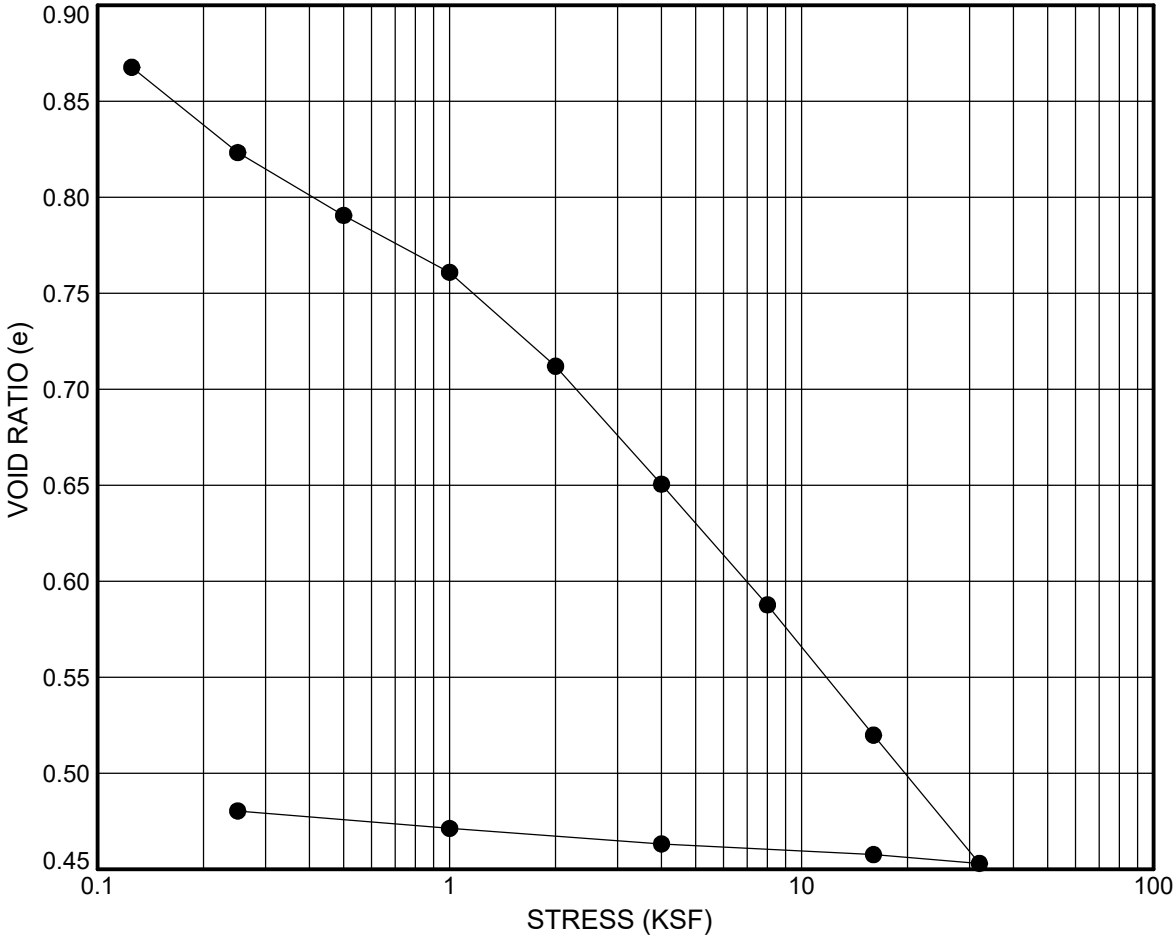
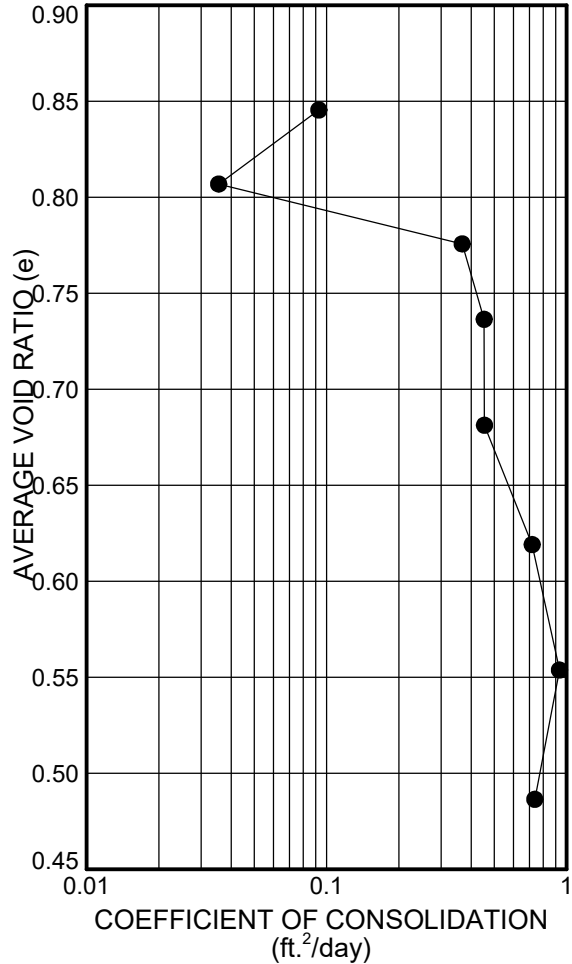
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C01	GTS-10-13	10.0 - 13.0	(ML) Very dark brown, sandy SILT	42.2	28.1	94.6	99.1	73.4	90.2	1.074	0.696



Laboratory Testing for Integral Consulting
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 5055 East Marginal Way
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ONE DIMENSIONAL CONSOLIDATION OF SOILS ASTM D2435

