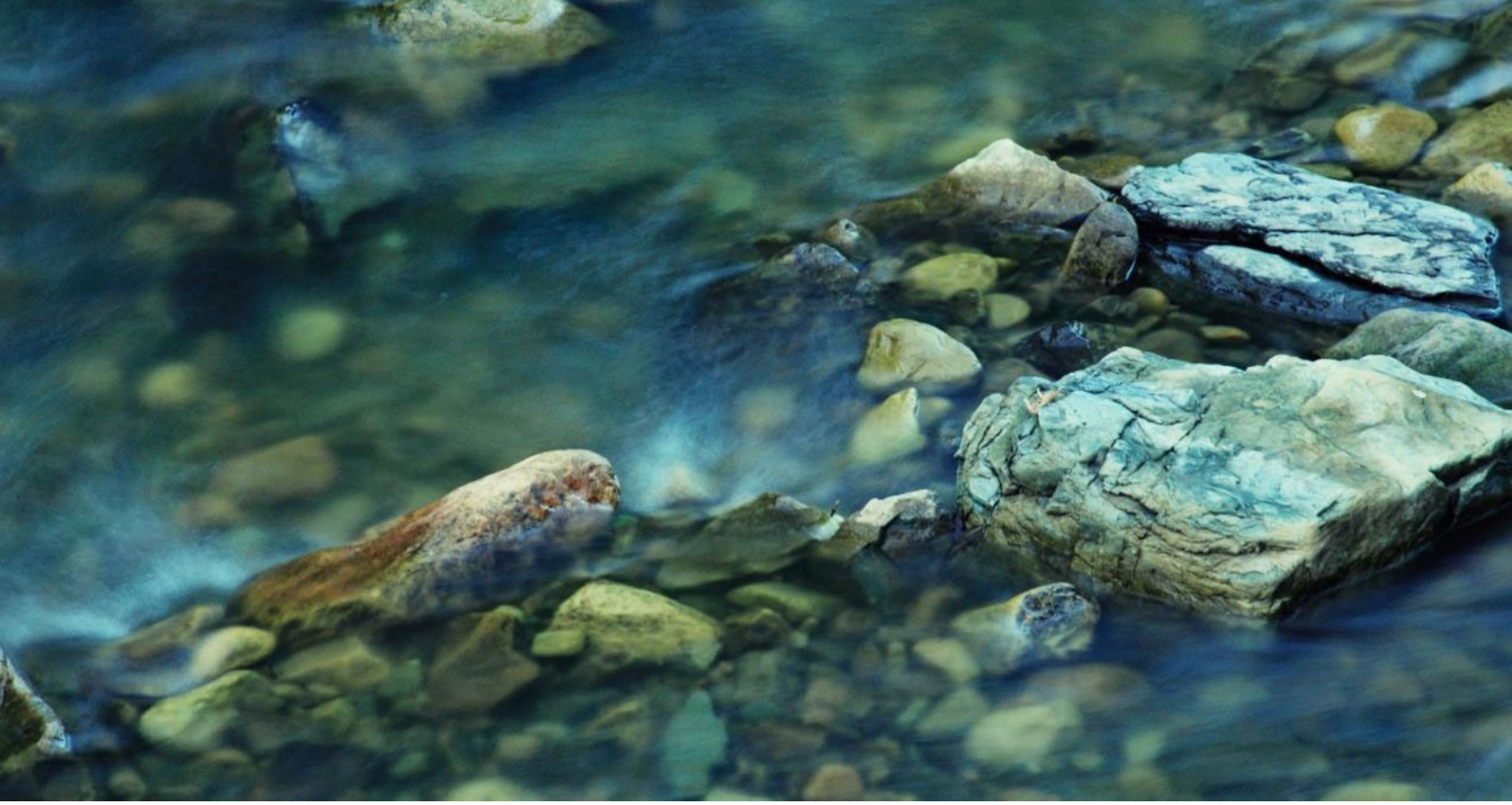


June 2021
Former Kaiser Aluminum Property

ANCHOR QEA

2021 Groundwater Monitoring Report

Prepared for the Port of Tacoma

June 2021
Former Kaiser Aluminum Property

2021 Groundwater Monitoring Report

Prepared for
Port of Tacoma
P.O. Box 1837
Tacoma, Washington 98401

Prepared by
Anchor QEA, LLC
1119 Pacific Avenue, Suite 1600
Tacoma, Washington 98402

Project Number: 170092-02.01
\\fuji\tacoma\Projects\Port_of_Tacoma\Former Kaiser\Report\2021\Former Kaiser Property 2021 GW Monitoring Report.docx

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ABBREVIATIONS

µg/L	micrograms per liter
Ecology	Washington Department of Ecology
Kaiser Aluminum	Kaiser Aluminum & Chemical Corporation
Port	Port of Tacoma
Site	Former Kaiser Aluminum Property located at 3400 Taylor Way in Tacoma, Washington
SPL	Spent Pot Lining

1 Introduction

This report summarizes field activities and presents results of the 2021 performance groundwater quality monitoring event conducted by Anchor QEA on behalf of the Port of Tacoma (Port) at the Former Kaiser Aluminum Property located at 3400 Taylor Way in Tacoma, Washington (Site; Figure 1). Groundwater sampling activities were conducted in accordance with the requirements set forth in the public review Consent Decree 16-2-12406-8, dated July 2016, between the Port and the Washington Department of Ecology (Ecology 2016a).

Performance groundwater quality monitoring was performed in 2017 (Year 1), 2018 (Year 2), and 2019 (Year 3) to establish baseline groundwater conditions to evaluate long-term effectiveness of the remedial action and the combined baseline groundwater conditions were presented in the 2019 Groundwater Monitoring Report (Anchor QEA 2019).

This report documents the results of Year 5 (2021) of performance groundwater quality monitoring conducted to evaluate long-term effectiveness of the remedial action against baseline groundwater conditions Per the *Cleanup Action Plan* (Ecology 2016b), upon completion of Year 5 monitoring, monitoring will be discontinued if the results show that concentrations are stable, or declining, and that contaminants are not migrating from the Site.

2 Site History

The Site encompasses approximately 96 acres of the Blair Hylebos Peninsula in Tacoma, Washington. The Hylebos Waterway is northeast and the Blair Waterway is southwest of the Site (Figure 1). From 1941 to 1947, the Department of Defense built and operated an aluminum smelter at the Site. In 1947, Kaiser Aluminum & Chemical Corporation (Kaiser Aluminum) purchased the Site and operated the aluminum production facility until 2001. In 2002, Kaiser Aluminum closed the plant and, in 2003, the Port purchased the smelter property from Kaiser Aluminum for redevelopment. Between 2003 and 2010, the Port demolished the smelter complex, shipped thousands of tons of waste to approved disposal, treatment, or recycling facilities, and placed a 2- to 6-foot-thick layer of structural fill on approximately 80 of the 96 acres.

The Site is zoned for industrial use and underwent redevelopment in 2019 and is currently used as an import automotive processing center under a 30-year lease agreement.

The Remedial Investigation/Feasibility Study (Landau Associates 2012) identified the Spent Pot Lining (SPL) Area, the Rod Mill Area Closed Landfill, and the Former Log Yard Area as requiring further remedial action, which was completed in 2016. Performance groundwater quality monitoring is required in the SPL and Former Log Yard Areas following completion of the remedial action.

3 Groundwater Monitoring

This section summarizes the field observations and laboratory results from the five groundwater monitoring wells sampled on March 30, 2021, in the SPL and Former Log Yard Areas at the Site.

Groundwater sampling activities were conducted in accordance with the *Performance Groundwater Quality Monitoring Plan,* which is included as Appendix A in the *Cleanup Action Plan* (Ecology 2016b).

3.1 Water Level Measurements

Prior to groundwater sampling, water levels were measured to the nearest 0.01 foot in each monitoring well relative to the top of the surveyed casing rim using a water level meter. Table 1 provides the water level measurements converted to elevations referenced to mean lower low water and North American Vertical Datum of 1988. Field records of water level measurements are provided on field forms located in Appendix A.

3.2 Groundwater Sampling

A site map showing well locations is presented in Figure 2. On March 30, 2021, groundwater samples were collected from five monitoring wells, along with two sample duplicates. Three samples were collected from the Former Log Yard, including MW-101(S), MW-102(S), and MW-103(S). Two locations were collected from the SPL Area, including MW-SPL1(S) and MW-SPL2(S).

Groundwater samples were obtained from monitoring wells using a peristaltic pump and dedicated polyethylene tubing. Groundwater was pumped at 0.5 liter per minute or less using a peristaltic pump through tubing placed within the screened interval. A water quality meter with a flow-through cell was used to monitor water quality parameters during purging. Groundwater samples at each location were obtained after ambient groundwater conditions were reached, such that pH, temperature, specific conductance, and turbidity stabilized for three successive readings (i.e., the readings were within ±0.1 pH units for pH, ±3% for conductivity, and ±10% for turbidity). Field records of water quality parameters are provided in Appendix A.

Groundwater samples were collected directly into laboratory-provided bottles once water quality parameters had stabilized and were subsequently placed in a cooler on ice. All groundwater samples were hand delivered to Analytical Resources, Inc., under chain-of-custody procedures. The groundwater sampling field logs are provided in Appendix A.

Laboratory data were subjected to a standard U.S. Environmental Protection Agency Level 2B data validation review prior to use in data reduction and reporting.

4 Results

Table 2 presents the analytical results for groundwater performance monitoring and includes all data from 2017, 2018, 2019, and 2019 for comparison purposes. Lab reports (2021 only) are provided in Appendix B. The data validation report (2021 only) is included in Appendix C.

4.1 Spent Pot Lining Area

Results of testing for the SPL Area, documenting the current groundwater conditions for cyanide, weak acid dissociable (WAD) cyanide, and carcinogenic polycyclic hydrocarbons (cPAHs) are summarized below:

- Detected cyanide concentrations were below the groundwater cleanup levels established in the *Cleanup Action Plan* by approximately two orders of magnitude. Total cyanide and WAD cyanide were detected in both MW-SPL1(S) and MW-SPL2(S) with the WAD cyanide result from MW-SPL1(S) being slightly above the established cleanup level (0.016 milligrams per liter [mg/l] compared to the 0.010 mg/l cleanup level).
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were detected in MW-SPL1(S) and MW-SPL2(S), but at concentrations less than the groundwater cleanup levels.

4.2 Former Log Yard Area

Results of testing in the Former Log Yard Area, documenting the current groundwater conditions for total arsenic are summarized below:

- MW-101(S): 3.26 micrograms per liter (µg/L)
- MW-102(S): 13 µg/L
- MW-103(S): 0.978 µg/L

The result from MW-102(S) exceeded the cleanup level of (8 µg/L).

4.3 Comparison to Baseline Groundwater Conditions

Groundwater conditions observed in 2021 (Year 5) are stable when compared to the baseline groundwater conditions established during the Year 1 through Year 3 monitoring periods (Table 2). Comparison observations include the following:

- SPL Area
  - Baseline conditions for total cPAHs (U=0) in MW-SPL1(S) ranged from 0.00002 µg/L to 0.01 µg/L and from 0.00003 µg/L to 0.00126 µg/L in MW-SPL2(S). The Year 5 (2021) total cPAHs (U=0) concentrations were 0.017 µg/L in MW-SPL1(S) and undetected at the reporting limit of 0.01 µg/L in MW-SPL2(S). Several of the individual cPAH compounds were undetected for all monitoring events and none to the total cPAHs concentrations exceeded the 0.03 µg/L cleanup levels for total cPAHs (U=0 or U=1/2).

  - Baseline conditions for cyanide in MW-SPL1(S) ranged from 0.017 mg/L to 0.103 mg/L and from 0.023 mg/L to 0.141 mg/L in MW-SPL2(S). The Year 5 (2021) cyanide concentration were 0.4 mg/L in MW-SPL1(S) and 0.12 mg/L in MW-SPL2(S). None of these concentrations exceed the 16 mg/L cleanup level for cyanide.
  - Baseline conditions for weak acid dissociable (WAD) cyanide ranged from 0.005 mg/L to 0.009 mg/L in both MW-SPL1(S) and MW-SPL2(S). The Year 5 (2021) WAD cyanide concentrations were 0.016 mg/L in MW-SPL1(S) and 0.010 mg/L in MW-SPL2(S). The concentration in MW-SPL1(S) slightly exceed the 0.010 mg/L cleanup level for WAD cyanide.
- Former Log Yard Area
  - Baseline conditions for arsenic in MW-101(S) ranged from 3.43 to 5.63 µg/L and the Year 5 (2021) concentration was 3.26 µg/L. None of these concentrations exceed the cleanup level.
  - Baseline conditions for arsenic in MW-102(S) ranged from 10.1 to 14.9 µg/L and the Year 5 (2021) concentration was 13 µg/L. These concentrations slightly exceed the 8 µg/L cleanup level for arsenic.
  - Baseline conditions for arsenic in MW-103(S) ranged from 1.03 to 1.4 µg/L and the Year 5 (2021) concentration was 0.978 µg/L, None of these concentrations exceed the cleanup level.

5 Future Groundwater Performance Monitoring

Per the *Cleanup Action Plan* (Ecology 2016b), upon completion of Year 5 monitoring, monitoring will be discontinued if the results show that concentrations are stable, or declining, and that contaminants are not migrating from the Site.

Arsenic concentrations in MW-102(2) within the Former Log Yard Area exceeds the cleanup level by an exceedance factor of less than 2. All parameters analyzed for within the SPL Area are in compliance with cleanup levels except for 2021 WAD cyanide concentrations in the MW-SPL1(S) duplicate sample; however, the WAD cyanide concentration in the parent sample from MW-SPL1(S) was below the cleanup level.

The results from the 2021 groundwater monitoring confirm that the groundwater plume for all analytes have reached steady state and are not migrating off site as groundwater concentration trends have been stable over the entire performance groundwater monitoring period. Therefore, no additional sampling is warranted at the Site as the conditions of the performance groundwater monitoring program has been met.

6 References

Anchor QEA, 2019. 2019 Groundwater Monitoring Report. Former Kaiser Aluminum Property. Prepared for Port of Tacoma. May 2019.

Ecology (Washington Department of Ecology), 2016a. Public Review Consent Decree between the Port of Tacoma and Washington Department of Ecology. July 1, 2016.

Ecology, 2016b. *Ecology Cleanup Action Plan*. Former Kaiser Aluminum Property, 3400 Taylor Way, Tacoma, Washington. Issued by Washington Department of Ecology. July 1, 2016.

Landau Associates, 2012. *Final Remedial Investigation/Feasibility Study, Former Kaiser Aluminum Property, 3400 Taylor Way, Tacoma, Washington.* Prepared for the Port of Tacoma. August 2012.

Tables

Table 1
Groundwater Level Observations

Groundwater Monitoring Well ID	Date Sampled	Time	Depth to Water (TOC)	Top of Well Elevation (feet MLLW)	Groundwater Elevation (feet MLLW)	Top of Well Elevation (NAVD88)	Groundwater Elevation (NAVD88)
MW-101(S)	03/30/21	9:55	7.15	18.51	11.36	15.84	8.69
MW-102(S)	03/30/21	11:05	10.80	20.32	9.52	17.65	6.85
MW-103(S)	03/30/21	15:15	7.62	18.24	10.62	15.57	7.95
MW-SPL1(S)	03/30/21	12:35	6.67	19.98	13.31	17.31	10.64
MW-SPL2(S)	03/30/21	13:50	6.98	20.01	13.03	17.34	10.36

Notes:

MLLW: mean lower low water

NADVD88: North American Vertical Datum of 1988

TOC: top of casing

Table 2
Analytical Results

				Conventional Parameters (mg/L)		Metals (µg/L)	Polycyclic Aromatic Hydrocarbons (µg/L)							
Well ID			Date	Cyanide	Cyanide, Weak Acid Dissociable	Arsenic	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b,j,k) fluoranthenes	Chrysene	Dibenzo(a,h) anthracene	Indeno (1,2,3-c,d) pyrene	Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	Total cPAH TEQ (7 minimum CAEPA 2005) (U = 1/2)
MTCA Method B Cleanup Level				16	0.01	8.0	0.020	0.018	0.018	0.019	0.018	0.018	0.030	0.030
2017	Former Log Yard Area	MW-101(S)	02/13/17	--	--	**3.43**	--	--	--	--	--	--	--	--
		MW-102(S)	02/13/17	--	--	**10.1**	--	--	--	--	--	--	--	--
		MW-102(S) (Duplicate)	02/13/17	--	--	**11.1**	--	--	--	--	--	--	--	--
		MW-103(S)	02/13/17	--	--	**1.25**	--	--	--	--	--	--	--	--
	SPL Area	MW-SPL1(S)	02/13/17	**0.103**	0.005 U	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
		MW-SPL2(S)	02/13/17	**0.023**	0.005 U	--	0.01 U	0.01 U	**0.004 J**	**0.006 J**	0.01 U	0.01 U	**0.00046 J**	**0.00696 J**
		MW-SPL2(S) (Duplicate)	02/13/17	**0.023**	0.005 U	--	0.01 U	0.01 U	**0.005 J**	**0.007 J**	0.01 U	0.01 U	**0.00057 J**	**0.00707 J**
2018	Former Log Yard Area	MW-101(S)	02/19/18	--	--	**5.37**	--	--	--	--	--	--	--	--
		MW-102(S)	02/19/18	--	--	**11.9**	--	--	--	--	--	--	--	--
		MW-103(S)	02/19/18	--	--	**1.03**	--	--	--	--	--	--	--	--
		MW-103(S) (Duplicate)	02/19/18	--	--	**1.05**	--	--	--	--	--	--	--	--
	SPL Area	MW-SPL1(S)	02/19/18	**0.054**	0.005 U	--	**0.001 J**	0.01 U	0.01 U	**0.002 J**	0.01 U	0.01 U	**0.00012 J**	**0.00662 J**
		MW-SPL2(S)	02/19/18	**0.036**	0.005 U	--	**0.003 J**	0.01 U	**0.007 J**	**0.006 J**	0.01 U	**0.002 J**	**0.00126 J**	**0.00676 J**
		MW-SPL2(S) (Duplicate)	02/19/18	**0.027**	0.005 U	--	**0.002 J**	0.01 U	**0.005 J**	**0.006 J**	0.01 U	**0.002 J**	**0.00096 J**	**0.00646 J**
2019	Former Log Yard Area	MW-101(S)	02/28/19	--	--	**5.63**	--	--	--	--	--	--	--	--
		MW-102(S)	02/28/19	--	--	**14.9**	--	--	--	--	--	--	--	--
		MW-103(S)	02/28/19	--	--	**1.38**	--	--	--	--	--	--	--	--
		MW-103(S) (Duplicate)	02/28/19	--	--	**1.4**	--	--	--	--	--	--	--	--
	SPL Area	MW-SPL1(S)	02/28/19	**0.021**	**0.009**	--	0.01 U	0.01 U	0.01 U	**0.002 J**	0.01 U	0.01 U	**0.00002 J**	**0.00702 J**
		MW-SPL1(S) (Duplicate)	02/28/19	**0.017**	**0.006**	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
		MW-SPL2(S)	02/28/19	**0.141**	**0.009**	--	0.01 U	0.01 U	0.01 U	**0.003 J**	0.01 U	0.01 U	**0.00003 J**	**0.00703 J**
2021	Former Log Yard Area	MW-101(S)	03/30/21	--	--	**2.7**	--	--	--	--	--	--	--	--
		MW-101(S) (Duplicate)	03/30/21	--	--	**3.26**	--	--	--	--	--	--	--	--
		MW-102(S)	03/30/21	--	--	**13**	--	--	--	--	--	--	--	--
		MW-103(S)	03/30/21	--	--	**0.978**	--	--	--	--	--	--	--	--
	SPL Area	MW-SPL1(S)	03/30/21	**0.4**	**0.016 J**	--	0.01 U	0.01 U	**0.004 J**	**0.002 J**	0.01 U	0.01 U	**0.006 J**	**0.026 J**
		MW-SPL1(S) (Duplicate)	03/30/21	**0.3**	**0.009 J**	--	**0.002 J**	0.01 U	**0.009 J**	**0.004 J**	0.01 U	**0.002 J**	**0.017 J**	**0.027 J**
		MW-SPL2(S)	03/30/21	**0.12**	**0.010 J**	--	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

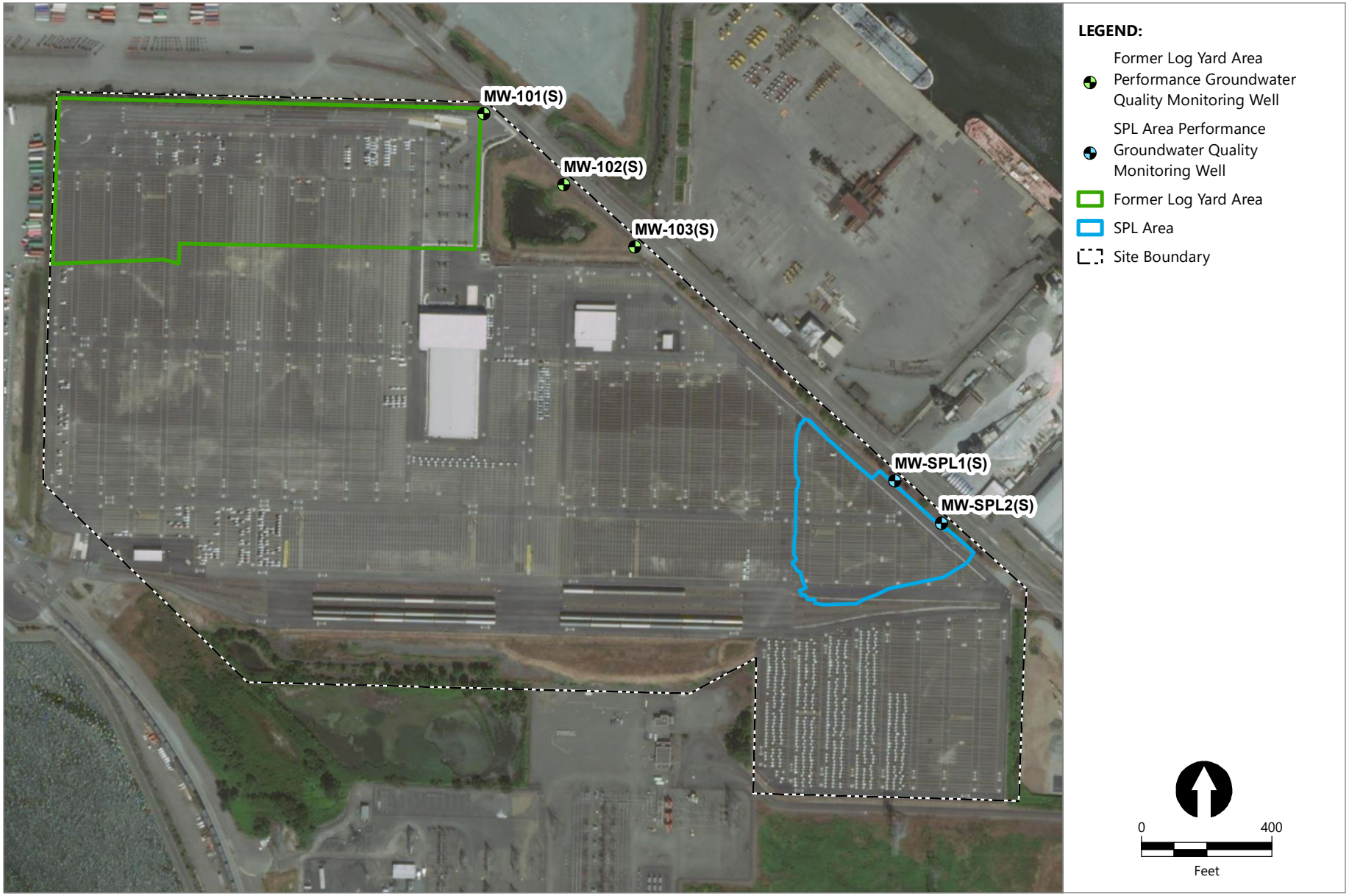
Notes:
Total cPAH TEQ (7 minimum CAEPA 2005) calculation includes benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Per MTCA cleanup Regulation, Table 708-2 TEQ for Minimum Required cPAHs under Washington Administrative Code 173-340-708(e).
U.S. Environmental Protection Agency Stage 2B data validation was completed by Laboratory Data Consultants.
: Shading indicates result exceeded MTCA Method B Cleanup Level established for the site.
Bold: detected result
--: not analyzed
µg/L: micrograms per liter
CAEPA: California Environmental Protection Agency
cPAH: carcinogenic polycyclic aromatic hydrocarbon
J: indicates an estimated value
mg/L: milligrams per liter
MTCA: Model Toxics Control Act
SPL: Spent Pot Lining
TEQ: Toxic Equivalents Quotient
U: compound analyzed, but not detected above detection limit

Figures

Publish Date: 2021/06/03, 1:42 PM | User: jsfox
Filepath: \\orcas\GIS\Jobs\Port_of_Tacoma_0092\Former_Kaiser_Aluminum\Maps\2019_04_GW_Rept\AQ_Kaiser_Site_Map_GW_Rept.mxd

ANCHOR QEA

Figure 1
Site Map
Groundwater Monitoring Report
Former Kaiser Aluminum Property



Publish Date: 2021/06/03, 1:43 PM | User: jsfox
Filepath: \\orcas\GIS\Jobs\Port_of_Tacoma_0092\Former_Kaiser_Aluminum\Maps\2019_04_GW_Rept\AQ_Kaiser_GW_Wells_GW_Rept.mxd

ANCHOR QEA

Figure 2
Performance Groundwater Quality Monitoring Well Locations
Groundwater Monitoring Report
Former Kaiser Aluminum Property

Appendix A
Field Forms

Daily Log

ANCHOR QEA

Anchor QEA, L.L.C.
1201 3rd Ave, #2600
Seattle, WA 98101
Phone 206.287.9130

PROJECT NAME: 170097-02.01 T2021-01 **DATE:** 3-30-21

SITE ADDRESS: PORT OF TACOMA - KAISER GWM **PERSONNEL:** S. Strehl

WEATHER: **WIND FROM:** N | NE | E | SE | (S) | SW | W | NW | None

(SUNNY) | CLOUDY | Prtly Cldy | RAIN

(LIGHT) | MEDIUM | HEAVY

TEMPERATURE: 50-60 °F

TIME	COMMENTS
0715	MOBE / PREP / TRAVEL / LAB PICKUP / FEE PICKUP
0850	ON SITE / NBACHER ON SITE
	H+S / SITE WALK / NBACHER OFF SITE
0945	SET UP ON MW-101 (S) → (SEE GWM FORMS)
0955	CHEMCHEM CALL / LAB SHIPPED BOTTLES — SAMPLED METALS @ MW-101 AND DUPE UNPRESERVED
1000	TOM BAKER (WALLENIUS WILHELMSEN SUPERVISOR) CAME UP TO DISCUSS ~~[illegible]~~ ACTIVITIES. CONFIRMED GW SAMPLING. ALL GOOD.
1420	LEFT SITE FOR REPLACEMENT LOCKS FOR WELLS
1500	BACK ON SITE, FINISH UP WELLS
1645	LEFT SITE FOR LAB
1715	SAMPLES AT LAB
1800	DEMOB

SS 3-30-21

Comments:

Signature: [signature]

ANCHOR QEA

1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131
www.anchorqea.com

Groundwater Collection Form: Water Quality Monitoring, Tacoma WA

Well ID: MW-101(S)		**Date:** 3-30-2021	**Sampler:** S. Strehl
Project Name: Kaiser Groundwater Sampling		**Project Number:** 170092-02.01 T2021-01	
Method: ~~Peristaltic Pump~~/Low Flow			
Initial Depth to Water	7.15	Total Depth to Well	—
Weather Observations: Sunny / 60F			

Time	Depth to Water (feet)	Rate (mL/m)	Cum. Vol (mL)	Temp (°C)	pH	Spec. Cond. (mS/cm)	ORP (mV)	Turbidity (NTU)	Comments
0955	7.17	150	1500	→ CONNECT YSI / BEGIN MONITORING					H2S-LIKE ODOR, CLEAR
1000	7.17	150	2250	9.7	6.69	4.305	91.1	6.66	CLEAR, NO ODORS
1005	7.17	150	3000	9.7	6.65	4.270	-24.1	5.18	" "
1010	7.17	150	3750	9.7	6.65	4.267	-38.9	4.99	" "
1015	7.17	150	4500	9.8	6.65	4.293	-56.1	4.15	" "
1020	7.17	150	5250	9.7	6.66	4.220	-56.9	4.14	" "
1025	7.17	150	6000	9.7	6.66	4.222	-57.6	4.15	" "
1030	BYPASS	YSI /	SAMPLED						
1040	SAMPLE	DUPLICATE							

Notes: BEGIN PURGE 0945 @ 150 mL/m, INITIALLY TURBID, BLACK FLAKES → FOR 10 MIN

PERISTALTIC
~~Controller~~ Setting: 50 hz.

Total Volume Purged: 6000 mL

Sample ID: MW-101(S)-033021 @ 1030

Duplicate ID: MW-201(S)-033021 @ 1040

Other: X

ANCHOR QEA

1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131
www.anchorqea.com

Groundwater Collection Form: Water Quality Monitoring, Tacoma WA

Well ID: MW-102(S)		**Date:** 3.30.21	**Sampler:** S. Strehl
Project Name: Kaiser Groundwater Sampling		**Project Number:** 170092-02.01 T2021-01	
Method: Peristaltic Pump/Low Flow			
Initial Depth to Water	10.80	Total Depth to Well	—
Weather Observations:	Sunny / 60F		

Time	Depth to Water (feet)	Rate (mL/m)	Cum. Vol (mL)	Temp (°C)	pH	Spec. Cond. (mS/cm)	ORP (mV)	Turbidity (NTU)	Comments
1105	10.88	150	1500	- BEGIN YSI CONNECTION -					CLEAR, NO ODORS
1110	10.88	150	2250	11.3	6.86	0.963	-1.2	44.94	" "
1115	10.88	150	3000	11.3	6.68	1.005	-26.5	23.99	" "
1120	10.88	150	3750	11.3	6.65	1.012	-30.6	22.14	" "
1125	10.88	150	4500	11.3	6.62	1.039	-39.9	14.81	" "
1130	10.88	150	5250	11.3	6.62	1.058	-44.0	13.07	" "
1135	10.88	150	6000	11.3	6.62	1.061	-46.0	13.02	" "
1140	10.88	150	6750	11.3	6.61	1.070	-48.5	13.05	" "
1145	BY PASS YSI / SAMPLES								

Notes: 1055 BEGIN PURGE @ 150 mL/m FOR 10 MIN / INITIAL MOSTLY CLEAR, NO ODORS, ORANGE/RUST FLAKES

Peristaltic Controller Setting: 45 /,

Total Volume Purged:

Sample ID: MW-102(S)-033021 @ 1145

Duplicate ID: X

Other: X

ANCHOR QEA

1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131
www.anchorqea.com

Groundwater Collection Form: Water Quality Monitoring, Tacoma WA

Well ID: MW-103(S)		**Date:** 3-30-2021	**Sampler:** S. Strehl
Project Name: Kaiser Groundwater Sampling		**Project Number:** 170092-02.01 T2021-01	
Method: Peristaltic Pump/Low Flow			
Initial Depth to Water	7.62	Total Depth to Well	—
Weather Observations:	Sunny / 55F		

Time	Depth to Water (feet)	Rate (mL/m)	Cum. Vol (mL)	Temp (°C)	pH	Spec. Cond. (mS/cm)	ORP (mV)	Turbidity (NTU)	Comments
1515	7.70	190	1500	— BEGIN YSI CONNECTION —					CLEAR, NO ODORS
1520	7.70	150	2250	10.0	6.58	0.132	166.7	21.59	" "
1525	7.70	190	3000	10.0	6.32	0.137	171.8	9.10	" "
1530	7.70	150	3750	10.0	6.34	0.138	172.4	5.69	" "
1535	7.70	150	4500	10.0	6.24	0.138	174.0	4.94	" "
1540	7.70	150	5250	10.0	6.20	0.139	174.2	4.93	" "
1545	7.70	150	6000	10.0	6.20	0.139	174.3	4.90	" "
1550	BYPASS YSI / SAMPLES								

Notes: BEGIN PURGE 1505 @ 150 mL/m FOR 10 MINS / INITIAL SLIGHTLY TURBID / GRASSES & DRAINAGES

Peristaltic
~~Controller~~ Setting: 45%

Total Volume Purged: 6000 mL's

Sample ID: MW-103(S)-033021 @ 1550

Duplicate ID: X

Other: FIELD FILTERED / PRESERVED H2O3 BOTTLE

ANCHOR QEA

1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131
www.anchorqea.com

Groundwater Collection Form: Water Quality Monitoring, Tacoma WA

Well ID: MW-SPL1(S)		**Date:** 3-30-21	**Sampler:** S. Strehl
Project Name: Kaiser Groundwater Sampling		**Project Number:** 170092-02.01 T2021-01	
Method: Peristaltic Pump/Low Flow			
Initial Depth to Water	6.67	Total Depth to Well	—

Weather Observations: Sunny / 55°F

Time	Depth to Water (feet)	Rate (mL/m)	Cum. Vol (mL)	Temp (°C)	pH	Spec. Cond. (mS/cm)	ORP (mV)	Turbidity (NTU)	Comments
1235	7.00	150	1500	— BEGIN YSI CONNECTION					CLEAR, NO ODORS
1240	7.00	150	2250	10.6	6.26	0.483	88.6	67.88	" "
1245	7.00	150	3000	10.5	6.01	0.485	100.4	57.73	" "
1250	7.00	150	3750	10.6	6.01	0.490	102.1	39.88	" "
1255	7.00	150	4500	10.6	5.99	0.491	103.6	30.13	" "
1300	7.00	150	5250	10.6	5.99	0.494	106.3	24.34	" "
1305	7.00	150	6000	10.6	6.00	0.499	106.7	24.22	" "
1310	7.00	150	6750	10.7	6.00	0.502	107.0	24.22	" "
1315	* BYPASS		YSI	/ SAMPLED					

Notes: 1225 BEGIN PURGE @ 150 mL/m / INITIAL TURBID - NO ODORS
→ FOR 10 MIN
PERISTALTIC
~~Controller~~ Setting: 45%

Total Volume Purged: 6750

Sample ID: MW-SPL1(S)-033021 @ 1315

Duplicate ID: MW-SPL101(S)-033021 @ 1325

Other: *

ANCHOR QEA

1201 3rd Avenue, Suite 2600
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131
www.anchorqea.com

Groundwater Collection Form: Water Quality Monitoring, Tacoma WA

Well ID: MW-SPL2(S)		**Date:** 3-30-2021	**Sampler:** S. Strehl
Project Name: Kaiser Groundwater Sampling		**Project Number:** 170092-02.01 T2021-01	
Method: Peristaltic Pump/Low Flow			
Initial Depth to Water	6.98	Total Depth to Well	—
Weather Observations:	Sunny / 55F		

Time	Depth to Water (feet)	Rate (mL/m)	Cum. Vol (mL)	Temp (°C)	pH	Spec. Cond. (mS/cm)	ORP (mV)	Turbidity (NTU)	Comments
1750	7.05	150	1500	— BEGIN YSI CONNECTION -					CLEAR, NO ODORS
1355	7.05	150	2250	10.1	6.81	0.512	137.0	67.61	" "
1400	7.05	150	3000	10.0	6.60	0.523	128.1	42.02	" "
1405	7.05	150	3750	10.0	6.57	0.543	119.9	29.75	" "
1410	7.05	150	4500	10.0	6.57	0.556	116.0	26.44	" "
1415	7.05	150	5250	10.0	6.57	0.567	113.3	26.37	" "
1420	7.05	150	6000	10.0	6.57	0.572	112.5	26.31	" "
1425	BYPASS	YSI / SAMPLES							

Notes: 1340 BEGIN PURGE @ 150 mL/m FOR 10 MIN

PERISTALTIC
~~Controller~~ Setting: 45%

Total Volume Purged:

Sample ID: MW-SPL2(S)-033021 @ 1425

Duplicate ID: NO

Other: NO

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested:	Page:	of
ARI Client Company:	Phone:	Date:	Ice Present? Yes
Client Contact:		No. of Coolers: 1	Cooler Temps: 3.4
Client Project Name:			
Client Project #:	Samplers:		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested								Notes/Comments

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name:	Printed Name: Kenny Dang	Printed Name:	Printed Name:
	Company:	Company: ART	Company:	Company:
	Date & Time: 1115	Date & Time: 3/30/21 1115	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Appendix B
Laboratory Data

Analytical Resources, Incorporated
Analytical Chemists and Consultants

18 April 2021

Nik Bacher
Anchor QEA, LLC
1119 Pacific Avenue, Suite 1600
Tacoma, WA 98402

RE: Port of Tacoma - Kaiser GWM 2021

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

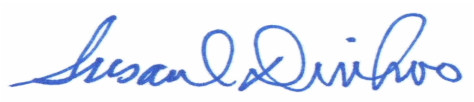
Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
21C0456	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclosed Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



Susan Dunnihoo, Director, Client Services

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Accredited in accordance with nelac
Cert# 100006-012

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21C0456	Turn-around Requested: STANDARD
ARI Client Company: ANCHOR QEA	Phone: 206 287 9130
Client Contact: NIK BACUTER	
Client Project Name: PORT OF TACOMA - KAISER GWM 2021	
Client Project #: 170092-02.01	Samplers: S. STREHL

Page: 1 of 1	
Date:	Ice Present? Yes
No. of Coolers: 1	Cooler Temps: 3.4

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TOTAL METALS	TOTAL CYANIDE	WAD CYANIDE	6 PAHs					Notes/Comments
MW-101(S)-033021	3-30-21	1030	GW	1	X								
MW-201(S)-033021	"	1040	"	1	X								
MW-102(S)-033021		1145		1	X								
MW-103(S)-033021		1550		1	X								
MW-SPL1(S)-033021		1315		3		X	X	X					
MW-SPL101(S)-033021		1325		3		X	X	X					
MW-SPL2(S)-033021	3-30-21	1425	GW	3		X	X	X					
	SS	3-30-21											

Comments/Special Instructions
ALL METALS FILTERED SS 3-30-21

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	STEPHEN STREHL			
Printed Name:	STEPHEN STREHL	Kenny Dang		
Company:	AQ	ARI		
Date & Time:	3-30-21 / 1715	3/30/21 1715		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

WORK ORDER

21C0456

Client: Anchor QEA, LLC
Project Manager: Susan Dunnihoo
Project: Kaiser Groundwater
Project Number: Kaiser (Port of Tacoma)

Preservation Confirmation

Container ID	Container Type	pH	
21C0456-01 A	Glass NM, Amber, 500 mL	>2	Fail
21C0456-02 A	Glass NM, Amber, 500 mL	>2	Fail
21C0456-03 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-04 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-05 A	Glass WM, Clear, 8 oz	<12	Fail
21C0456-05 B	Glass NM, Amber, 500 mL		
21C0456-05 C	Glass NM, Amber, 500 mL		
21C0456-06 A	Glass WM, Clear, 8 oz	<12	Fail
21C0456-06 B	Glass NM, Amber, 500 mL		
21C0456-06 C	Glass NM, Amber, 500 mL		
21C0456-07 A	Glass WM, Clear, 8 oz	<12	Fail
21C0456-07 B	Glass NM, Amber, 500 mL		
21C0456-07 C	Glass NM, Amber, 500 mL		

JS
Preservation Confirmed By

03/31/2021
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor QEA Project Name: POT - Kaiser

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21C0456 Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1715 3.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00 8206

Cooler Accepted by: KO Date: 3/30/21 Time: 1715

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		_____

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSm Date: 03/31/2021 Time: 1600 Labels checked by: JSm

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 03/31/2021 16:04:57

WORK ORDER

21C0456

Client: Anchor QEA, LLC	**Project Manager:** Susan Dunnihoo
Project: Kaiser Groundwater	**Project Number:** Kaiser (Port of Tacoma)

Preservation Confirmation

Container ID	Container Type	pH	
21C0456-01 A	Glass NM, Amber, 500 mL	>2	Fail
21C0456-02 A	Glass NM, Amber, 500 mL	>2	Fail
21C0456-03 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-04 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-05 A	Glass WM, Clear, 8 oz	<12	Fail (1)
21C0456-05 B	Glass NM, Amber, 500 mL		
21C0456-05 C	Glass NM, Amber, 500 mL		
21C0456-06 A	Glass WM, Clear, 8 oz	<12	Fail (1)
21C0456-06 B	Glass NM, Amber, 500 mL		
21C0456-06 C	Glass NM, Amber, 500 mL		
21C0456-07 A	Glass WM, Clear, 8 oz	<12	Fail (1)
21C0456-07 B	Glass NM, Amber, 500 mL		
21C0456-07 C	Glass NM, Amber, 500 mL		

JS ~
Preservation Confirmed By

03/31/2021
Date

(1) added 2ml NaOH 6N
pH > 12
UW
3-31-21

Reviewed By

Date

WORK ORDER

21C0456

Client: Anchor QEA, LLC	**Project Manager:** Susan Dunnihoo
Project: Kaiser Groundwater	**Project Number:** Kaiser (Port of Tacoma)

Preservation Confirmation

Container ID	Container Type	pH	
21C0456-01 A	Glass NM, Amber, 500 mL	>2	Fail (1)
21C0456-02 A	Glass NM, Amber, 500 mL	>2	Fail (1)
21C0456-03 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-04 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-05 A	Glass WM, Clear, 8 oz	<12	Fail
21C0456-05 B	Glass NM, Amber, 500 mL		
21C0456-05 C	Glass NM, Amber, 500 mL		
21C0456-06 A	Glass WM, Clear, 8 oz	<12	Fail
21C0456-06 B	Glass NM, Amber, 500 mL		
21C0456-06 C	Glass NM, Amber, 500 mL		
21C0456-07 A	Glass WM, Clear, 8 oz	<12	Fail
21C0456-07 B	Glass NM, Amber, 500 mL		
21C0456-07 C	Glass NM, Amber, 500 mL		

JS~
Preservation Confirmed By

03/31/2021
Date

(1) preserved to pH <2.0 with 1.00 ml conc. HNO_3 (JSSH). ML 4/9/21

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 03/31/2021 16:04:57

WORK ORDER

21C0456

Client: Anchor QEA, LLC	Project Manager: Susan Dunnihoo
Project: Kaiser Groundwater	Project Number: Kaiser (Port of Tacoma)

Preservation Confirmation

Container ID	Container Type	pH	
21C0456-01 A	Glass NM, Amber, 500 mL	>2	Fail
21C0456-02 A	Glass NM, Amber, 500 mL	>2	Fail
21C0456-03 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-04 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21C0456-05 A	Glass WM, Clear, 8 oz	<12	Fail (1)
21C0456-05 B	Glass NM, Amber, 500 mL		
21C0456-05 C	Glass NM, Amber, 500 mL		
21C0456-06 A	Glass WM, Clear, 8 oz	<12	Fail (1)
21C0456-06 B	Glass NM, Amber, 500 mL		
21C0456-06 C	Glass NM, Amber, 500 mL		
21C0456-07 A	Glass WM, Clear, 8 oz	<12	Fail (1)
21C0456-07 B	Glass NM, Amber, 500 mL		
21C0456-07 C	Glass NM, Amber, 500 mL		

JS ~
Preservation Confirmed By

03/31/2021
Date

Sulfide checked with pres. check on 3-31-21.
UW 4-12-21

(1) added 2ml NaOH 6N
pH > 12
UW
3-31-21

Reviewed By

Date

Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021	
1119 Pacific Avenue, Suite 1600	Project Number:	Kaiser (Port of Tacoma)	**Reported:**
Tacoma, WA 98402	Project Manager:	Nik Bacher	04/18/2021 15:29

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
21C0456-01	MW-101(S)-033021	Water	03/30/21 10:30	03/30/21 17:15
21C0456-02	MW-201(S)-033021	Water	03/30/21 10:40	03/30/21 17:15
21C0456-03	MW-102(S)-033021	Water	03/30/21 11:45	03/30/21 17:15
21C0456-04	MW-103(S)-033021	Water	03/30/21 15:50	03/30/21 17:15
21C0456-05	MW-SPL1(S)-033021	Water	03/30/21 13:15	03/30/21 17:15
21C0456-06	MW-SPL101(S)-033021	Water	03/30/21 13:25	03/30/21 17:15
21C0456-07	MW-SPL2(S)-033021	Water	03/30/21 14:25	03/30/21 17:15

Anchor QEA, LLC	Project: Port of Tacoma - Kaiser GWM 2021	
1119 Pacific Avenue, Suite 1600	Project Number: Kaiser (Port of Tacoma)	**Reported:**
Tacoma WA, 98402	Project Manager: Nik Bacher	18-Apr-2021 15:29

Case Narrative

Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Work Order: 21C0456

Sample receipt

Samples as listed on the preceding page were received 30-Mar-2021 17:15 under ARI work order 21C0456. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

The result for dibenzofuran was outside limits low in the initial calibration verification SJD0232-ICV1. Associated positive results have been "Q"-flagged.

Internal standard areas were within limits.

The surrogate percent recovery for d10-fluoranthene was low of limits in the method blank. The outlier is flagged on the summary sheet.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Insufficient sample volume was received for matrix QC.