VOID RATIO VS. STRESS



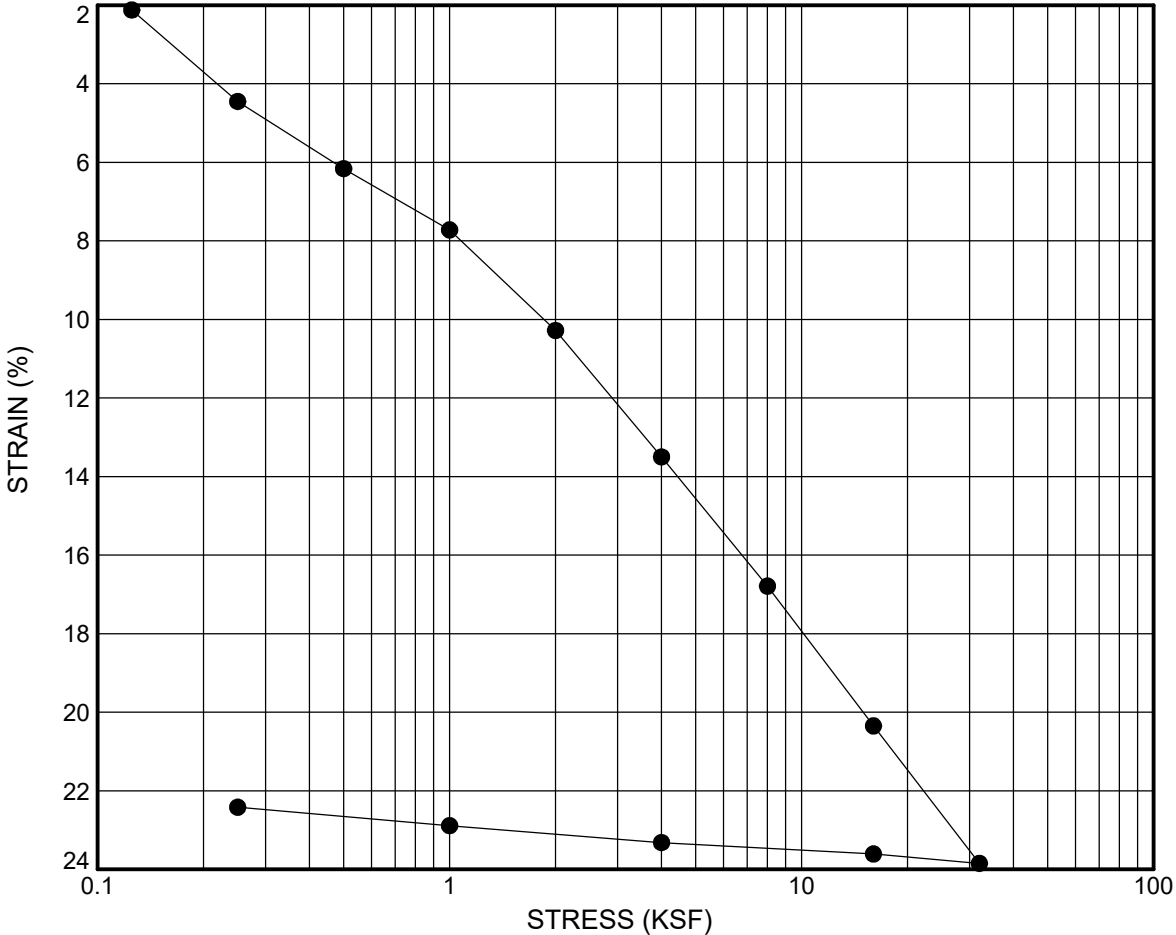
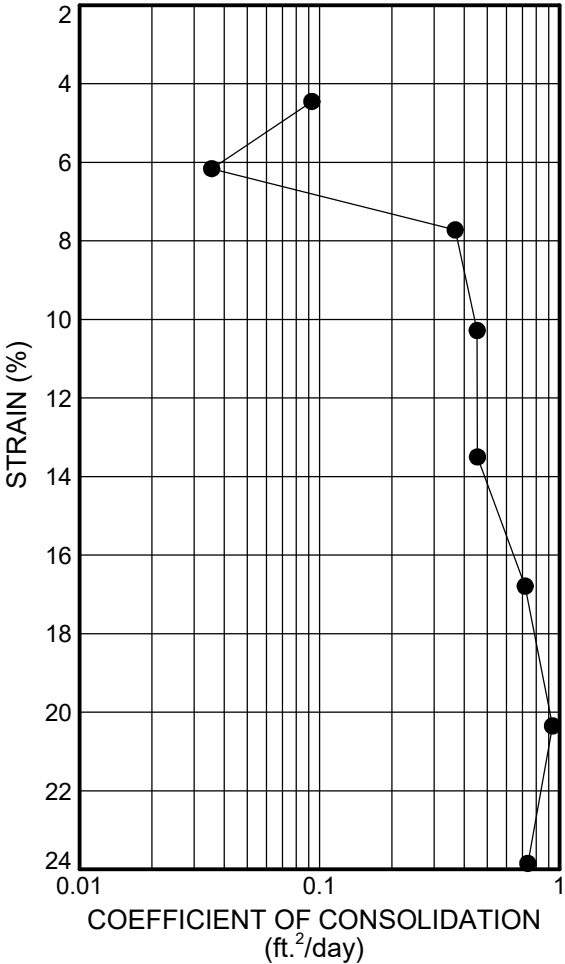
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C02	GTS-5-8	5.0 - 8.0	(GM) Black, silty GRAVEL with sand	26.2	23.2	93.8	101.4	68.7	88.6	0.908	0.480



Laboratory Testing for Integral Consulting
 Former Snopac Site
 5055 East Marginal Way
 Client Project No.: CF1774

ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435

STRAIN VS. STRESS



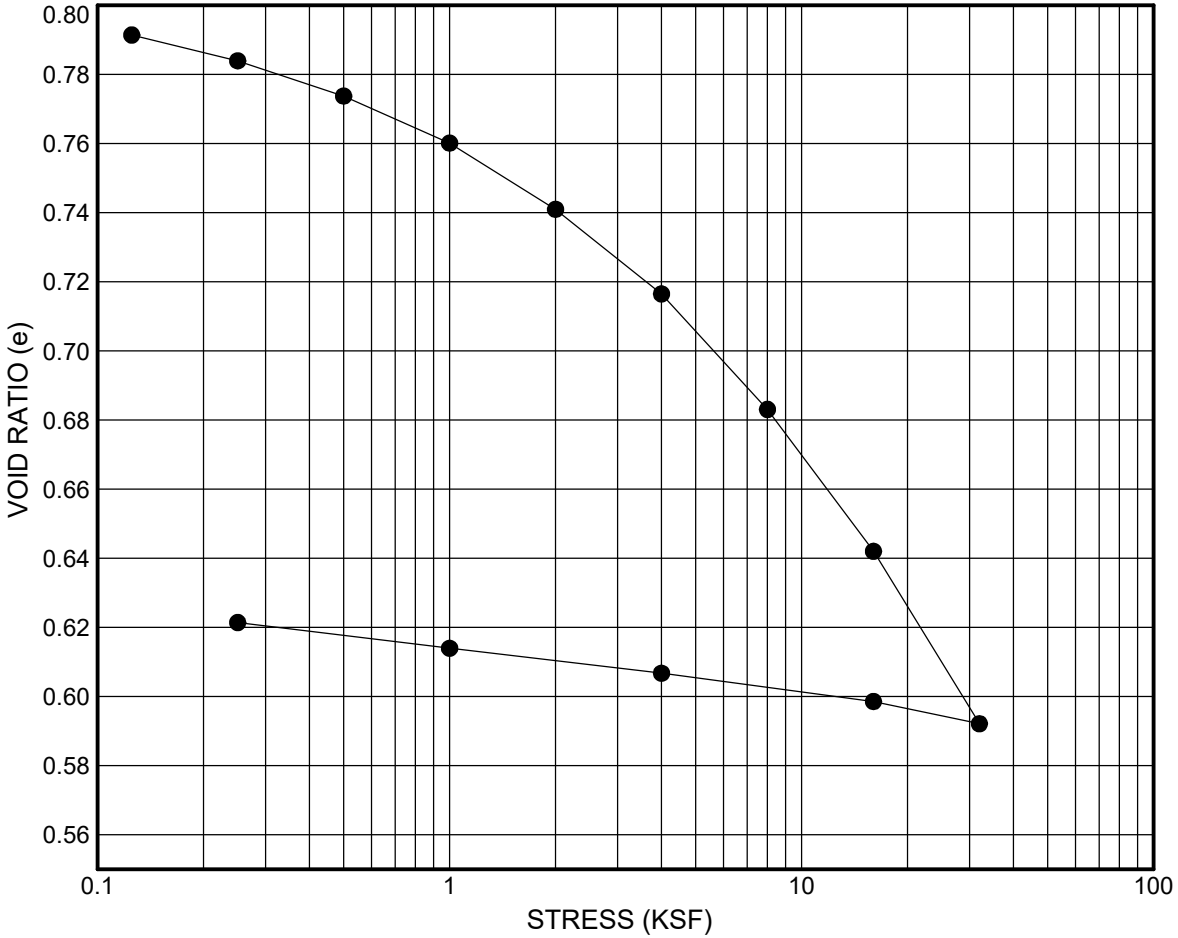
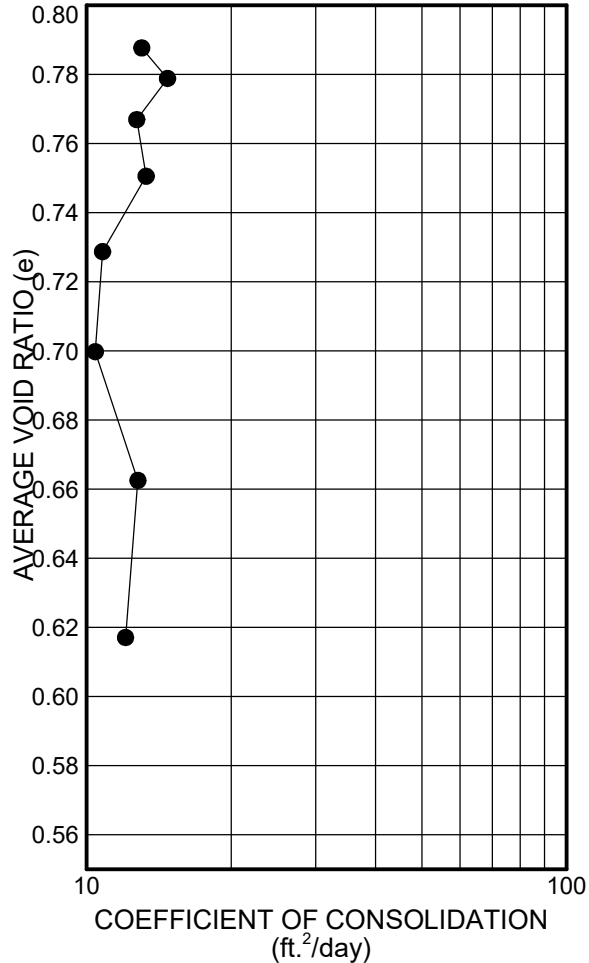
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C02	GTS-5-8	5.0 - 8.0	(GM) Black, silty GRAVEL with sand	26.2	23.2	93.8	101.4	68.7	88.6	0.908	0.480