Total Metals - EPA Method 200.8

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Anchor QEA, LLC	Project: Port of Tacoma - Kaiser GWM 2021	
1119 Pacific Avenue, Suite 1600	Project Number: Kaiser (Port of Tacoma)	**Reported:**
Tacoma WA, 98402	Project Manager: Nik Bacher	18-Apr-2021 15:29

Case Narrative

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

QUALIFIERS AND NOTES

Qualifier	Definition
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
J	Estimated concentration value detected below the reporting limit.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
D1	Surrogate was not detected due to sample extract dilution
D	The reported value is from a dilution
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analytical Resources, Incorporated
Analytical Chemists and Consultants

MW-SPL1(S)-033021

Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8270E-SIM
Polynuclear Aromatic Hydrocarbons - low level

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-05 B	SDG:	21C0456
Sampled:	03/30/21 13:15	Prepared:	04/05/21 17:54	File ID:	NT1121041606.D
% Solids:		Preparation:	EPA 3510C SepF	Analyzed:	04/16/21 12:26
Batch:	BJD0015	Sequence:	SJD0232	Initial/Final:	500 mL / 0.5 mL
Instrument:	NT11	Column:	RXi-17Sil-MS	Calibration:	DH00073
Cleanups:	Silica Gel				

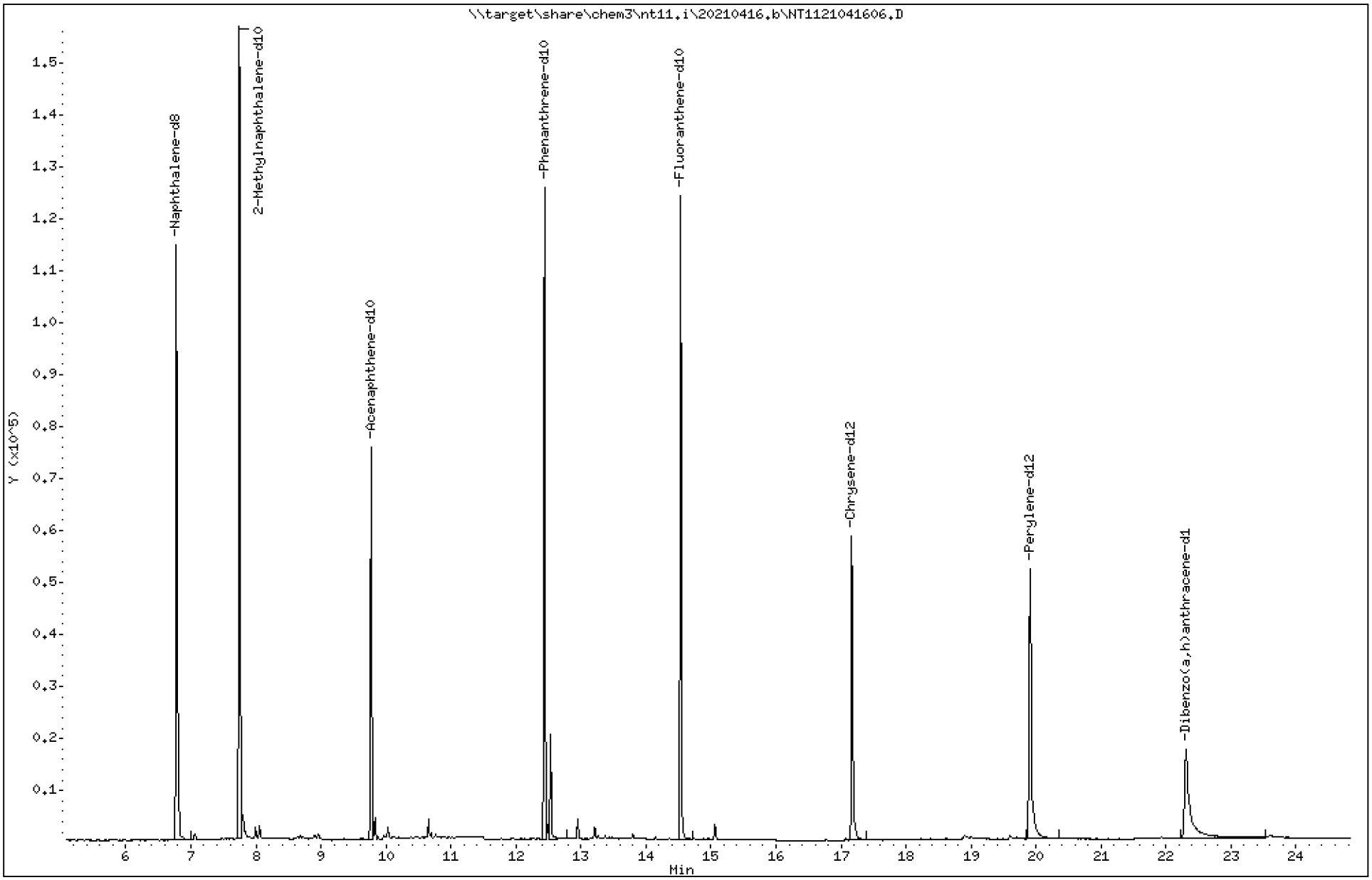
CAS NO.	COMPOUND	DILUTION	(ug/L)	Q	DL	RL
91-20-3	Naphthalene	1	0.003	J	0.001	0.010
91-57-6	2-Methylnaphthalene	1	0.003	J	0.001	0.010
90-12-0	1-Methylnaphthalene	1	0.002	J	0.0009	0.010
91-58-7	2-Chloronaphthalene	1	0.010	U	0.001	0.010
208-96-8	Acenaphthylene	1	0.010	U	0.002	0.010
83-32-9	Acenaphthene	1	0.004	J	0.003	0.010
132-64-9	Dibenzofuran	1	0.003	J	0.002	0.010
86-73-7	Fluorene	1	0.003	J	0.002	0.010
85-01-8	Phenanthrene	1	0.003	J	0.001	0.010
120-12-7	Anthracene	1	0.025		0.001	0.010
86-74-8	Carbazole	1	0.003	J	0.001	0.010
206-44-0	Fluoranthene	1	0.003	J	0.002	0.010
129-00-0	Pyrene	1	0.003	J	0.001	0.010
56-55-3	Benzo(a)anthracene	1	0.010	U	0.0008	0.010
218-01-9	Chrysene	1	0.002	J	0.0009	0.010
205-99-2	Benzo(b)fluoranthene	1	0.002	J	0.0005	0.010
207-08-9	Benzo(k)fluoranthene	1	0.010	U	0.003	0.010
205-82-3	Benzo(j)fluoranthene	1	0.010	U	0.002	0.010
	Benzofluoranthenes, Total	1	0.004	J	0.004	0.010
50-32-8	Benzo(a)pyrene	1	0.010	U	0.002	0.010
1985-5-0	Perylene	1	0.010	U	0.006	0.010
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.010	U	0.001	0.010
53-70-3	Dibenzo(a,h)anthracene	1	0.010	U	0.001	0.010
191-24-2	Benzo(g,h,i)perylene	1	0.002	J	0.001	0.010

SURROGATES	ADDED:(ug/L)	(ug/L)	% REC	QC LIMITS	Q
2-Methylnaphthalene-d10	0.30000	0.184	61.2	42 - 120	
Dibenzo[a,h]anthracene-d14	0.30000	0.208	69.4	29 - 120	
Fluoranthene-d10	0.30000	0.191	63.7	57 - 120	

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D
Date : 16-APR-2021 12:26
Client ID:
Sample Info: 21C0456-05