Laboratory Testing for Integral Consulting
 Former Snopac Site
 5055 East Marginal Way
 Client Project No.: CF1774

ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435

VOID RATIO VS. STRESS



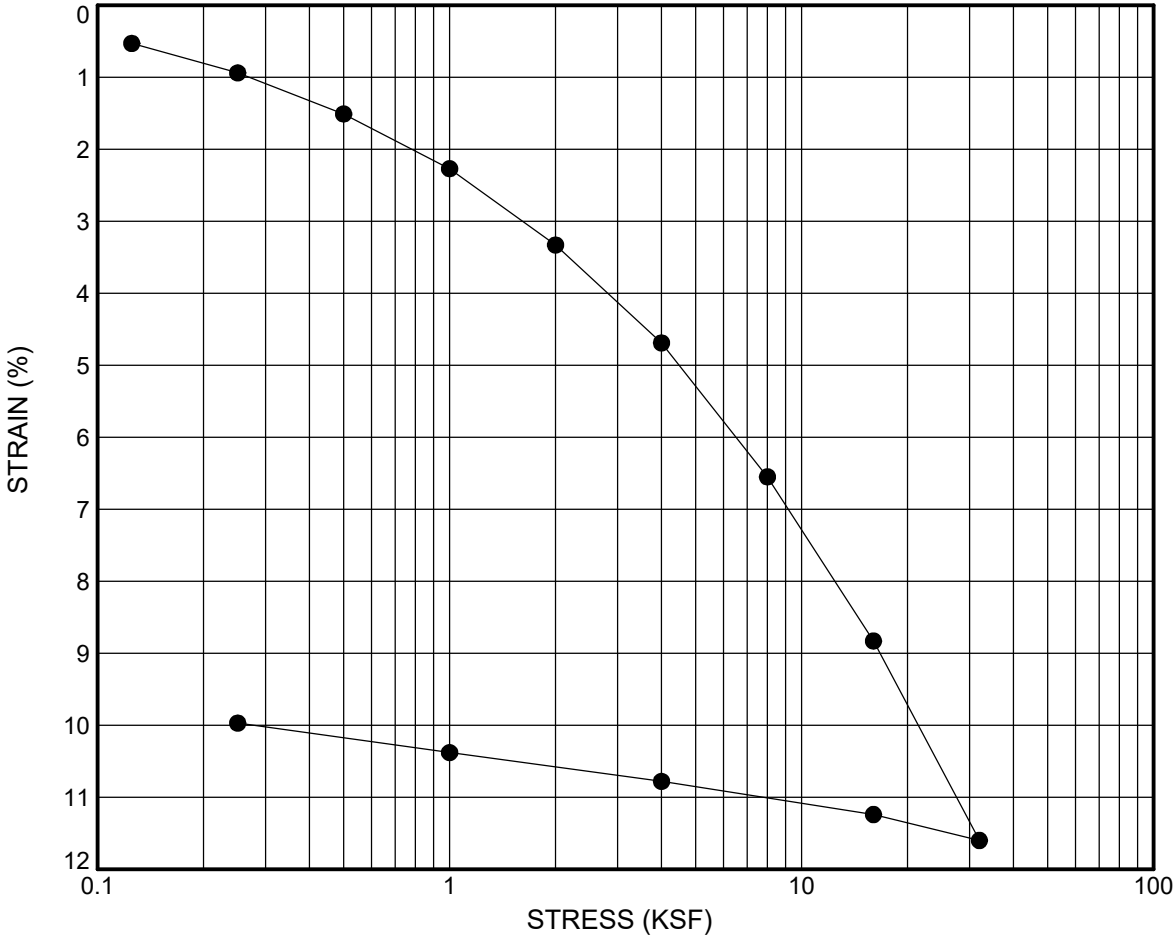
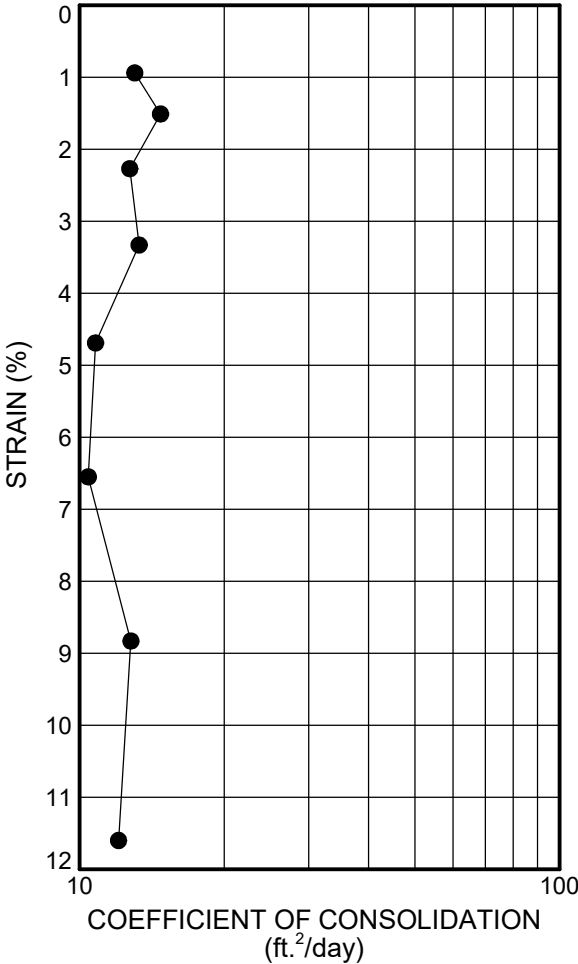
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C03	GTS-5-8	5.0 - 8.0	(SM) Black, silty SAND	40.0	24.1	86.8	98.8	80.3	98.2	0.801	0.621



Laboratory Testing for Integral Consulting
 Former Snopac Site
 5055 East Marginal Way
 Client Project No.: CF1774

ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435

STRAIN VS. STRESS



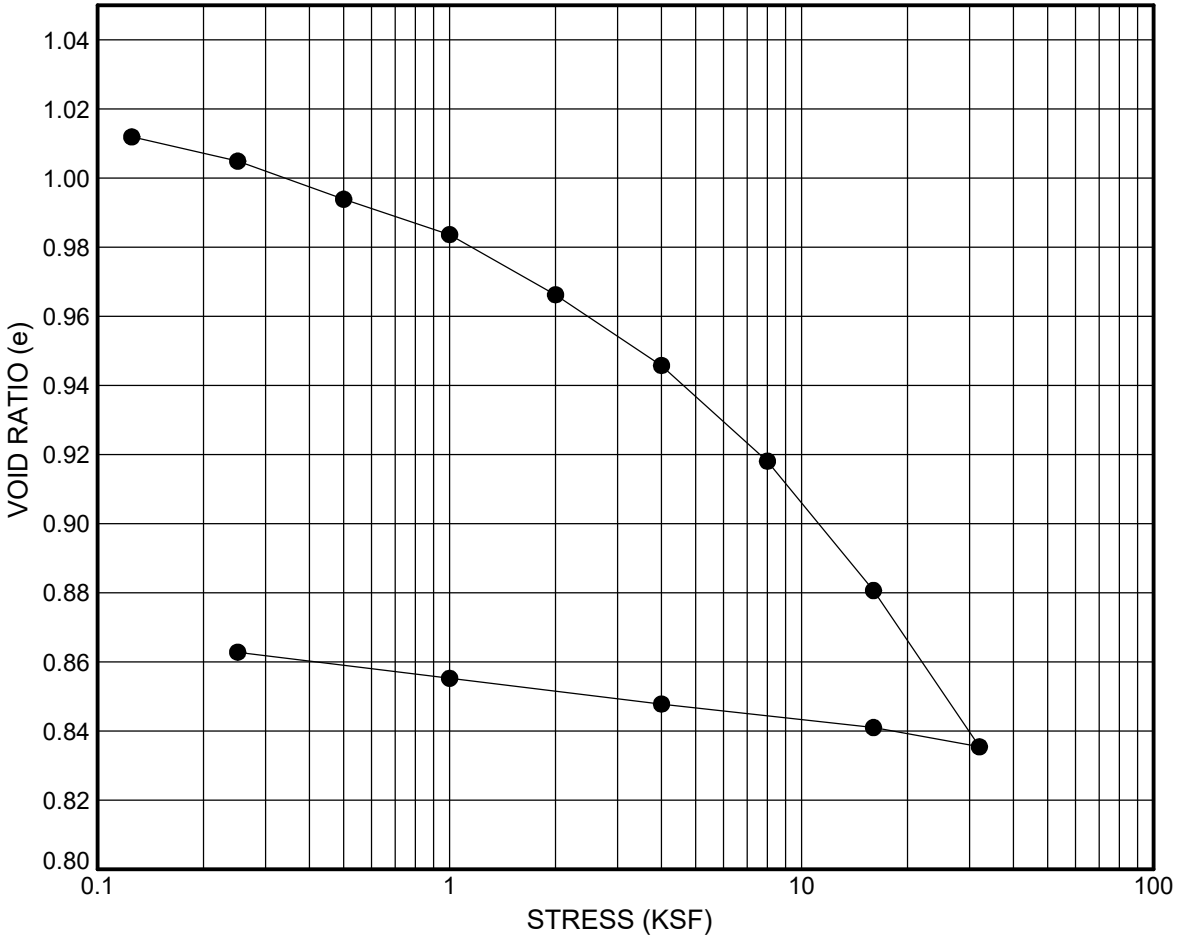
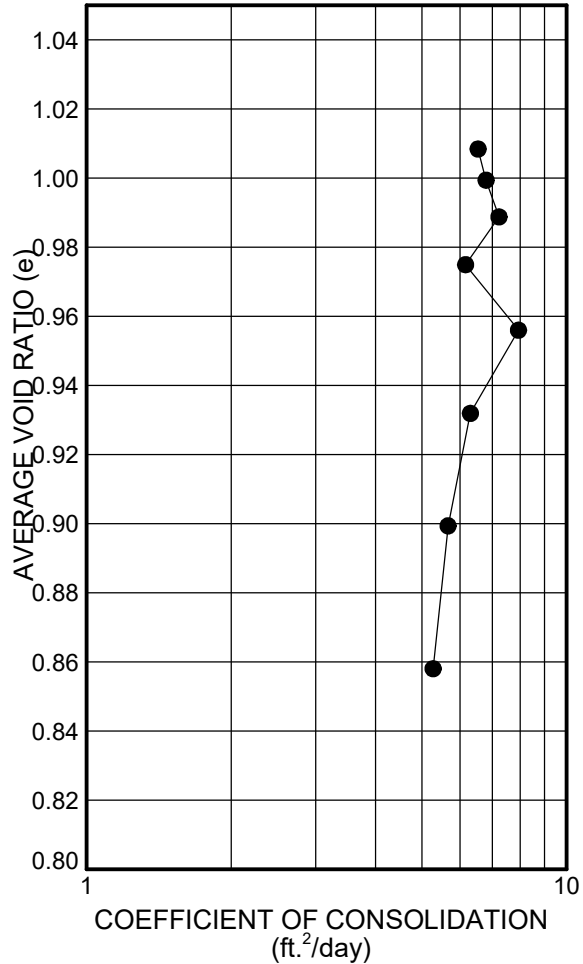
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)		
				Initial	Final	Initial	Final	Initial	Final	Initial	Final	
●	C03	GTS-5-8	5.0 - 8.0	(SM) Black, silty SAND	40.0	24.1	86.8	98.8	80.3	98.2	0.801	0.621