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

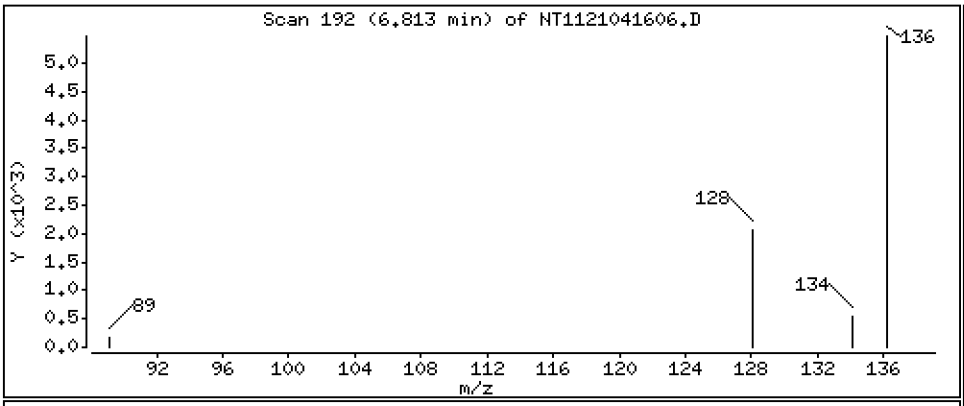
Operator: VTS

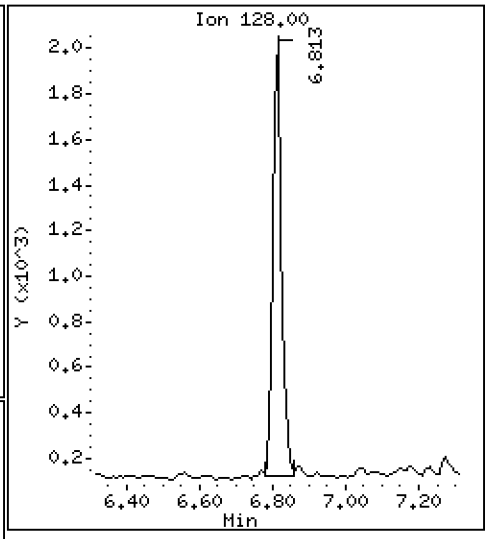
Column phase: Rxi-17Sil MS

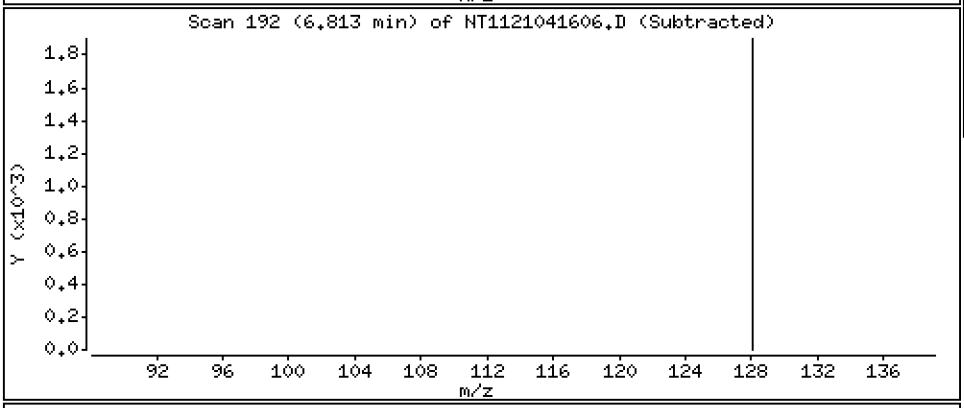
Column diameter: 0.25

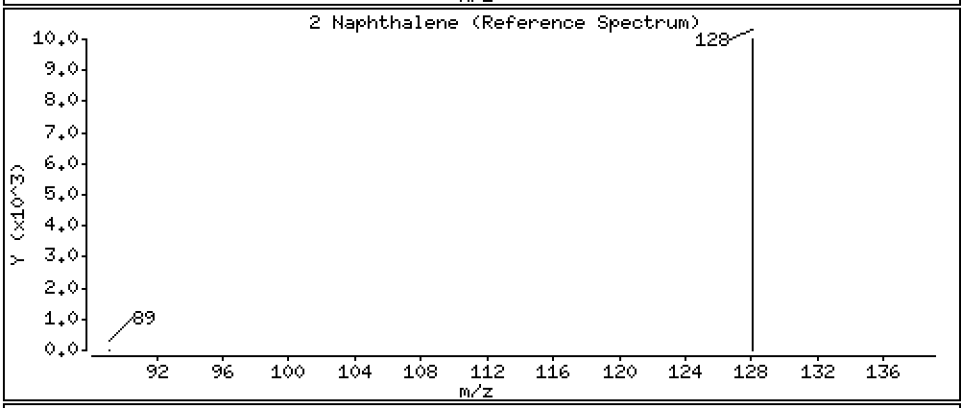
2 Naphthalene

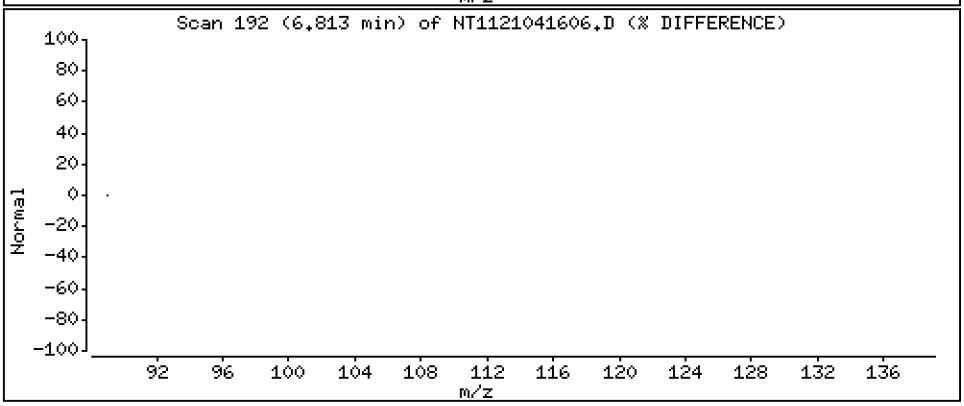
Concentration: 3.22 ng/mL











Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

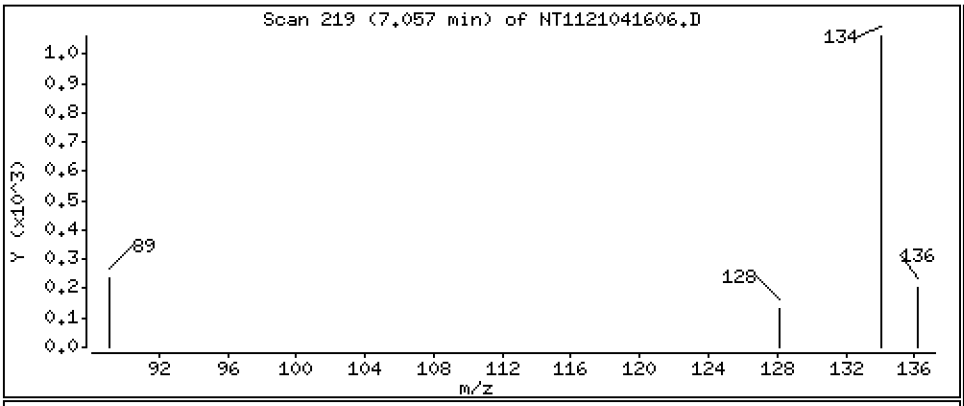
Operator: VTS

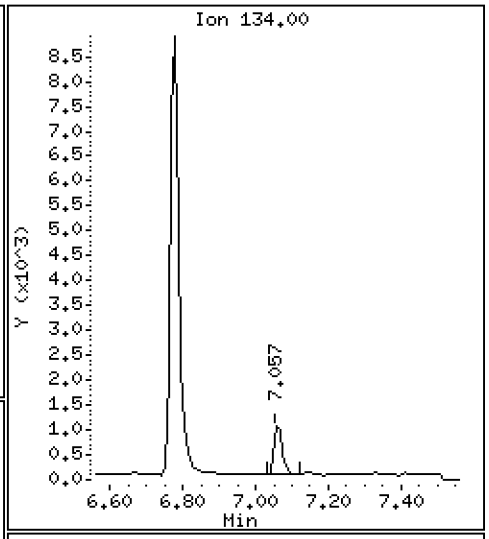
Column phase: Rxi-17Sil MS

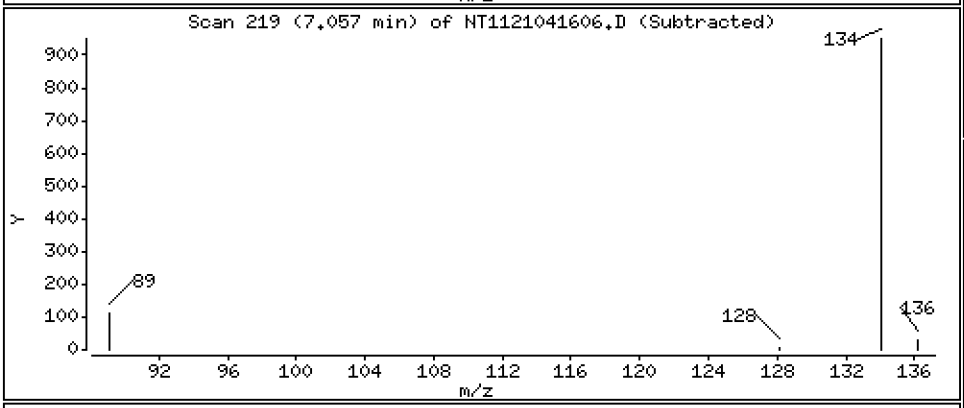
Column diameter: 0.25

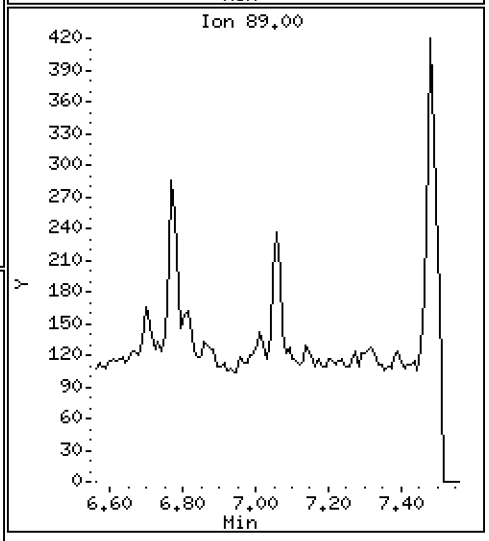
3 Benzo(b)thiophene

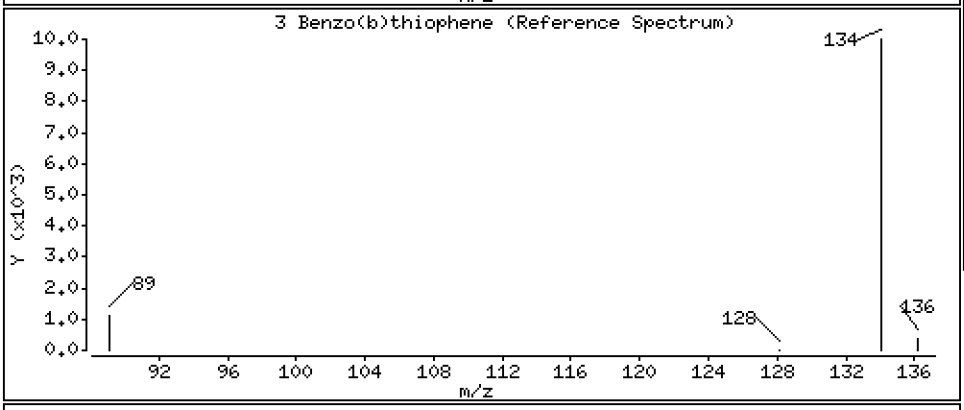
Concentration: 2.02 ng/mL

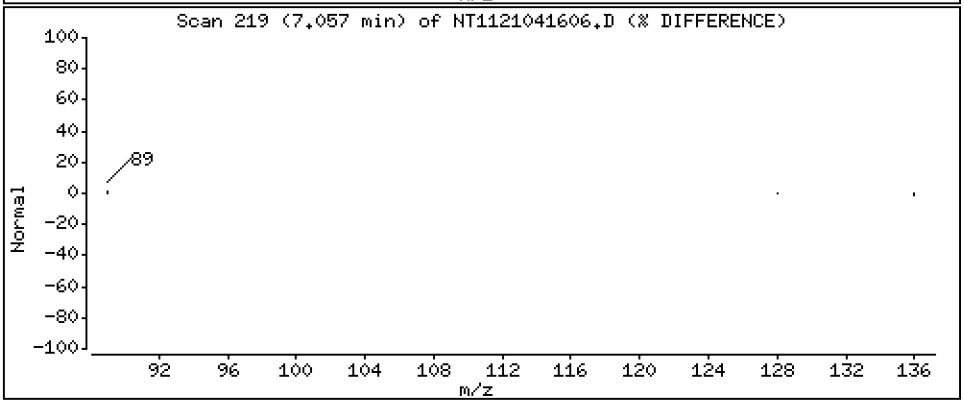












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

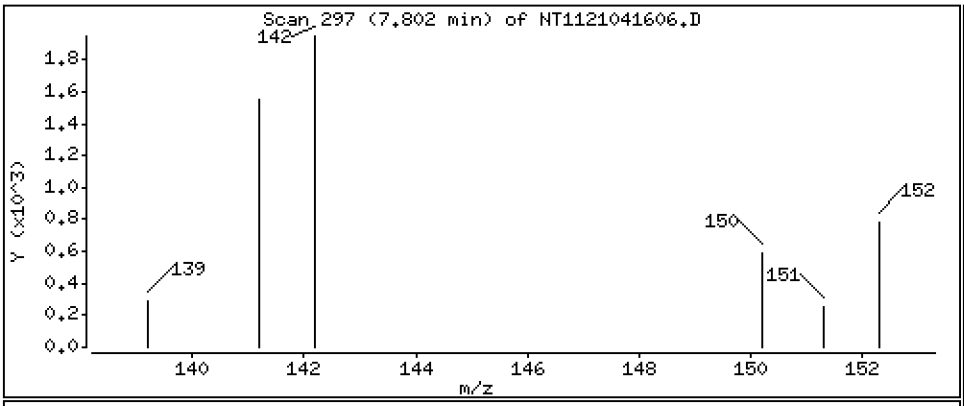
Operator: VTS

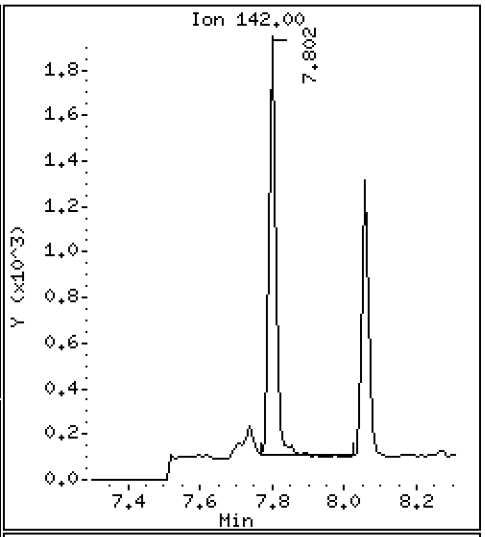
Column phase: Rxi-17Sil MS

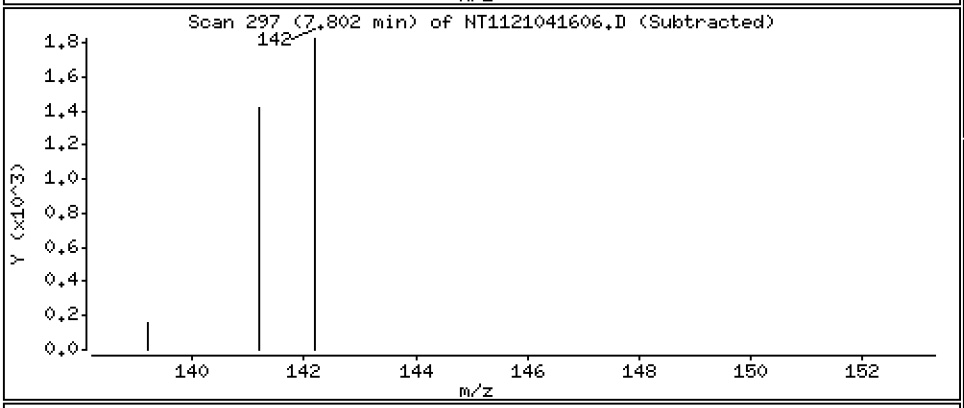
Column diameter: 0.25

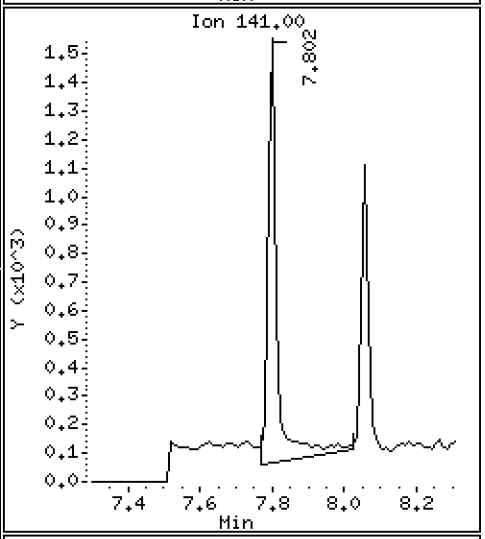
5 2-Methylnaphthalene

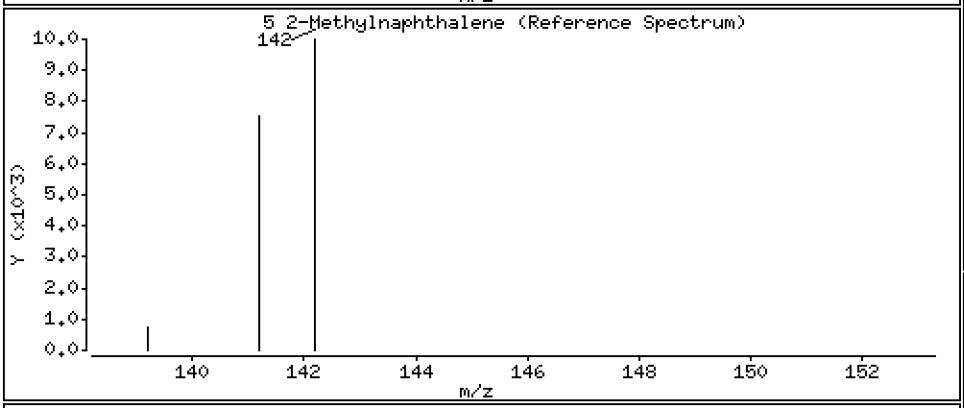
Concentration: 3.01 ng/mL

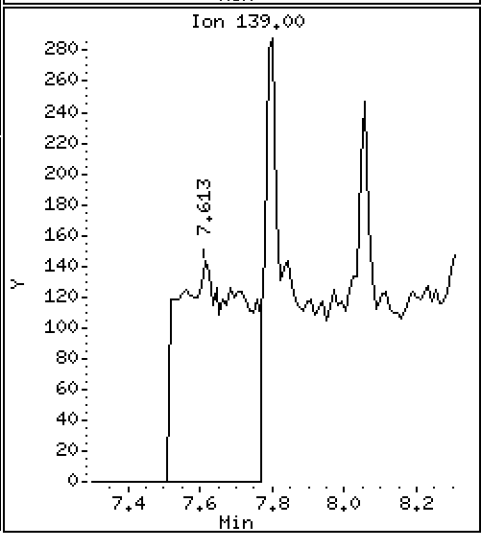


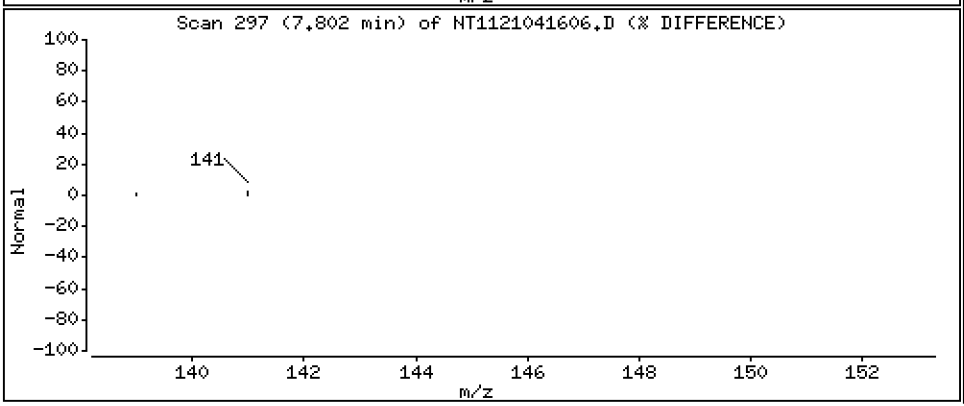












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

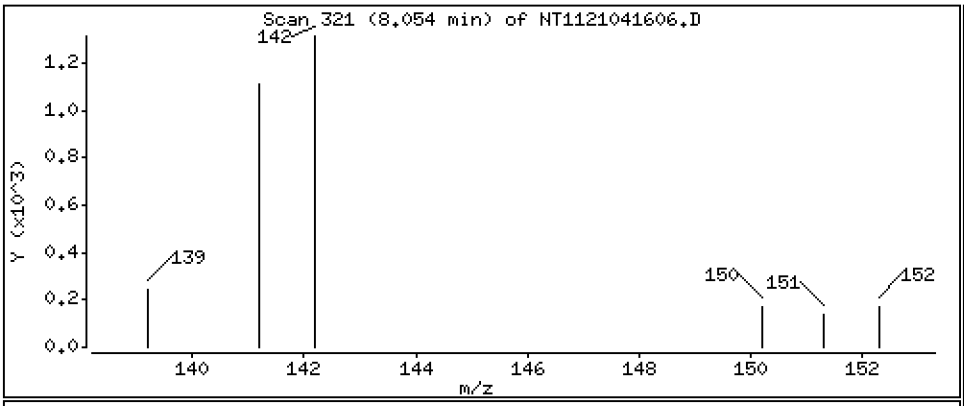
Operator: VTS

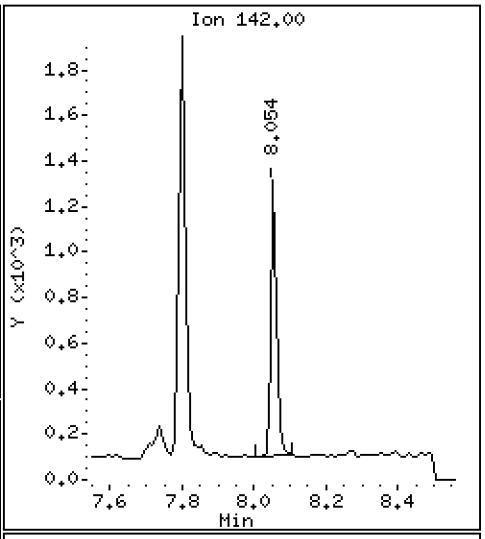
Column phase: Rxi-17Sil MS

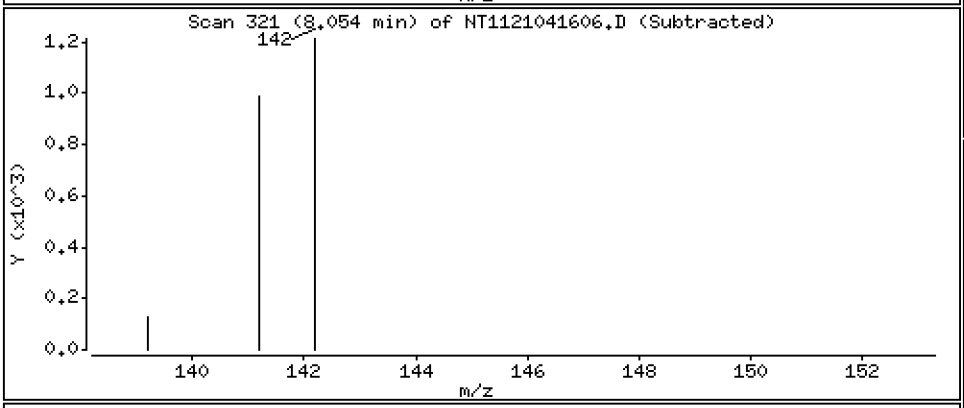
Column diameter: 0.25

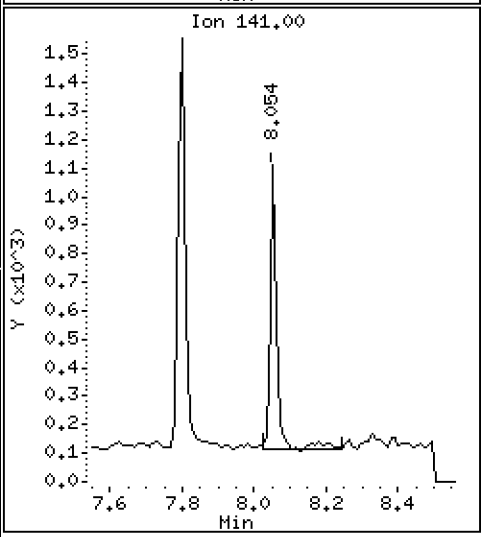
6 1-Methylnaphthalene

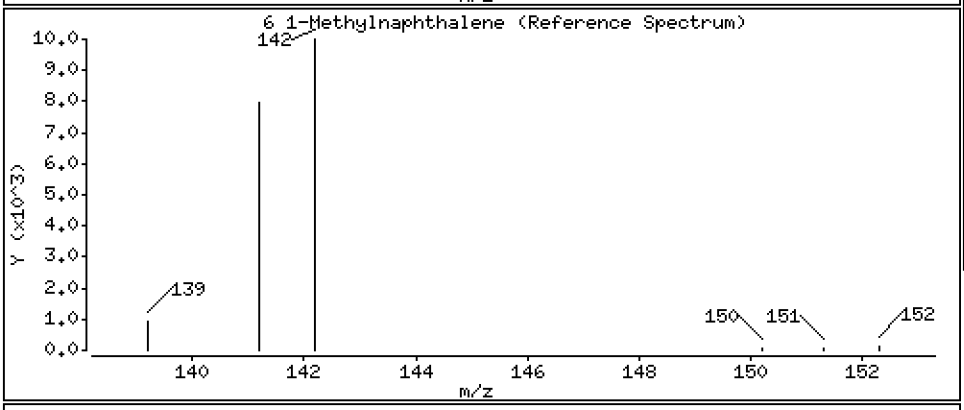
Concentration: 2.09 ng/mL

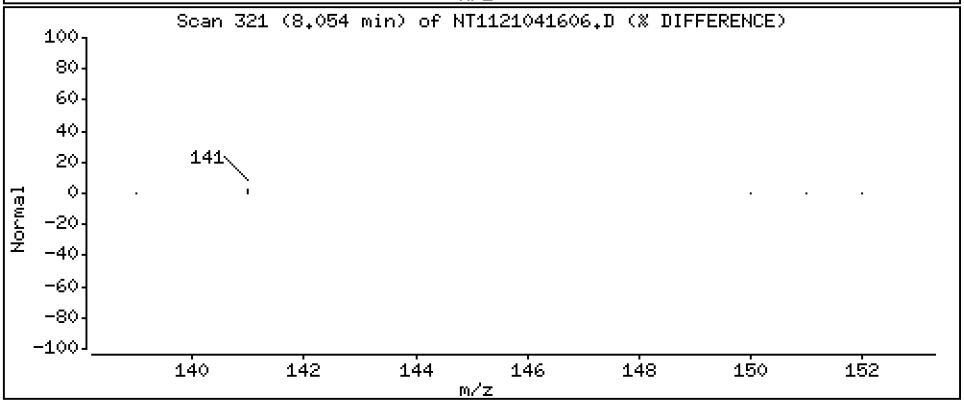












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

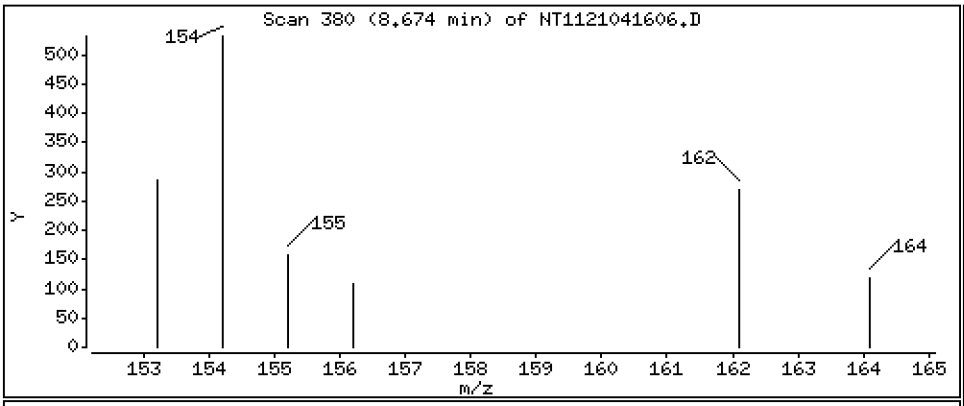
Operator: VTS

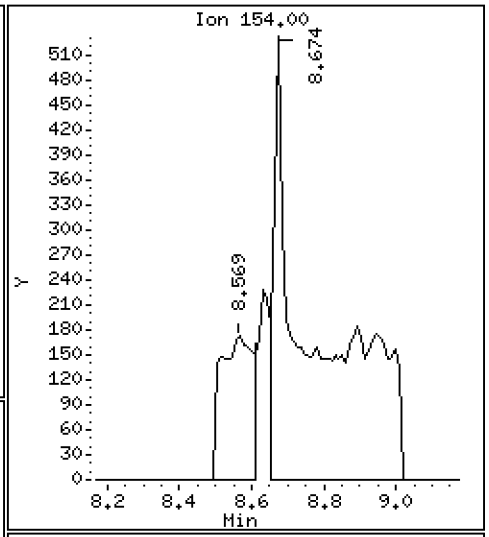
Column phase: Rxi-17Sil MS

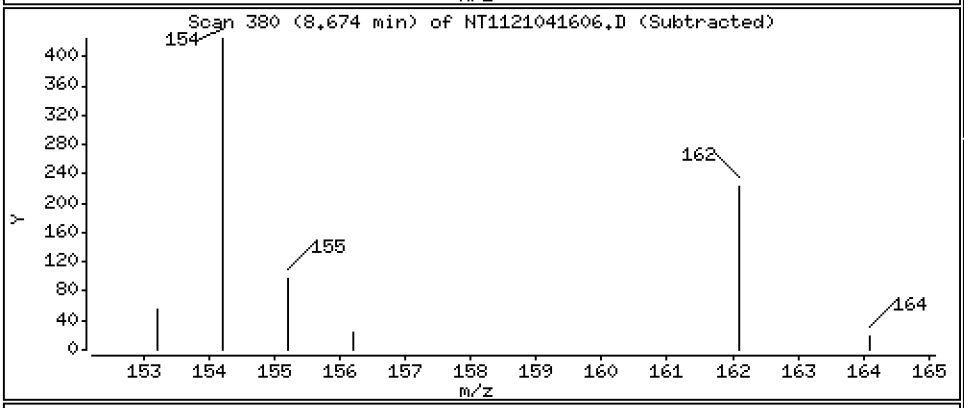
Column diameter: 0.25

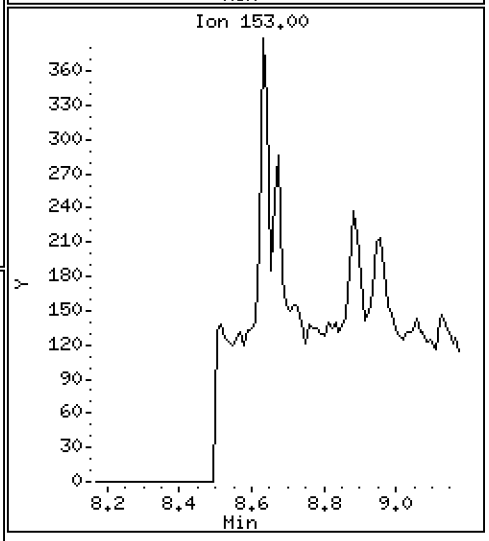
8 Biphenyl

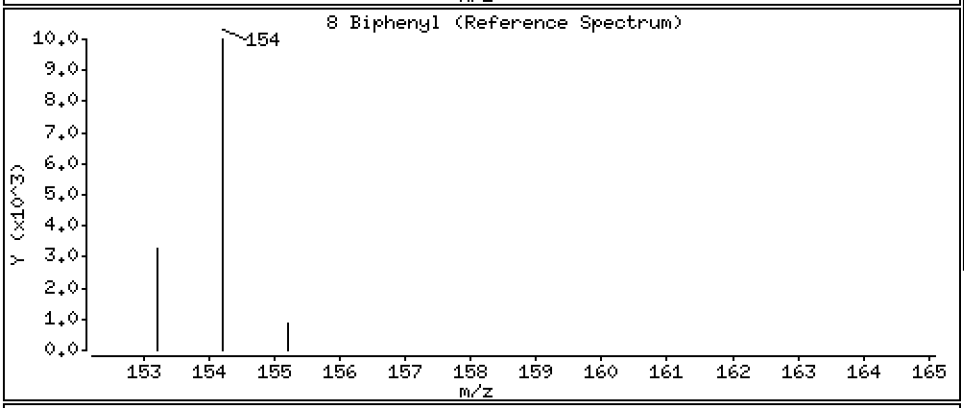
Concentration: 3.80 ng/mL

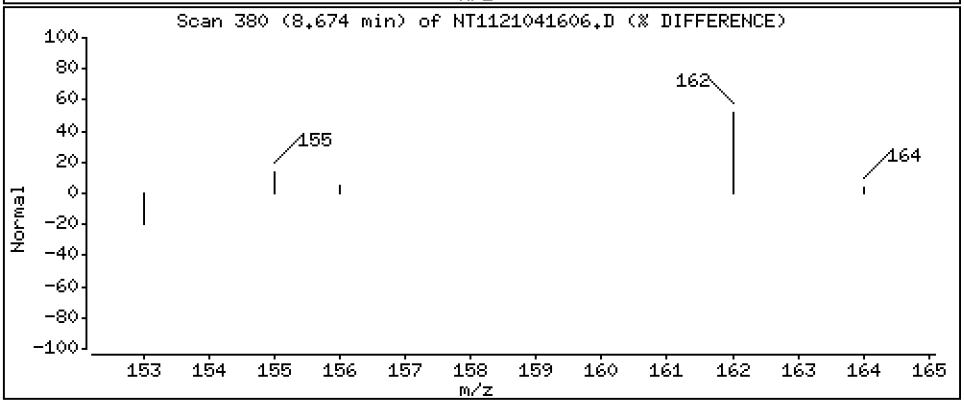












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

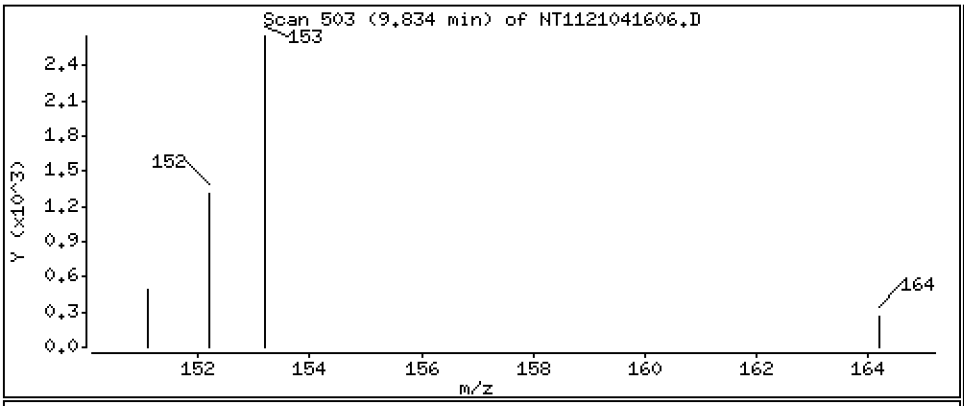
Operator: VTS

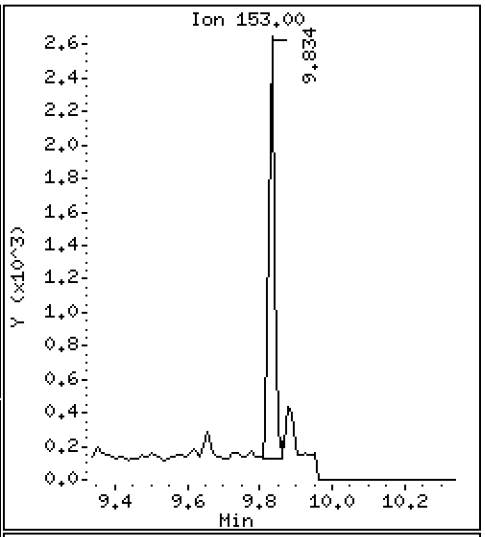
Column phase: Rxi-17Sil MS

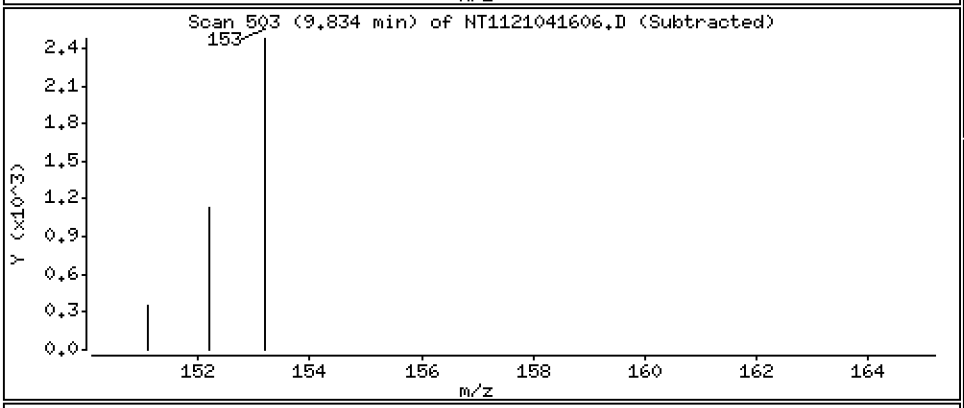
Column diameter: 0.25

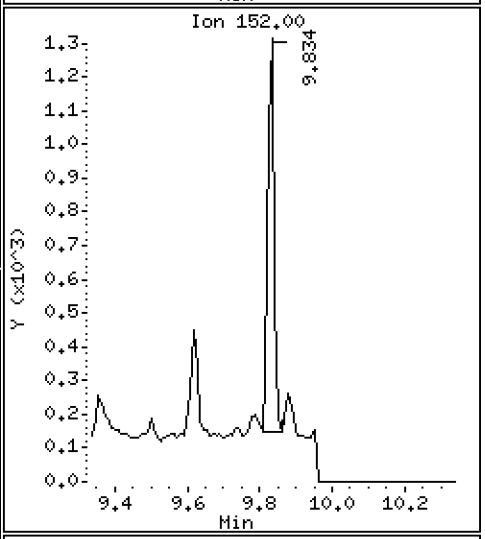
12 Acenaphthene

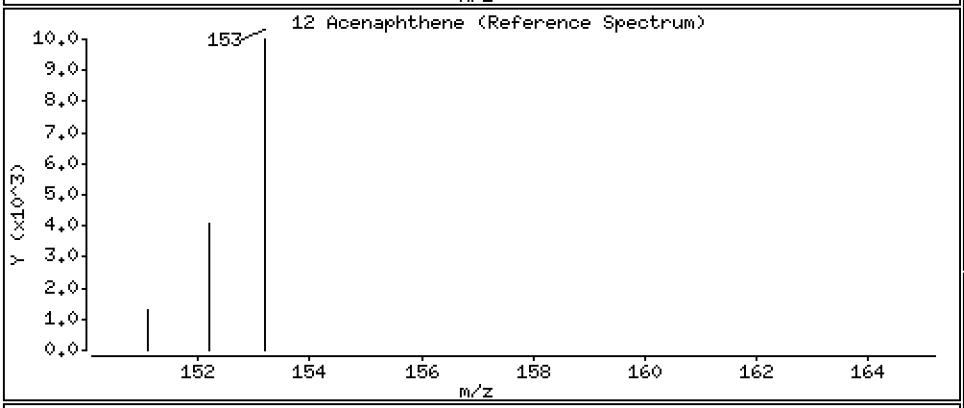
Concentration: 4.34 ng/mL

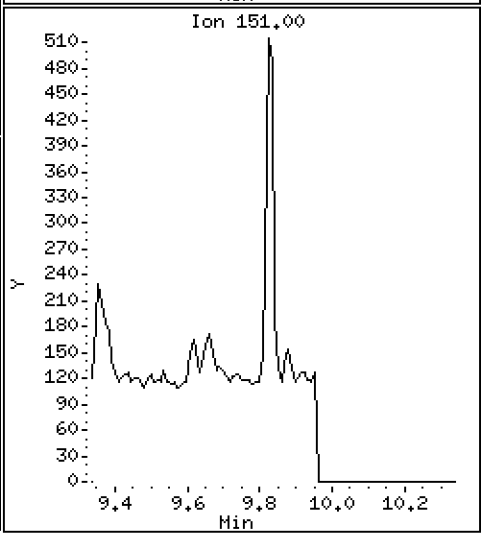


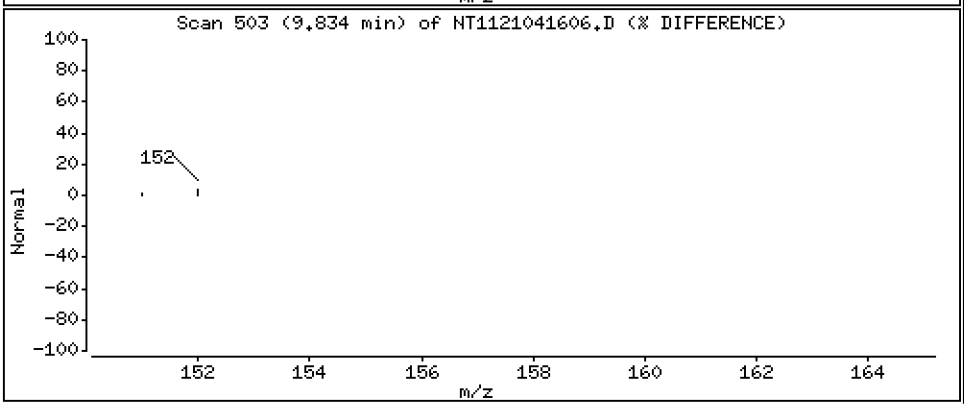












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

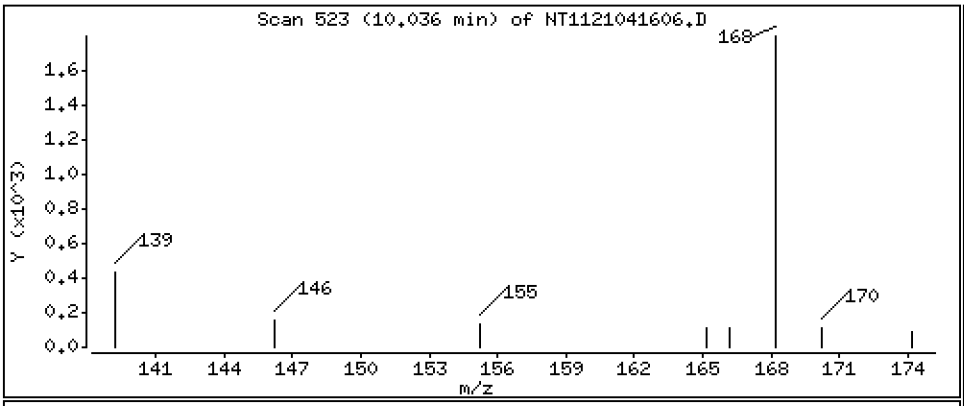
Operator: VTS

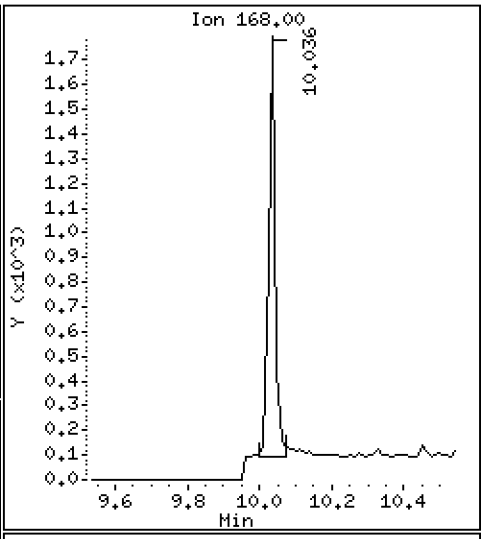
Column phase: Rxi-17Sil MS

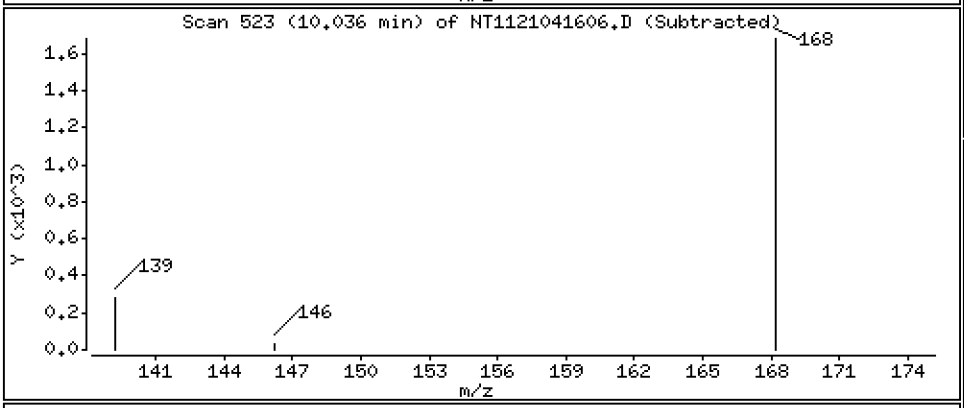
Column diameter: 0.25

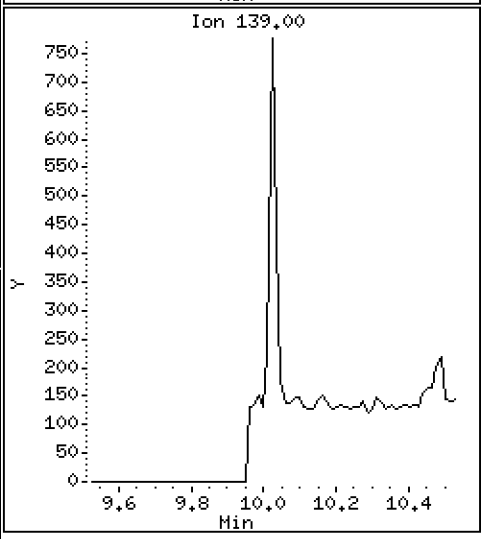
13 Dibenzofuran

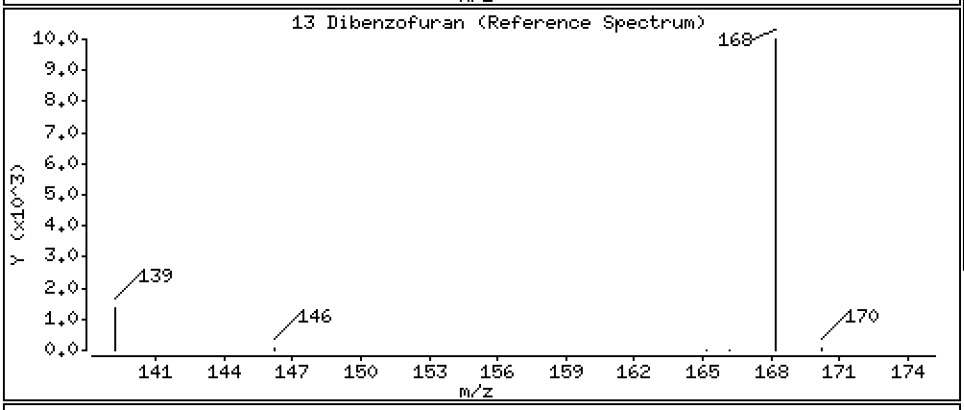
Concentration: 2.54 ng/mL

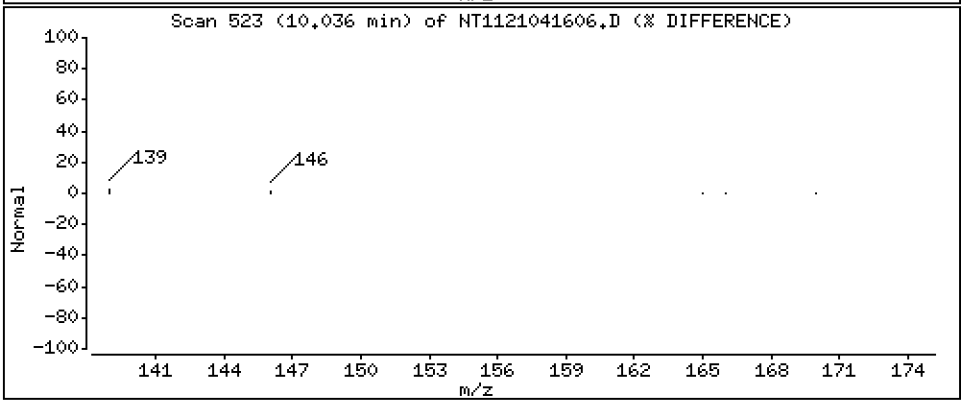












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

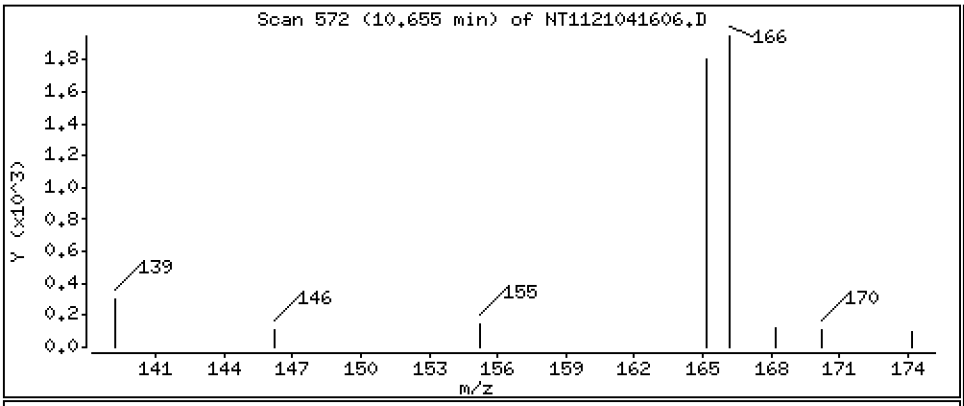
Operator: VTS

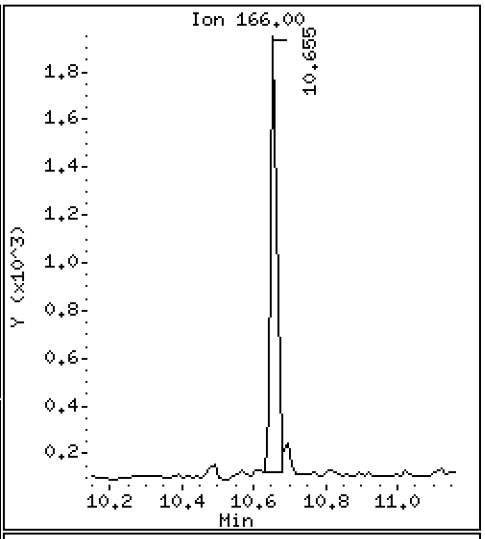
Column phase: Rxi-17Sil MS

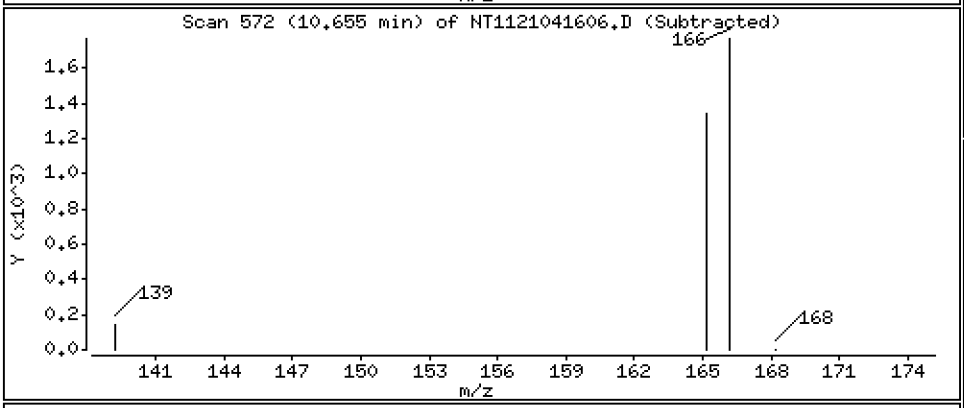
Column diameter: 0.25

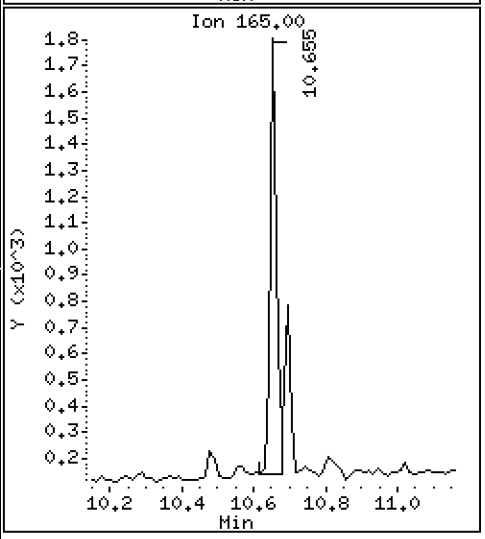
16 Fluorene

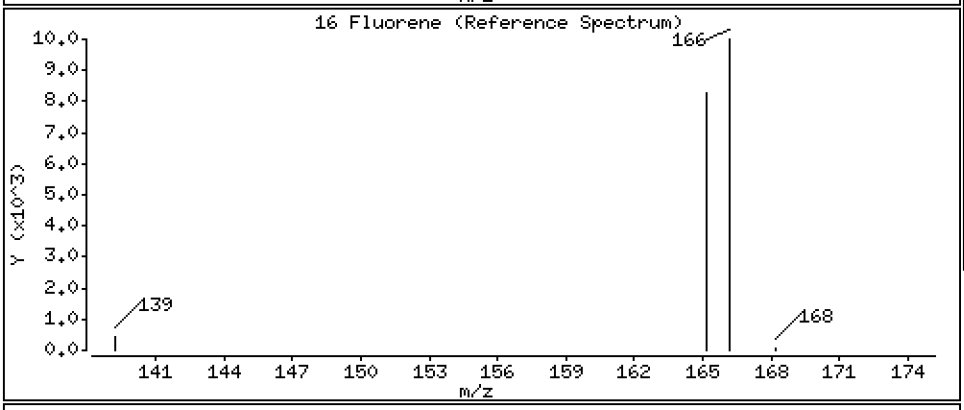
Concentration: 3.17 ng/mL

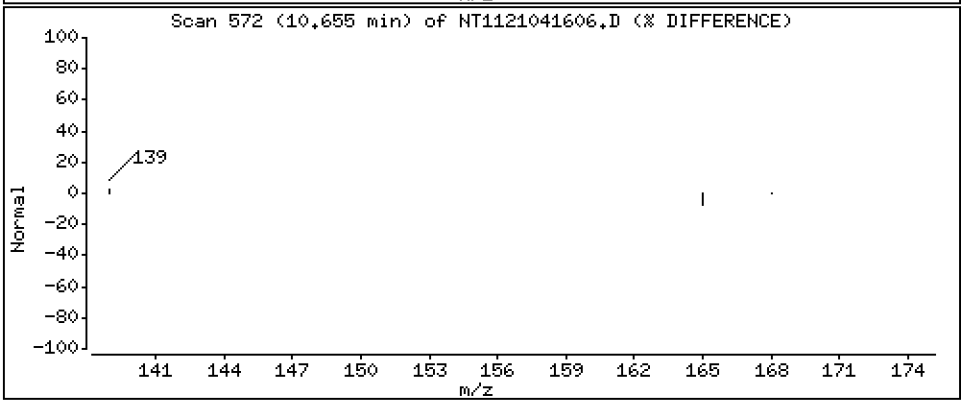












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

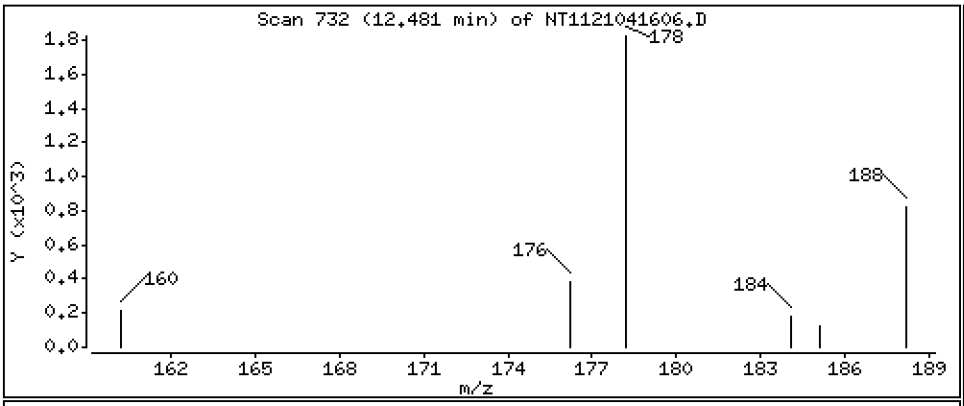
Operator: VTS

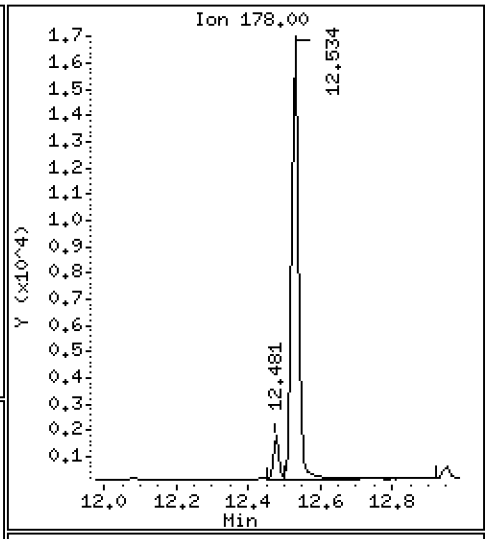
Column phase: Rxi-17Sil MS

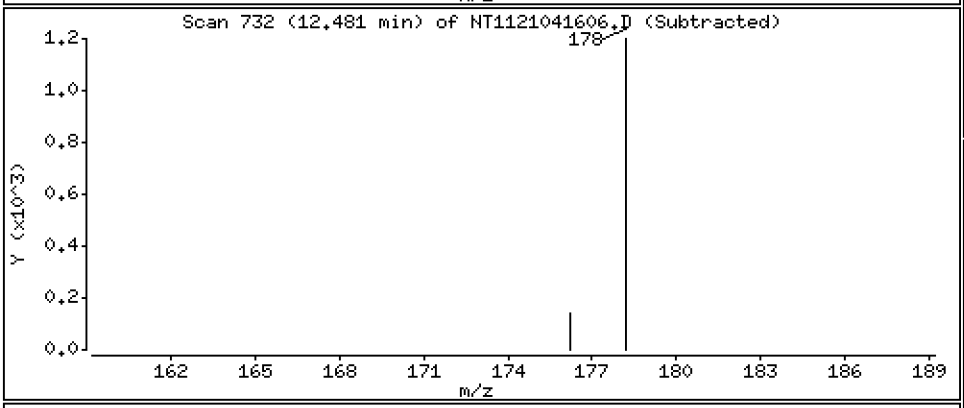
Column diameter: 0.25

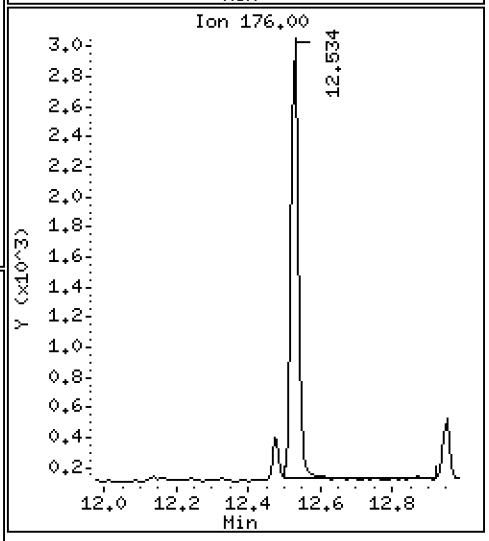
19 Phenanthrene

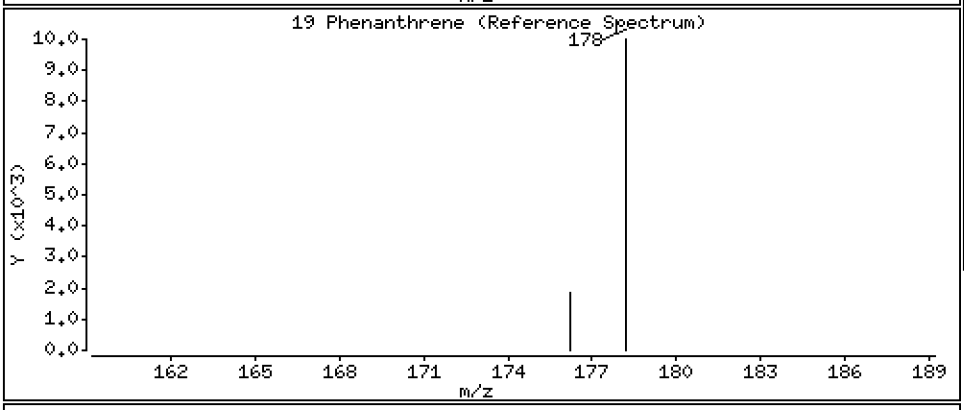
Concentration: 2.51 ng/mL

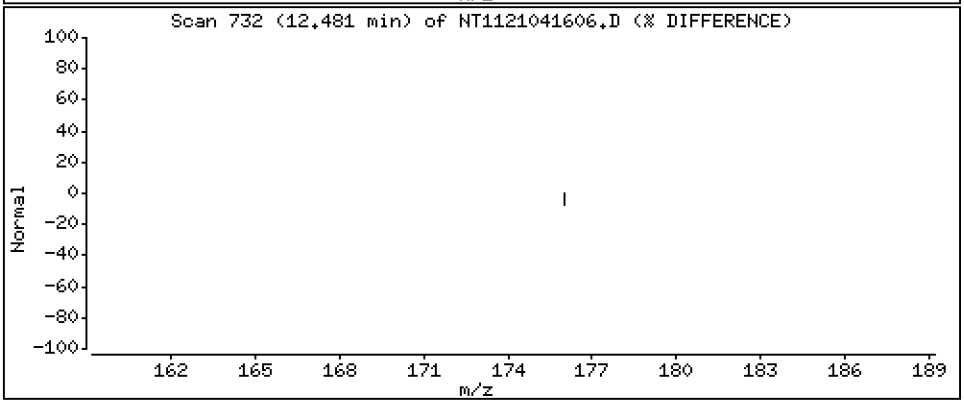












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

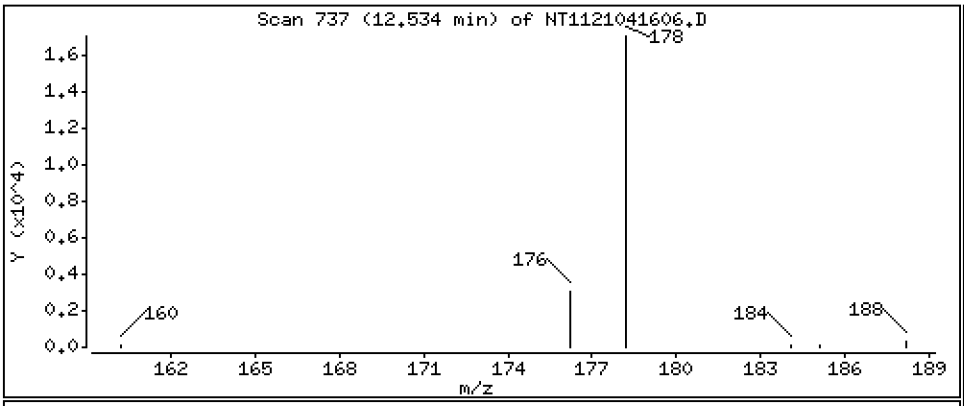
Operator: VTS

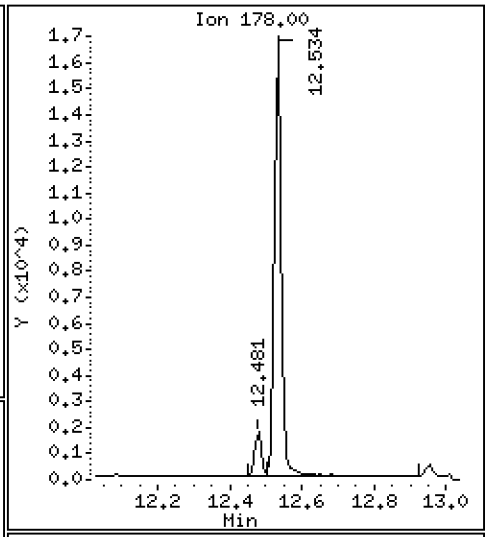
Column phase: Rxi-17Sil MS

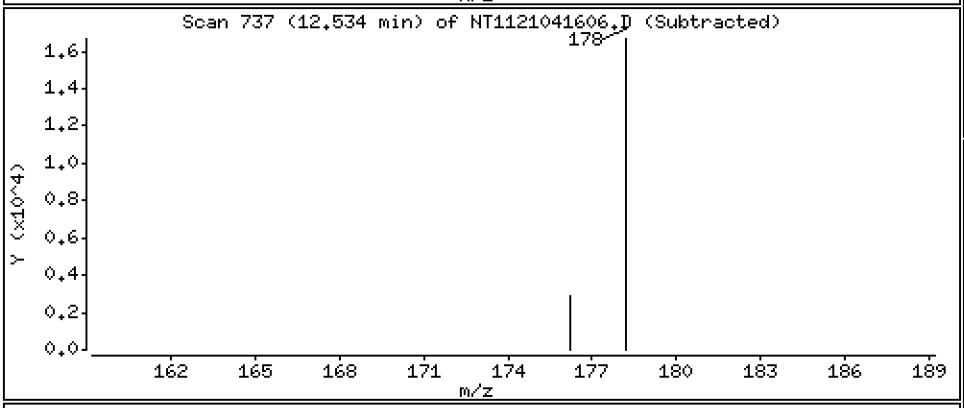
Column diameter: 0.25

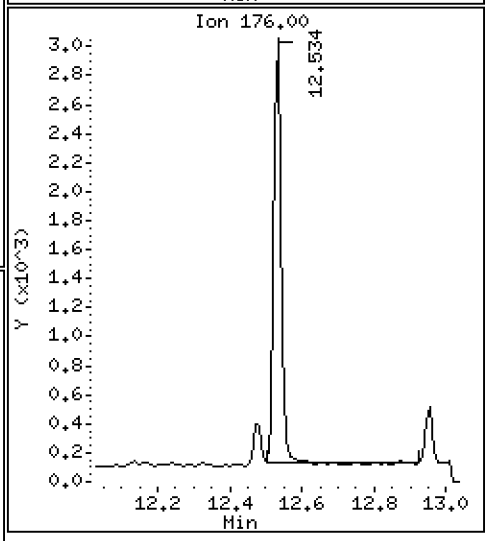
21 Anthracene

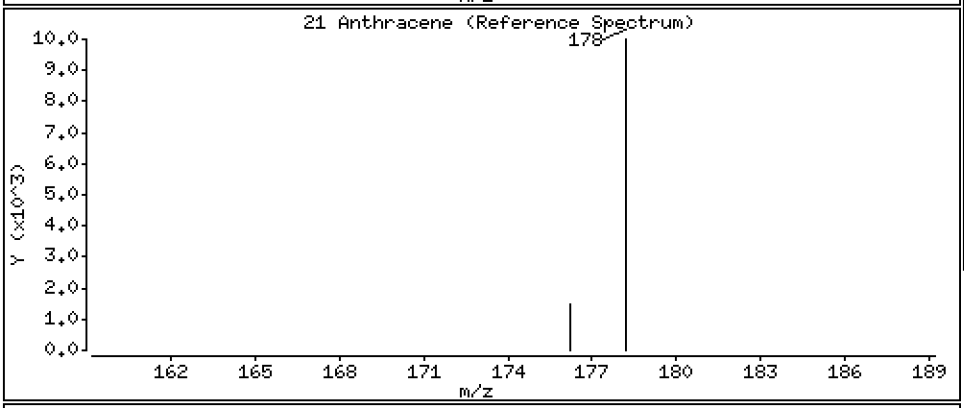
Concentration: 25.4 ng/mL

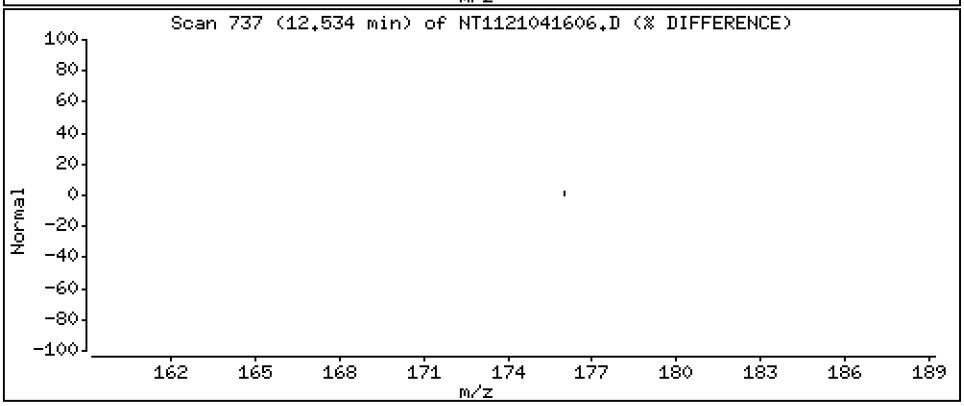












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

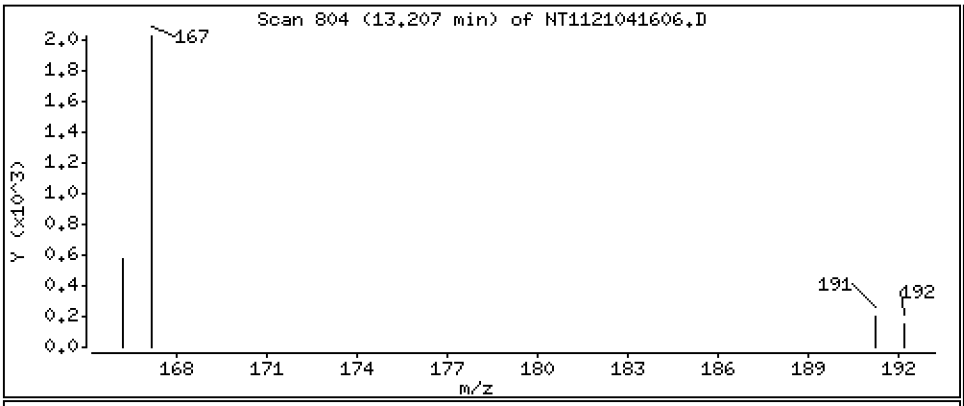
Operator: VTS

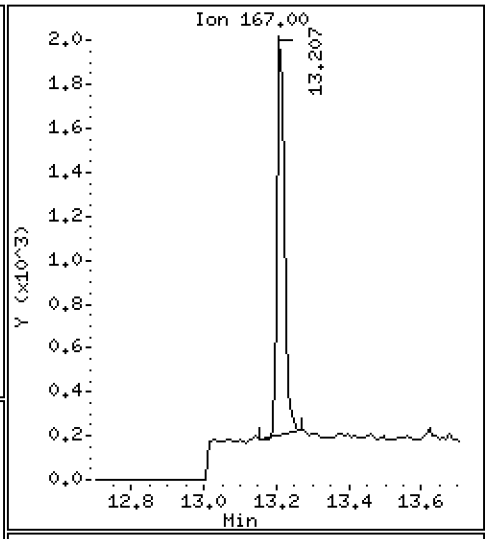
Column phase: Rxi-17Sil MS

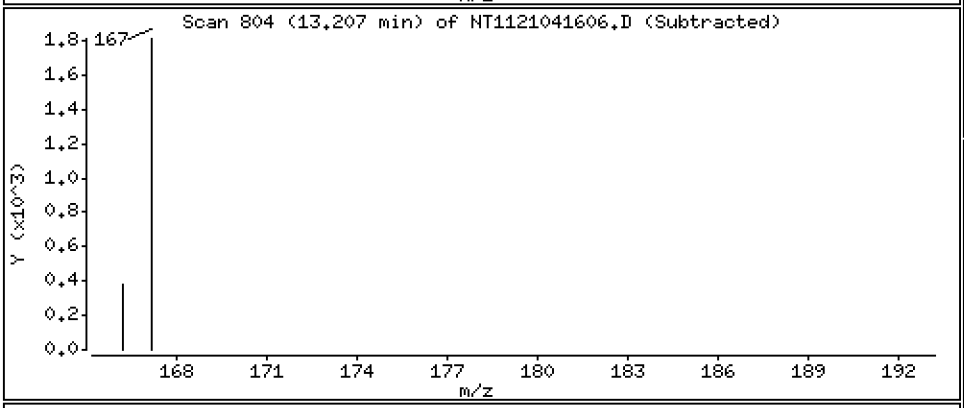
Column diameter: 0.25

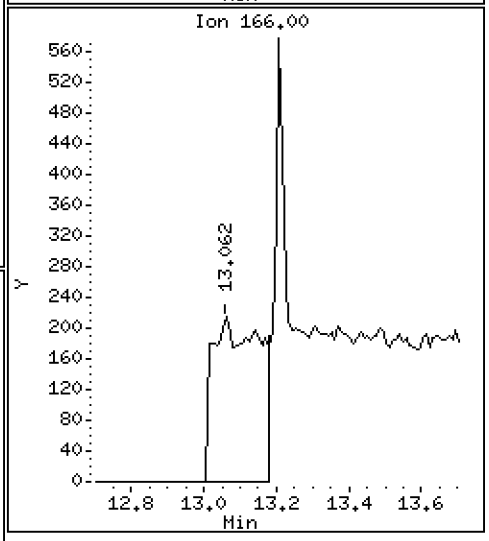
22 Carbazole

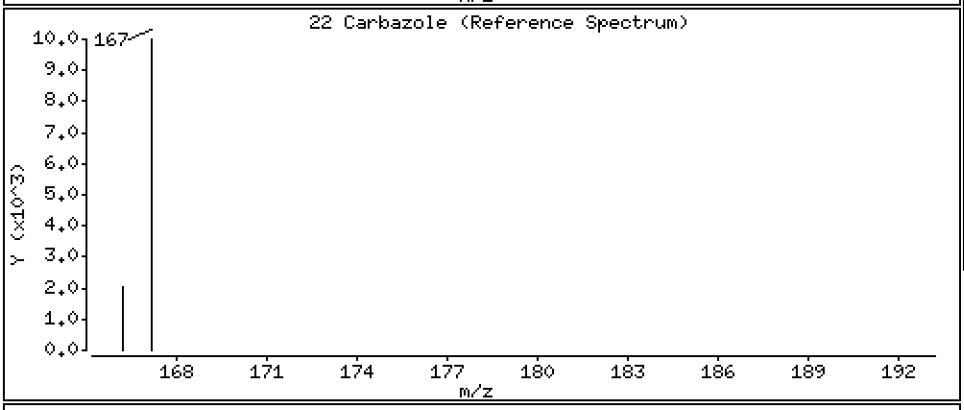
Concentration: 2.83 ng/mL

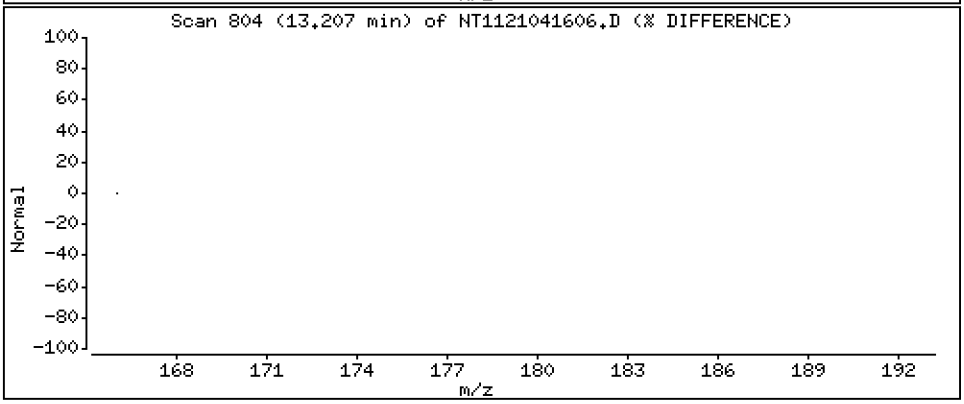












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

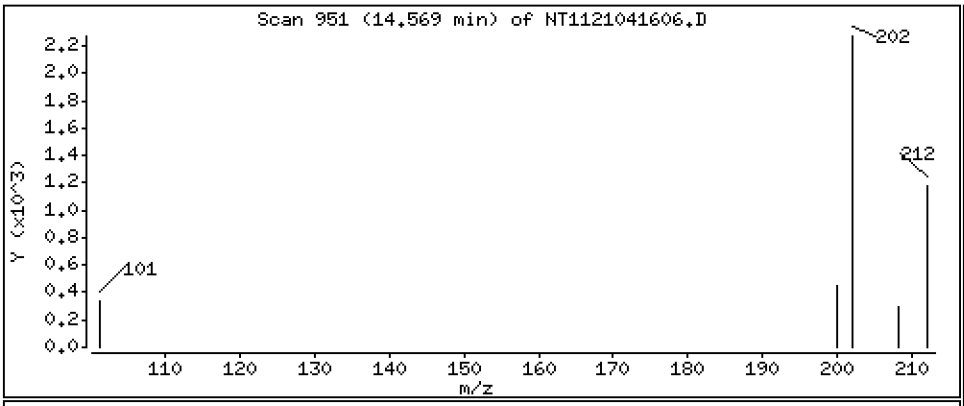
Operator: VTS

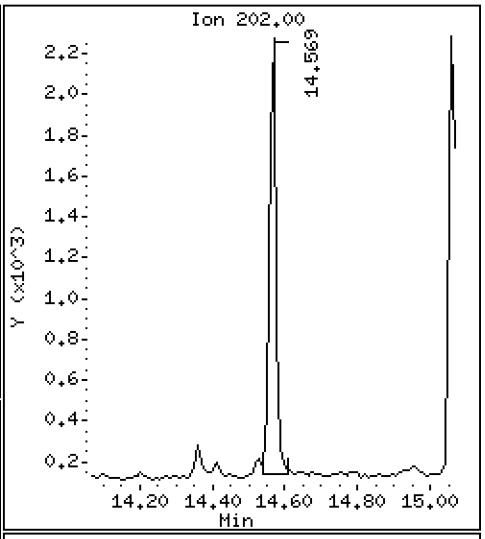
Column phase: Rxi-17Sil MS

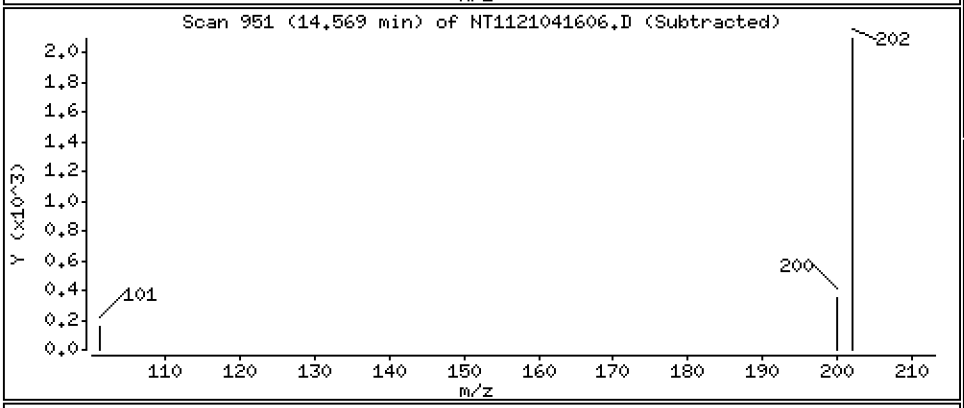
Column diameter: 0.25

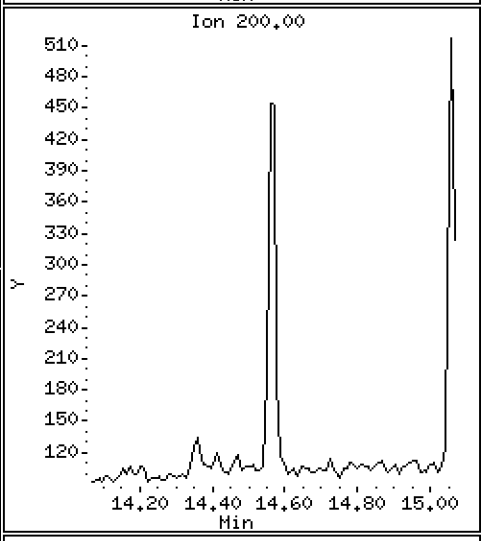
25 Fluoranthene

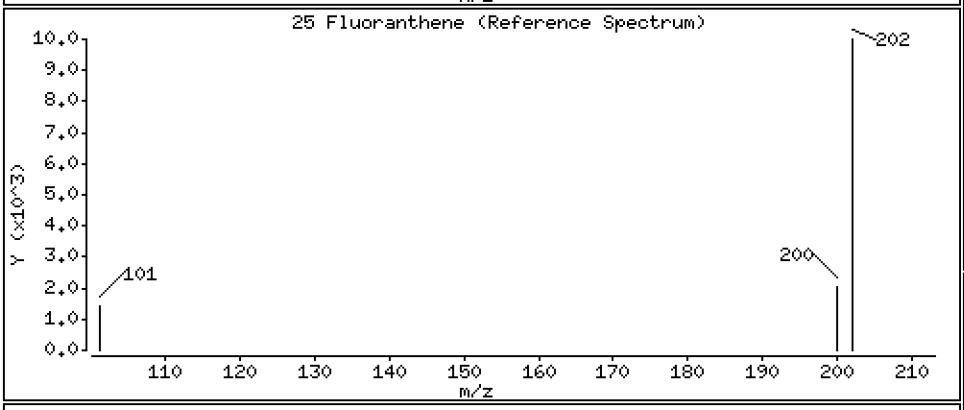
Concentration: 3.33 ng/mL

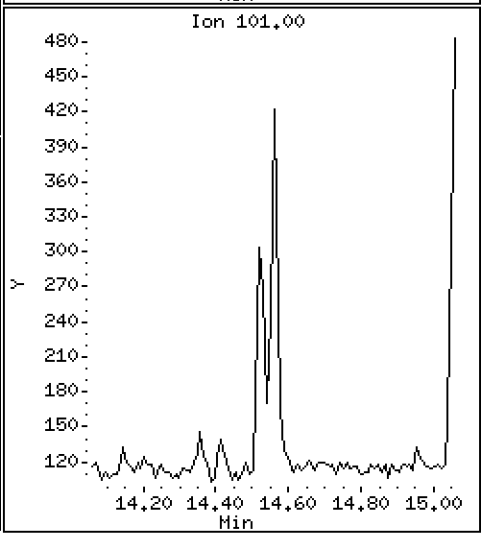


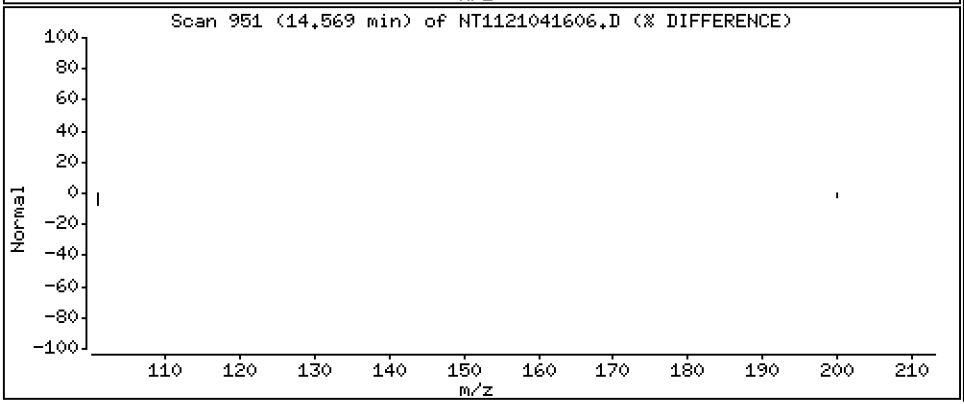












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

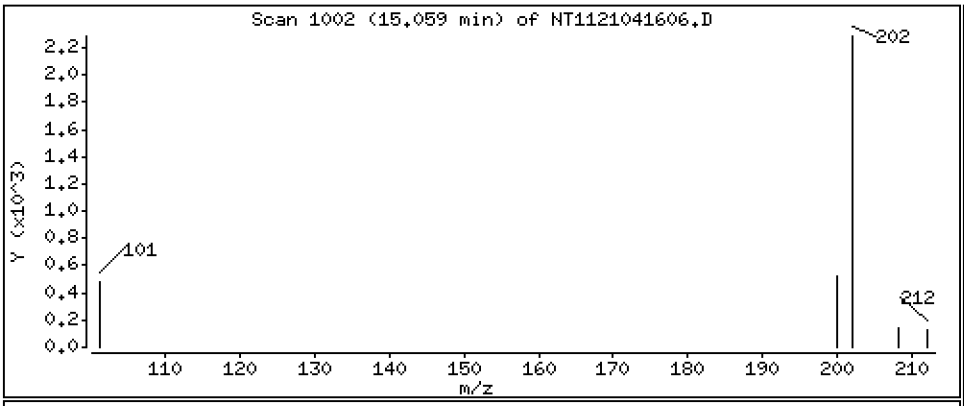
Operator: VTS

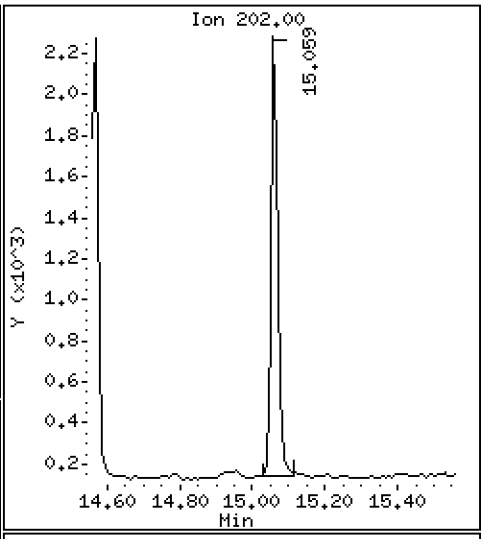
Column phase: Rxi-17Sil MS

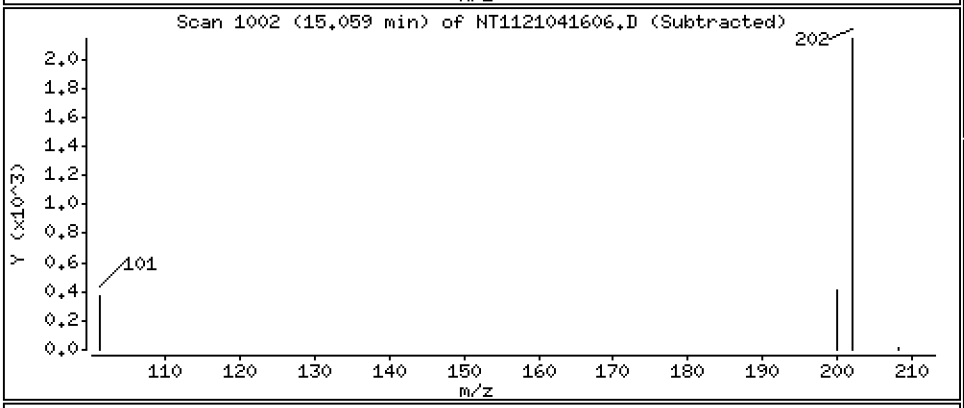
Column diameter: 0.25

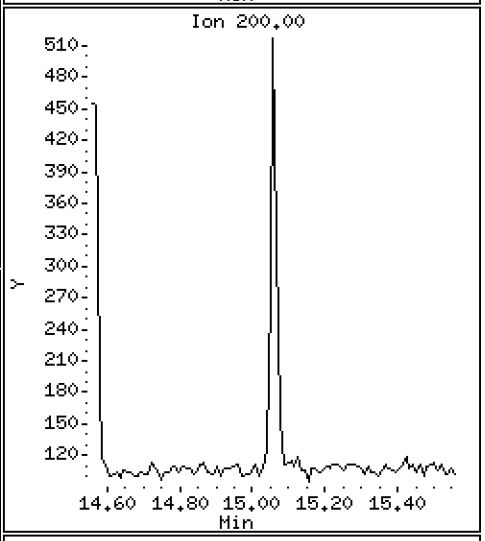
26 Pyrene

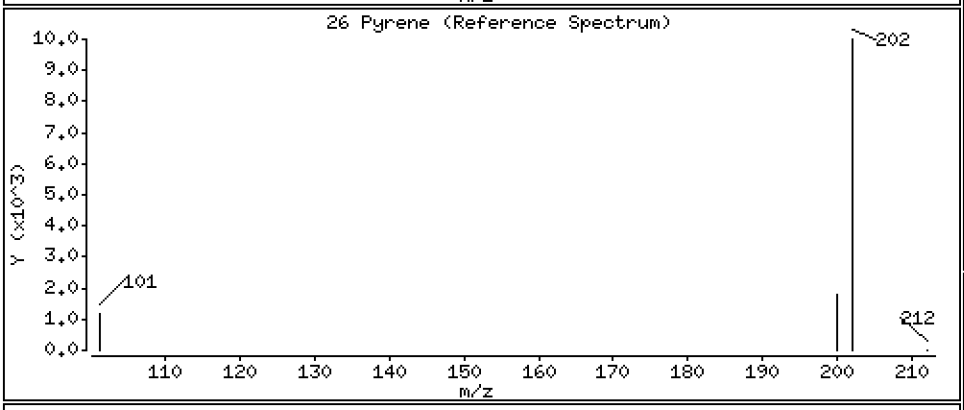
Concentration: 3.26 ng/mL

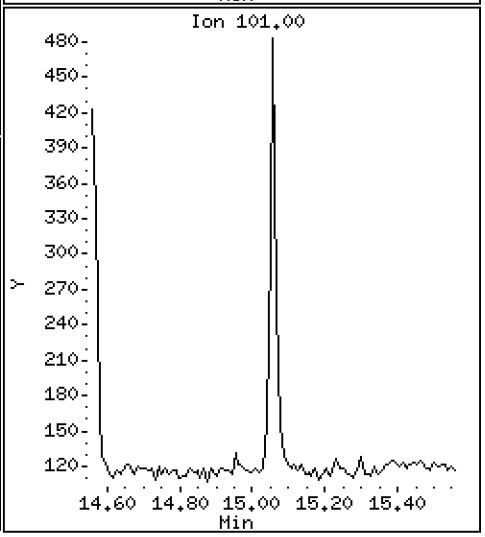


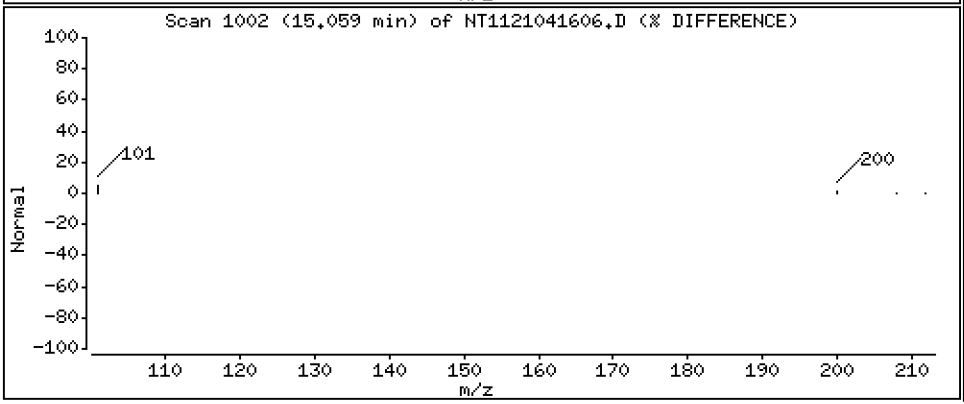












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

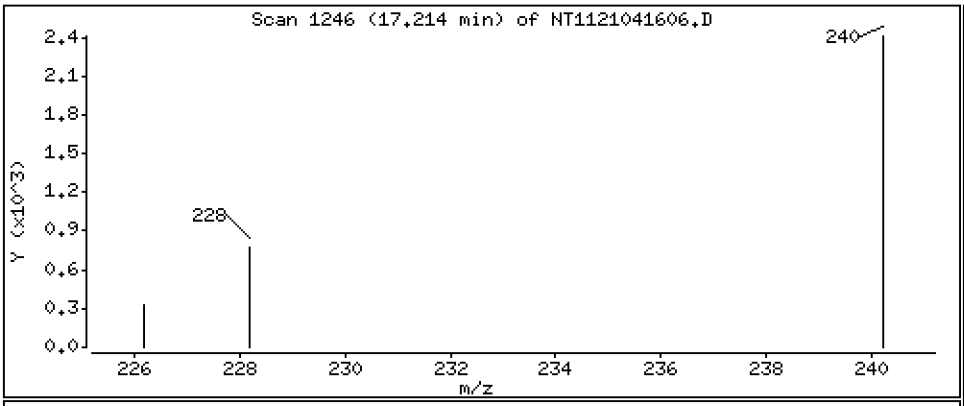
Operator: VTS

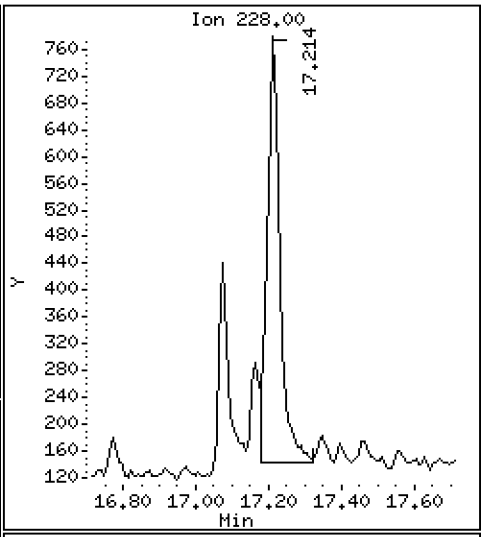
Column phase: Rxi-17Sil MS

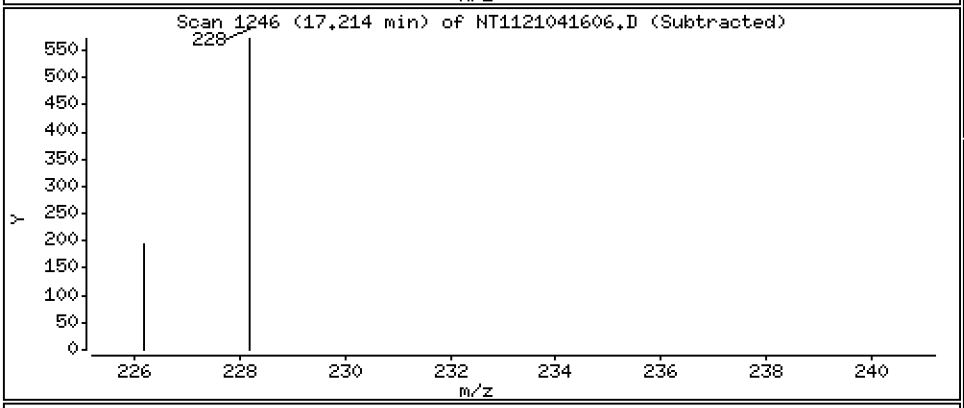
Column diameter: 0.25

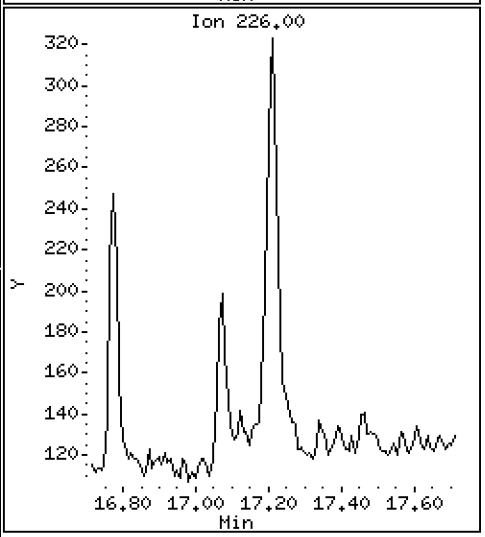
29 Chrysene

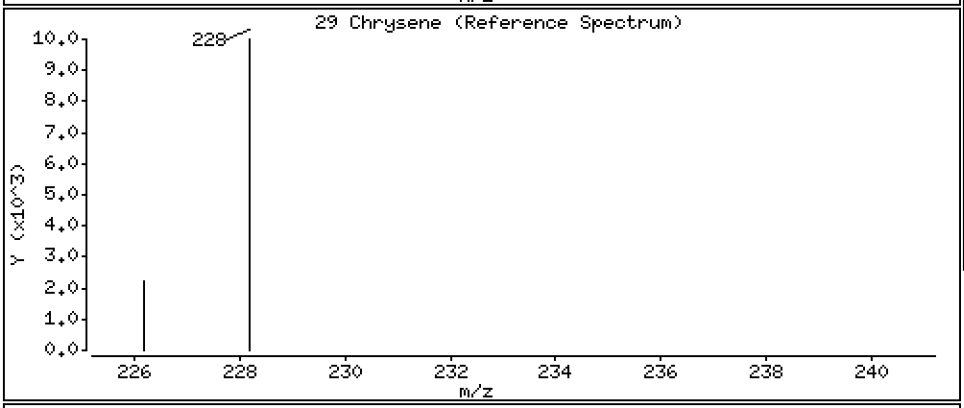
Concentration: 1.90 ng/mL

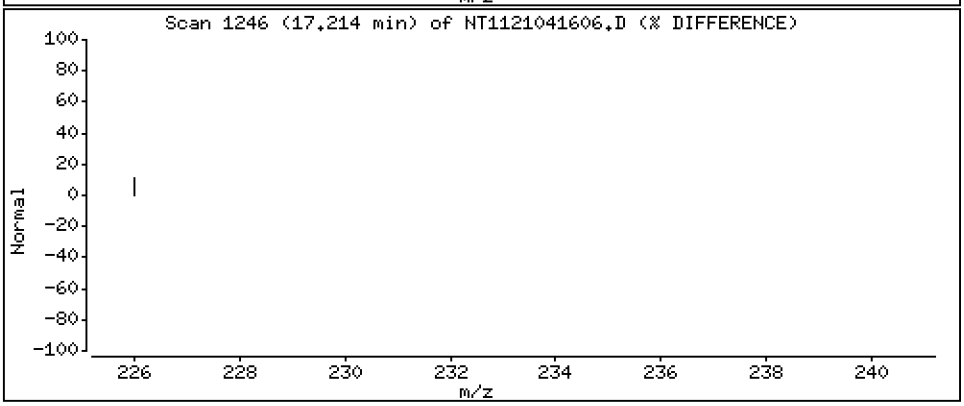












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

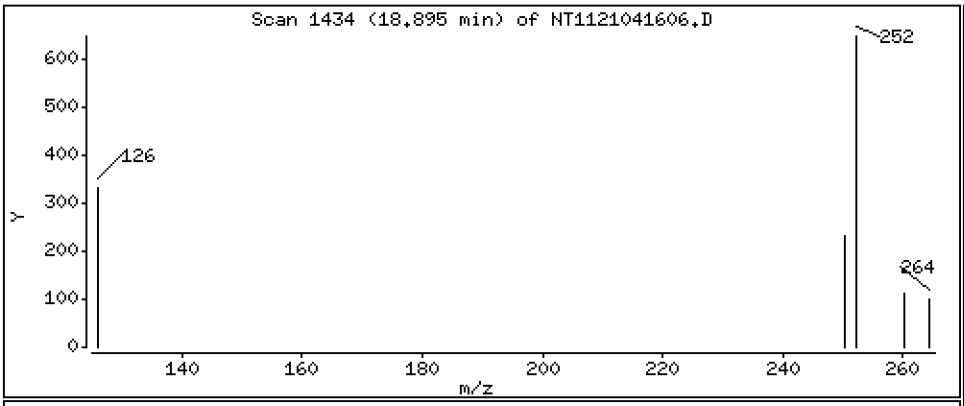
Operator: VTS

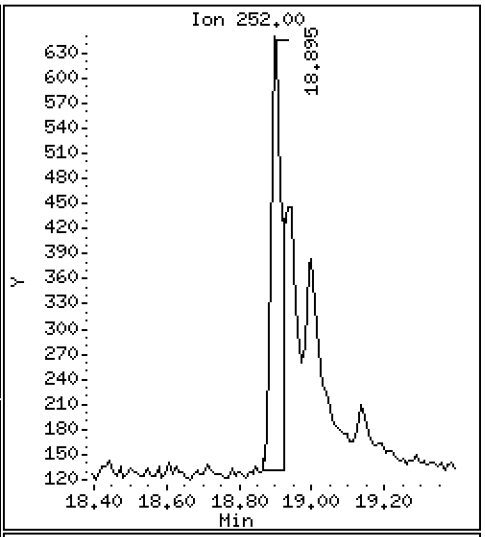
Column phase: Rxi-17Sil MS

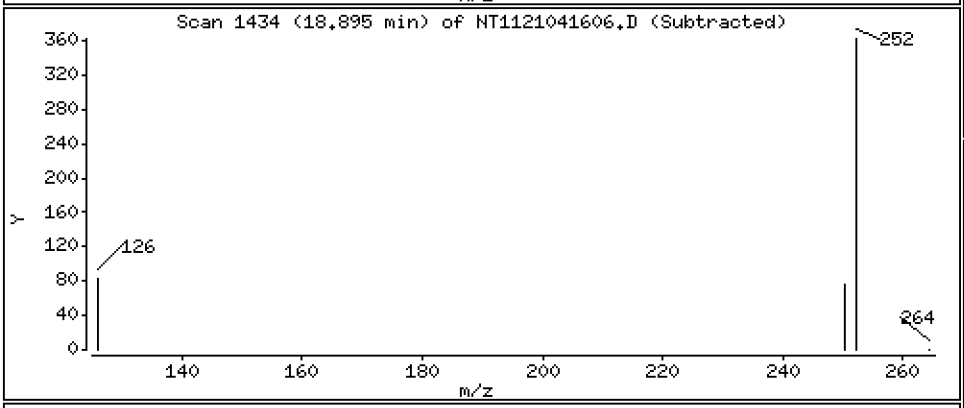
Column diameter: 0.25

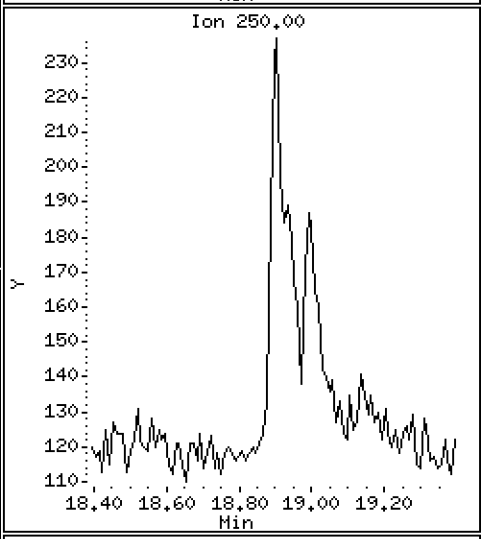
30 Benzo(b)fluoranthene

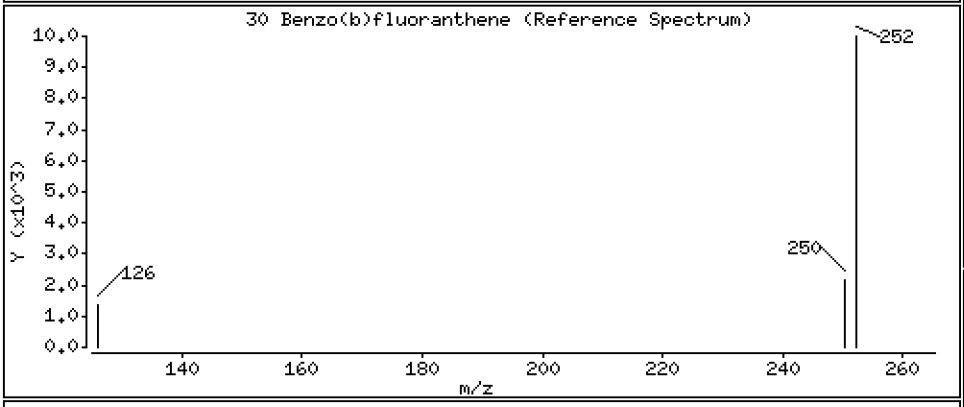
Concentration: 1.84 ng/mL

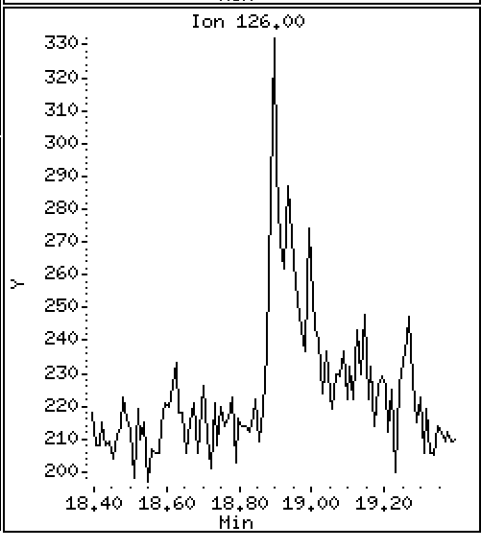


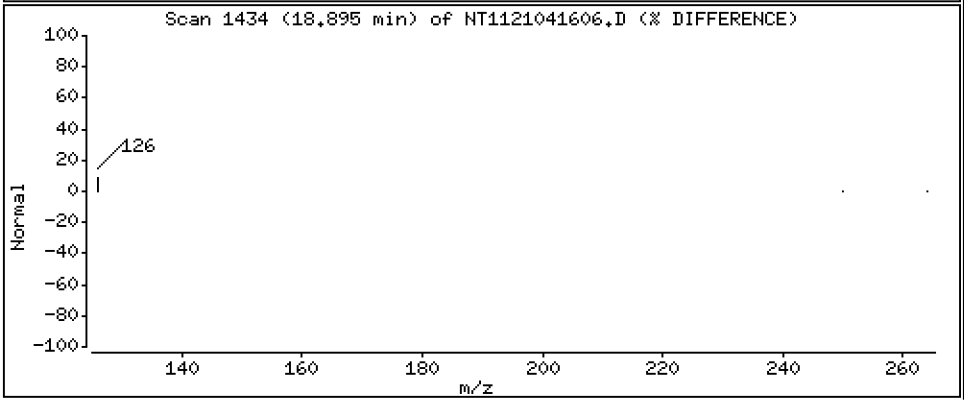












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

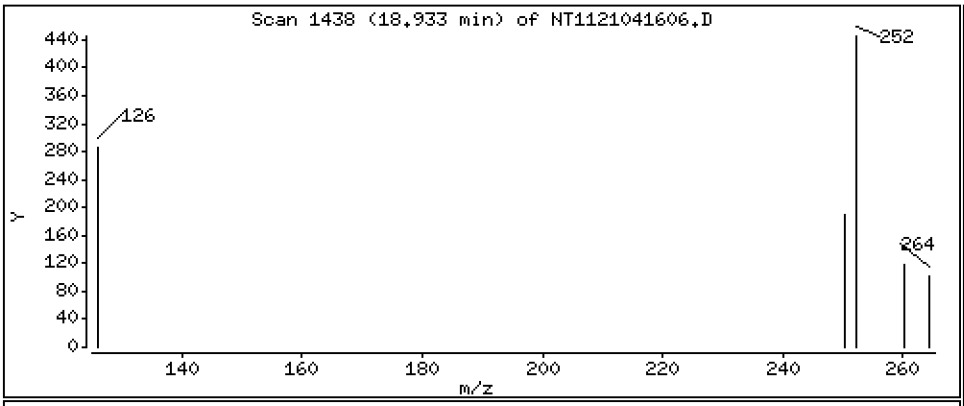
Operator: VTS

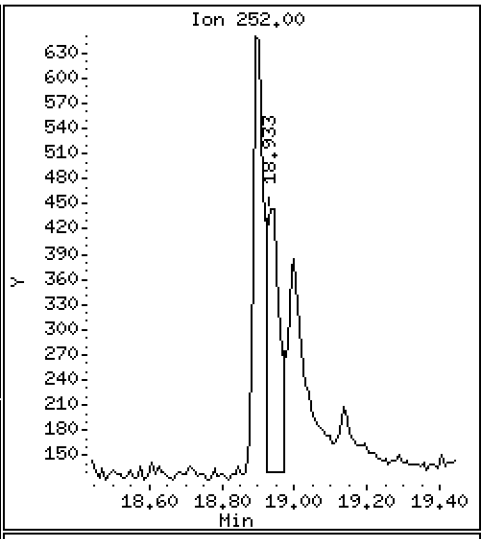
Column phase: Rxi-17Sil MS

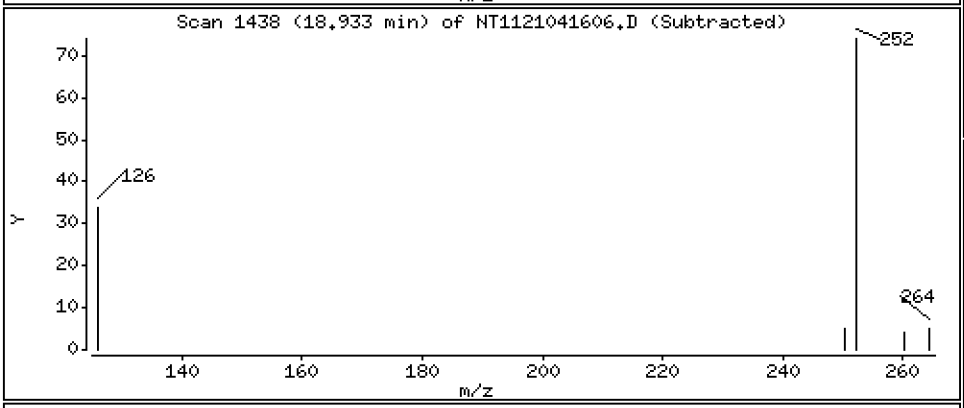
Column diameter: 0.25

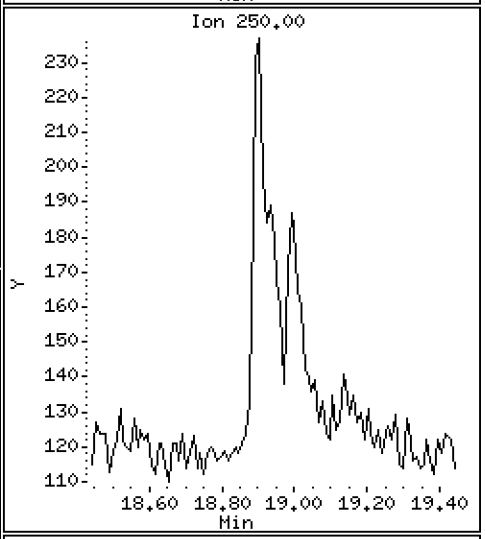
31 Benzo(k)fluoranthene

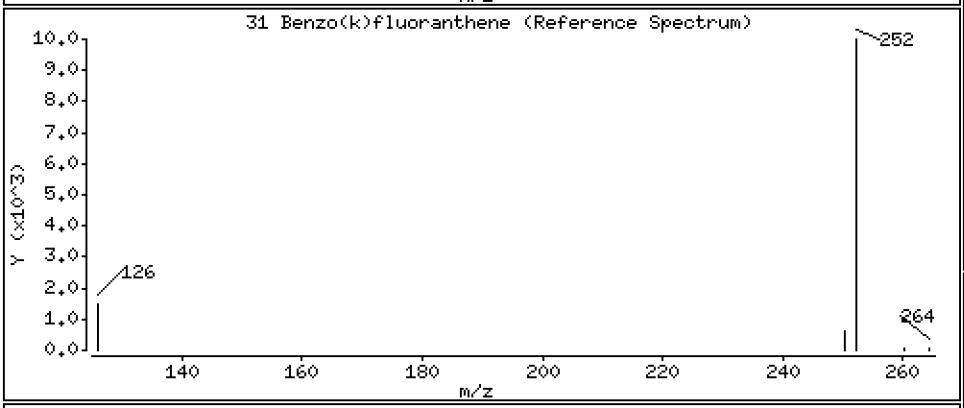
Concentration: 1.05 ng/mL

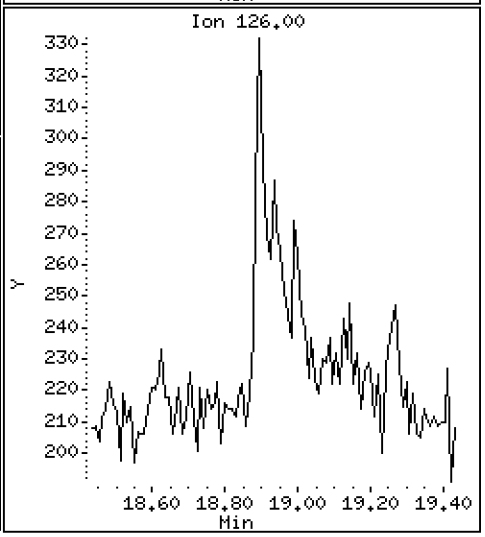


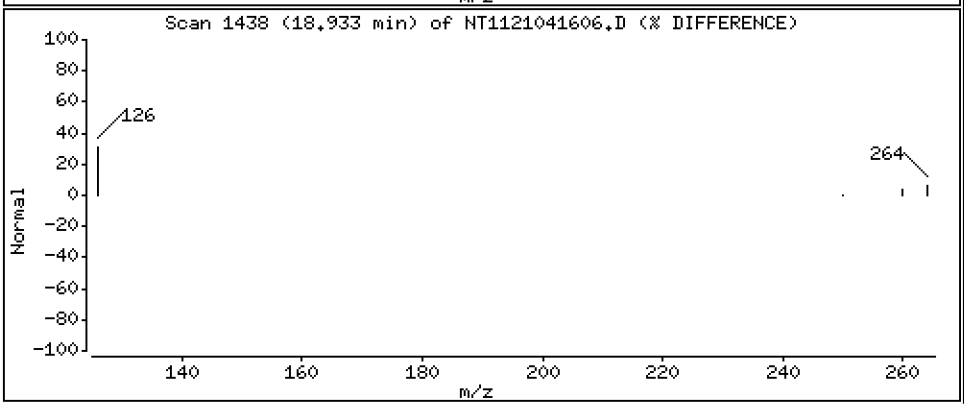












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

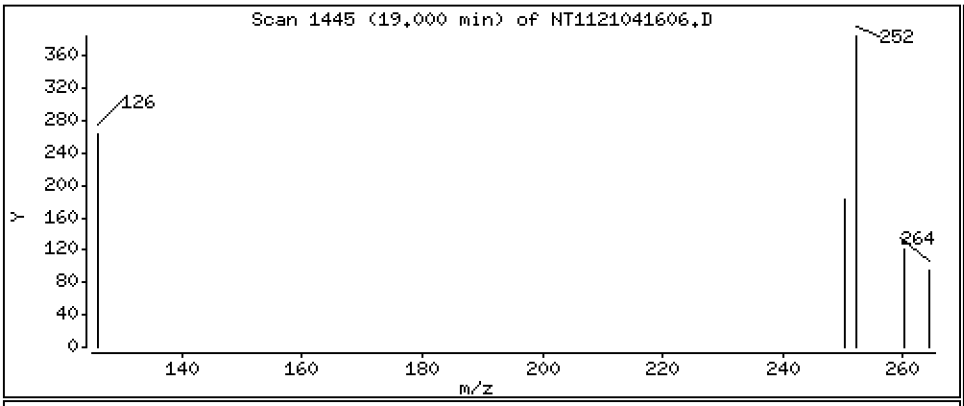
Operator: VTS

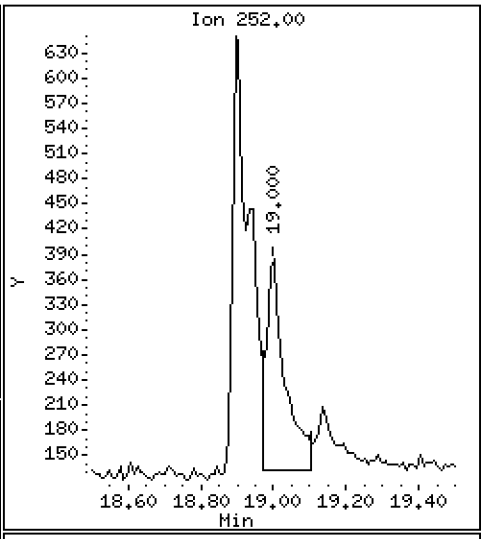
Column phase: Rxi-17Sil MS

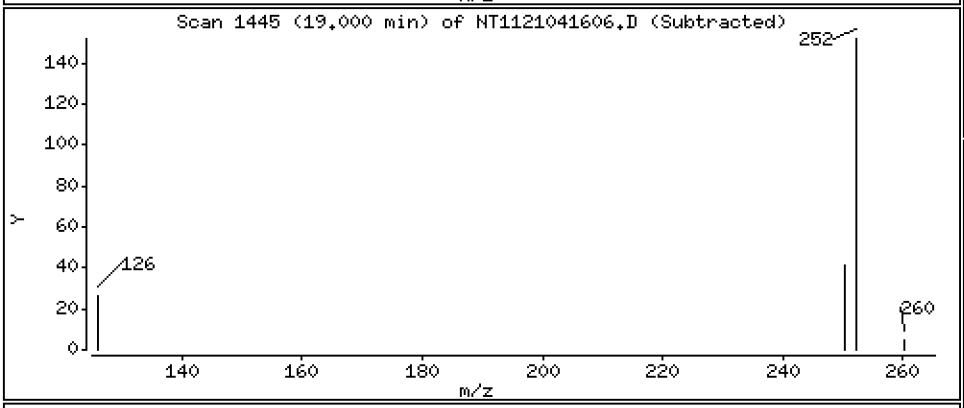
Column diameter: 0.25

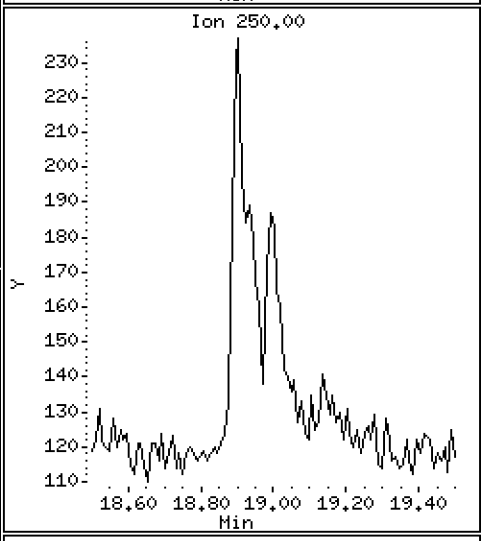
32 Benzo(j)fluoranthene

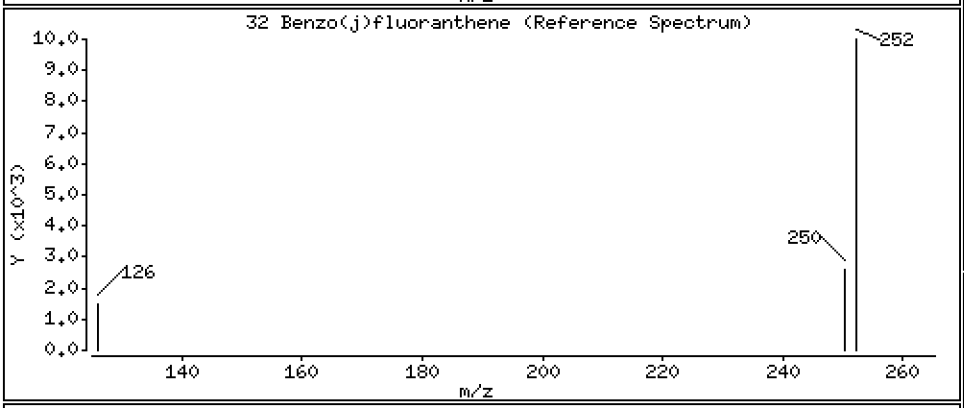
Concentration: 1.10 ng/mL

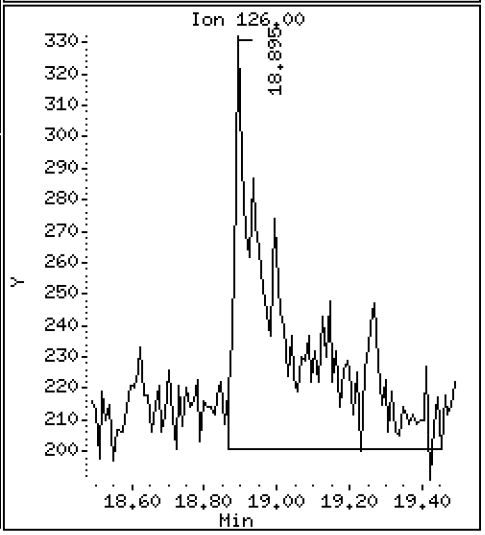


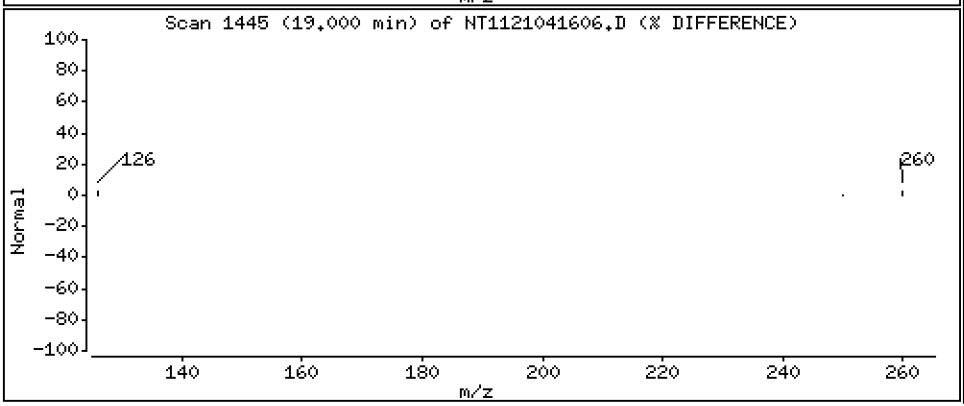












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

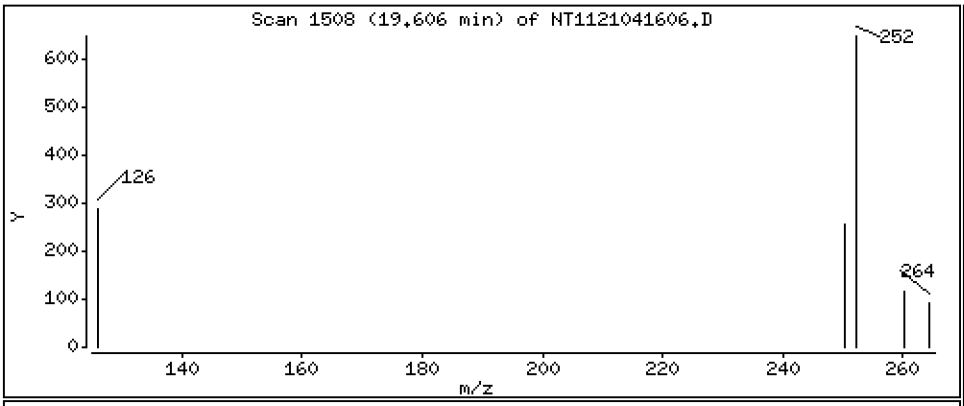
Operator: VTS

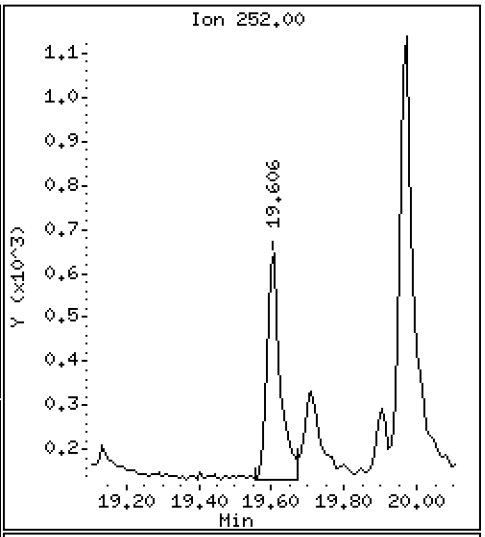
Column phase: Rxi-17Sil MS

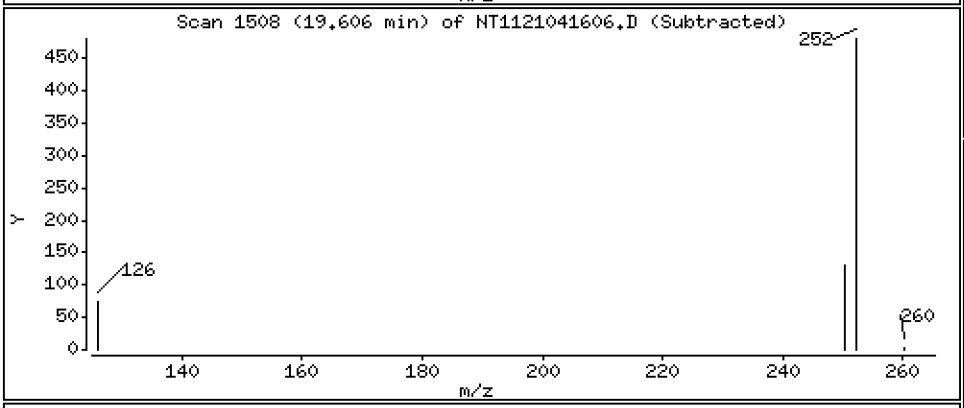
Column diameter: 0.25

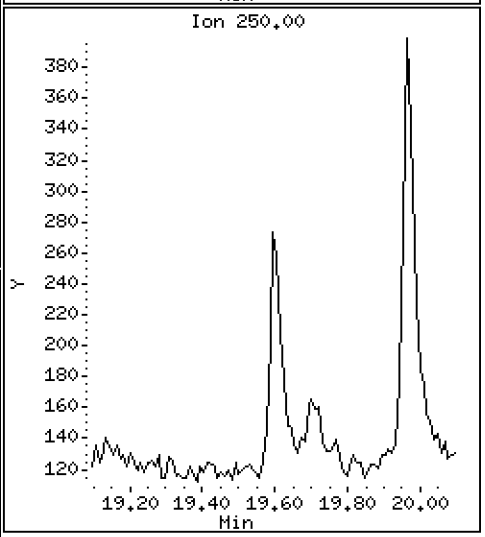
34 Benzo(e)pyrene

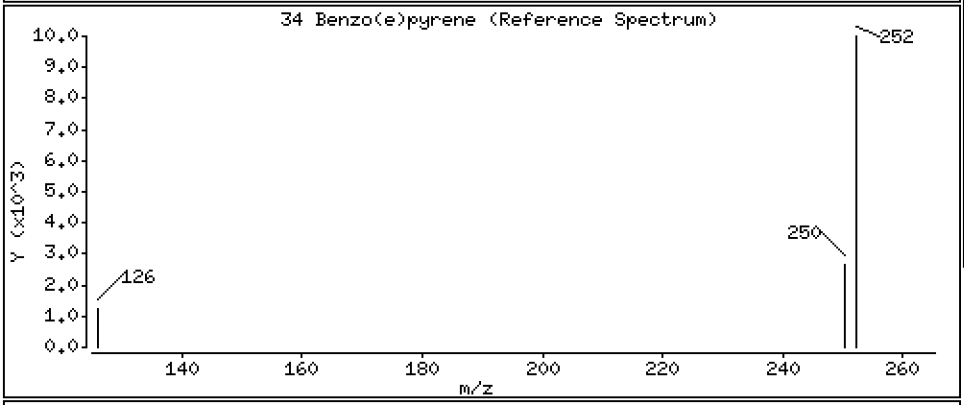
Concentration: 1.91 ng/mL

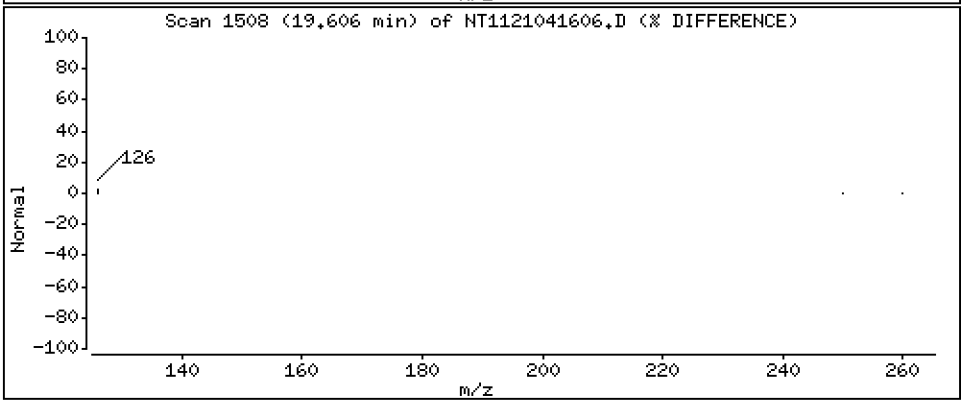












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

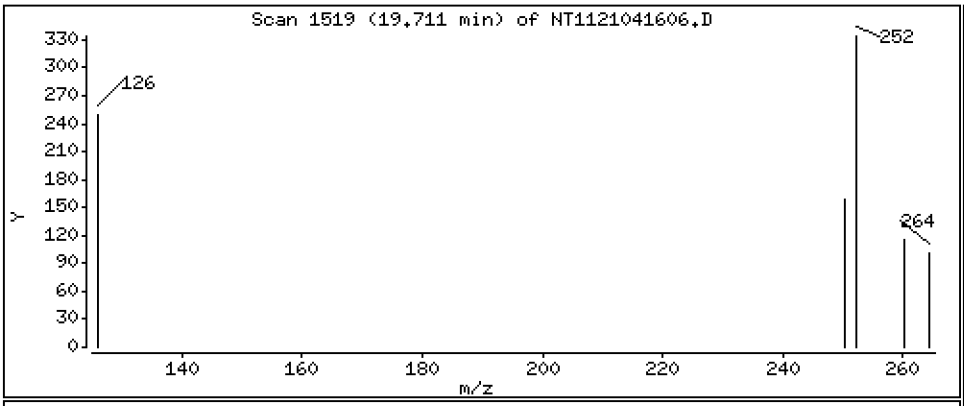
Operator: VTS

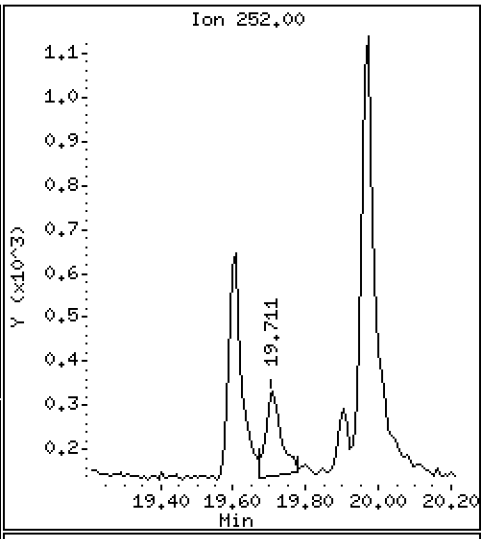
Column phase: Rxi-17Sil MS

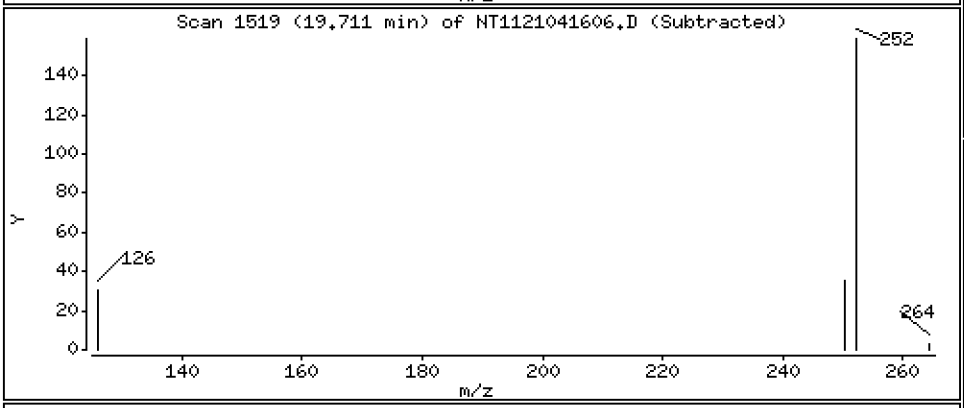
Column diameter: 0.25

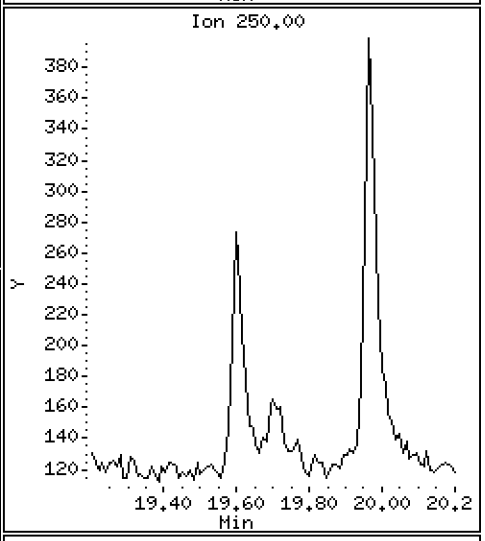
35 Benzo(a)pyrene

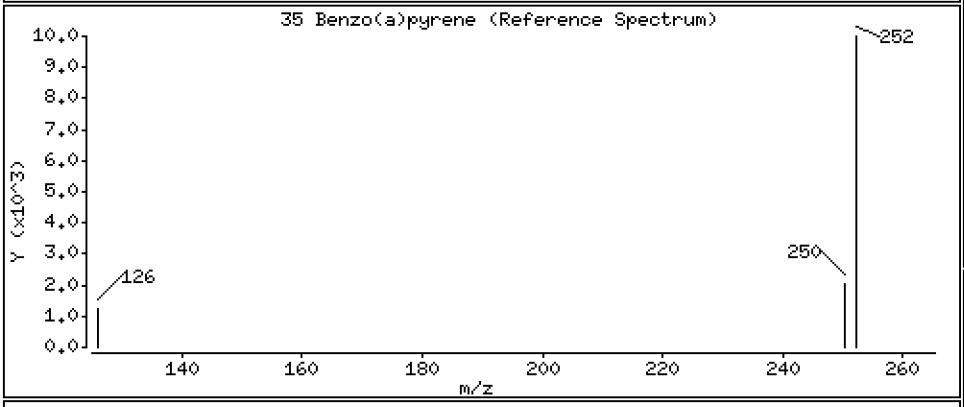
Concentration: 0.919 ng/mL

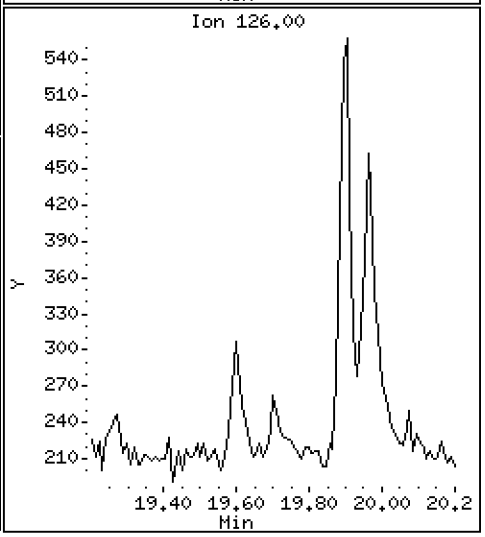


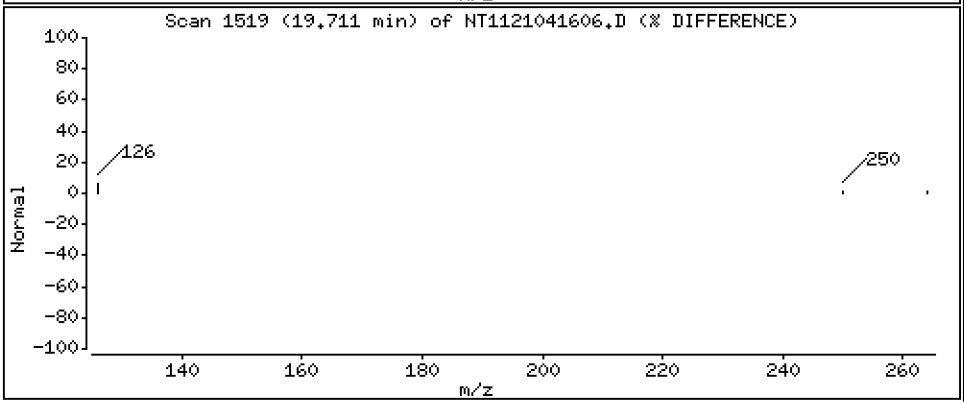












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

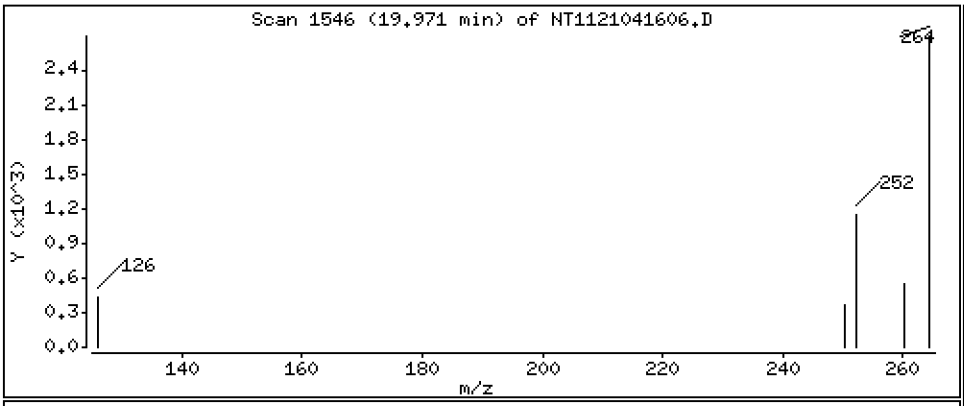
Operator: VTS

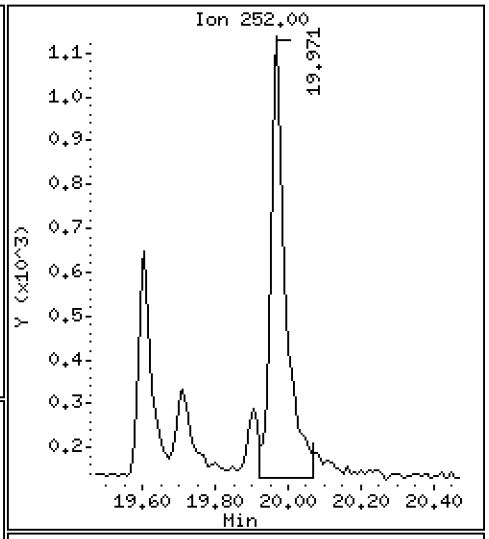
Column phase: Rxi-17Sil MS

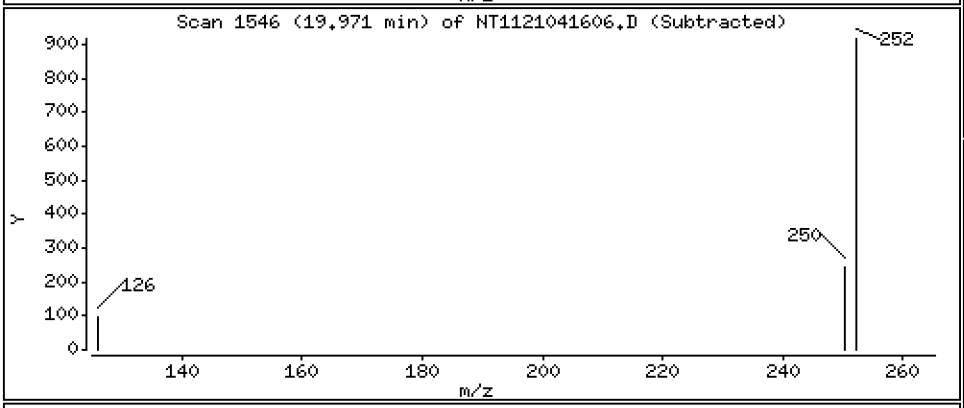
Column diameter: 0.25

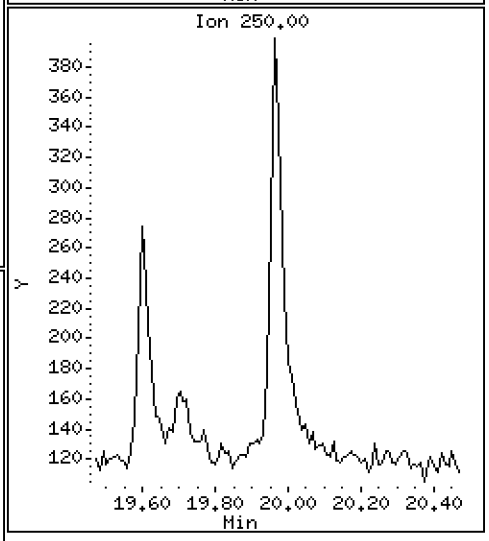
37 Perylene

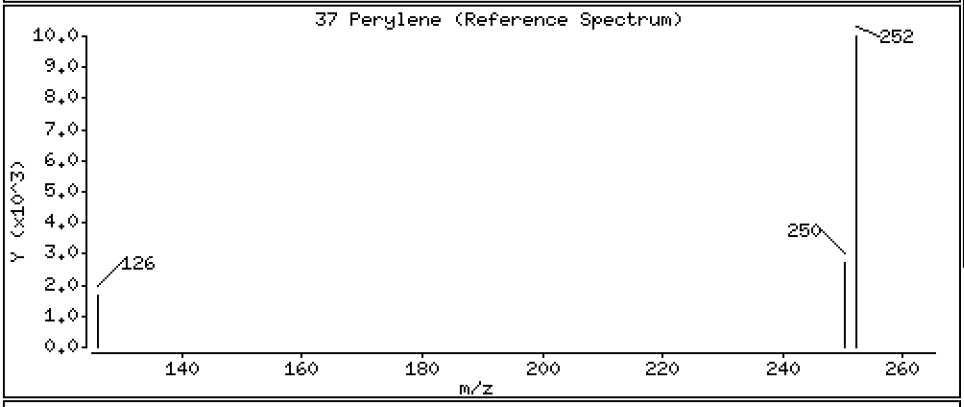
Concentration: 4.04 ng/mL

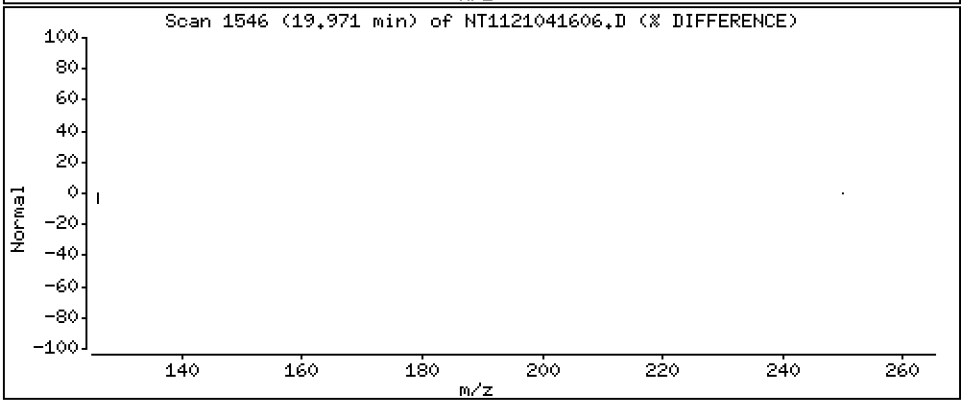












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D

Date : 16-APR-2021 12:26

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-05

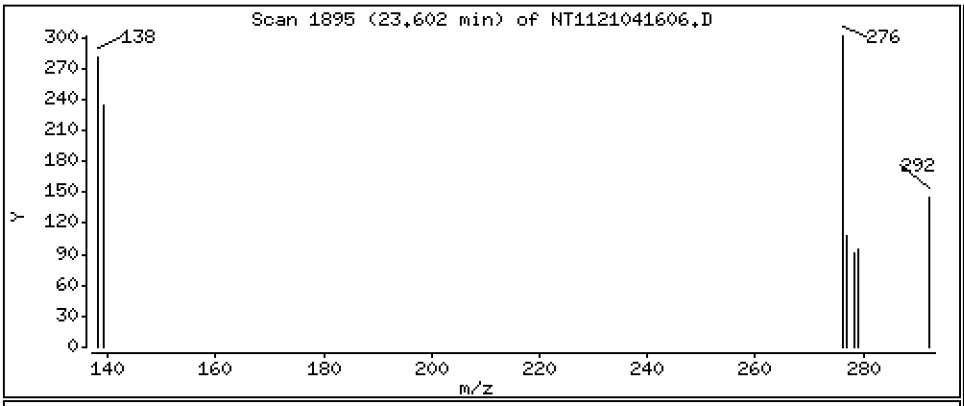
Operator: VTS

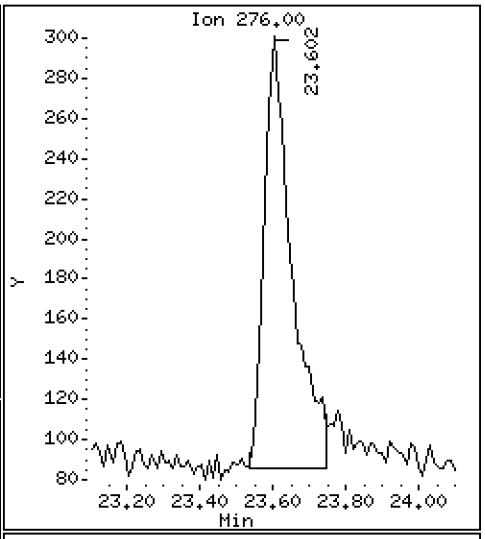
Column phase: Rxi-17Sil MS

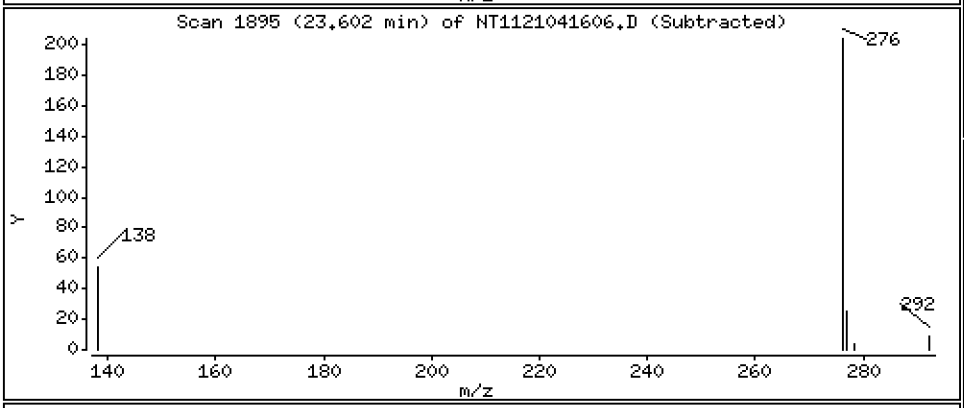
Column diameter: 0.25

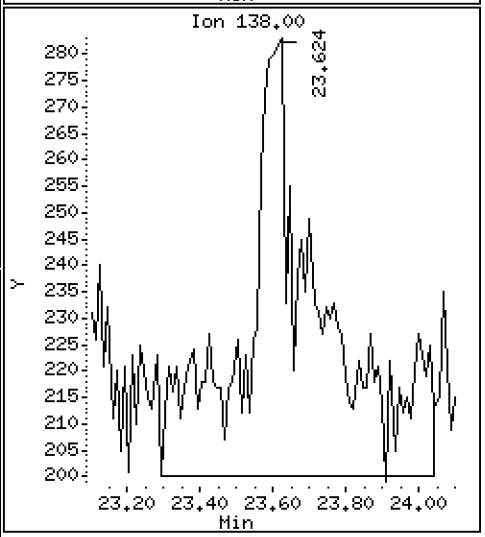
41 Benzo(g,h,i)perylene

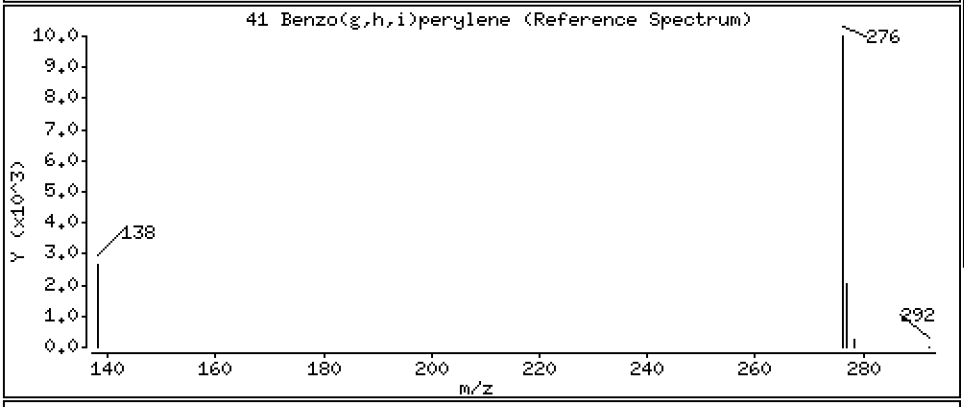
Concentration: 1.82 ng/mL

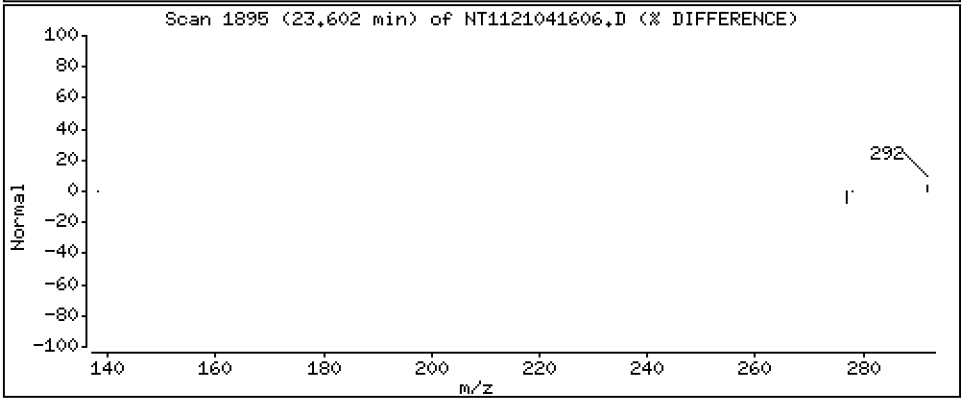












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041606.D
Lab Smp Id: 21C0456-05
Inj Date : 16-APR-2021 12:26 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : 21C0456-05
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.777	6.777	(1.000)	170554	200.000	
	2 Naphthalene	128	6.813	6.813	(1.005)	3189	3.22031	3.22(M)
	3 Benzo(b)thiophene	134	7.057	7.057	(1.041)	1578	2.01986	2.02
$	4 2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	125878	183.553	184
	5 2-Methylnaphthalene	142	7.801	7.801	(1.151)	2403	3.01011	3.01
	6 1-Methylnaphthalene	142	8.054	8.054	(1.188)	1554	2.09408	2.09(M)
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	8.673	8.673	(0.888)	3923	3.80452	3.80
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	Compound Not Detected.					
*	11 Acenaphthene-d10	164	9.770	9.770	(1.000)	88926	200.000	
	12 Acenaphthene	153	9.833	9.833	(1.006)	2929	4.34078	4.34
	13 Dibenzofuran	168	10.036	10.036	(1.027)	2287	2.53907	2.54(M)
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	10.655	10.655	(1.091)	2198	3.16796	3.17
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.439	12.439	(1.000)	132416	200.000	
	19 Phenanthrene	178	12.481	12.481	(1.003)	2174	2.50977	2.51
	21 Anthracene	178	12.533	12.533	(1.008)	21994	25.4120	25.4
	22 Carbazole	167	13.207	13.207	(1.062)	2613	2.83327	2.83(M)
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	14.530	14.530	(1.168)	132724	191.181	191
	25 Fluoranthene	202	14.568	14.568	(1.171)	2874	3.32791	3.33(M)
	26 Pyrene	202	15.058	15.058	(1.211)	2885	3.25627	3.26(M)
	27 Benzo(a)anthracene	228	Compound Not Detected.					
*	28 Chrysene-d12	240	17.163	17.163	(1.000)	96625	200.000	
	29 Chrysene	228	17.213	17.213	(1.003)	1522	1.90437	1.90(M)
	30 Benzo(b)fluoranthene	252	18.894	18.894	(0.949)	1121	1.83661	1.84(M)
	31 Benzo(k)fluoranthene	252	18.933	18.942	(0.951)	840	1.04737	1.05(M)
	32 Benzo(j)fluoranthene	252	19.000	19.000	(0.955)	956	1.10302	1.10(M)
	34 Benzo(e)pyrene	252	19.605	19.605	(0.985)	1322	1.91265	1.91
	35 Benzo(a)pyrene	252	19.711	19.711	(0.990)	586	0.91925	0.919(M)
*	36 Perylene-d12	264	19.903	19.903	(1.000)	112135	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
	37 Perylene	252	19.970	19.970	(1.003)	2931	4.03562	4.04(M)
$	38 Dibenzo(a,h)anthracene-d14	292	22.305	22.305	(1.121)	91159	208.109	208
	39 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	40 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
	41 Benzo(g,h,i)perylene	276	23.601	23.601	(1.186)	1125	1.81755	1.82(M)

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041606.D
Lab Smp Id: 21C0456-05
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 10:42
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	170554	20.02
11 Acenaphthene-d10	80301	40151	160602	88926	10.74
18 Phenanthrene-d10	121929	60965	243858	132416	8.60
28 Chrysene-d12	94055	47028	188110	96625	2.73
36 Perylene-d12	114179	57090	228358	112135	-1.79

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041606.D

Lab ID: 21C0456-05
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 12:26

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1121041602.D

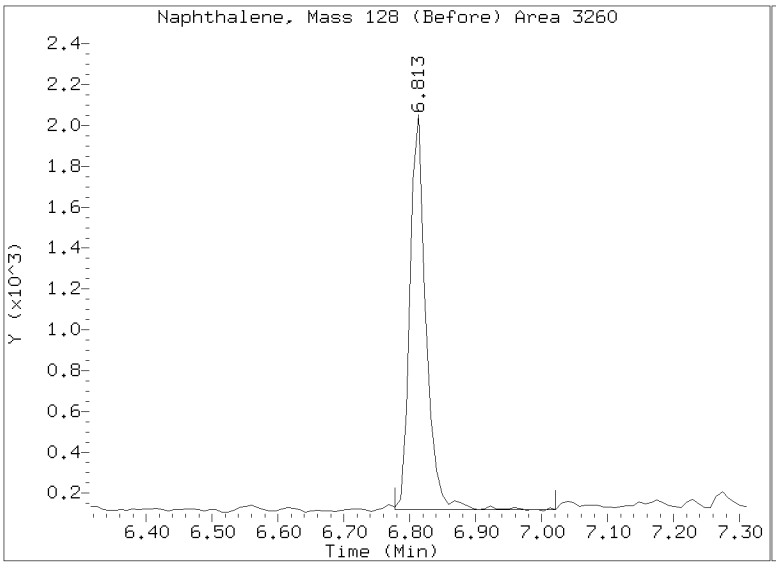
On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