Laboratory Testing for Integral Consulting
 Former Snopac Site
 5055 East Marginal Way
 Client Project No.: CF1774

ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435

VOID RATIO VS. STRESS



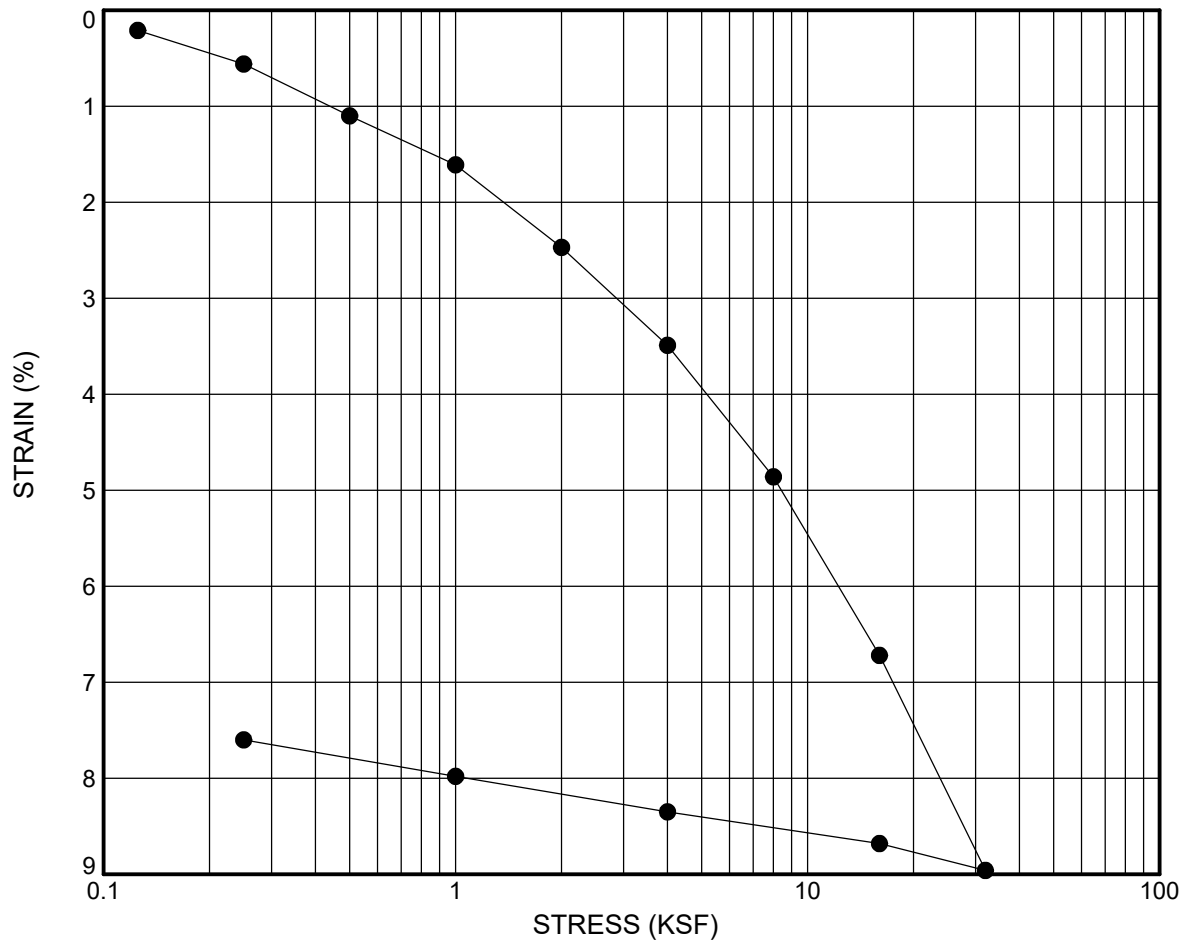
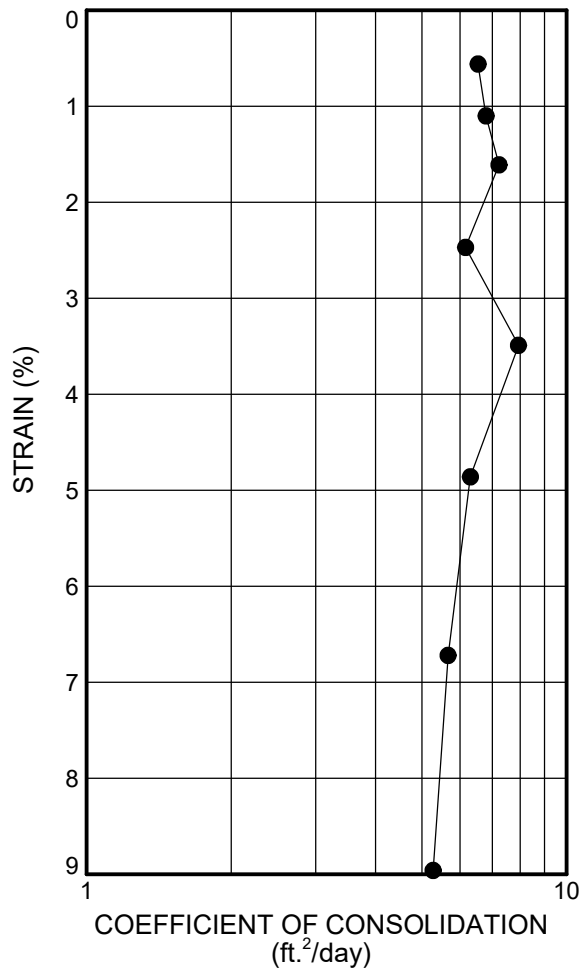
SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)	
				Initial	Final	Initial	Final	Initial	Final	Initial	Final
●	C03	GTS-11-13	(ML) Black, sandy SILT	36.3	32.3	99.3	99.2	83.1	88.8	1.016	0.863