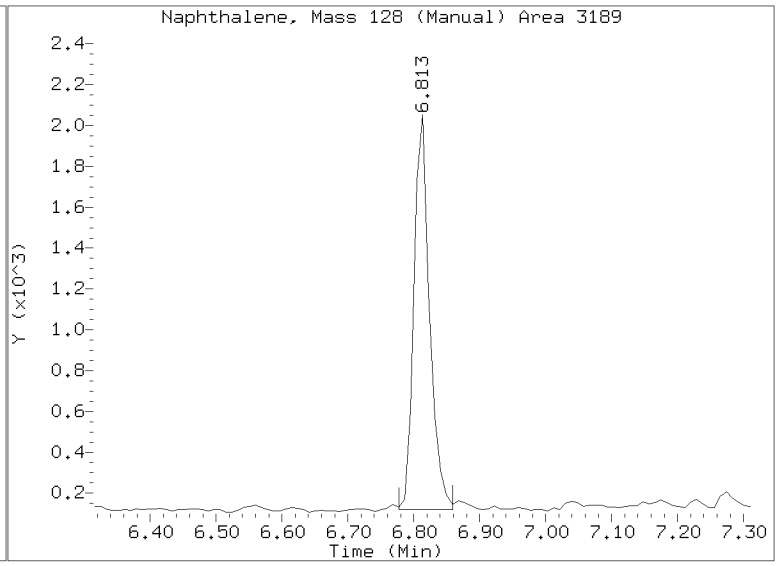
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

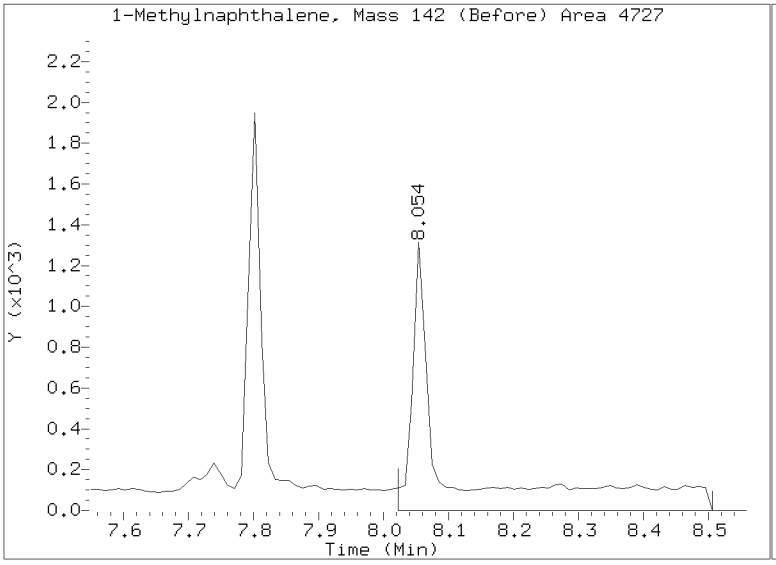
* Only compounds listed in the work order have been verified by the analyst *

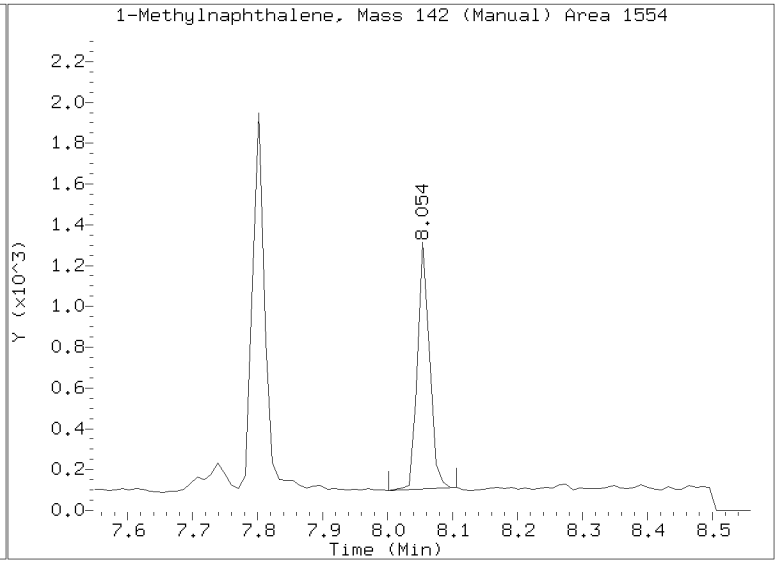
Quant Ion Manual Peak Adjustment Report

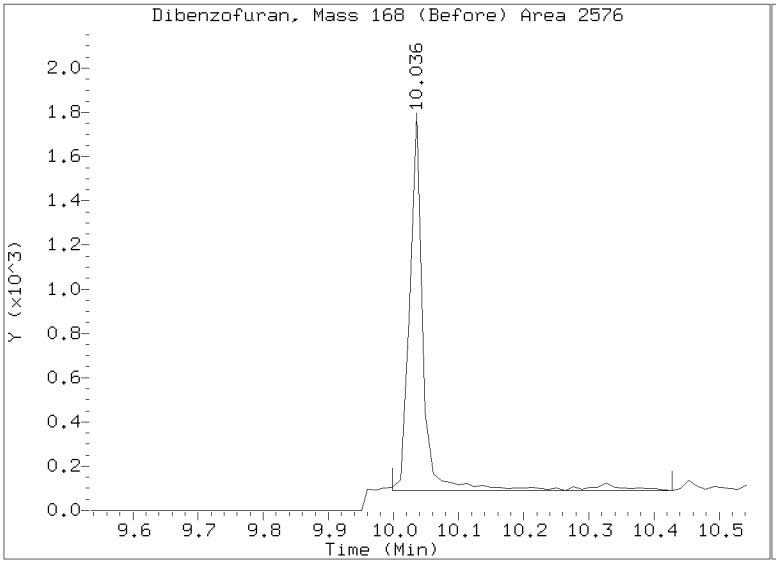
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041606.D
Injection Date: 16-APR-2021 12:26
Lab ID:21C0456-05 Client ID:
Report Date: 04/17/2021 08:33

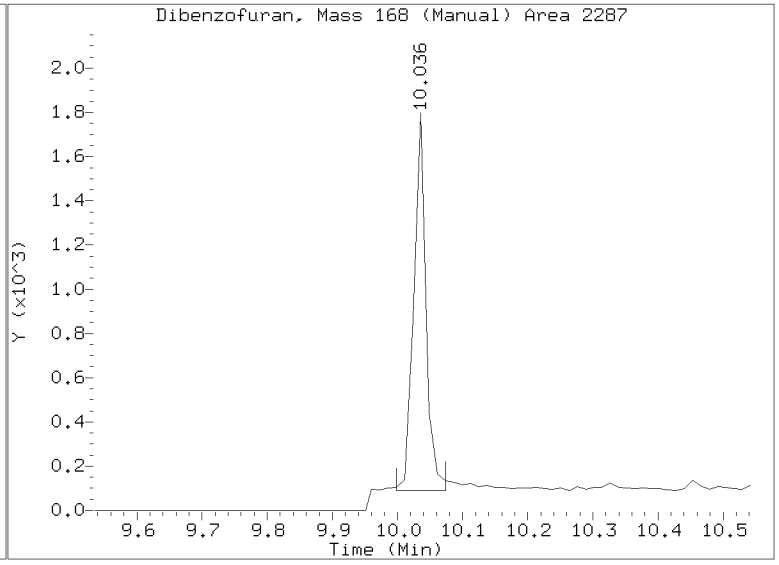






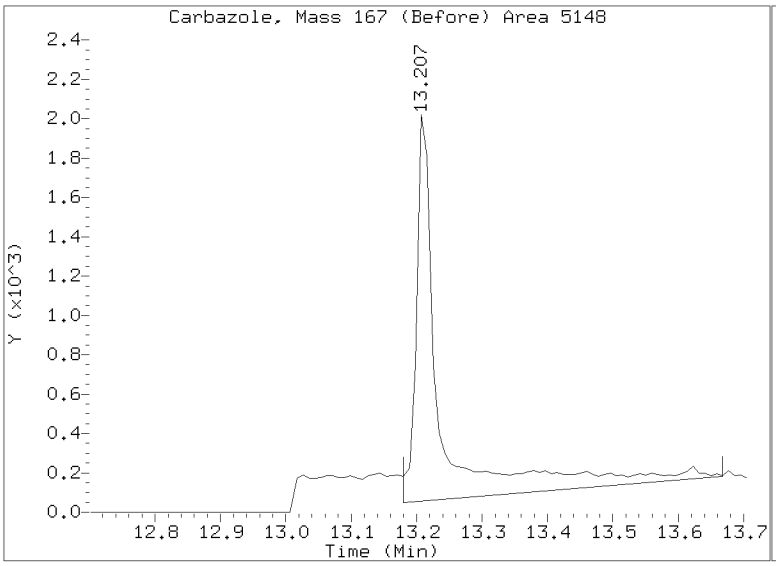


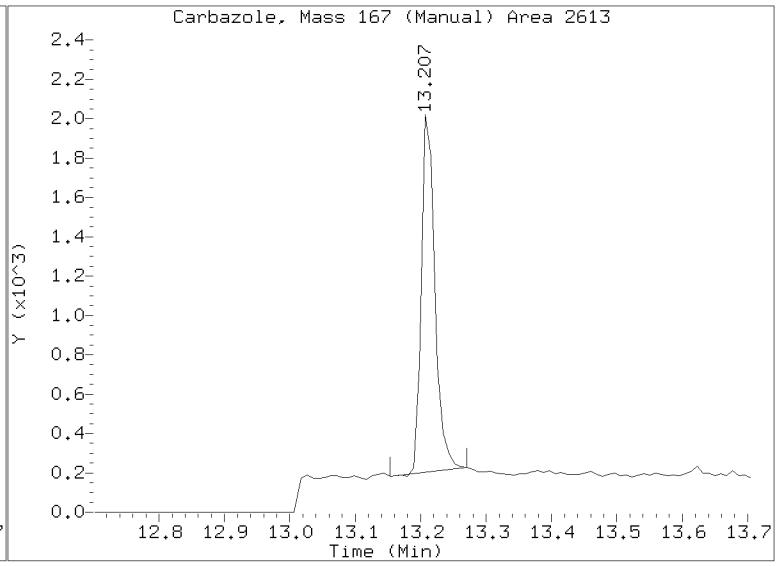


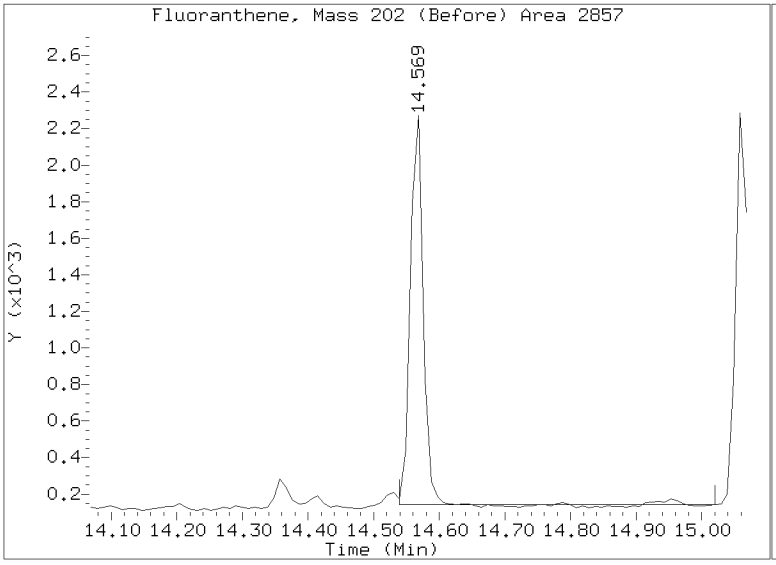


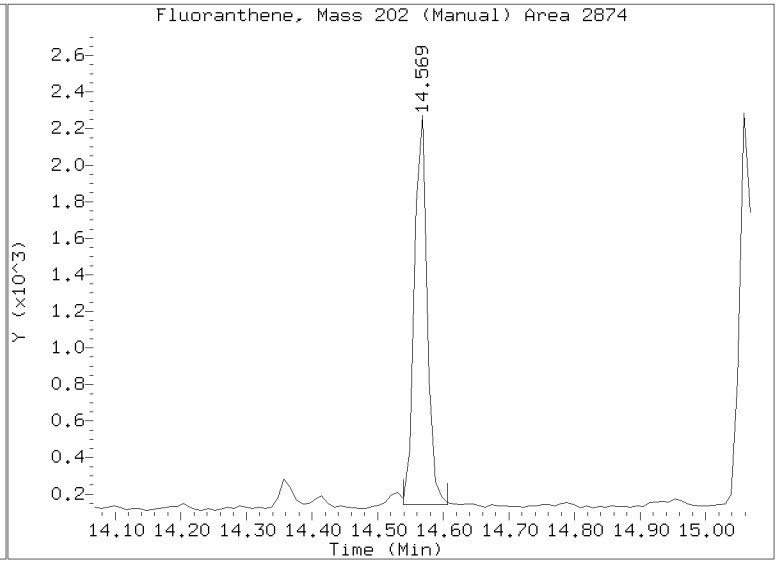
Quant Ion Manual Peak Adjustment Report

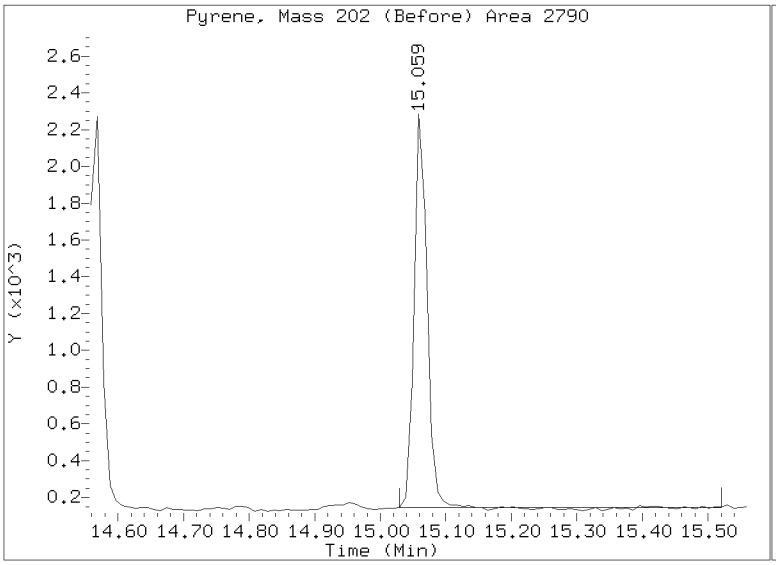
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041606.D
Injection Date: 16-APR-2021 12:26
Lab ID:21C0456-05 Client ID:
Report Date: 04/17/2021 08:33

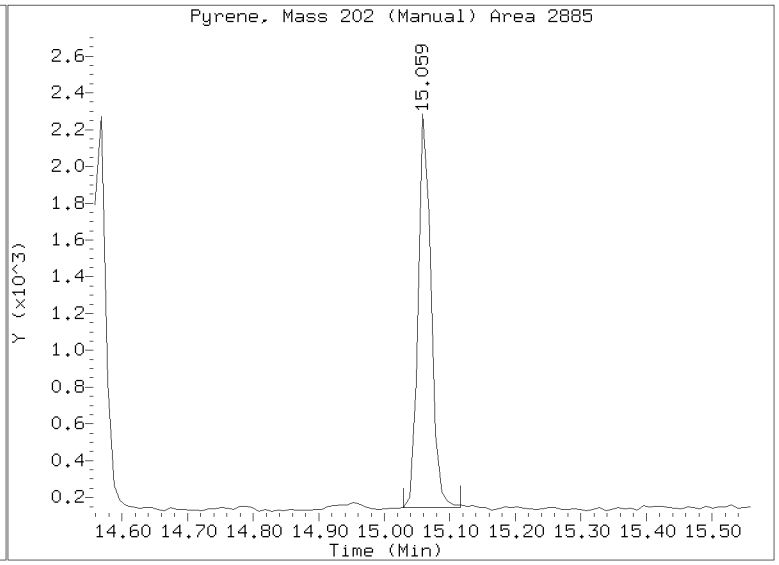






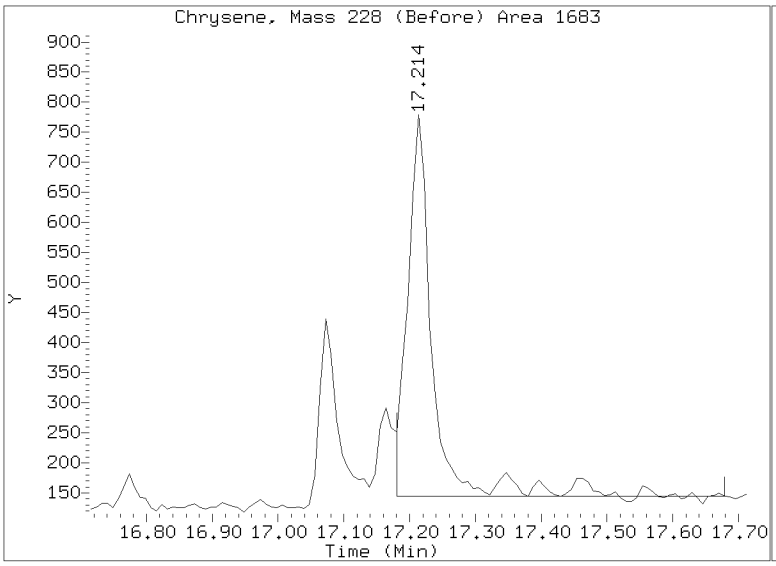


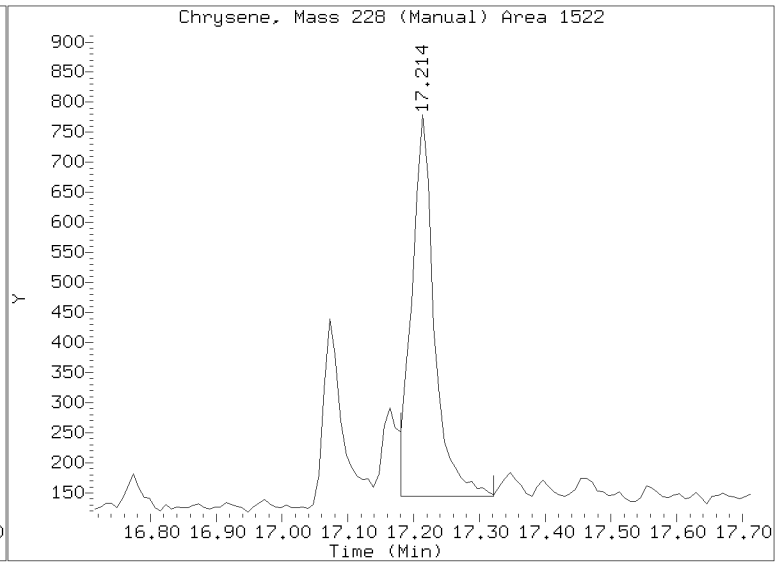


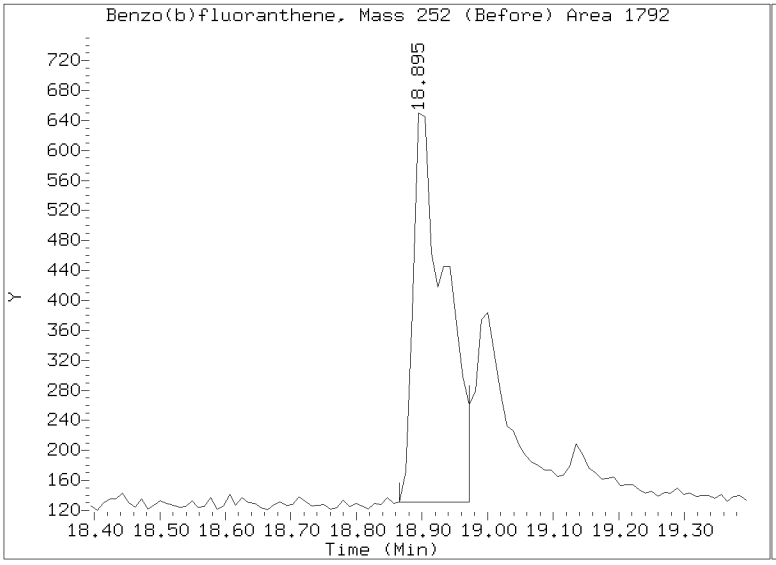


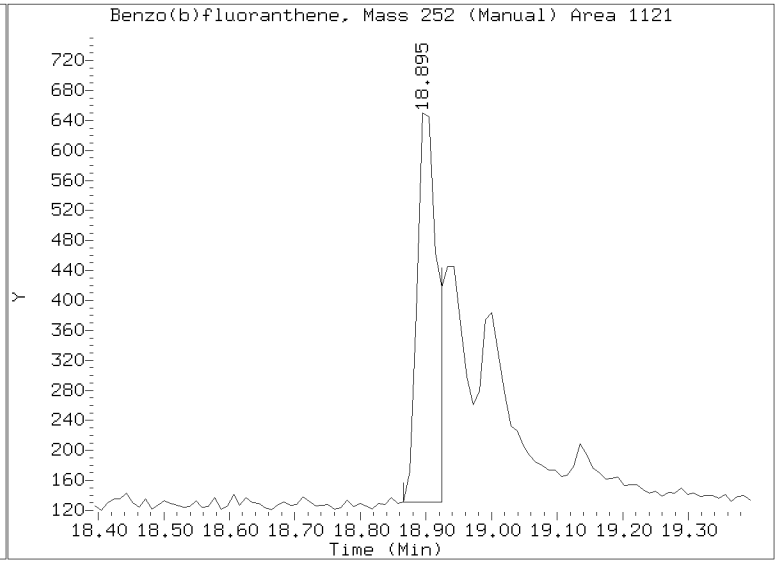
Quant Ion Manual Peak Adjustment Report

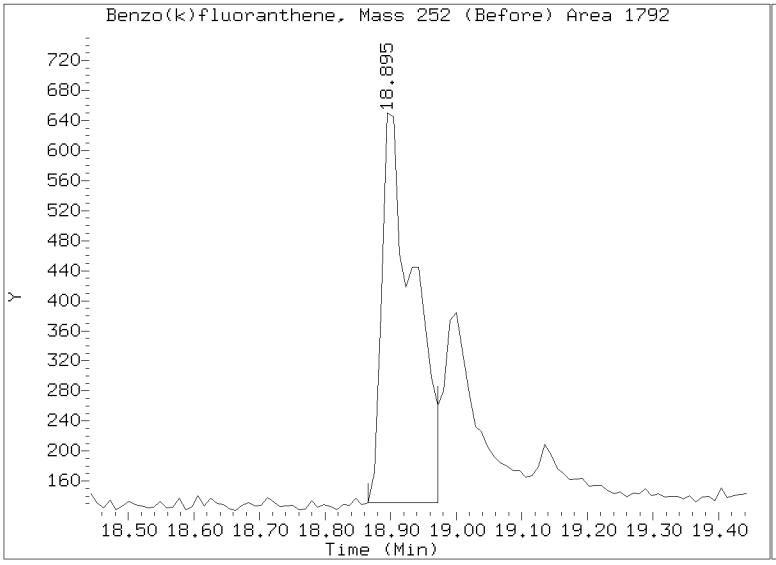
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041606.D
Injection Date: 16-APR-2021 12:26
Lab ID:21C0456-05 Client ID:
Report Date: 04/17/2021 08:33

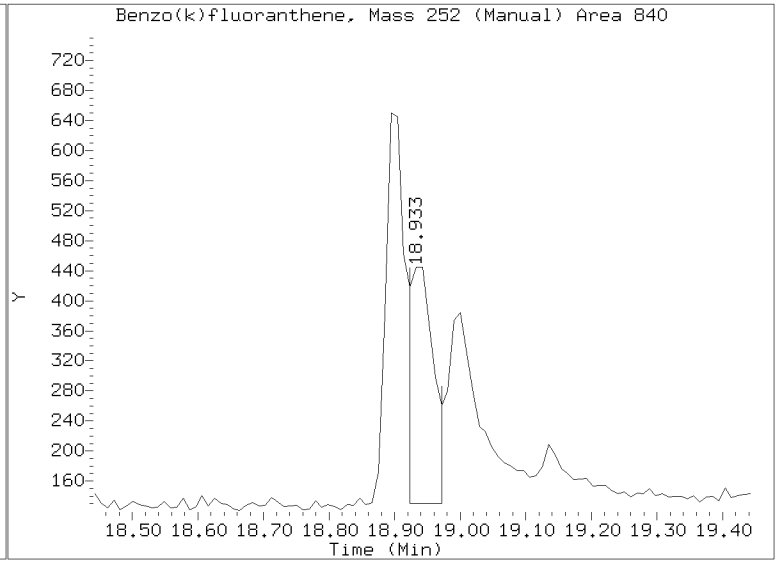






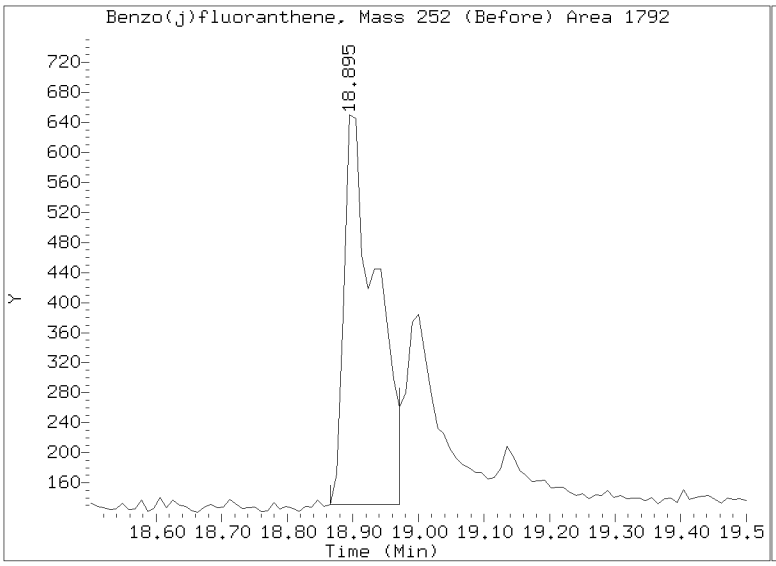


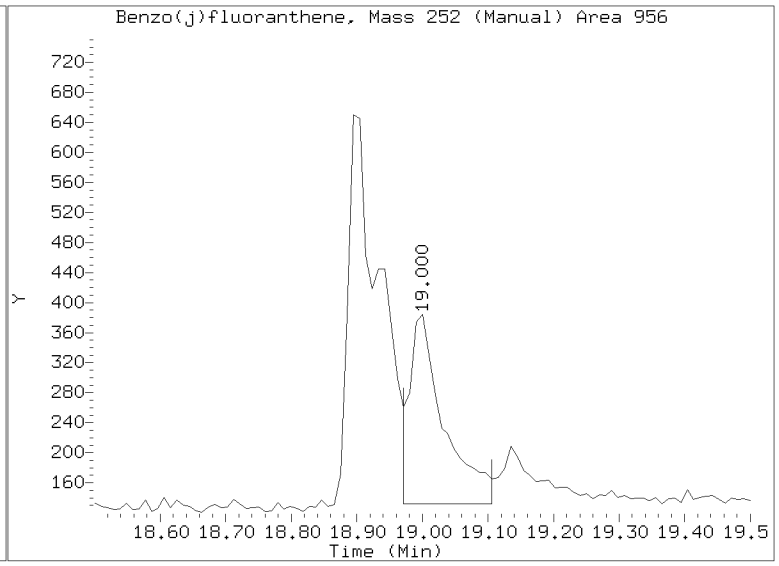


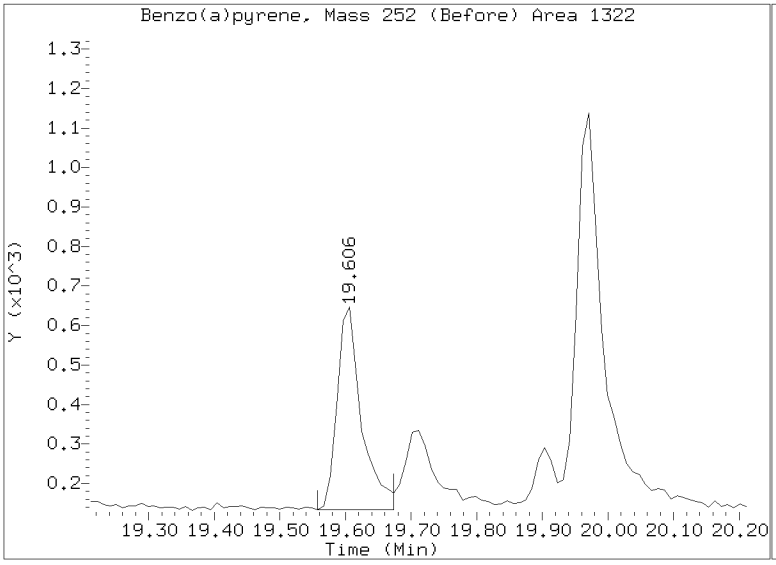


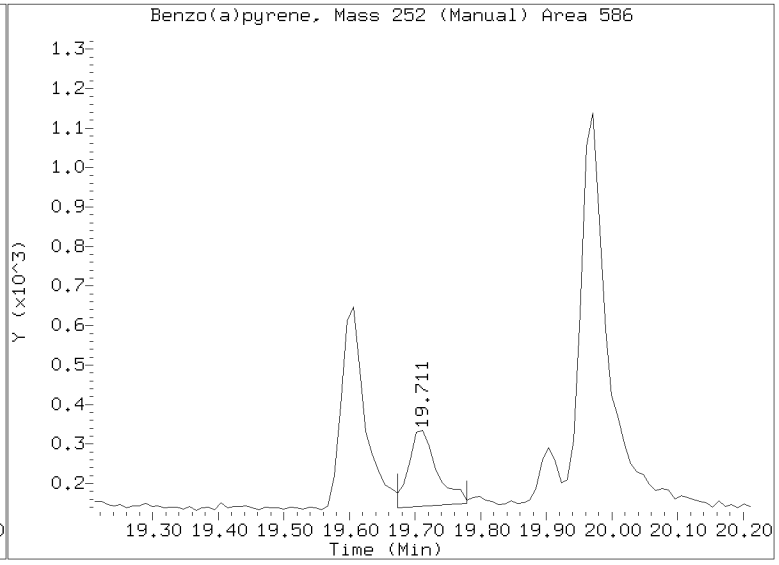
Quant Ion Manual Peak Adjustment Report

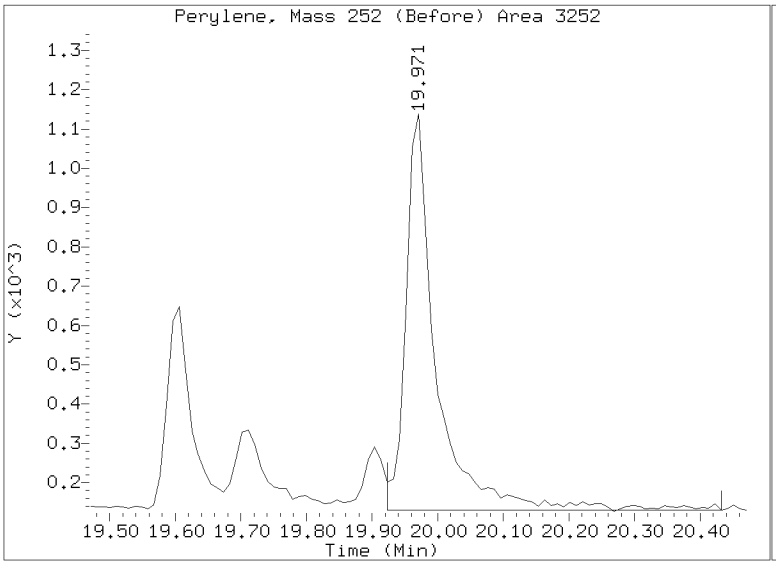
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041606.D
Injection Date: 16-APR-2021 12:26
Lab ID:21C0456-05 Client ID:
Report Date: 04/17/2021 08:33

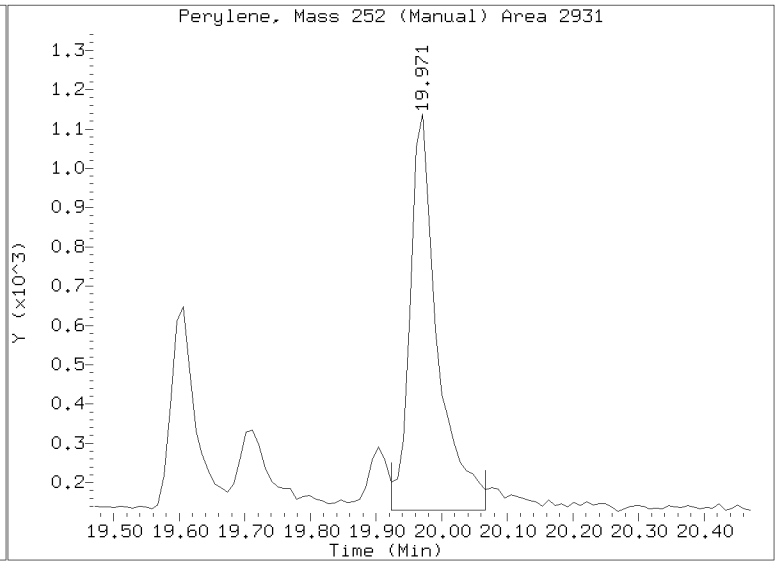






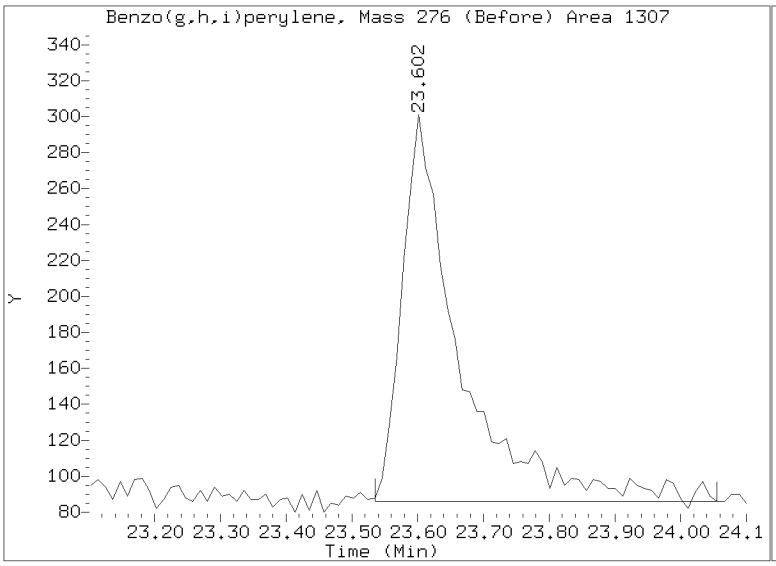


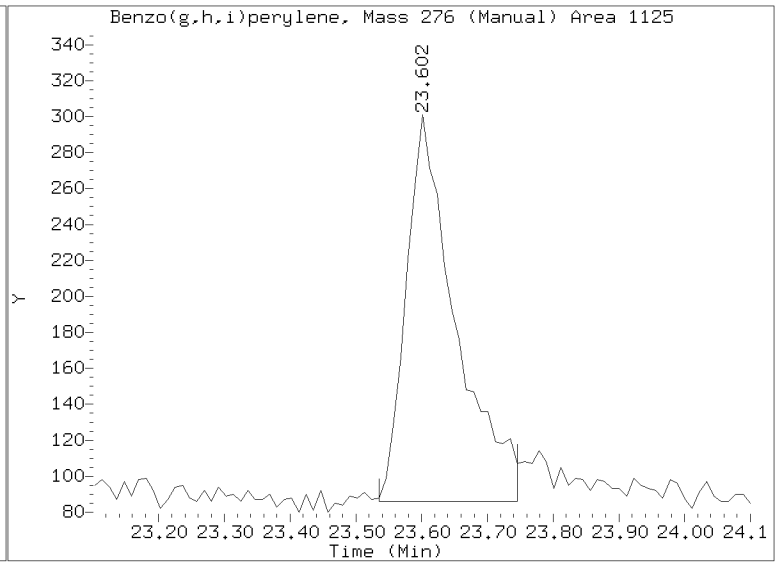




Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041606.D
Injection Date: 16-APR-2021 12:26
Lab ID:21C0456-05 Client ID:
Report Date: 04/17/2021 08:33





MW-SPL101(S)-033021

Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8270E-SIM
Polynuclear Aromatic Hydrocarbons - low level

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-06 B	SDG:	21C0456
Sampled:	03/30/21 13:25	Prepared:	04/05/21 17:54	File ID:	NT1121041607.D
% Solids:		Preparation:	EPA 3510C SepF	Analyzed:	04/16/21 12:58
Batch:	BJD0015	Sequence:	SJD0232	Initial/Final:	500 mL / 0.5 mL
Instrument:	NT11	Column:	RXi-17Sil-MS	Calibration:	DH00073
Cleanups:	Silica Gel				

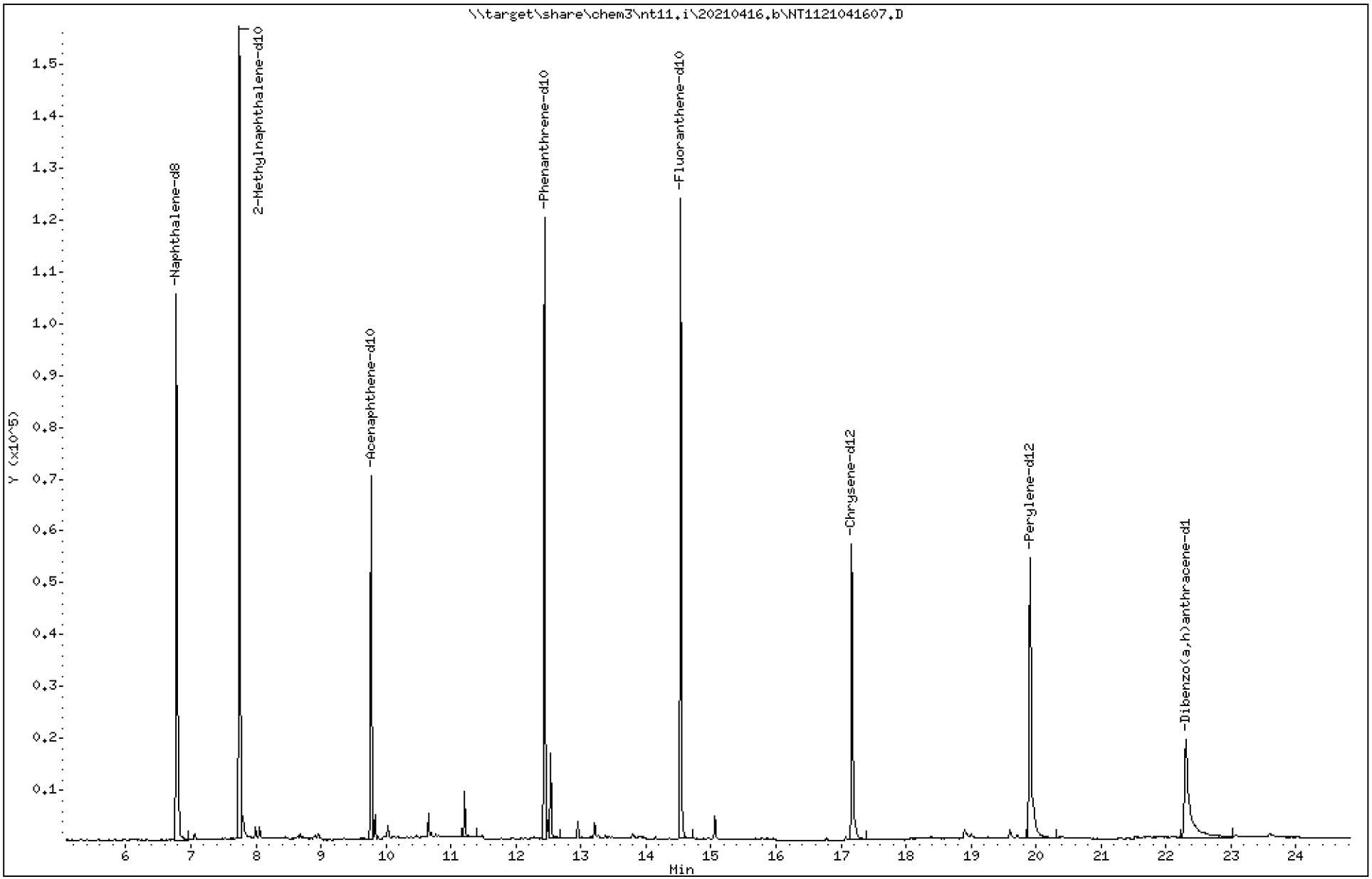
CAS NO.	COMPOUND	DILUTION	(ug/L)	Q	DL	RL
91-20-3	Naphthalene	1	0.004	J	0.001	0.010
91-57-6	2-Methylnaphthalene	1	0.003	J	0.001	0.010
90-12-0	1-Methylnaphthalene	1	0.002	J	0.0009	0.010
91-58-7	2-Chloronaphthalene	1	0.010	U	0.001	0.010
208-96-8	Acenaphthylene	1	0.010	U	0.002	0.010
83-32-9	Acenaphthene	1	0.005	J	0.003	0.010
132-64-9	Dibenzofuran	1	0.003	J	0.002	0.010
86-73-7	Fluorene	1	0.004	J	0.002	0.010
85-01-8	Phenanthrene	1	0.004	J	0.001	0.010
120-12-7	Anthracene	1	0.022		0.001	0.010
86-74-8	Carbazole	1	0.004	J	0.001	0.010
206-44-0	Fluoranthene	1	0.005	J	0.002	0.010
129-00-0	Pyrene	1	0.005	J	0.001	0.010
56-55-3	Benzo(a)anthracene	1	0.002	J	0.0008	0.010
218-01-9	Chrysene	1	0.004	J	0.0009	0.010
205-99-2	Benzo(b)fluoranthene	1	0.004	J	0.0005	0.010
207-08-9	Benzo(k)fluoranthene	1	0.010	U	0.003	0.010
205-82-3	Benzo(j)fluoranthene	1	0.002	J	0.002	0.010
	Benzofluoranthenes, Total	1	0.009	J	0.004	0.010
50-32-8	Benzo(a)pyrene	1	0.010	U	0.002	0.010
1985-5-0	Perylene	1	0.008	J	0.006	0.010
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.002	J	0.001	0.010
53-70-3	Dibenzo(a,h)anthracene	1	0.010	U	0.001	0.010
191-24-2	Benzo(g,h,i)perylene	1	0.003	J	0.001	0.010

SURROGATES	ADDED:(ug/L)	(ug/L)	% REC	QC LIMITS	Q
2-Methylnaphthalene-d10	0.30000	0.195	65.1	42 - 120	
Dibenzo[a,h]anthracene-d14	0.30000	0.219	73.0	29 - 120	
Fluoranthene-d10	0.30000	0.203	67.6	57 - 120	

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D
Date : 16-APR-2021 12:58
Client ID:
Sample Info: 21C0456-06