Laboratory Testing for Integral Consulting
Former Snopac Site
5055 East Marginal Way
Client Project No.: CF1774

**ONE DIMENSIONAL
CONSOLIDATION OF SOILS
ASTM D2435**

STRAIN VS. STRESS



SYMBOL	SAMPLE	DEPTH (ft)	CLASSIFICATION OF SOIL- ASTM D2487	% MC		% Saturation		Dry Density (pcf)		Void Ratio (e)	
				Initial	Final	Initial	Final	Initial	Final	Initial	Final
●	C03	GTS-11-13	(ML) Black, sandy SILT	36.3	32.3	99.3	99.2	83.1	88.8	1.016	0.863



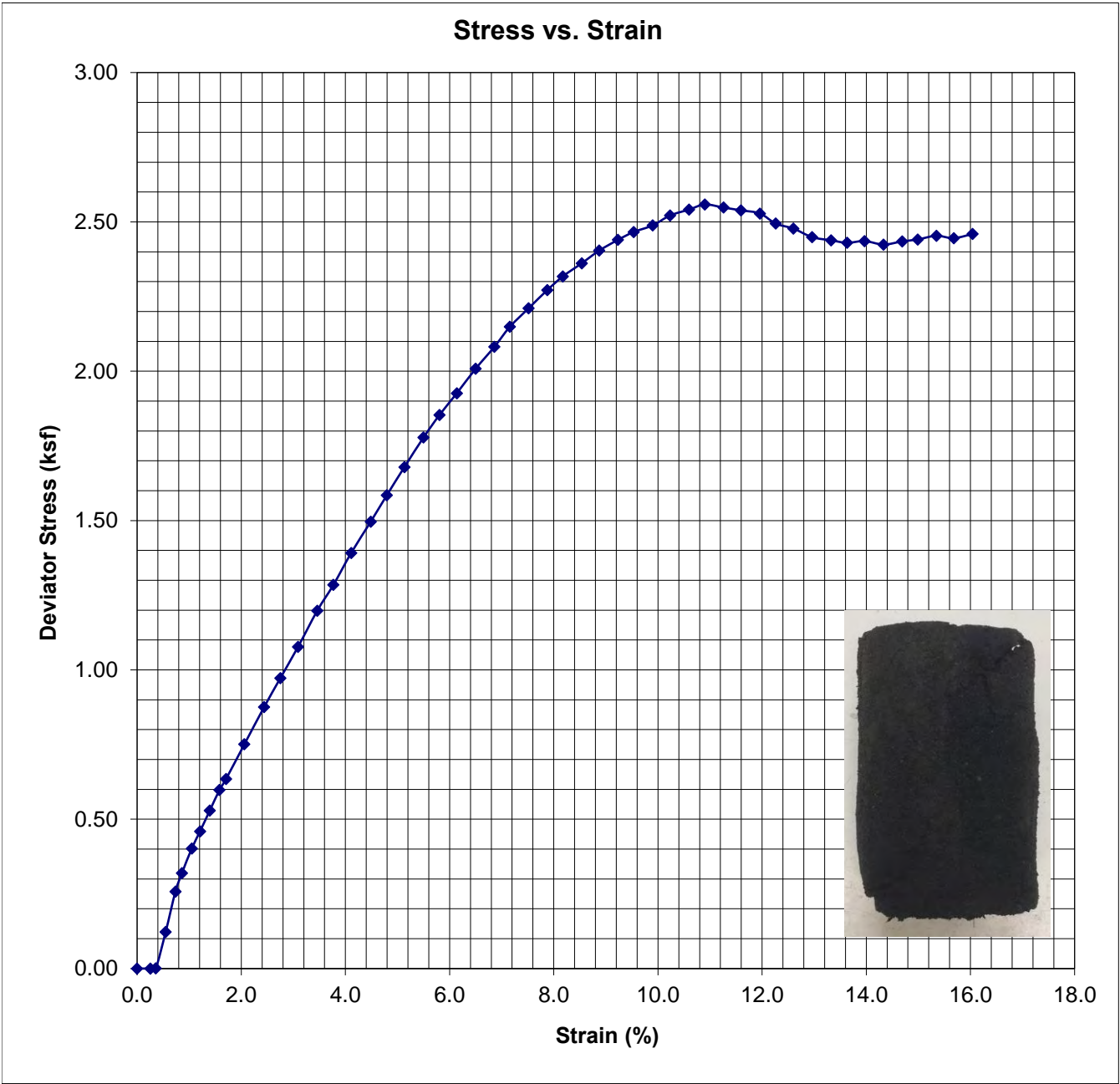
Laboratory Testing for Integral Consulting
 Former Snopac Site
 5055 East Marginal Way
 Client Project No.: CF1774

ONE DIMENSIONAL
 CONSOLIDATION OF SOILS
 ASTM D2435

HWA GEOSCIENCES INC. Materials Testing Laboratory
Unconsolidated-Undrained Triaxial Compression Test for Cohesive Soils (ASTM D2850)