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

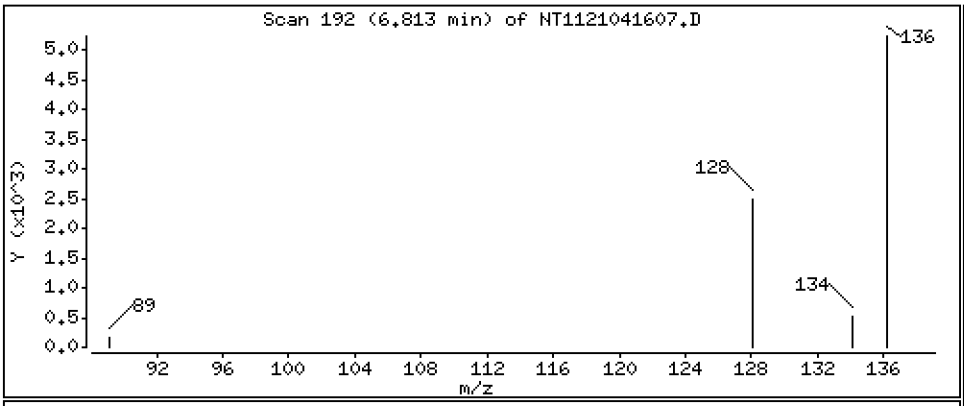
Operator: VTS

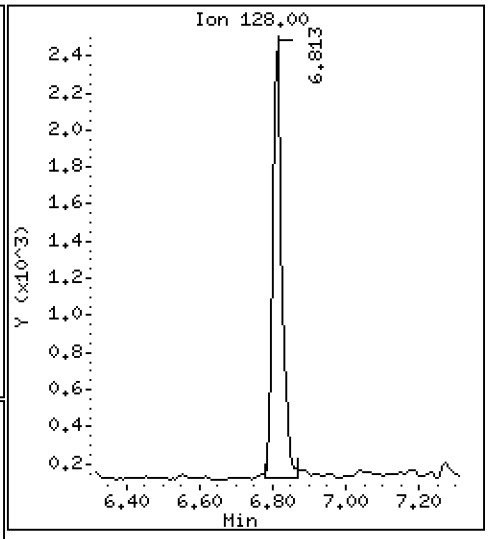
Column phase: Rxi-17Sil MS

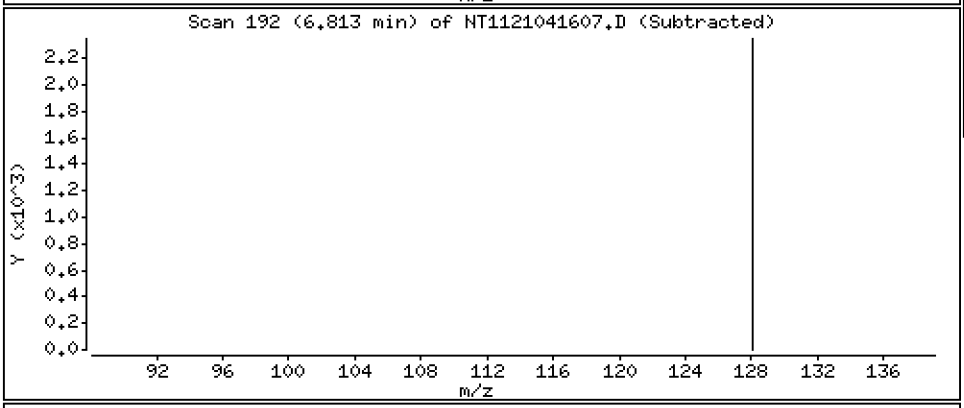
Column diameter: 0.25

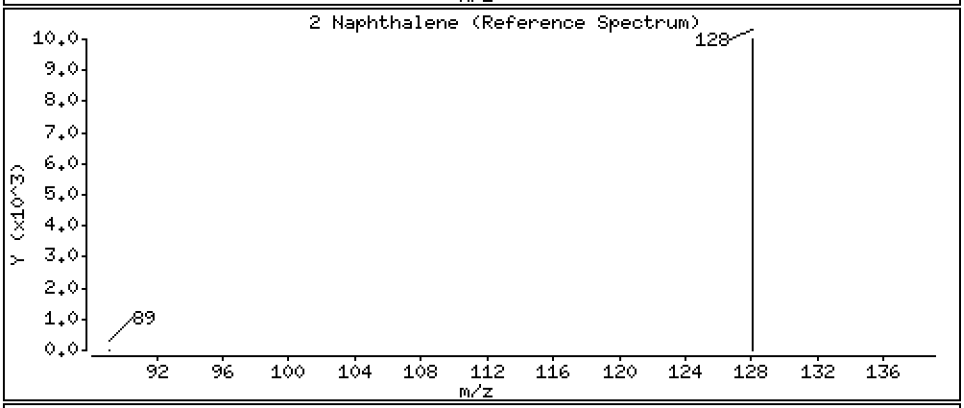
2 Naphthalene

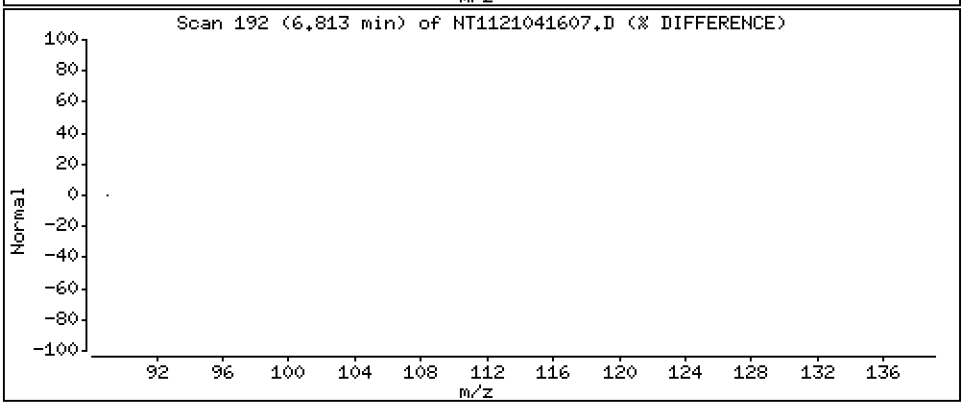
Concentration: 4.39 ng/mL











Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

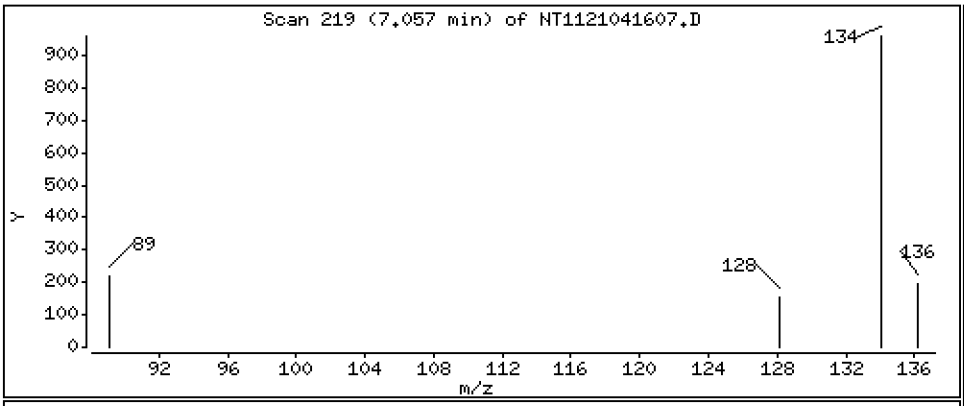
Operator: VTS

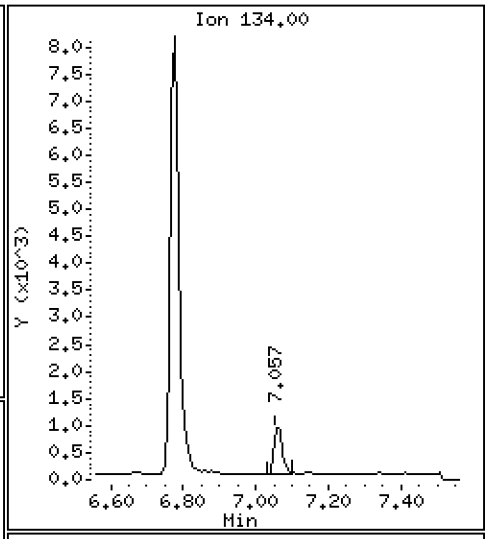
Column phase: Rxi-17Sil MS

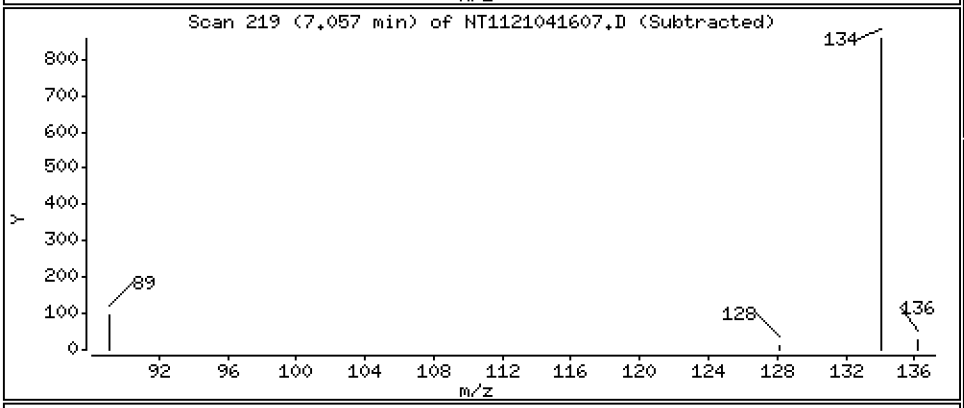
Column diameter: 0.25

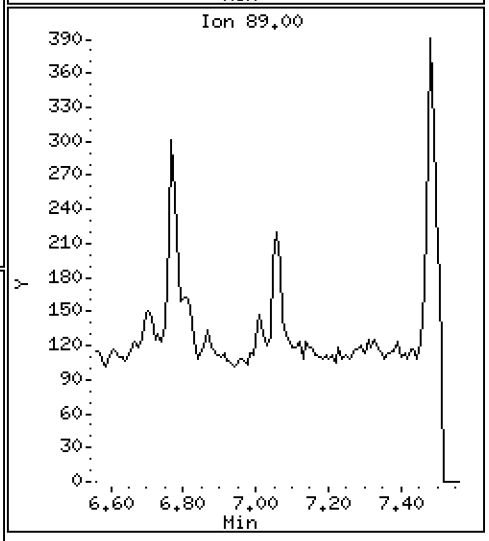
3 Benzo(b)thiophene

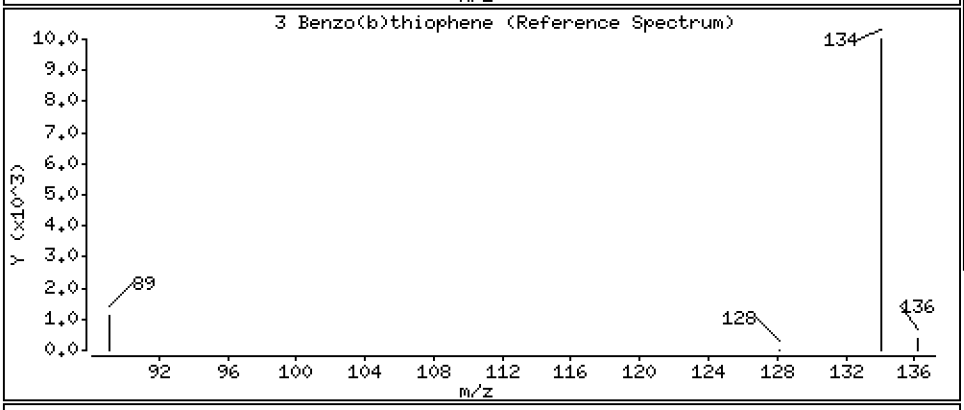
Concentration: 2.01 ng/mL

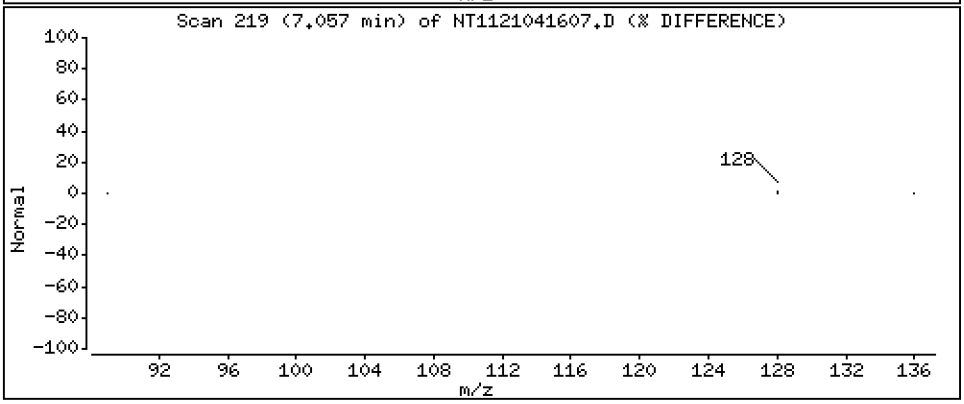












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

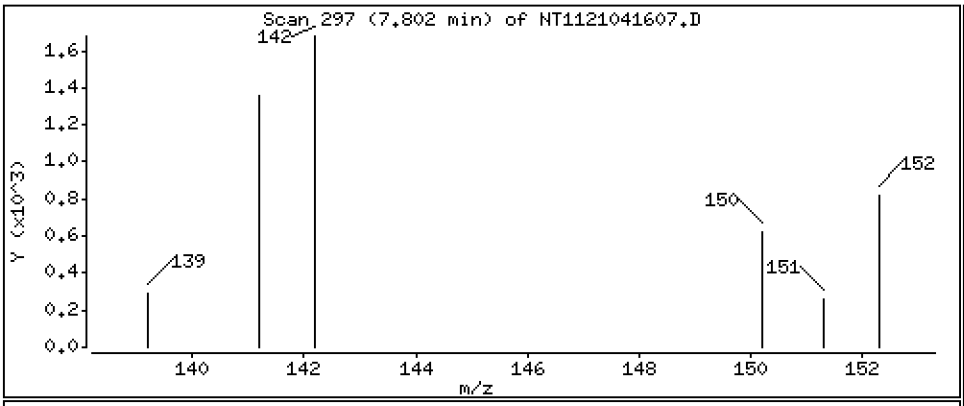
Operator: VTS

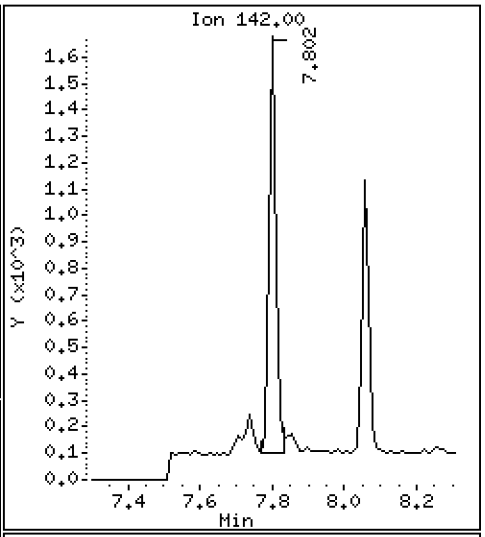
Column phase: Rxi-17Sil MS

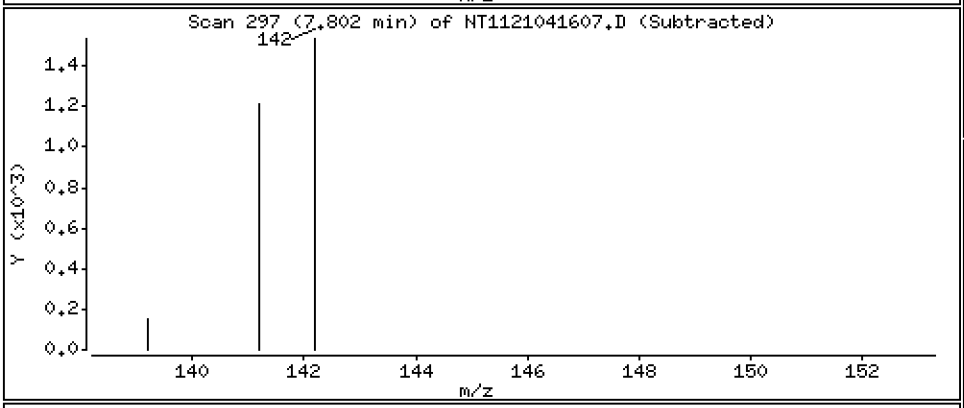
Column diameter: 0.25

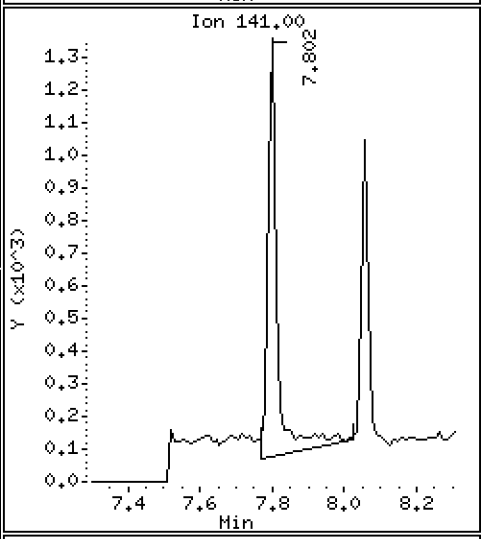
5 2-Methylnaphthalene

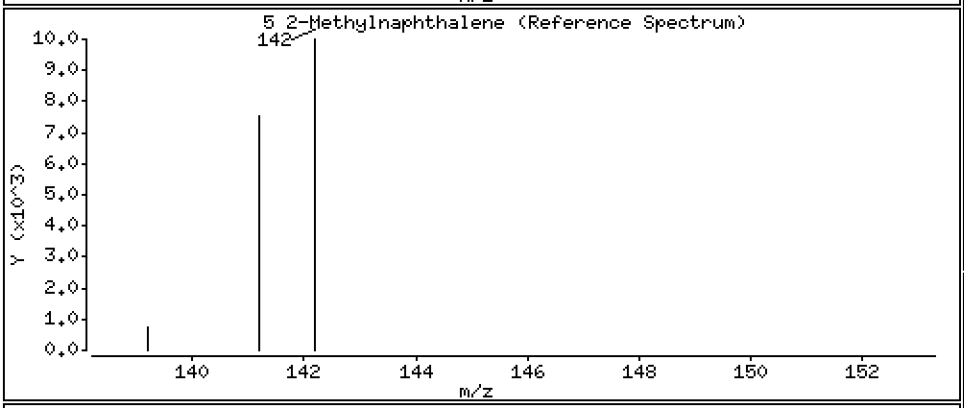
Concentration: 2.75 ng/mL

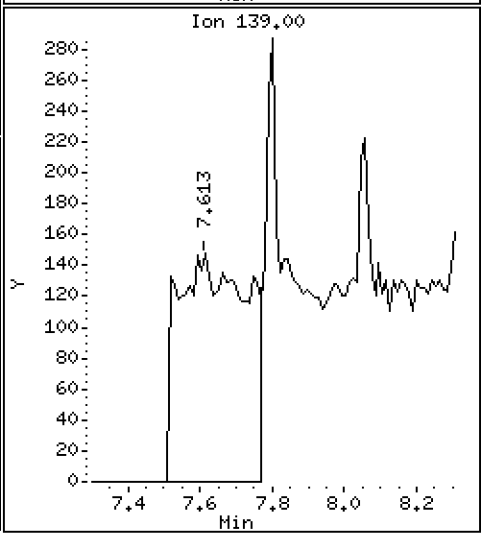


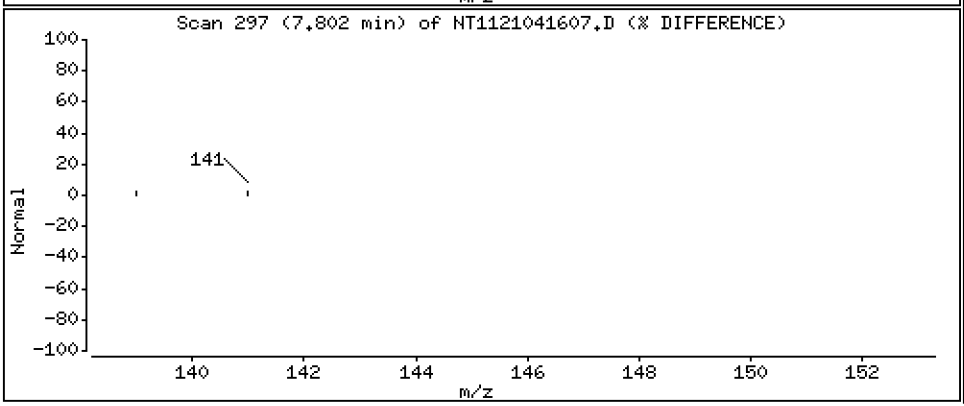












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

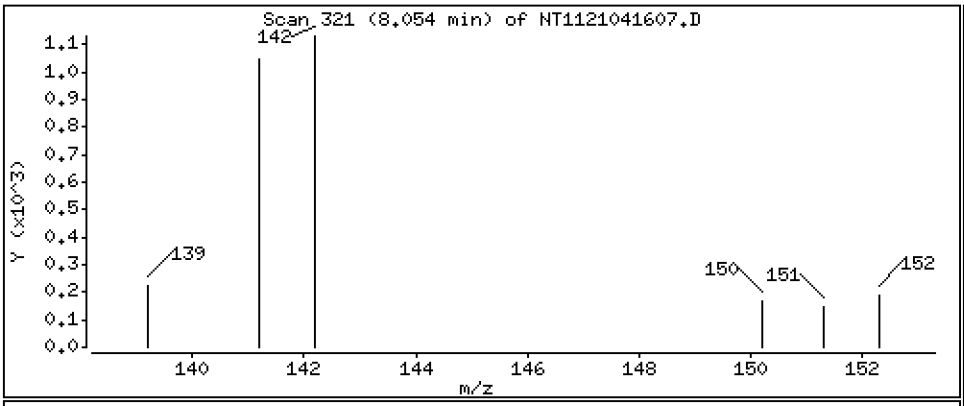
Operator: VTS

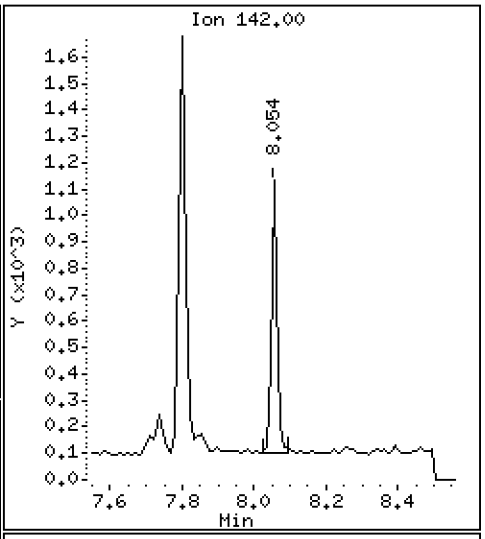
Column phase: Rxi-17Sil MS

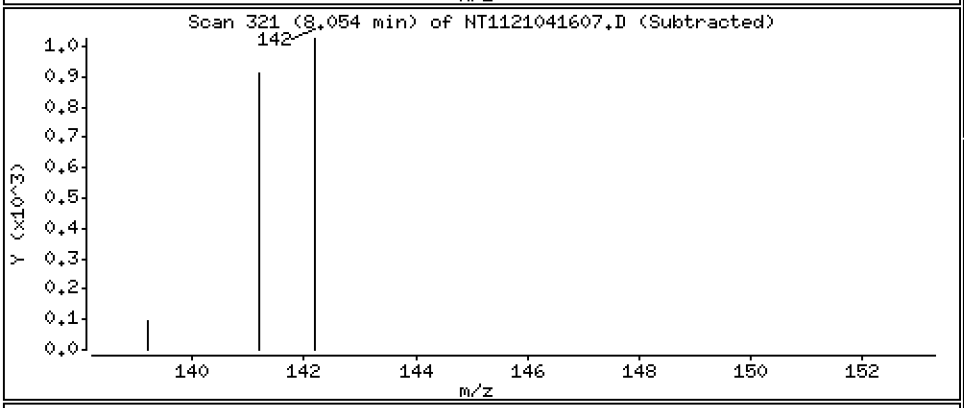
Column diameter: 0.25

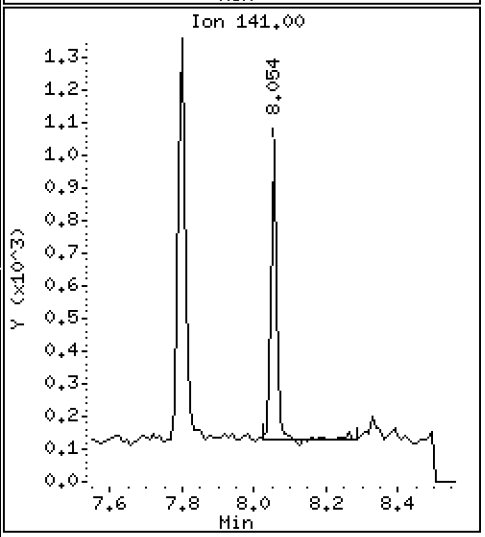
6 1-Methylnaphthalene

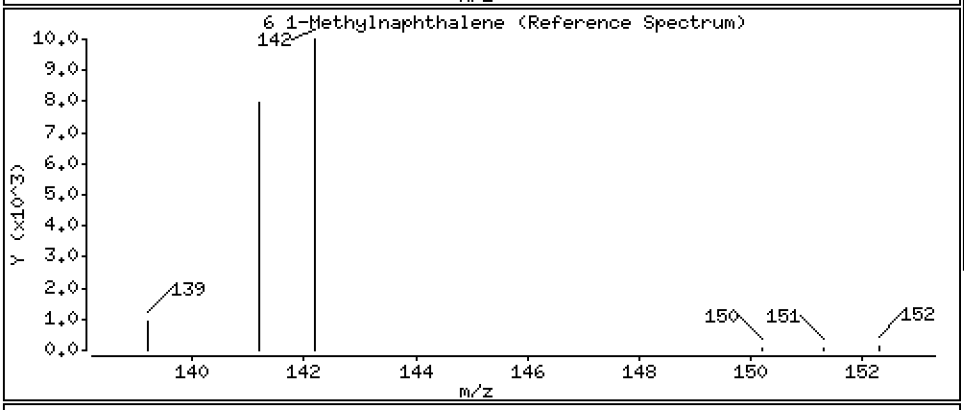
Concentration: 1.92 ng/mL

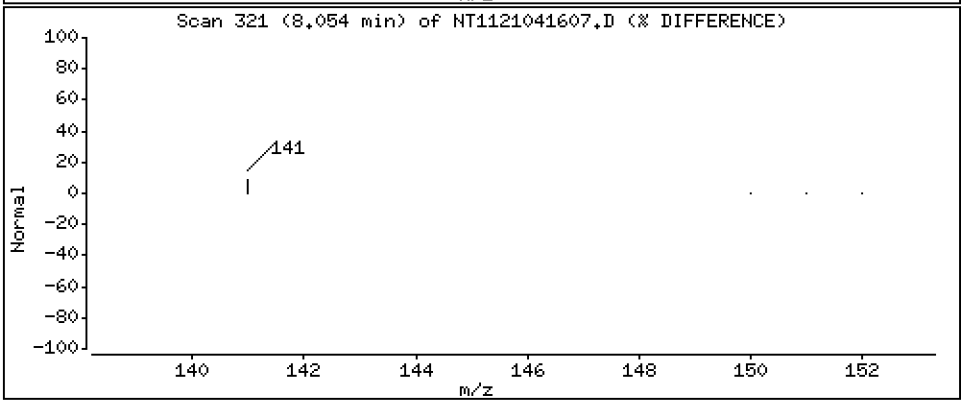












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

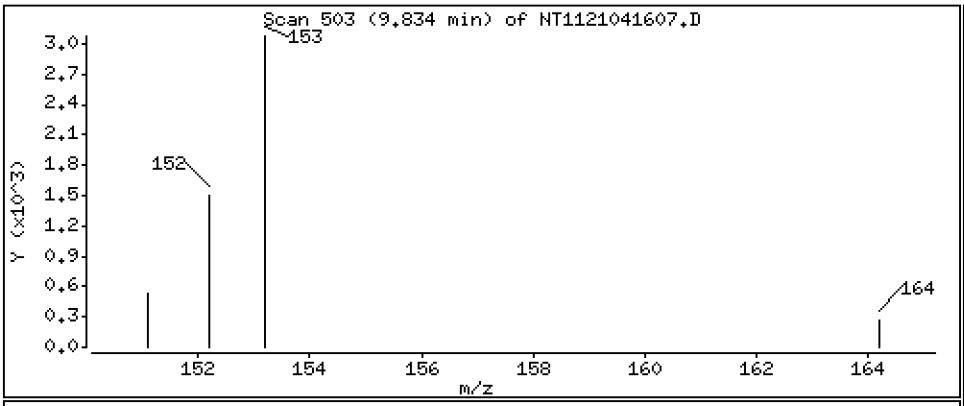
Operator: VTS

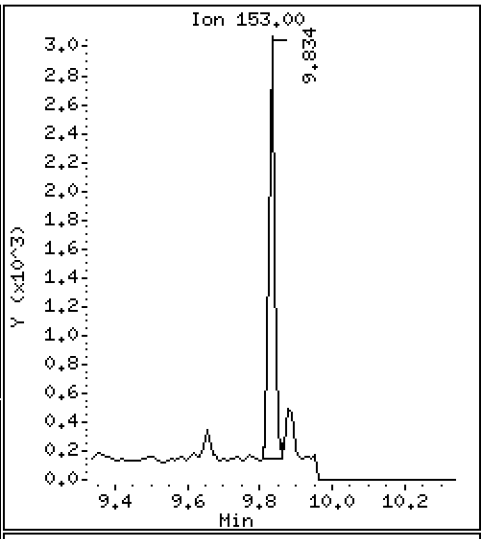
Column phase: Rxi-17Sil MS

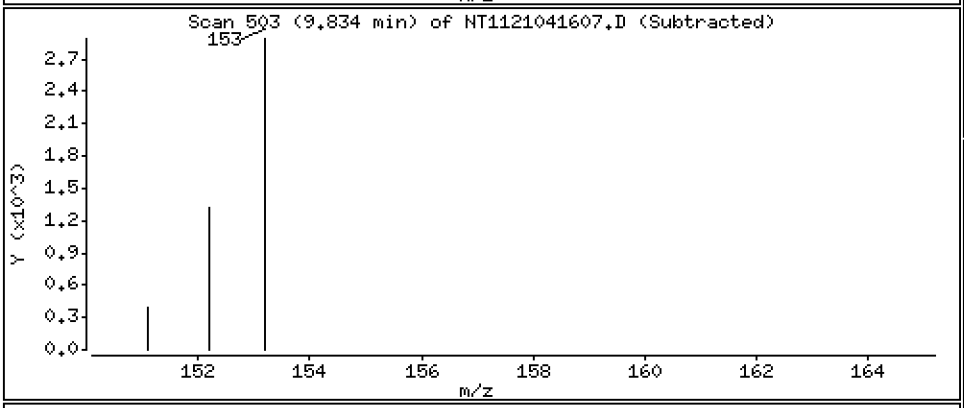
Column diameter: 0.25

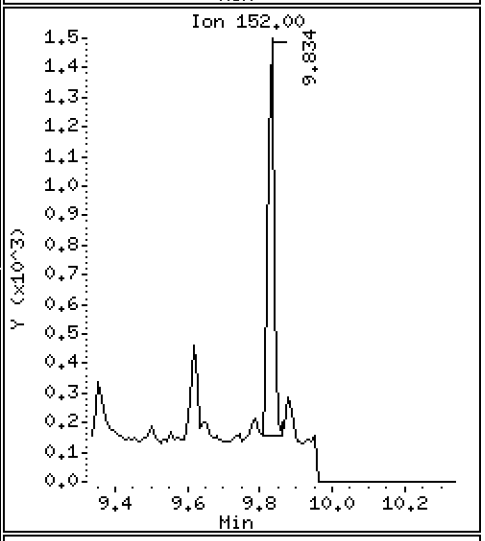
12 Acenaphthene

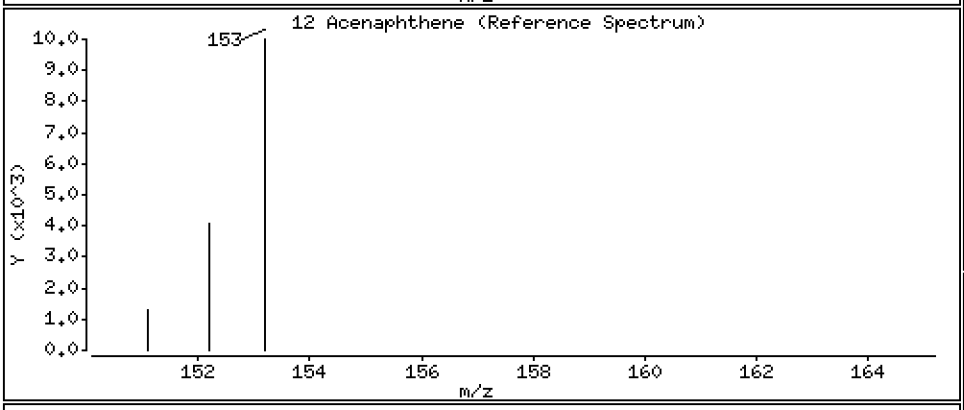
Concentration: 5.14 ng/mL

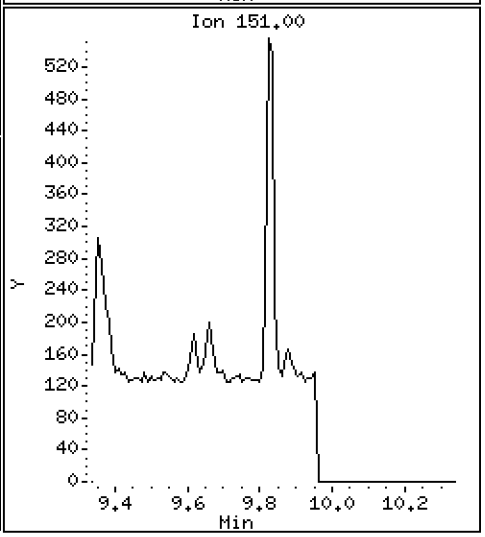


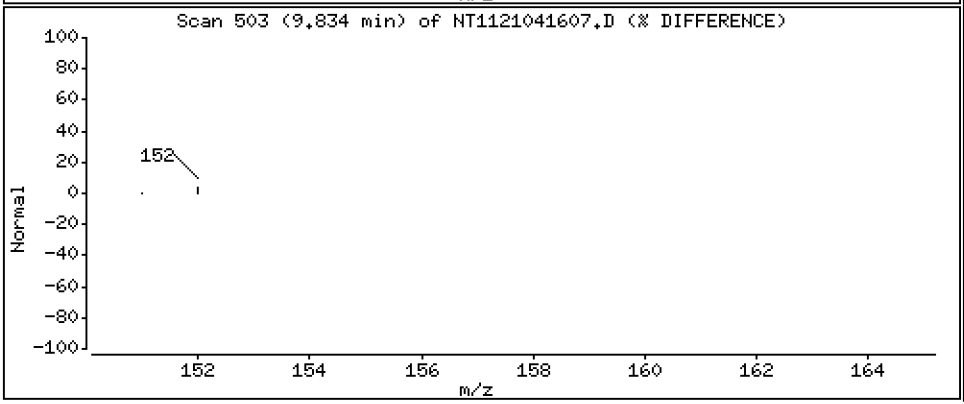












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

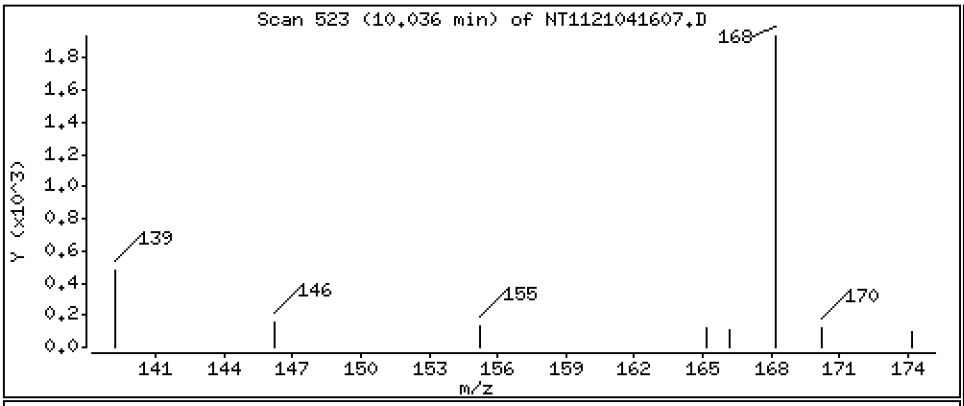
Operator: VTS

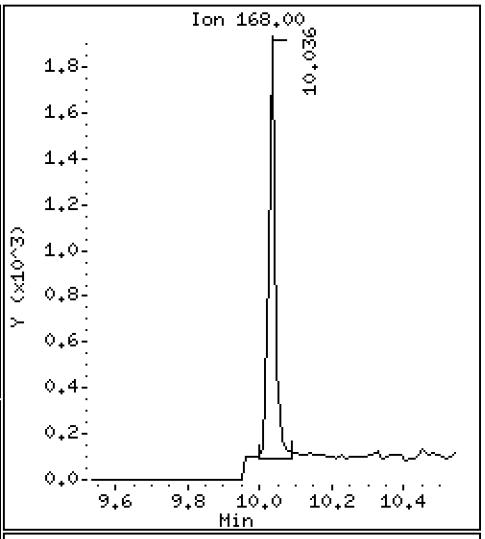
Column phase: Rxi-17Sil MS

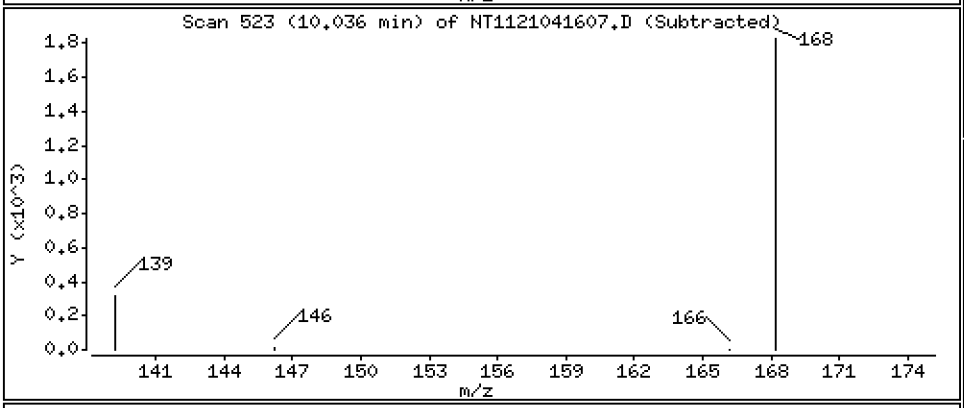
Column diameter: 0.25

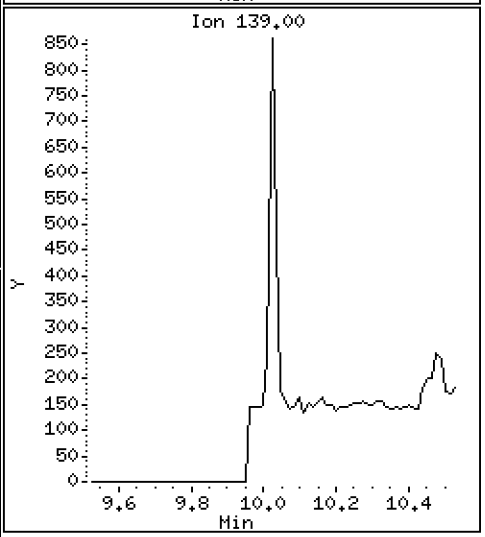
13 Dibenzofuran

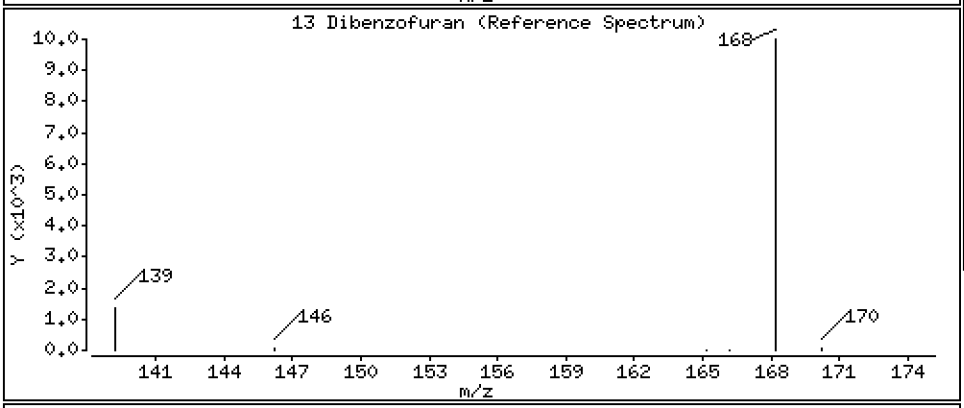
Concentration: 2.90 ng/mL

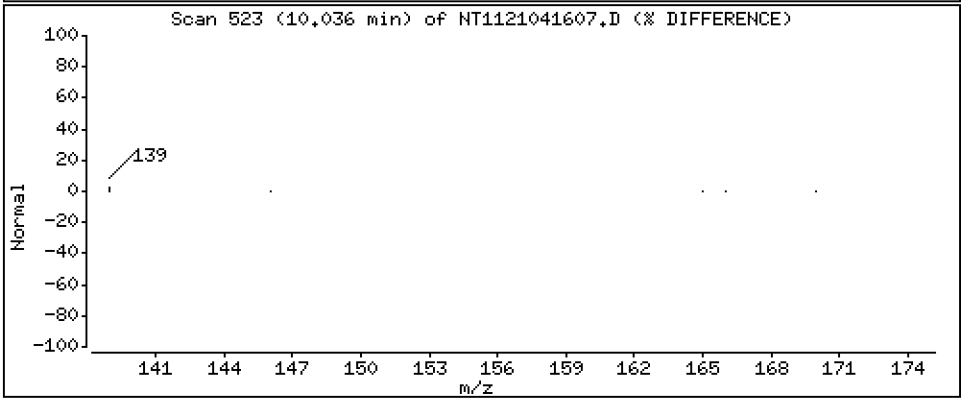












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

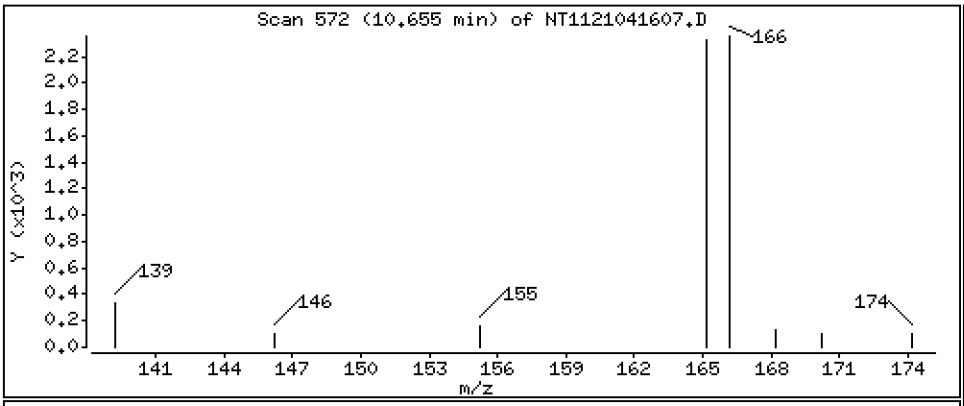
Operator: VTS

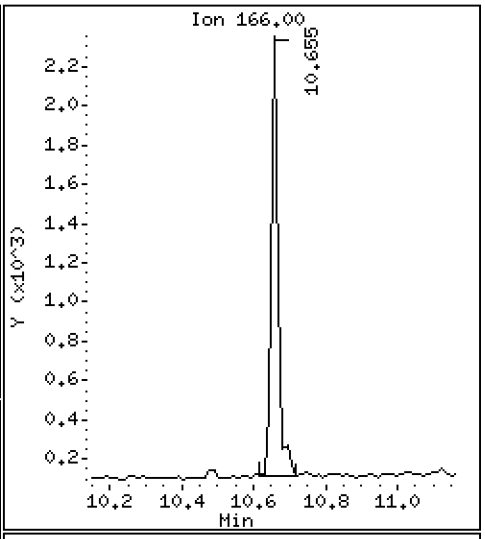
Column phase: Rxi-17Sil MS

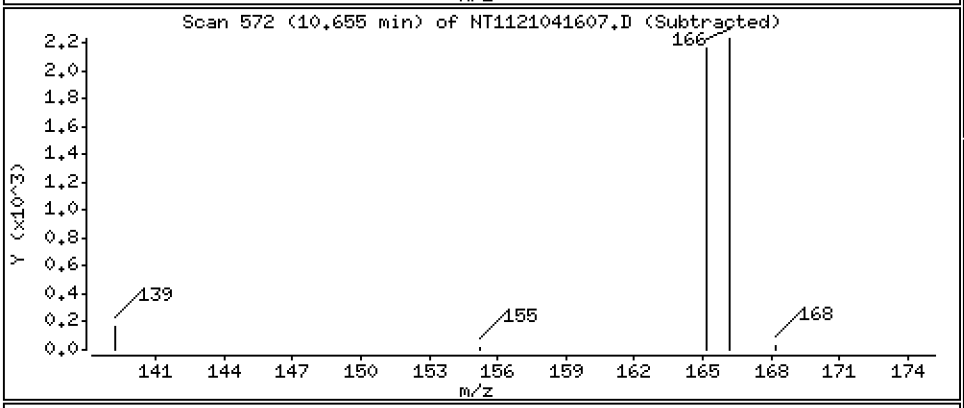
Column diameter: 0.25

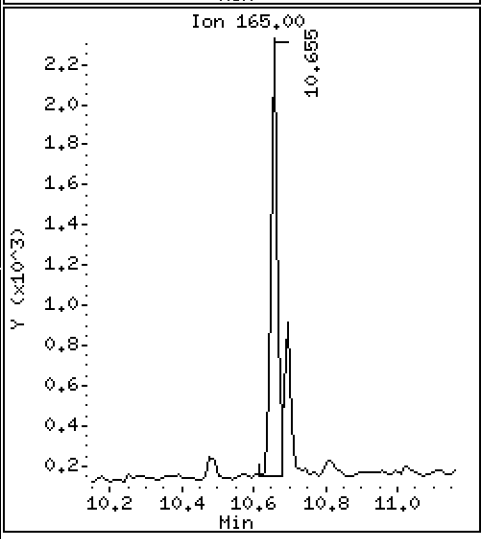
16 Fluorene

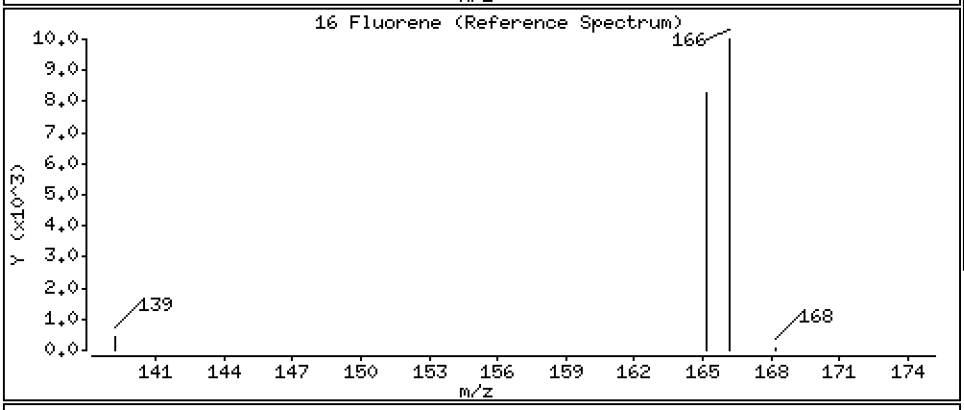
Concentration: 4.46 ng/mL

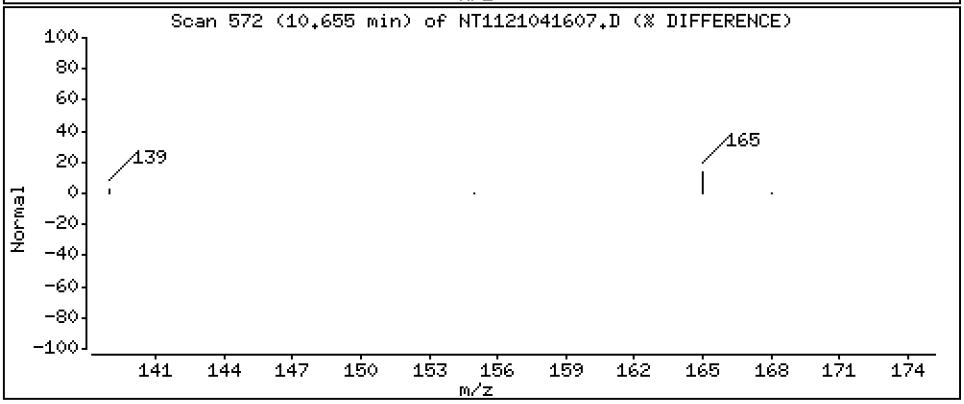












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

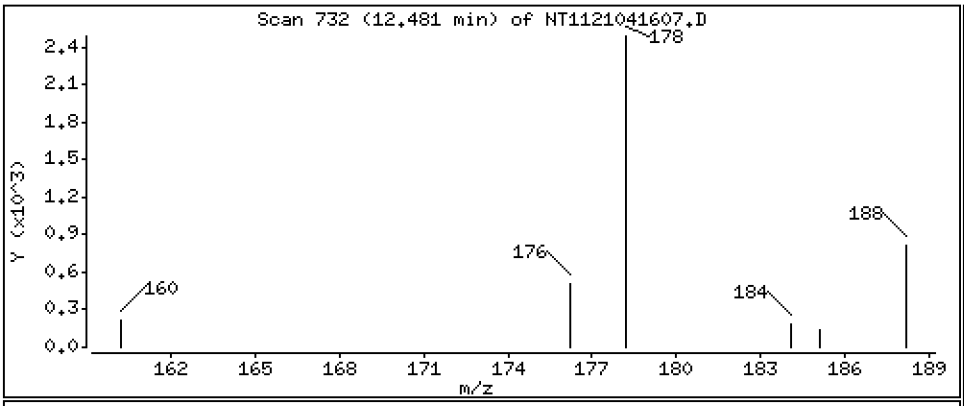
Operator: VTS

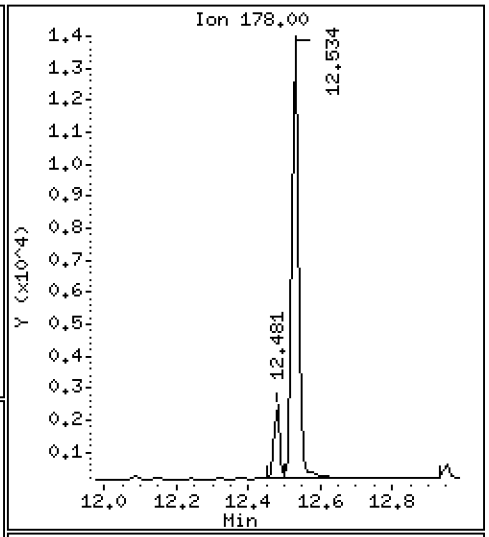
Column phase: Rxi-17Sil MS

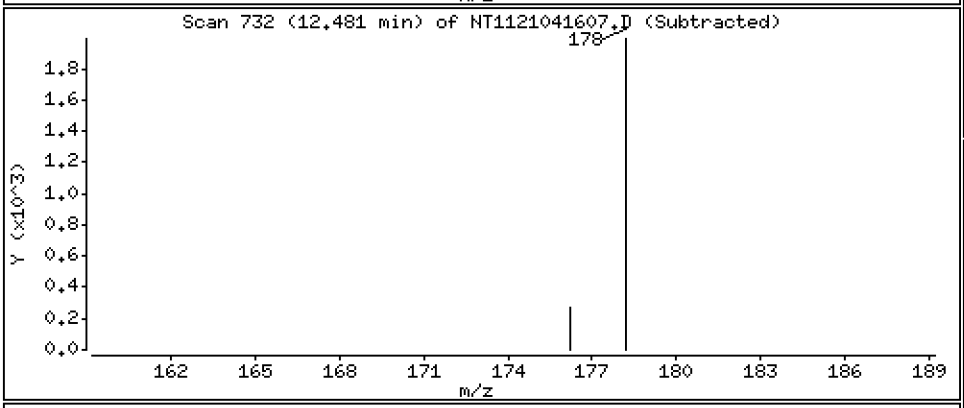
Column diameter: 0.25

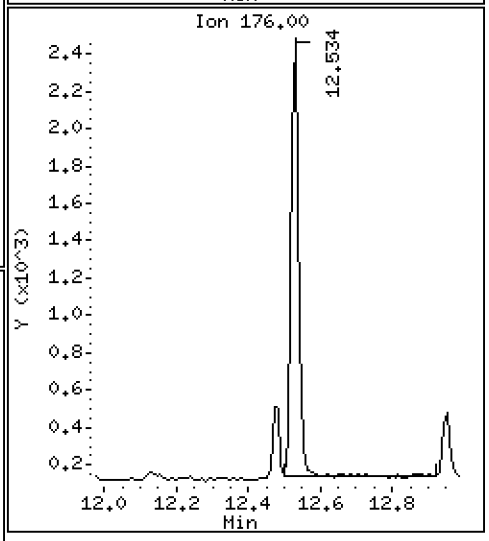
19 Phenanthrene

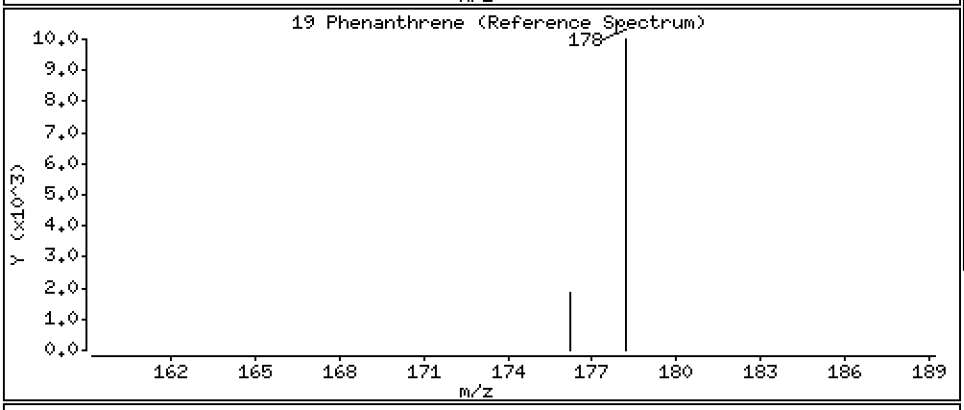
Concentration: 3.67 ng/mL

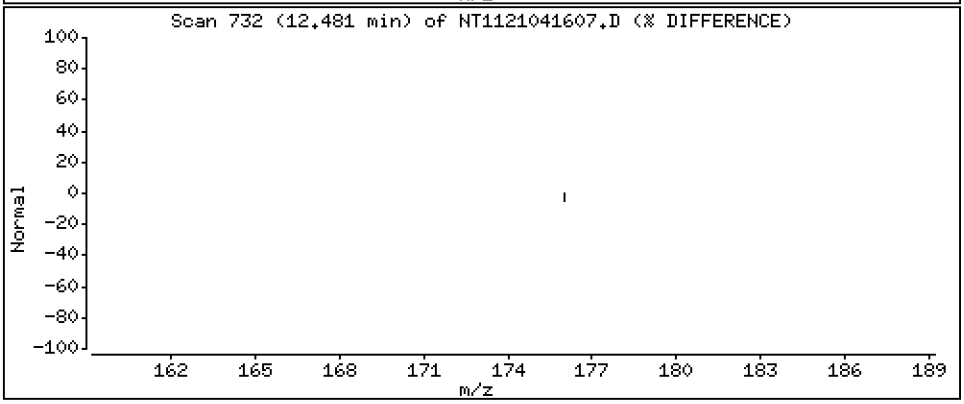












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

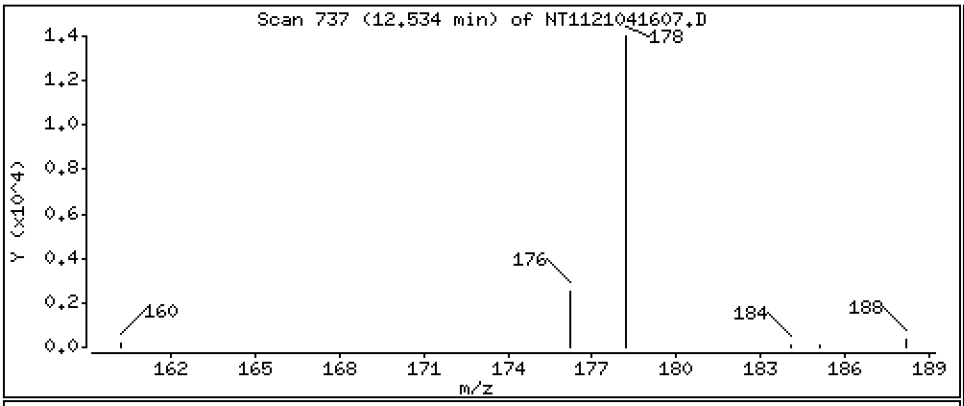
Operator: VTS

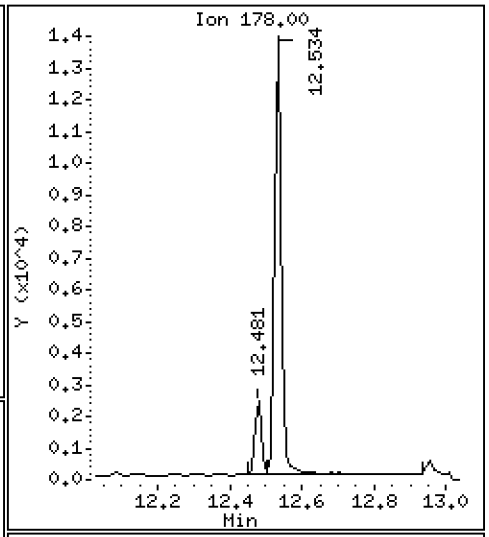
Column phase: Rxi-17Sil MS

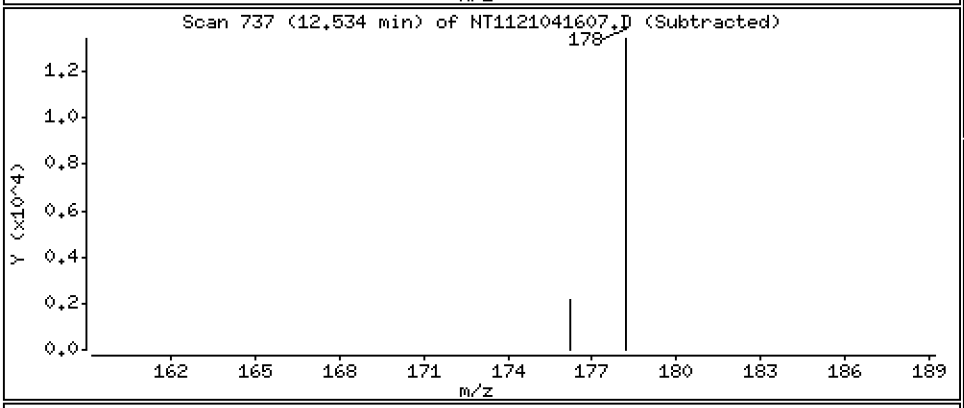
Column diameter: 0.25

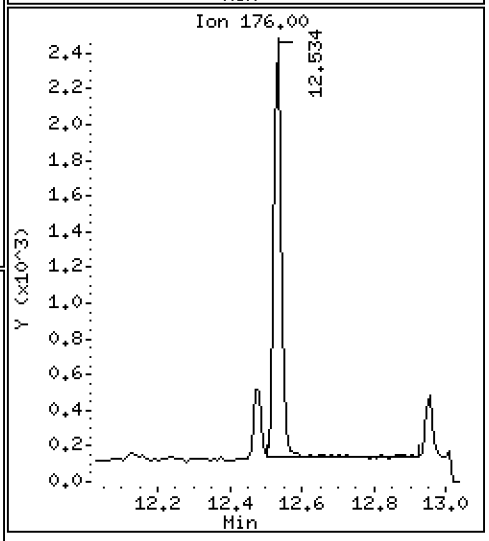
21 Anthracene

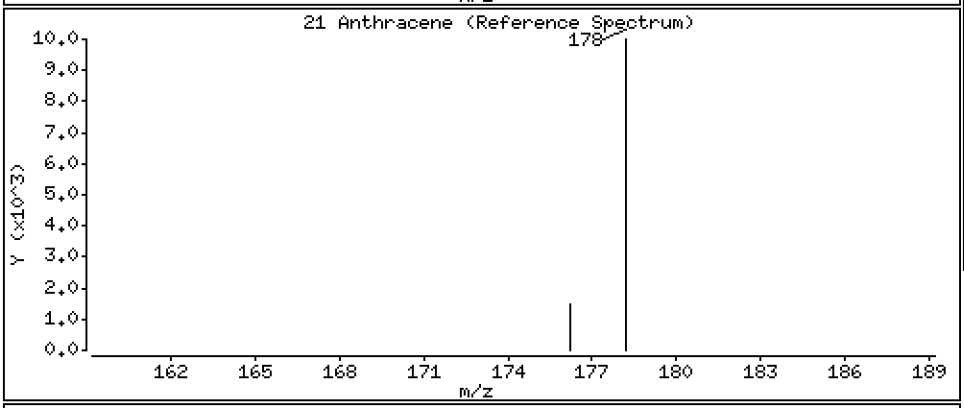
Concentration: 21.7 ng/mL

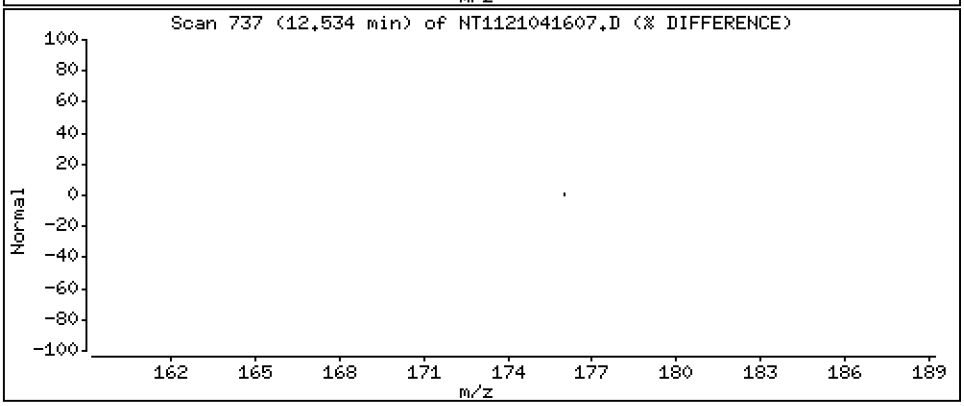












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

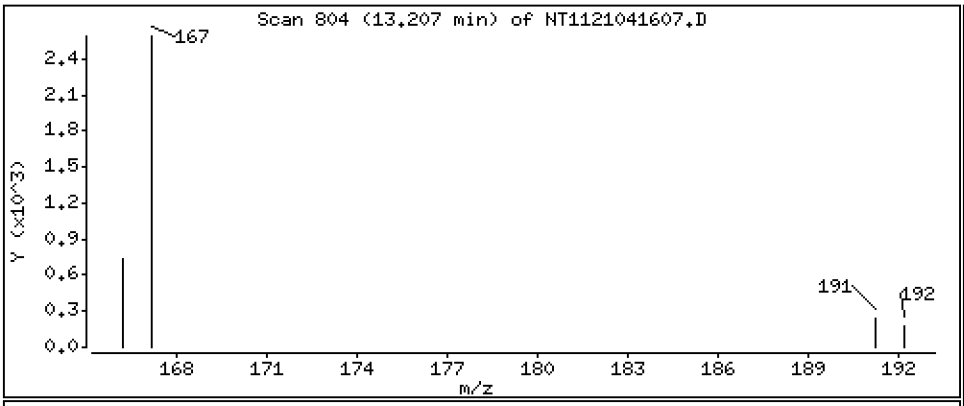
Operator: VTS

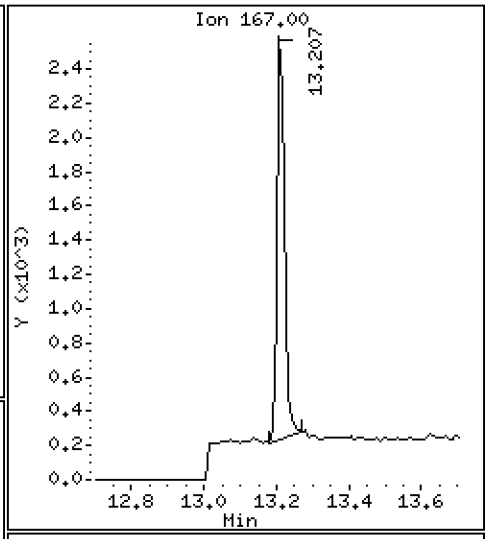
Column phase: Rxi-17Sil MS

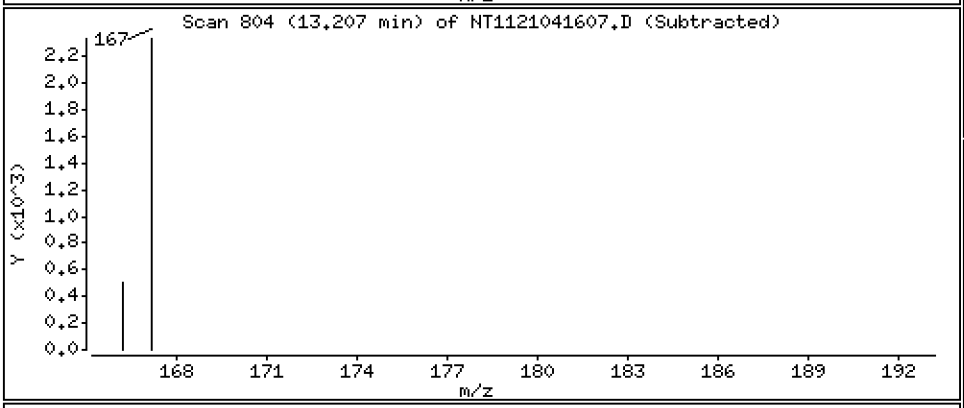
Column diameter: 0.25

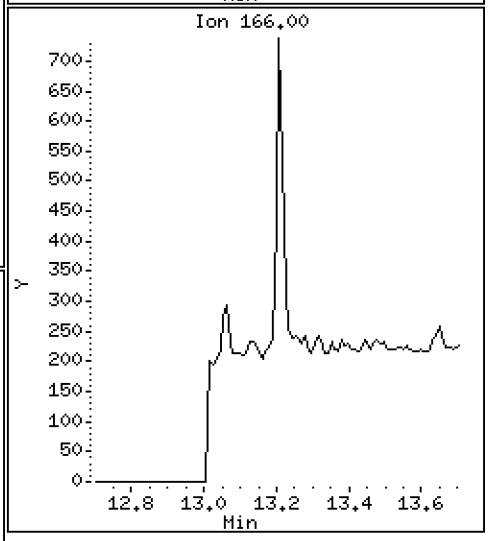
22 Carbazole

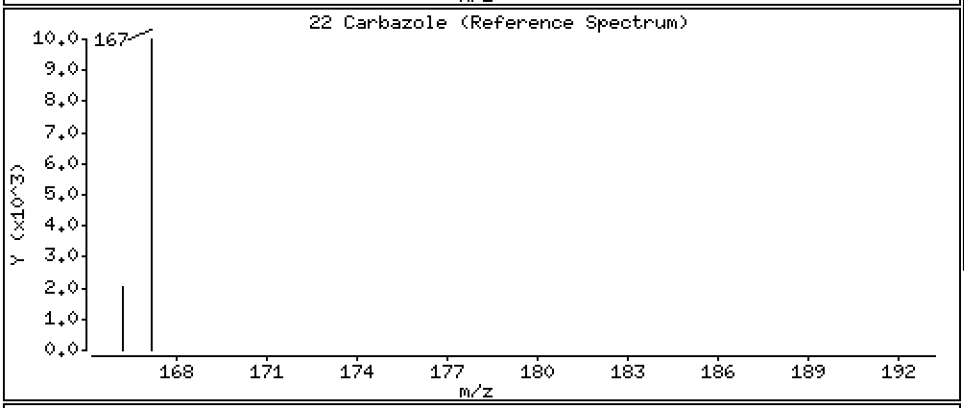
Concentration: 3.92 ng/mL

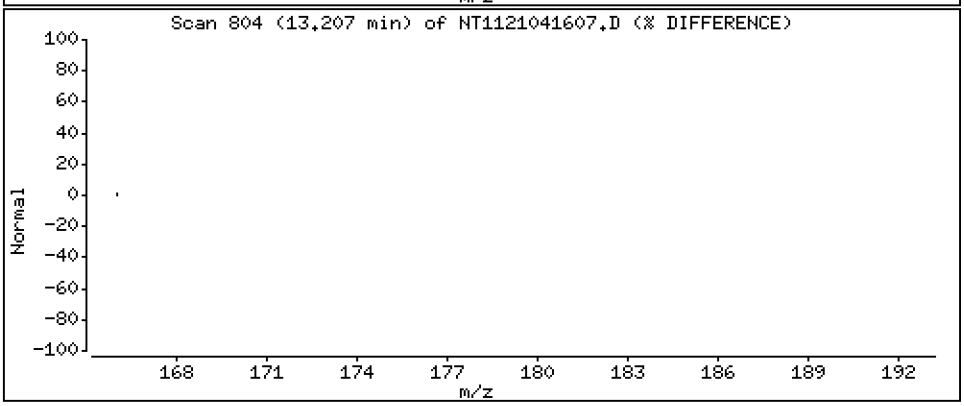












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

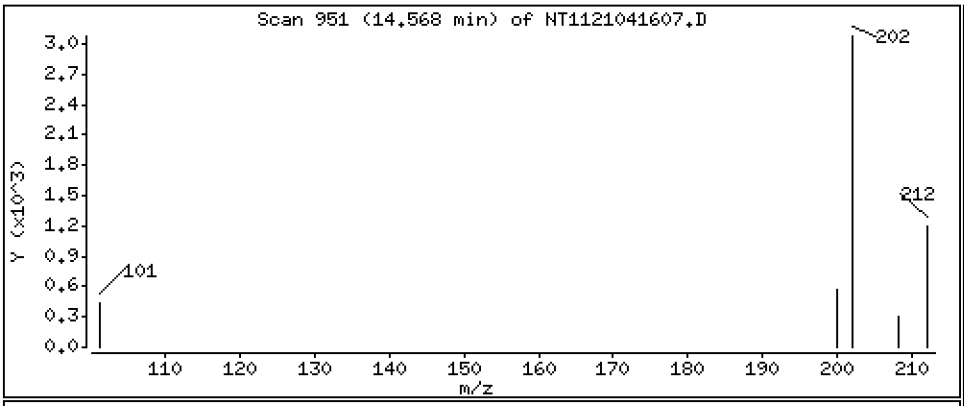
Operator: VTS

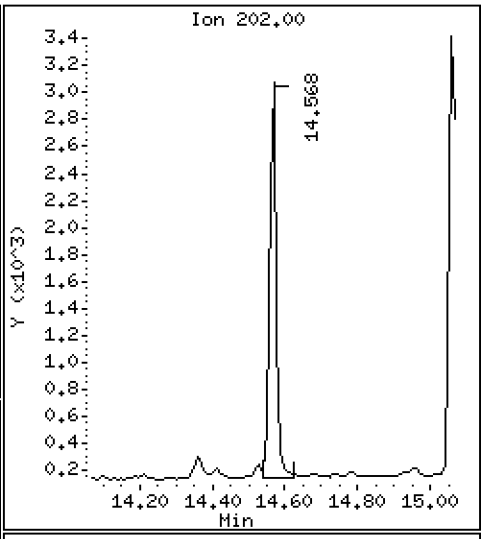