Client: Integral Consulting
Project Name: Former Snopac Site

Project Number: 2018-016 T100



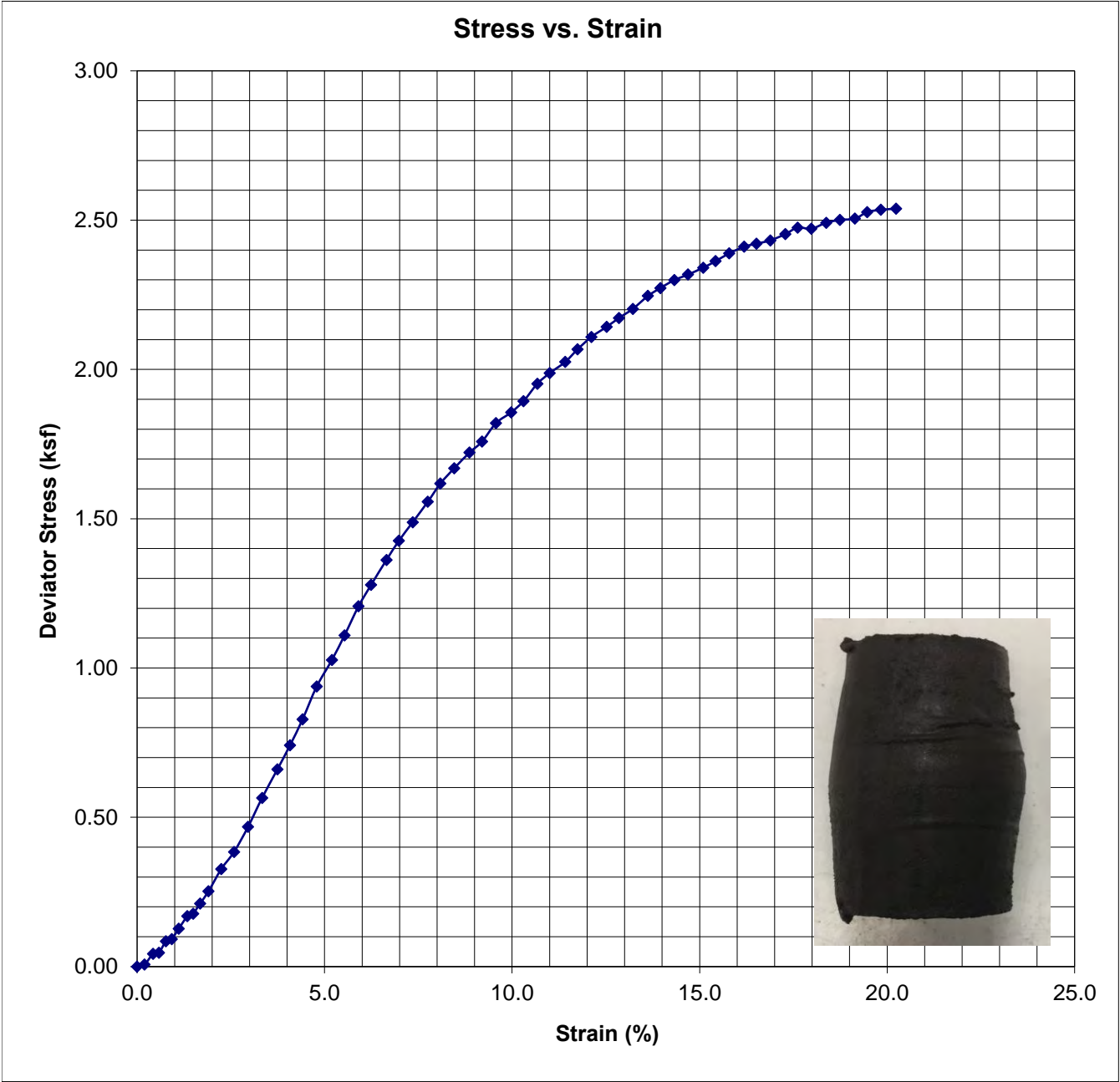
Soil Classification:	Dark grayish brown, sandy SILT (ML)		
Sample Point:	C03		
Sample Number:	GTS-5-8	Initial Moisture Content (%):	34.4
Sample Depth:	5.0-8.0	Wet Unit Weight (pcf):	113.5
Confining Stress (ksf):	0.29	Dry Unit Weight (pcf):	84.4
Strain Rate (%\min):	0.85	Total Peak Stress (ksf):	2.558

Figure No.: 9

HWA GEOSCIENCES INC. Materials Testing Laboratory
Unconsolidated-Undrained Triaxial Compression Test for Cohesive Soils (ASTM D2850)

Client: Integral Consulting
Project Name: Former Snopac Site

Project Number: 2018-016 T100



Soil Classification:	Dark grayish brown, sandy SILT (ML)		
Sample Point:	C03		
Sample Number:	GTS-11-13	Initial Moisture Content (%):	35.9
Sample Depth:	11.0-13.0	Wet Unit Weight (pcf):	116.3
Confining Stress (ksf):	0.52	Dry Unit Weight (pcf):	85.6
Strain Rate (%\min):	0.85	Total Peak Stress (ksf):	2.475

Figure No.: 10

HWA GeoSciences Inc - Materials Testing Laboratory					
Consolidated-Undrained Triaxial Compression Test for Cohesive Soils (ASTM D 4767)					
Project Name:	MLT for Integral - Former Snopac Site		Date:	2/13/2017	
Project No.:	2018-016 T100	Exploration ID:	C01		
Technician:	DW	Sample No:	GTS-5-8		
Sample Description:	Very dark brown, SILT (ML)		Sample Depth, ft:	5-8 feet	
Strain Rate, %/min:	0.0042	Confining Pressure, ksf:	0.288		
Initial Moisture, %	54.7	Initial Wet Density, pcf:	104.6	Initial Dry Density, pcf:	67.6

Shear Plots:

Deviator Stress, Excess Pore Pressure and Effective Stress Ratio