Column phase: Rxi-17Sil MS

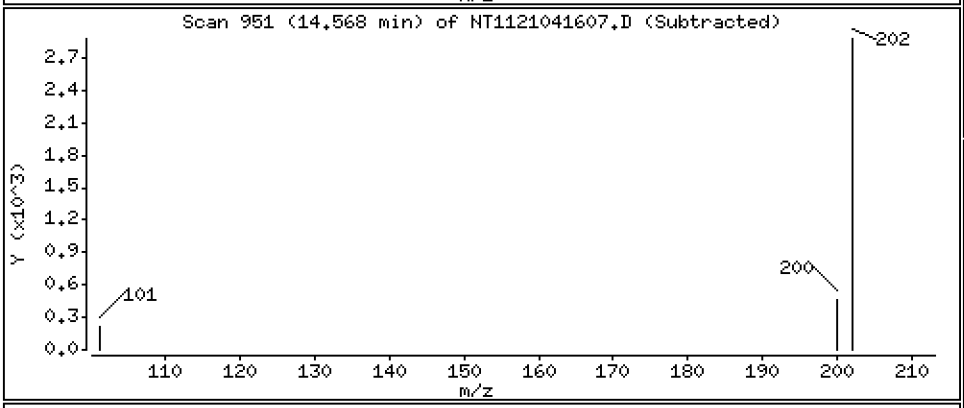
Column diameter: 0.25

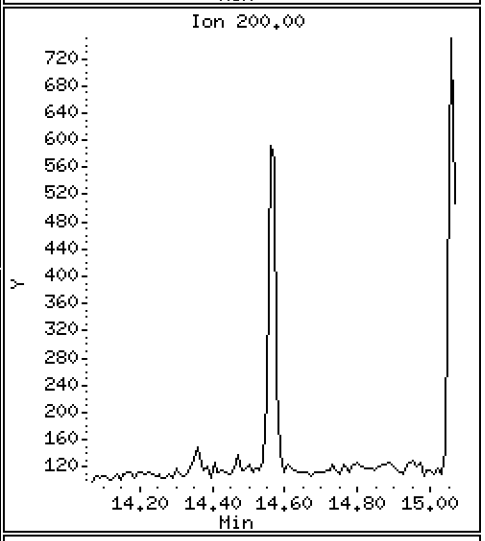
25 Fluoranthene

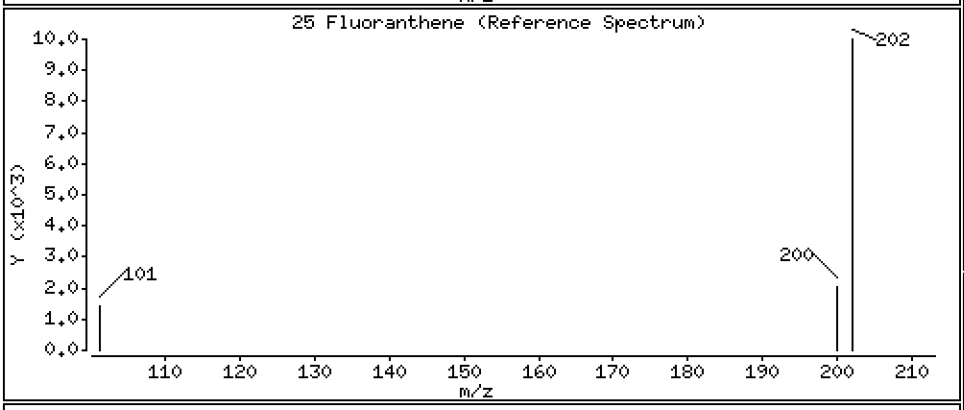
Concentration: 4.77 ng/mL

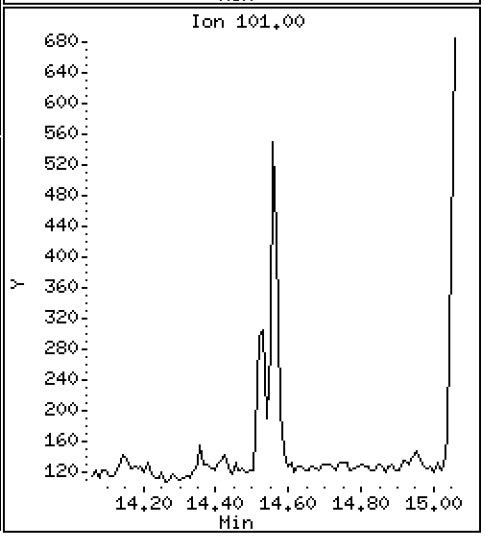


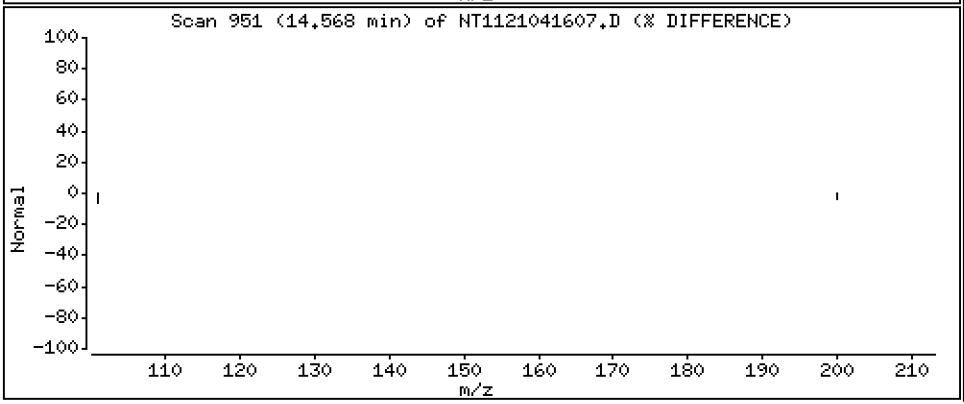












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

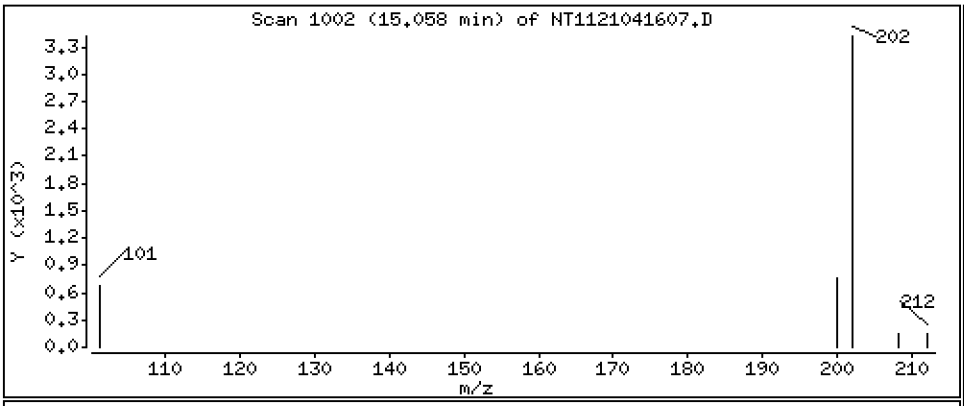
Operator: VTS

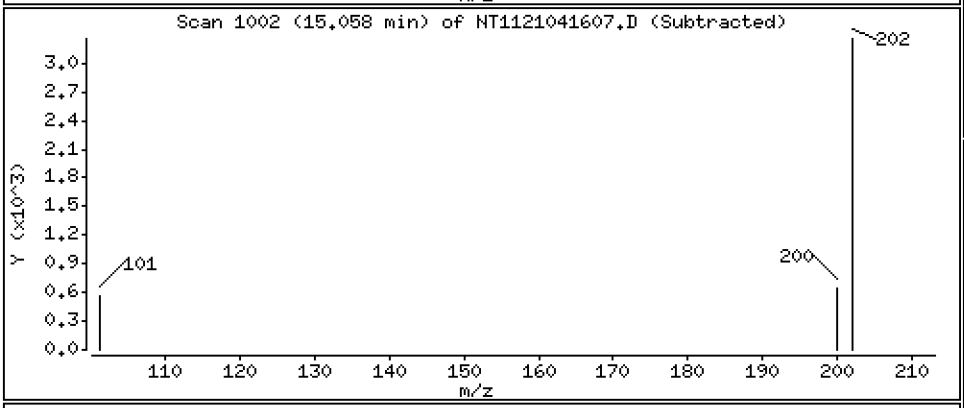
Column phase: Rxi-17Sil MS

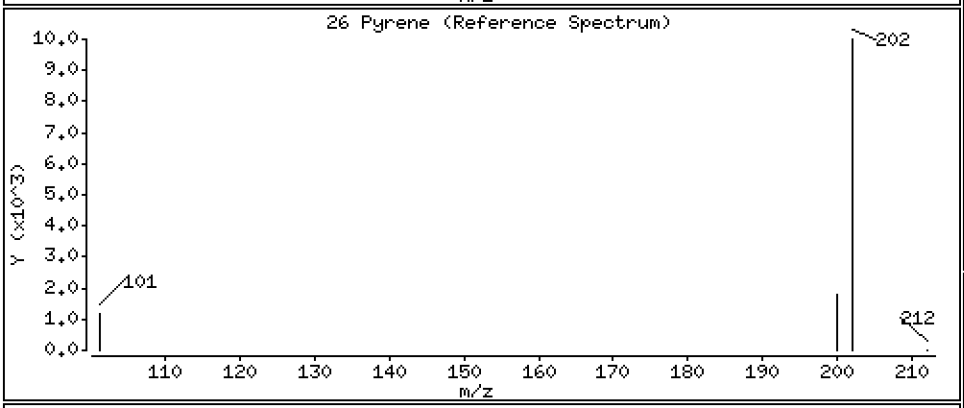
Column diameter: 0.25

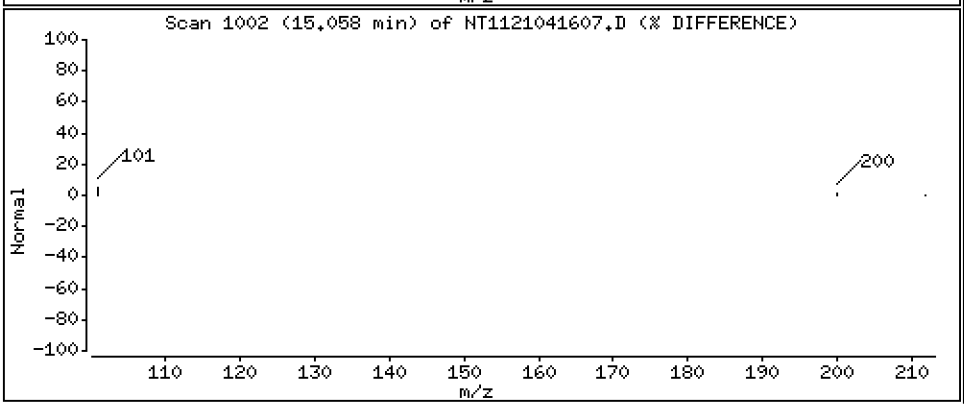
26 Pyrene

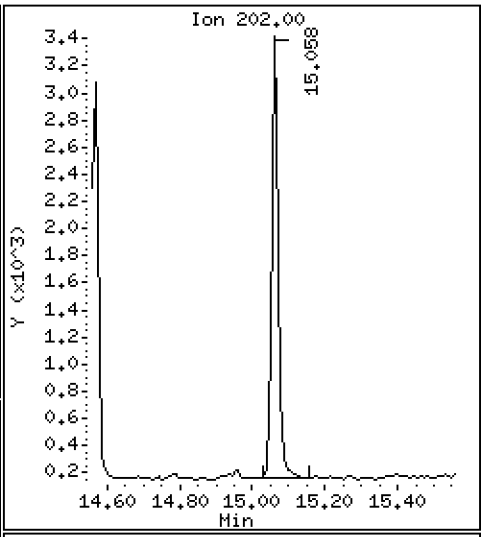
Concentration: 5.31 ng/mL

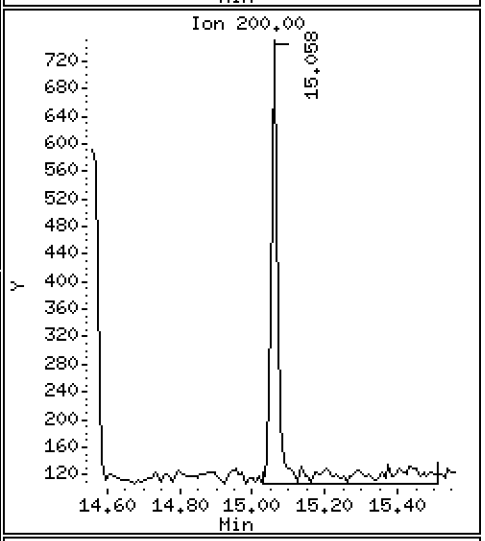


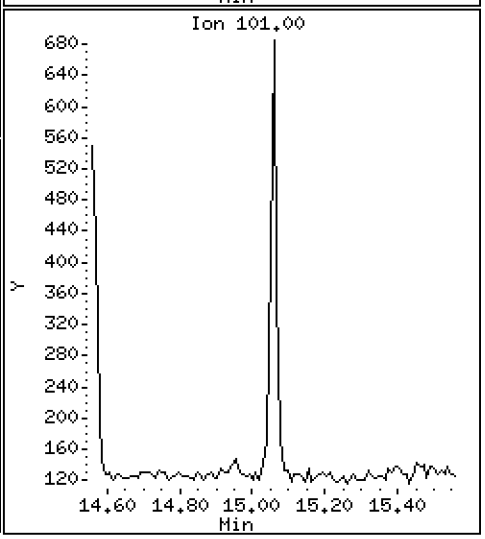












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

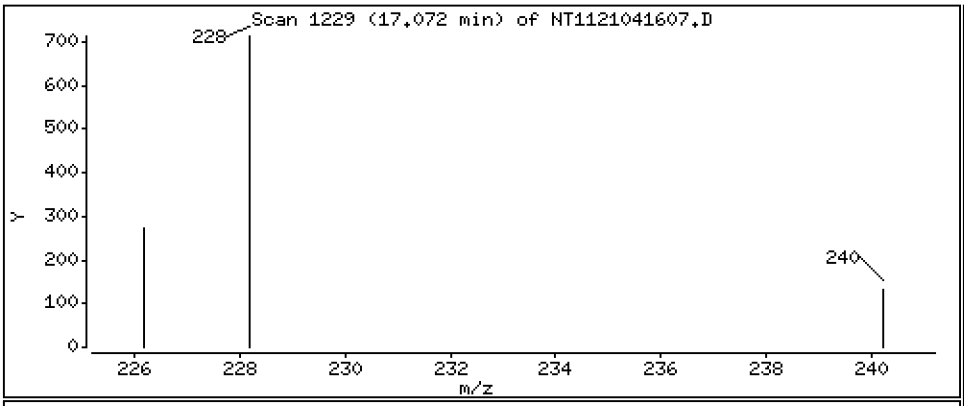
Operator: VTS

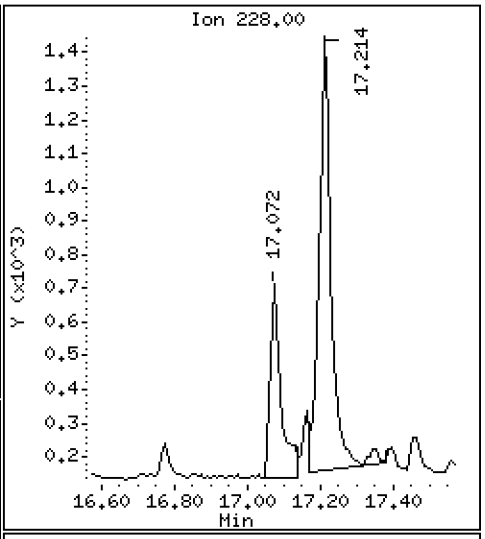
Column phase: Rxi-17Sil MS

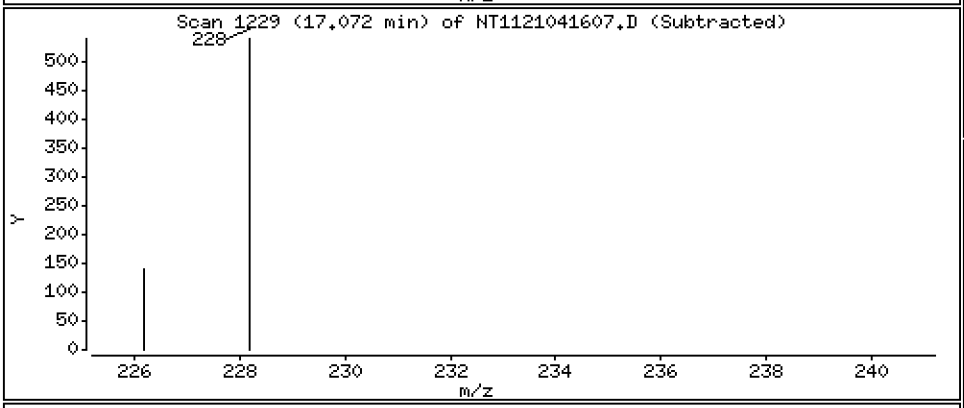
Column diameter: 0.25

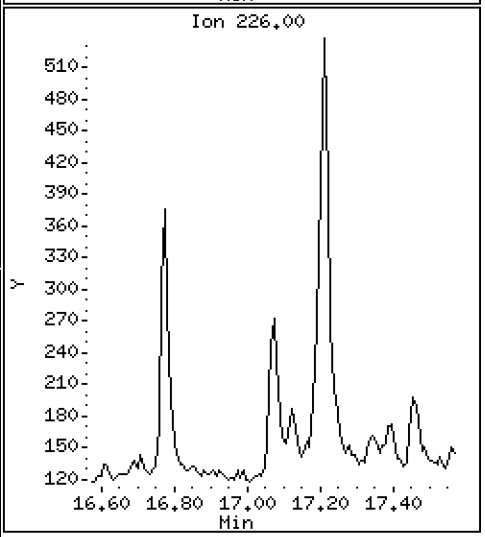
27 Benzo(a)anthracene

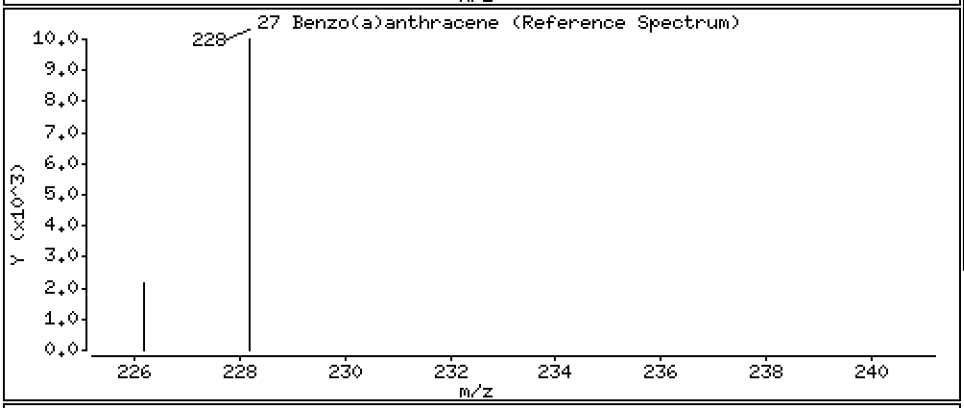
Concentration: 1.69 ng/mL

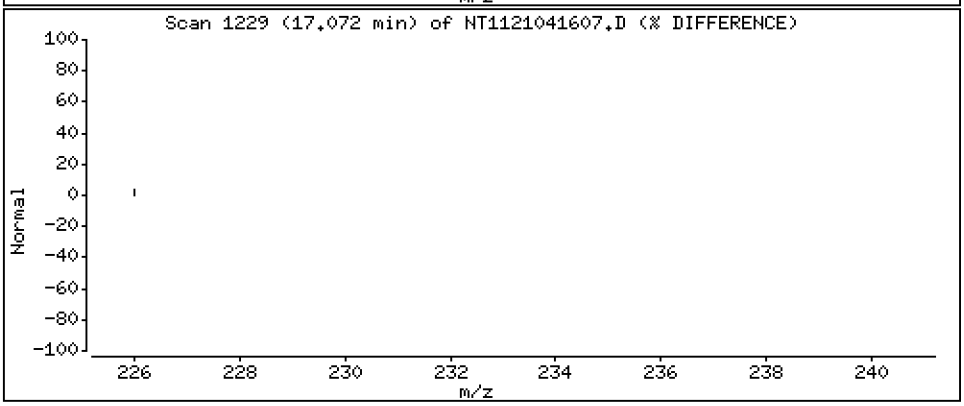












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

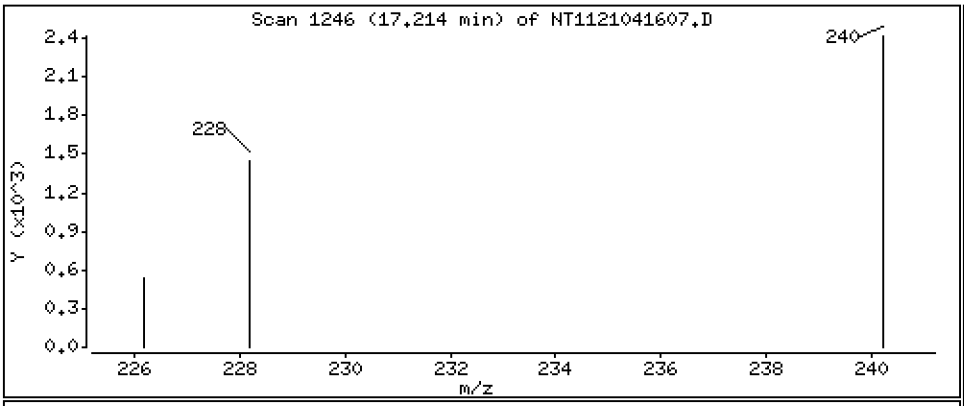
Operator: VTS

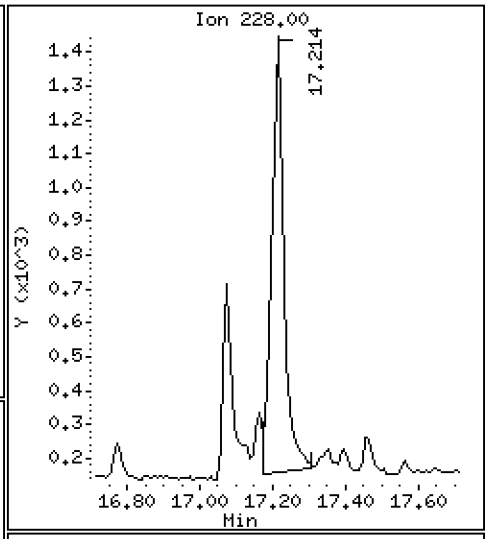
Column phase: Rxi-17Sil MS

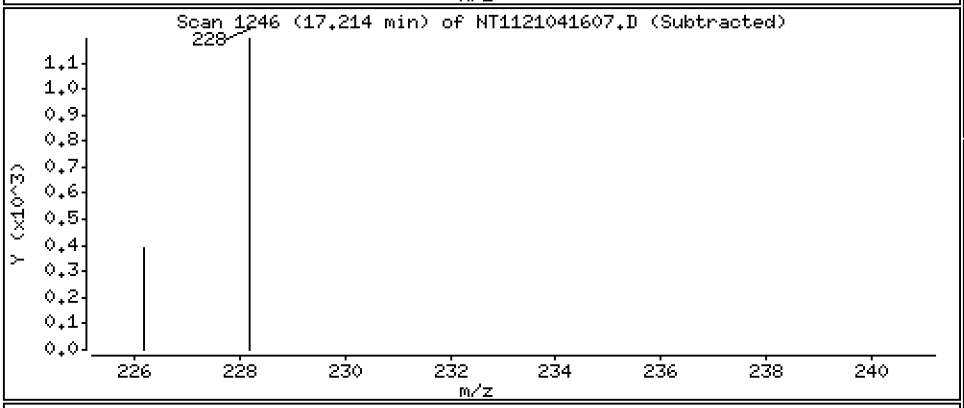
Column diameter: 0.25

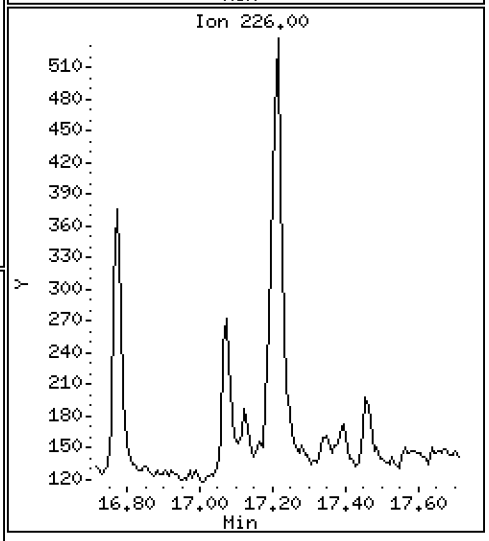
29 Chrysene

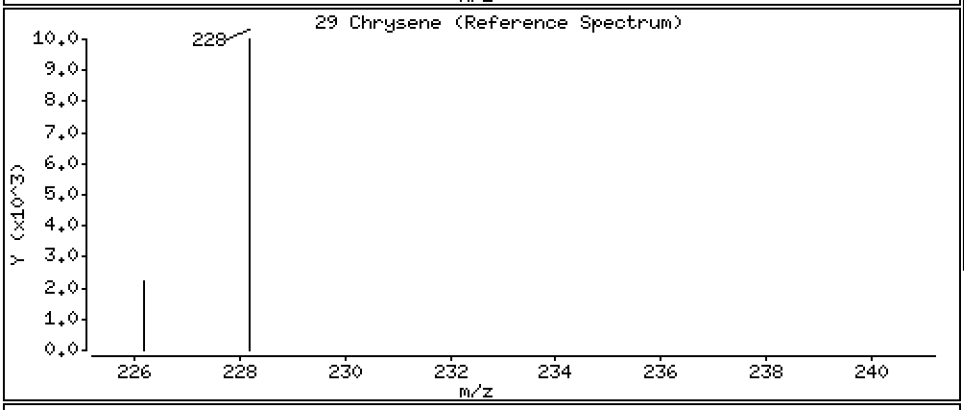
Concentration: 3.86 ng/mL

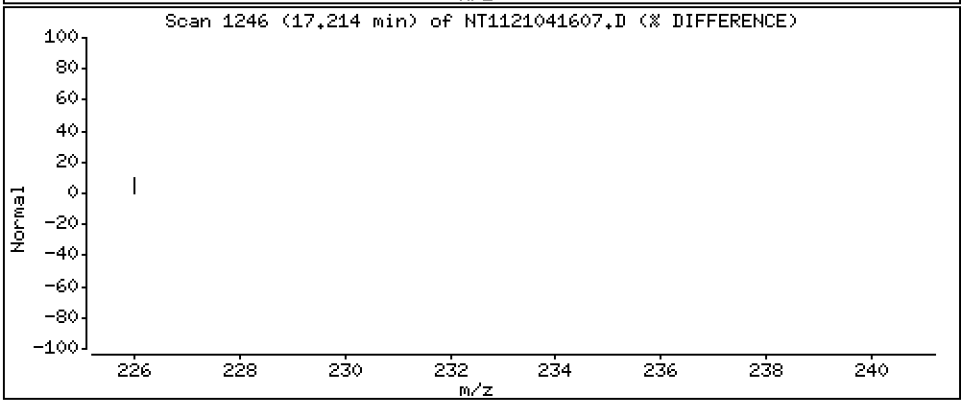












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

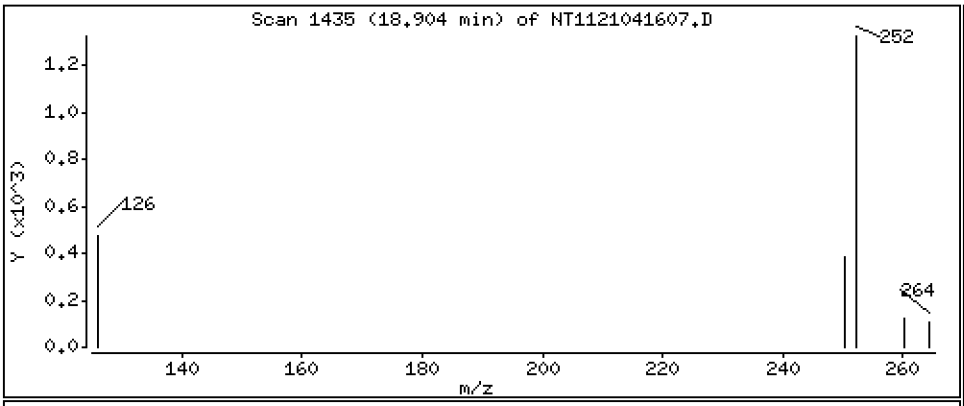
Operator: VTS

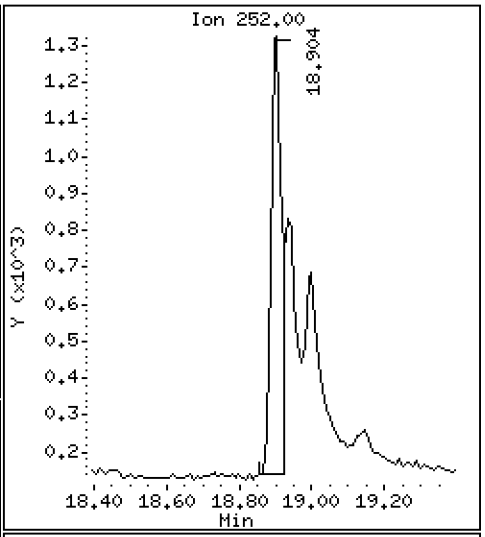
Column phase: Rxi-17Sil MS

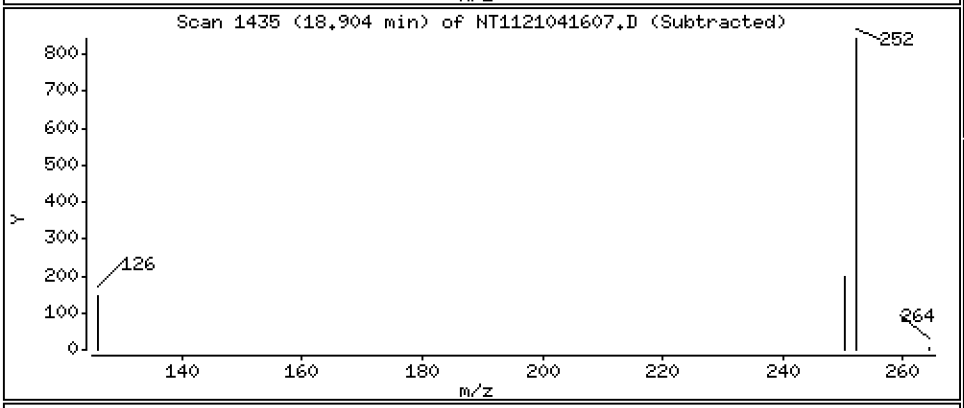
Column diameter: 0.25

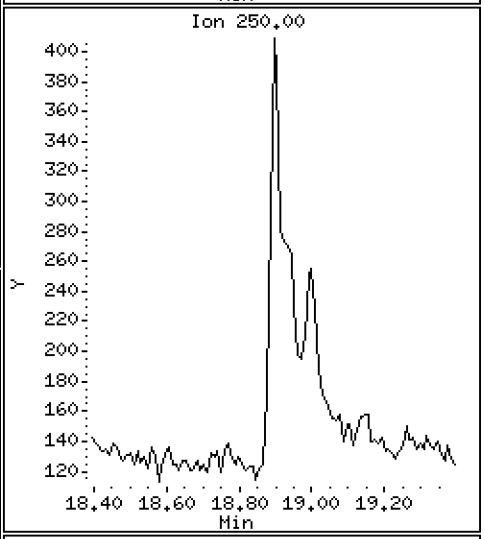
30 Benzo(b)fluoranthene

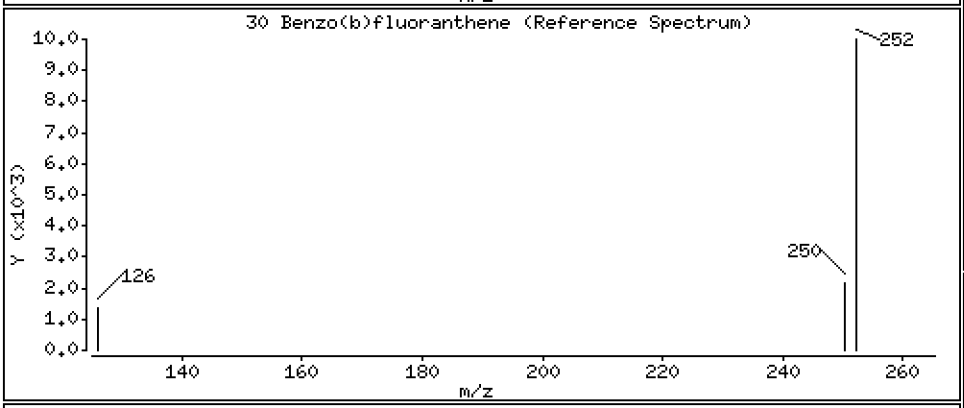
Concentration: 4.17 ng/mL

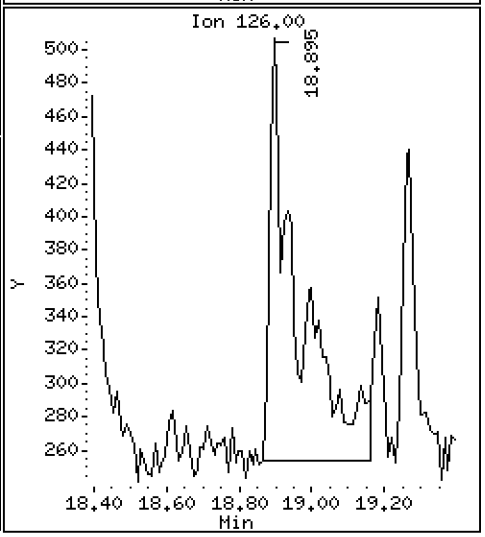


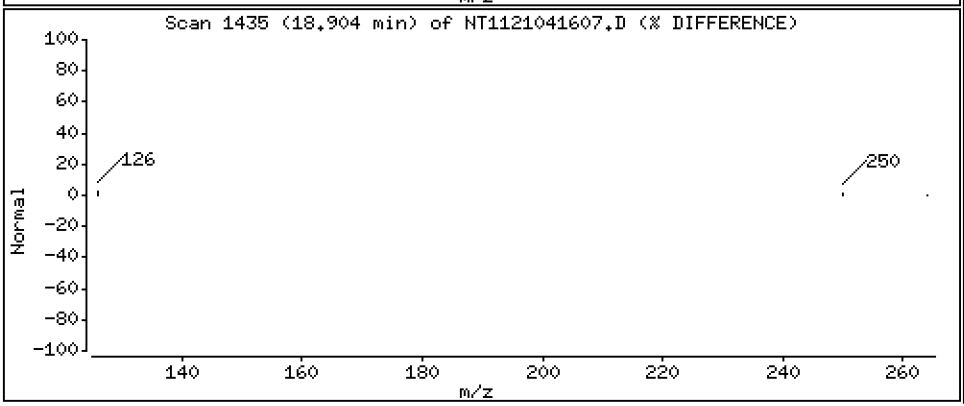












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

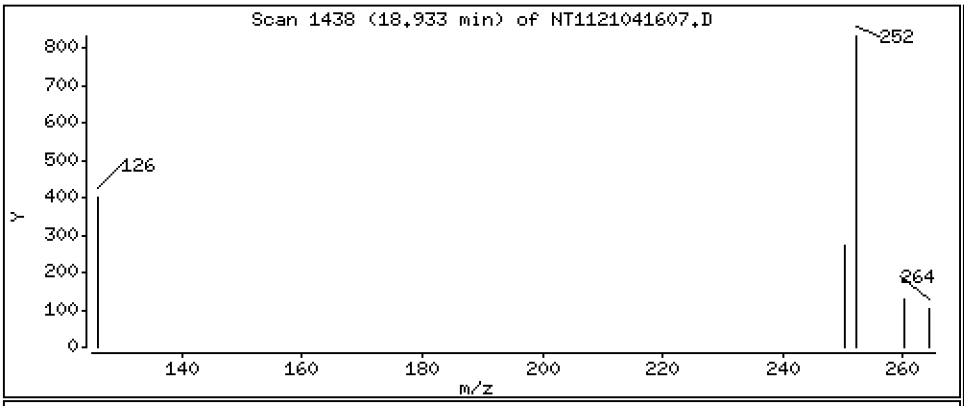
Operator: VTS

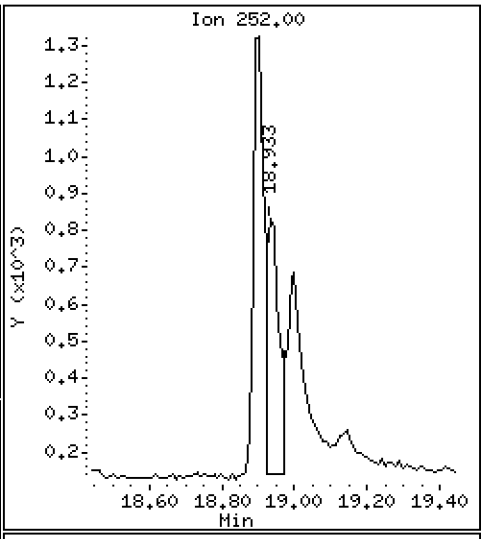
Column phase: Rxi-17Sil MS

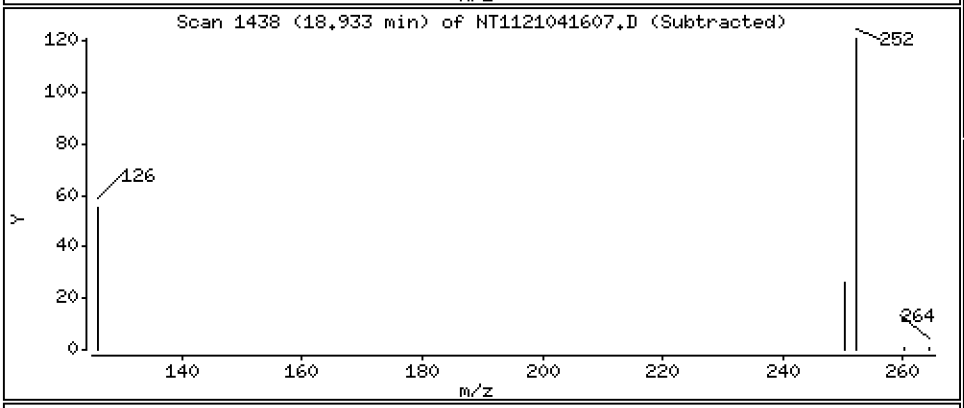
Column diameter: 0.25

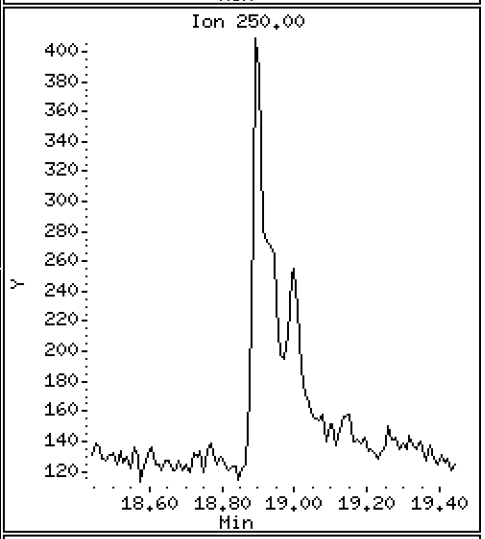
31 Benzo(k)fluoranthene

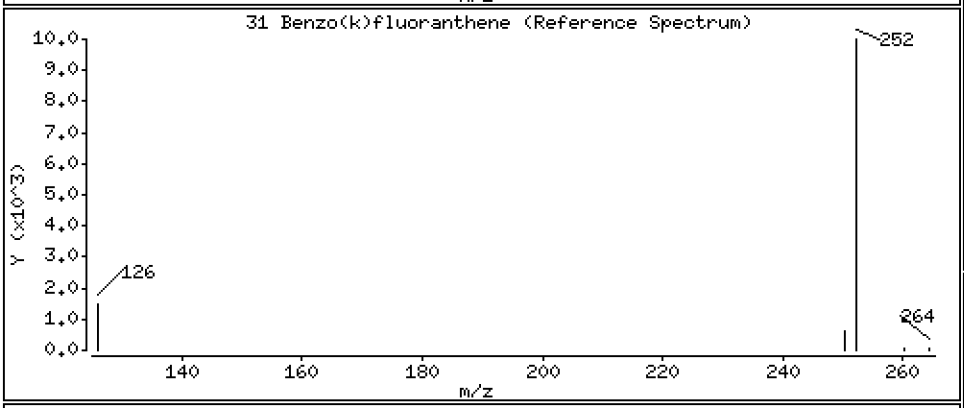
Concentration: 2.21 ng/mL

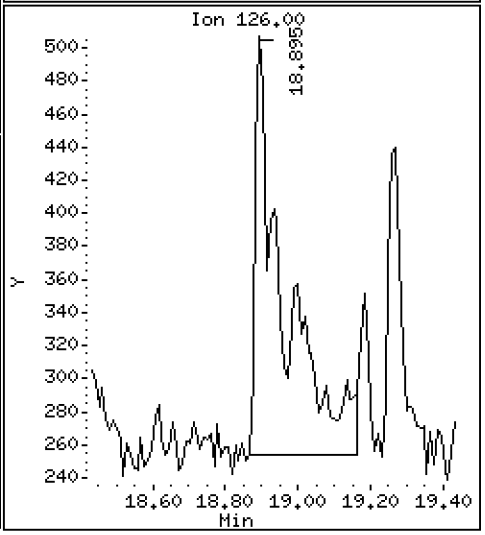


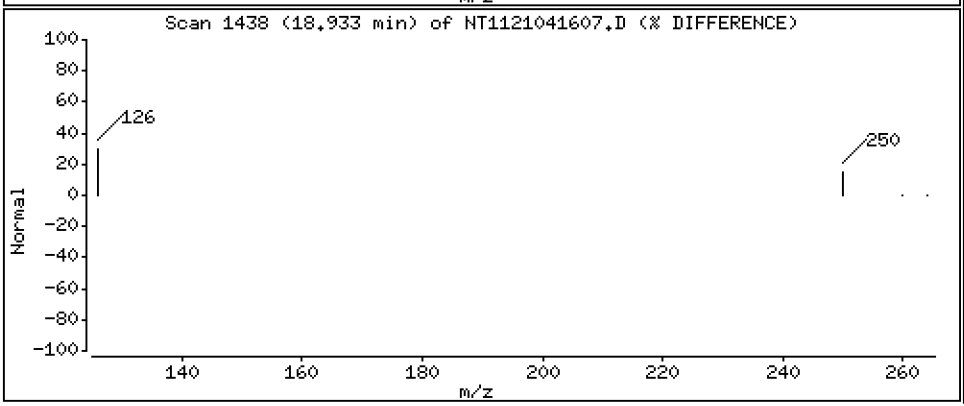












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

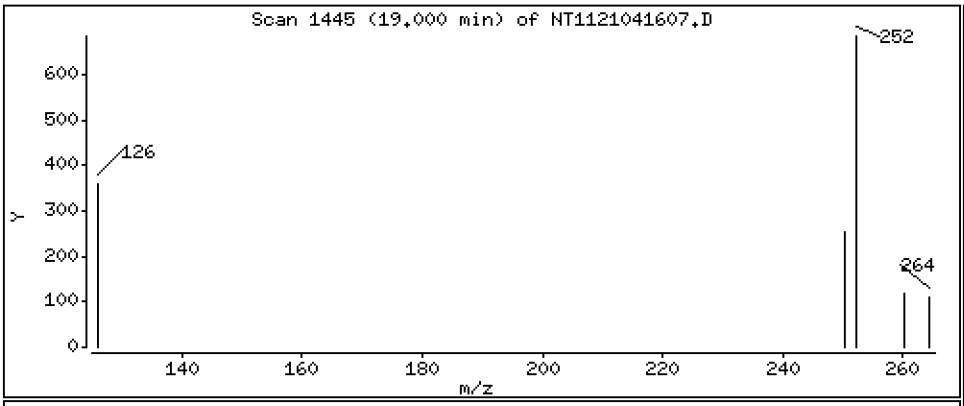
Operator: VTS

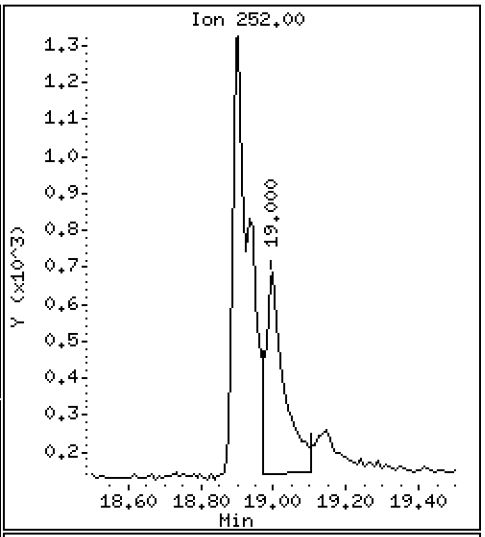
Column phase: Rxi-17Sil MS

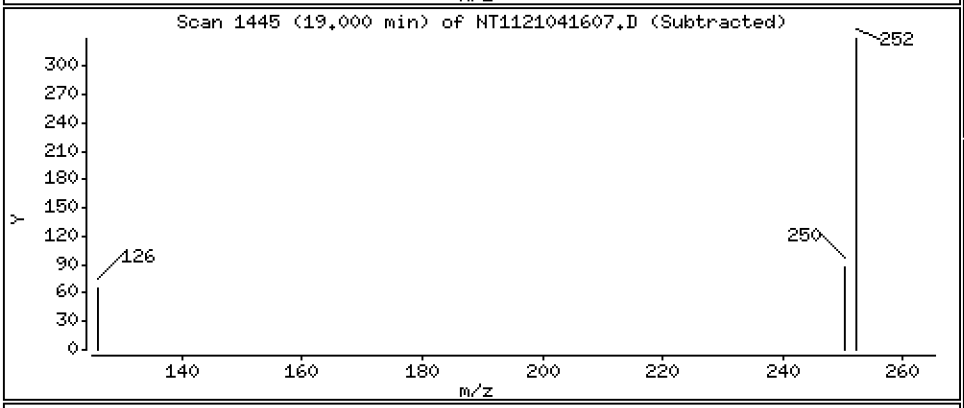
Column diameter: 0.25

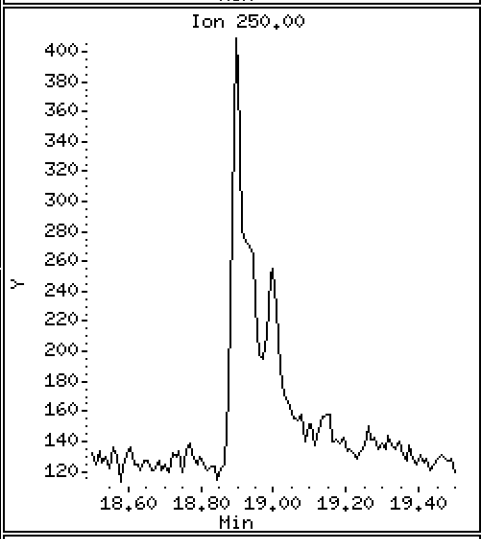
32 Benzo(j)fluoranthene

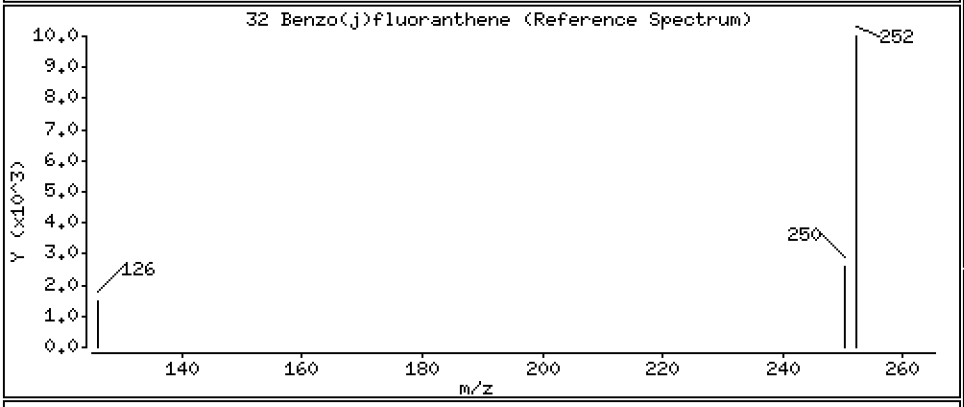
Concentration: 2.33 ng/mL

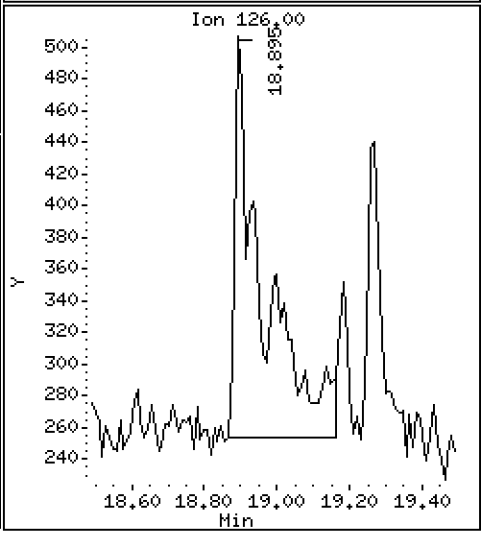


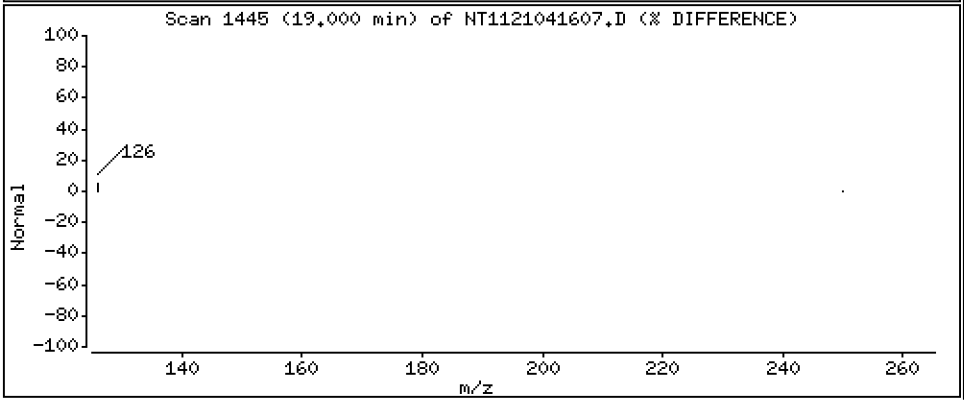












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

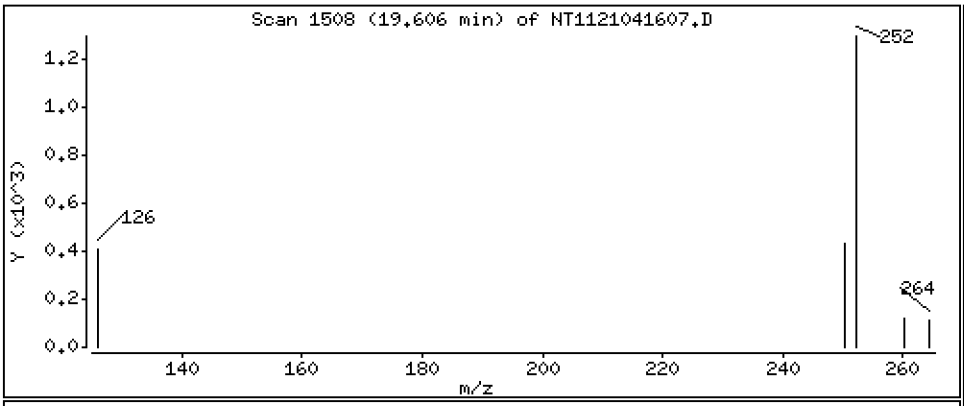
Operator: VTS

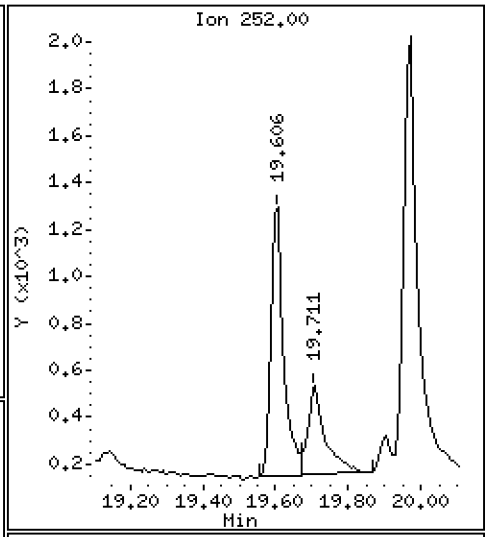
Column phase: Rxi-17Sil MS

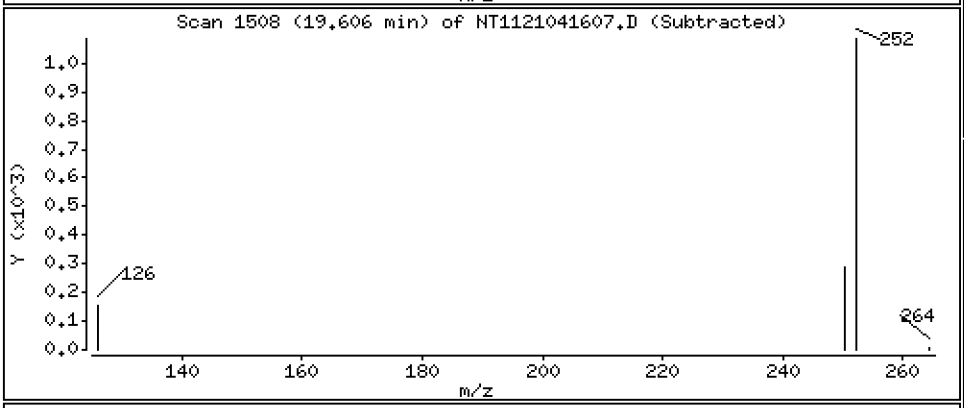
Column diameter: 0.25

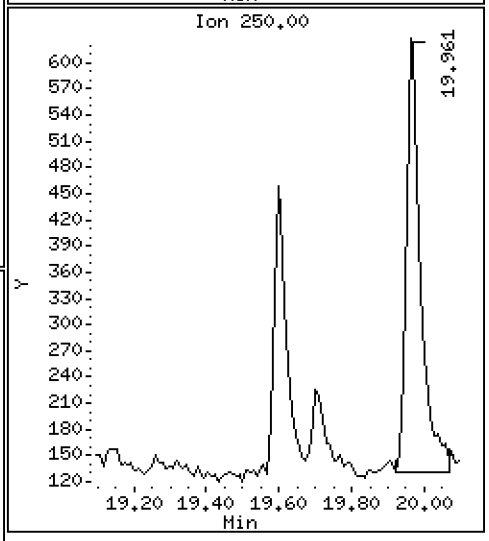
34 Benzo(e)pyrene

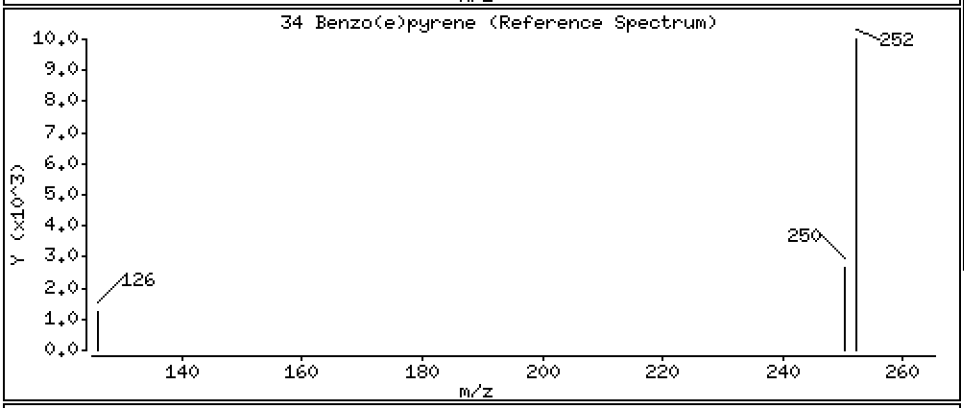
Concentration: 4.10 ng/mL

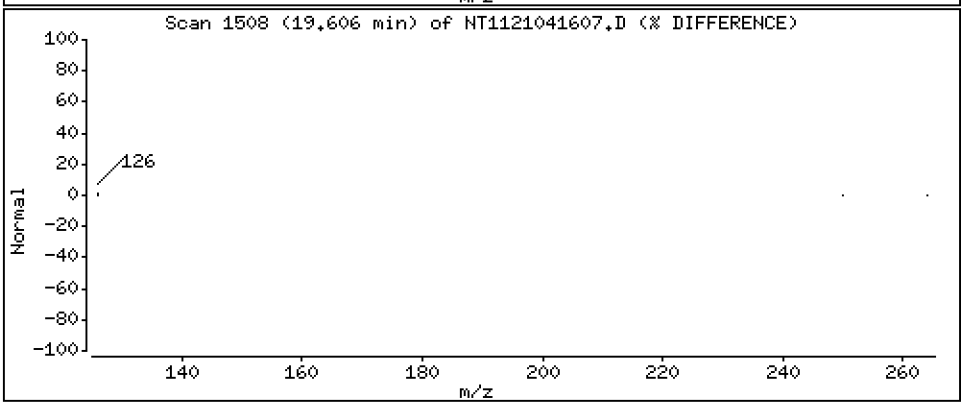












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

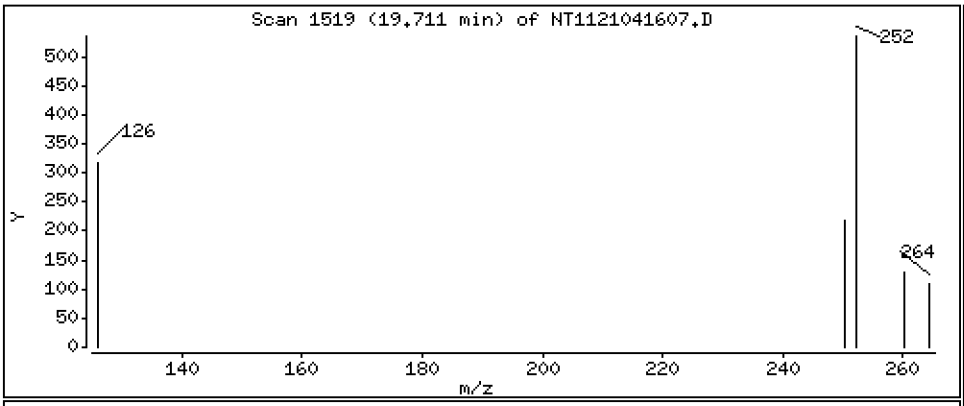
Operator: VTS

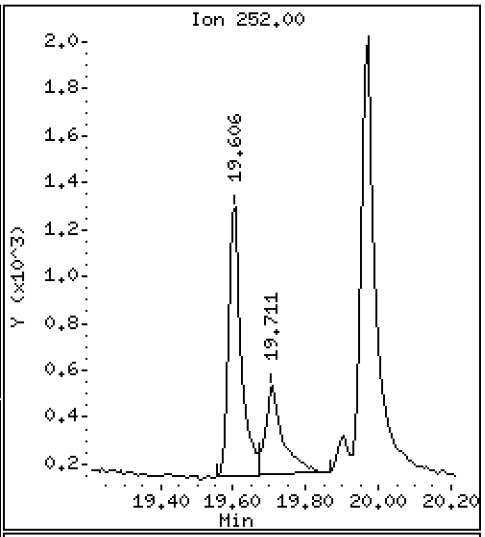
Column phase: Rxi-17Sil MS

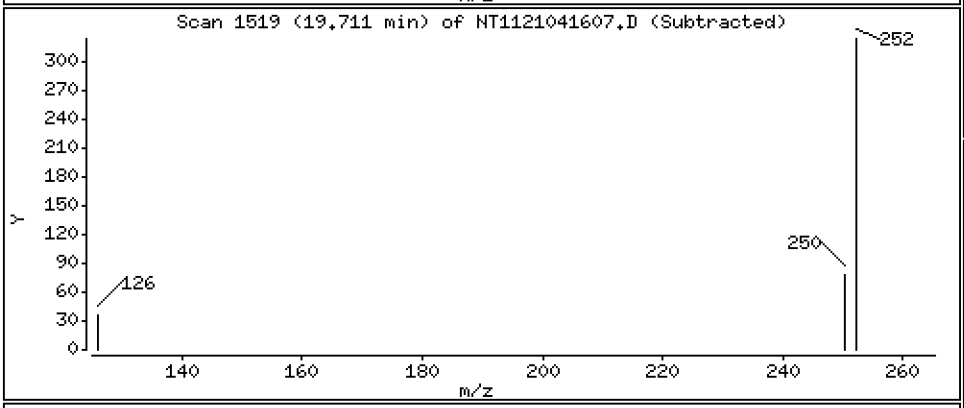
Column diameter: 0.25

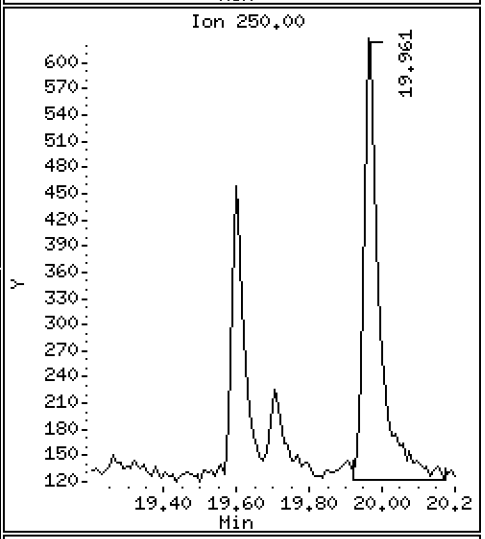
35 Benzo(a)pyrene

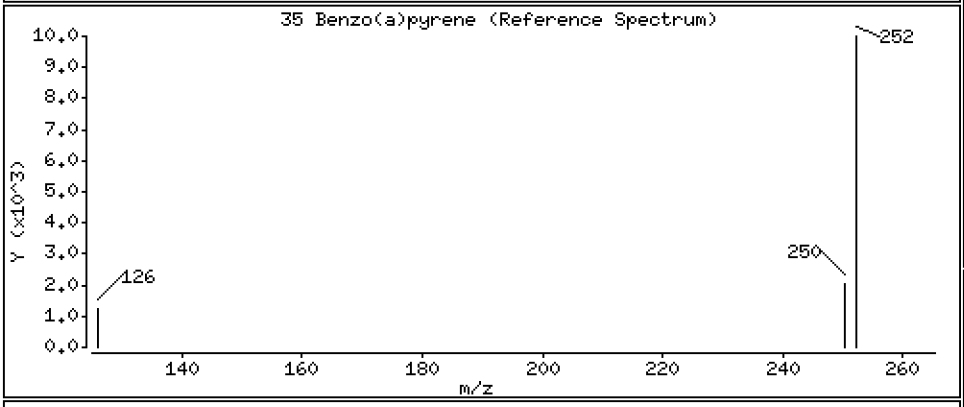
Concentration: 2.03 ng/mL

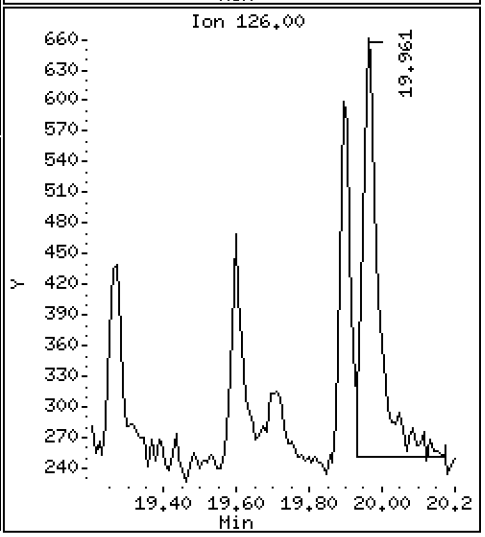


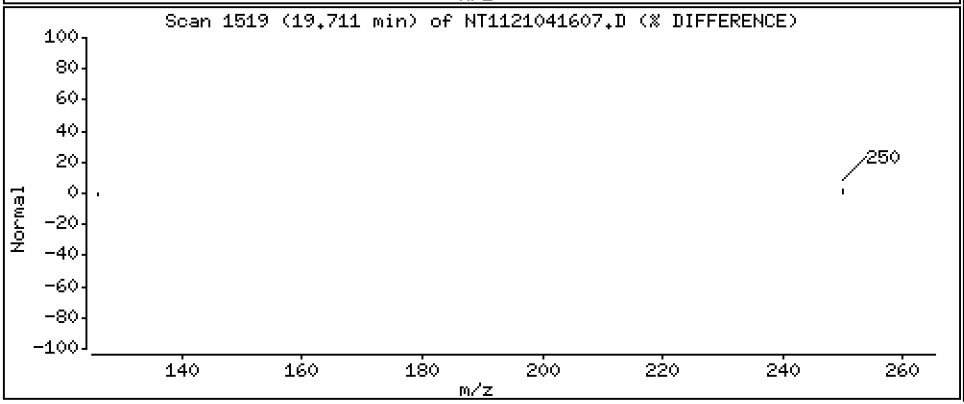












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

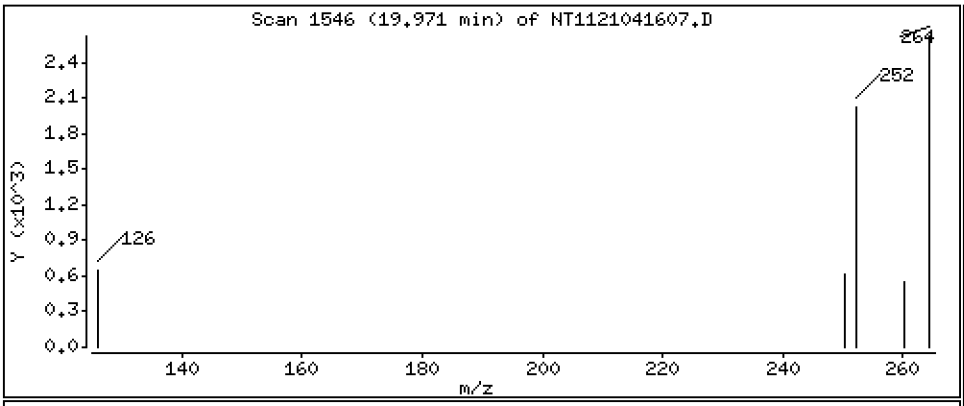
Operator: VTS

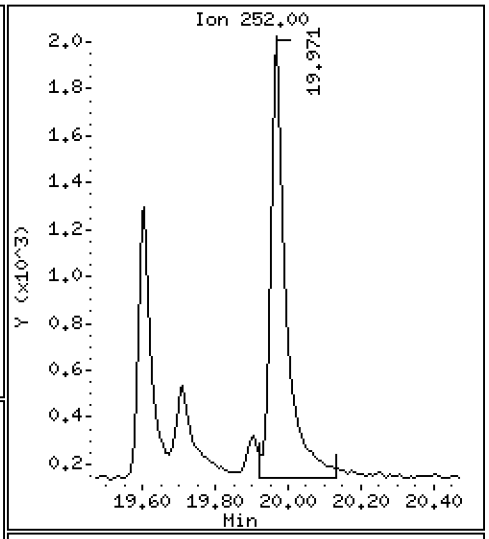
Column phase: Rxi-17Sil MS

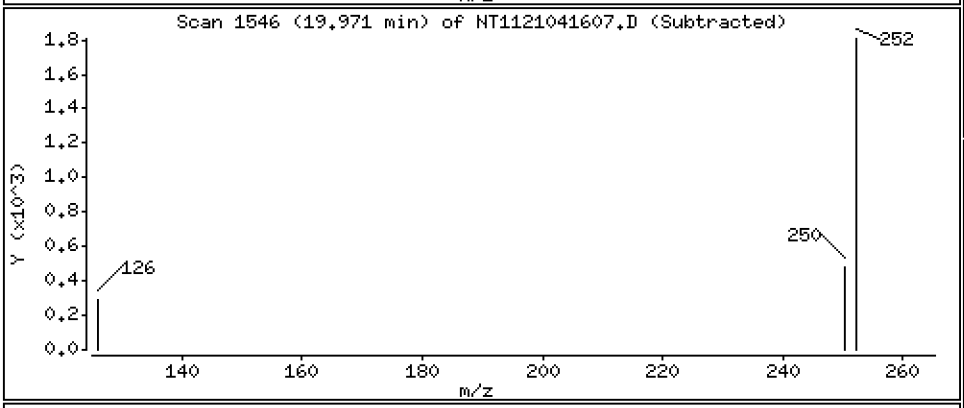
Column diameter: 0.25

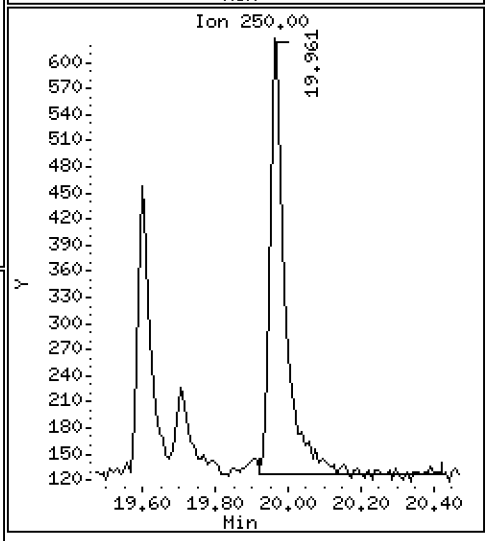
37 Perylene

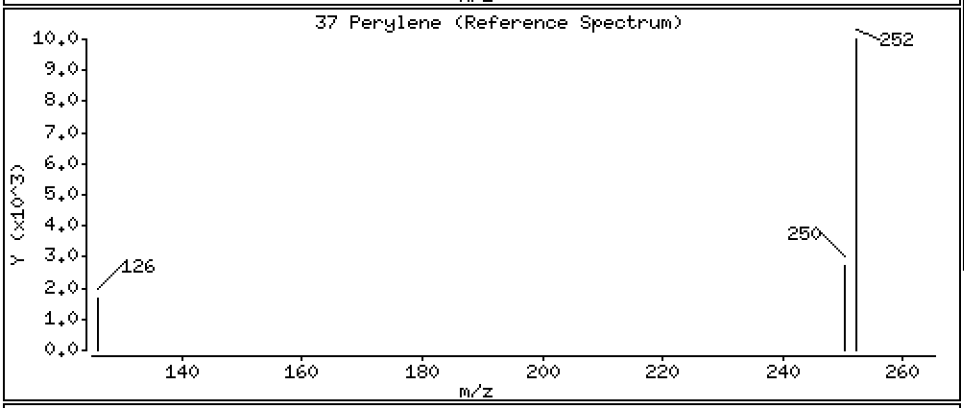
Concentration: 7.66 ng/mL

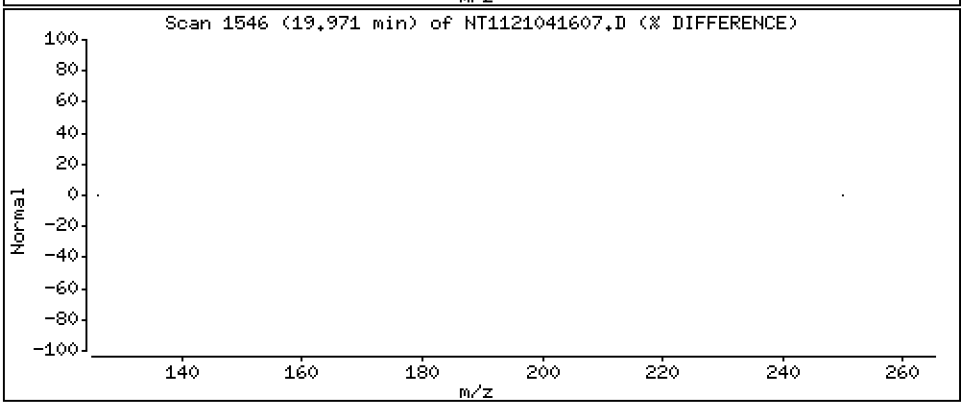












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

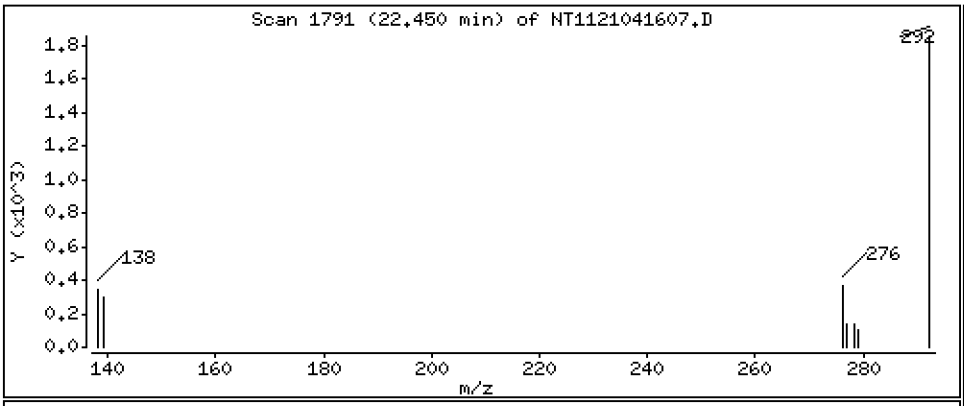
Operator: VTS

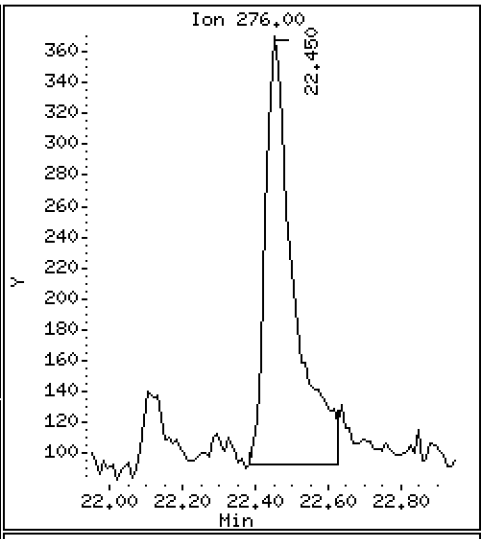
Column phase: Rxi-17Sil MS

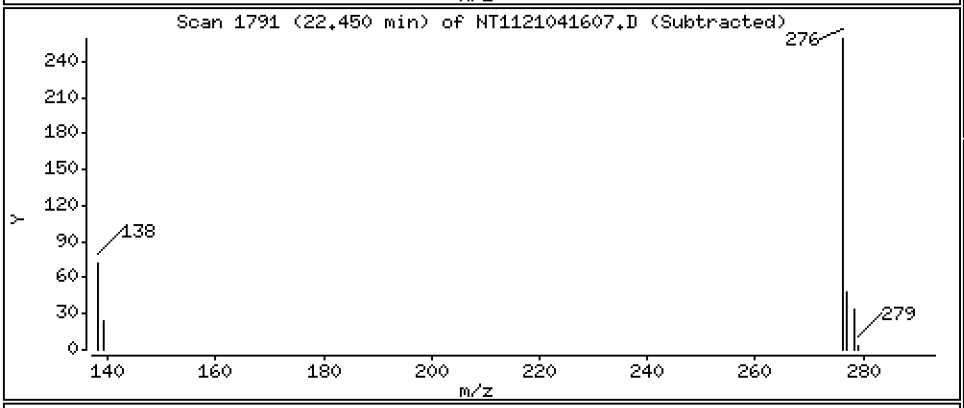
Column diameter: 0.25

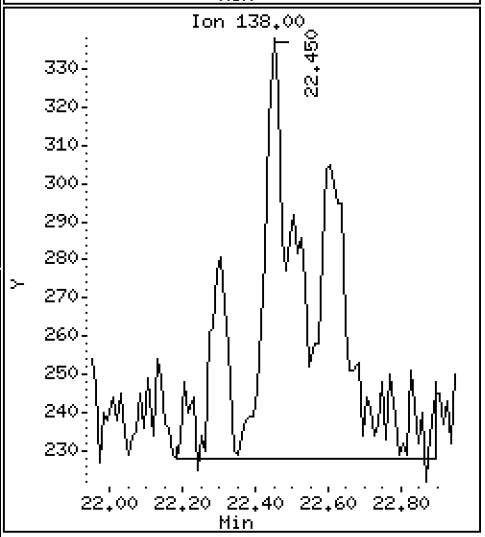
40 Indeno(1,2,3-cd)pyrene

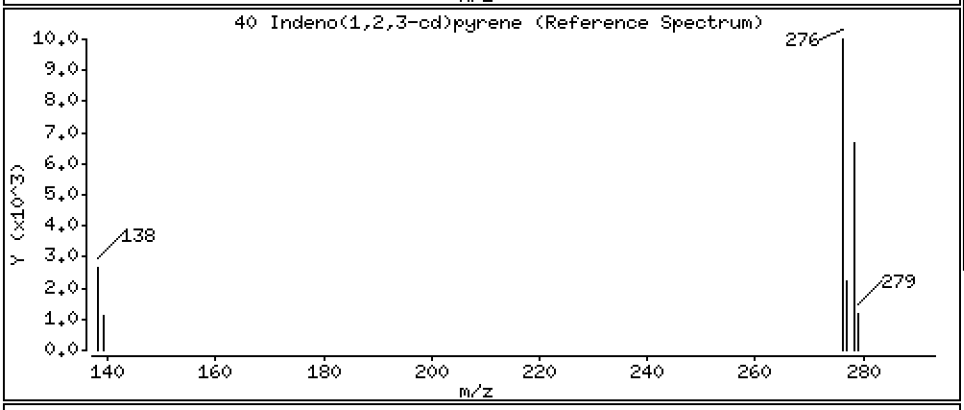
Concentration: 2.36 ng/mL

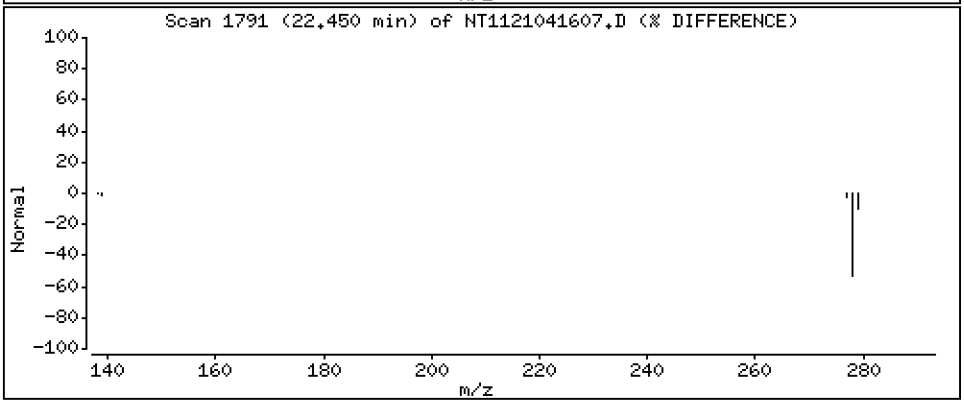












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D

Date : 16-APR-2021 12:58

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-06

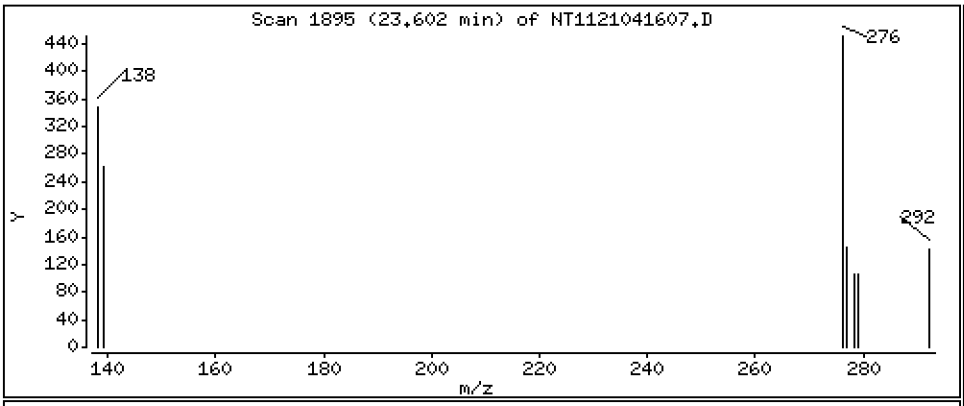
Operator: VTS

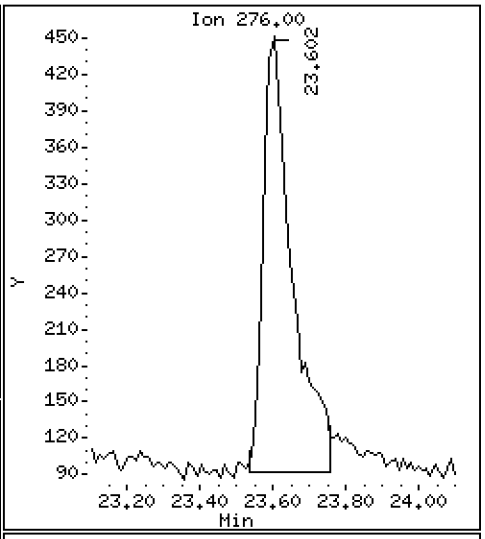
Column phase: Rxi-17Sil MS

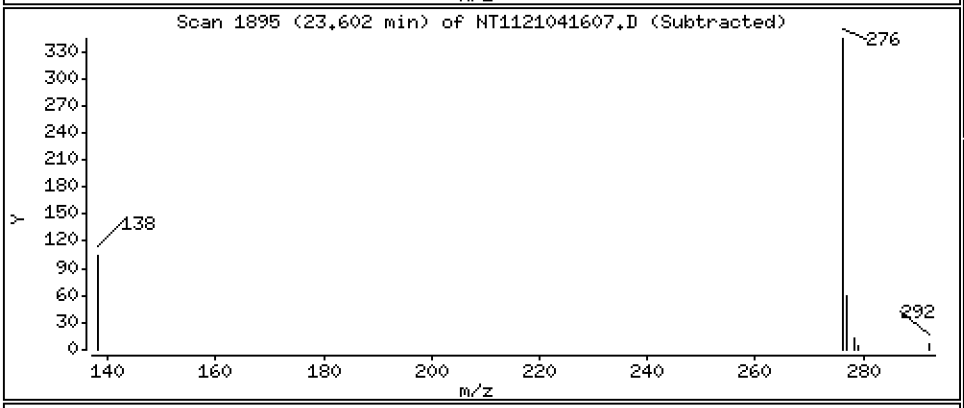
Column diameter: 0.25

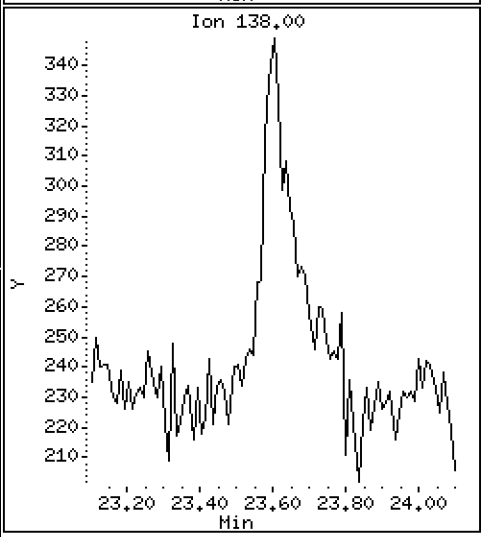
41 Benzo(g,h,i)perylene

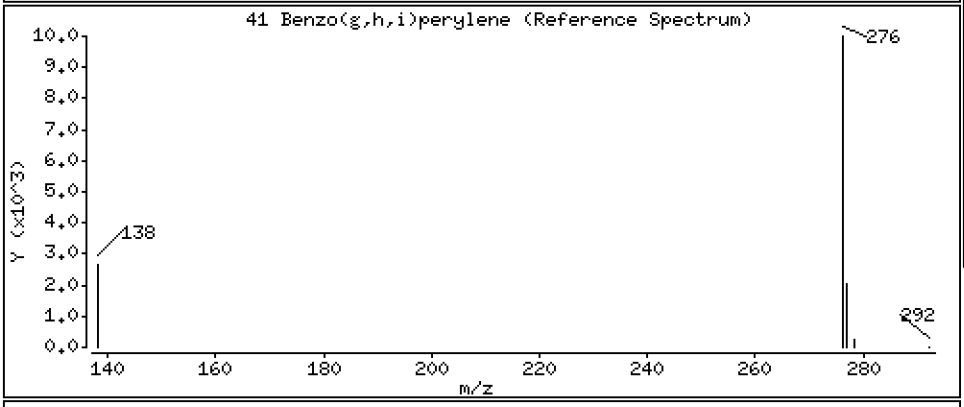
Concentration: 3.17 ng/mL

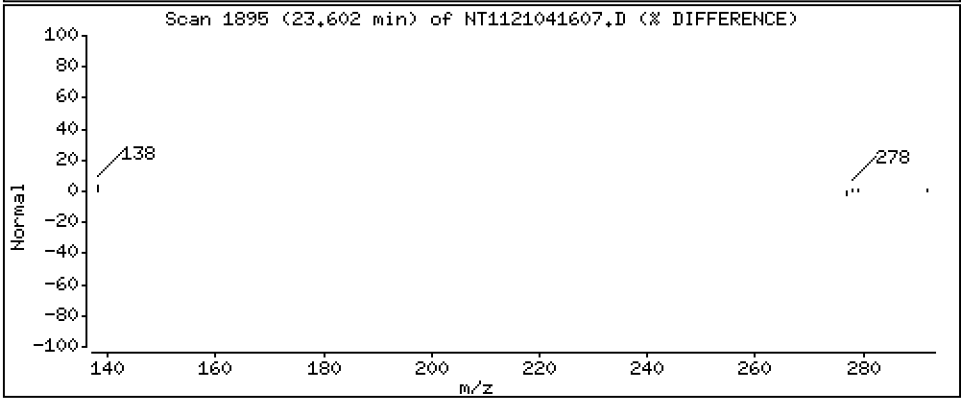












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041607.D
Lab Smp Id: 21C0456-06
Inj Date : 16-APR-2021 12:58 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : 21C0456-06
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.777	6.777	(1.000)	161124	200.000	
	2 Naphthalene	128	6.813	6.813	(1.005)	4109	4.39219	4.39(M)
	3 Benzo(b)thiophene	134	7.057	7.057	(1.041)	1480	2.00529	2.01(M)
$	4 2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	126618	195.438	195
	5 2-Methylnaphthalene	142	7.801	7.801	(1.151)	2077	2.75401	2.75
	6 1-Methylnaphthalene	142	8.053	8.054	(1.188)	1348	1.92280	1.92(M)
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	Compound Not Detected.					
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	Compound Not Detected.					
*	11 Acenaphthene-d10	164	9.770	9.770	(1.000)	84088	200.000	
	12 Acenaphthene	153	9.833	9.833	(1.006)	3280	5.14064	5.14
	13 Dibenzofuran	168	10.036	10.036	(1.027)	2471	2.90119	2.90(M)
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	10.655	10.655	(1.091)	2929	4.46442	4.46
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.439	12.439	(1.000)	126495	200.000	
	19 Phenanthrene	178	12.481	12.481	(1.003)	3034	3.66654	3.67
	21 Anthracene	178	12.533	12.533	(1.008)	17934	21.6910	21.7
	22 Carbazole	167	13.206	13.207	(1.062)	3452	3.91820	3.92(M)
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	14.530	14.530	(1.168)	134536	202.862	203
	25 Fluoranthene	202	14.568	14.568	(1.171)	3934	4.76855	4.77(M)
	26 Pyrene	202	15.058	15.058	(1.211)	4490	5.30503	5.31(M)
	27 Benzo(a)anthracene	228	17.072	17.072	(0.995)	1169	1.69180	1.69
*	28 Chrysene-d12	240	17.163	17.163	(1.000)	94065	200.000	
	29 Chrysene	228	17.213	17.213	(1.003)	3004	3.86098	3.86(M)
	30 Benzo(b)fluoranthene	252	18.904	18.894	(0.950)	2559	4.17142	4.17(M)
	31 Benzo(k)fluoranthene	252	18.933	18.942	(0.951)	1784	2.21319	2.21(M)
	32 Benzo(j)fluoranthene	252	19.000	19.000	(0.955)	2032	2.33267	2.33(M)
	34 Benzo(e)pyrene	252	19.605	19.605	(0.985)	2850	4.10252	4.10
	35 Benzo(a)pyrene	252	19.711	19.711	(0.990)	1298	2.02588	2.03
*	36 Perylene-d12	264	19.903	19.903	(1.000)	112704	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
	37 Perylene	252	19.970	19.970	(1.003)	5594	7.66336	7.66(M)
$	38 Dibenzo(a,h)anthracene-d14	292	22.305	22.305	(1.121)	96533	219.035	219
	39 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	40 Indeno(1,2,3-cd)pyrene	276	22.449	22.449	(1.128)	1471	2.36422	2.36(M)
	41 Benzo(g,h,i)perylene	276	23.601	23.601	(1.186)	1971	3.16827	3.17(M)

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041607.D
Lab Smp Id: 21C0456-06
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 10:42
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	161124	13.38
11 Acenaphthene-d10	80301	40151	160602	84088	4.72
18 Phenanthrene-d10	121929	60965	243858	126495	3.74
28 Chrysene-d12	94055	47028	188110	94065	0.01
36 Perylene-d12	114179	57090	228358	112704	-1.29

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	-0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	-0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	-0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	-0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041607.D

Lab ID: 21C0456-06
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 12:58

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1121041602.D

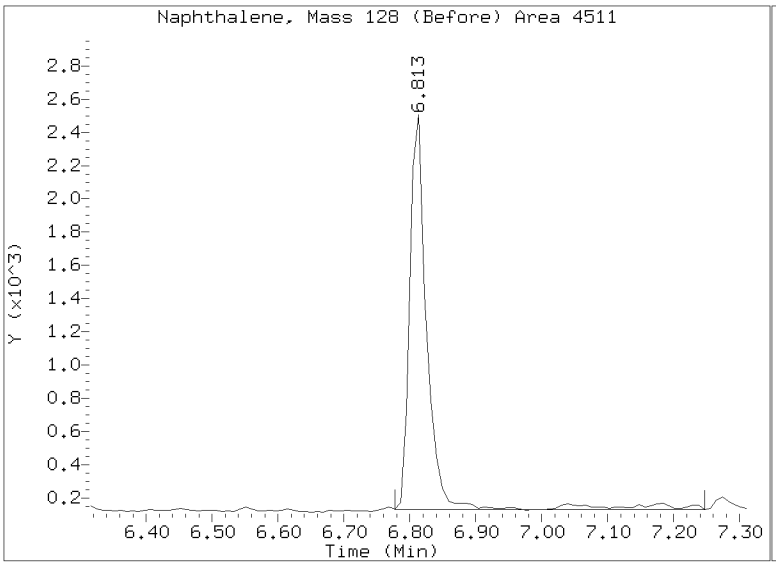
On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

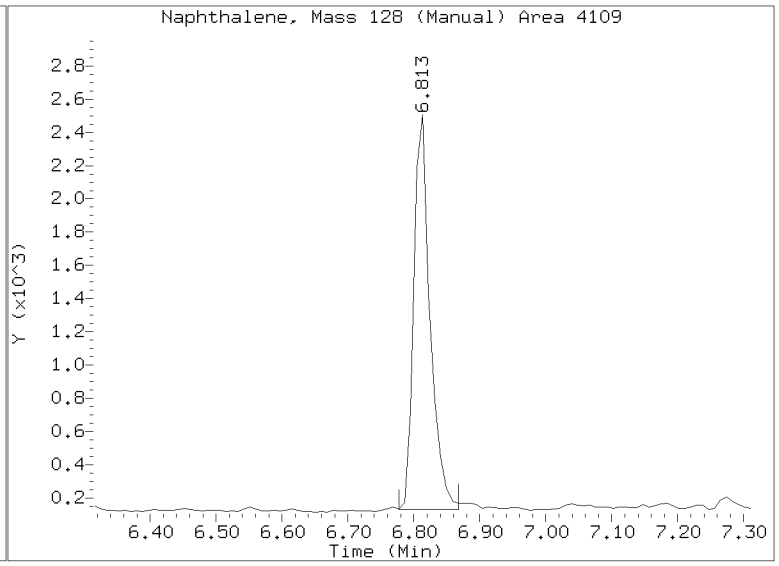
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

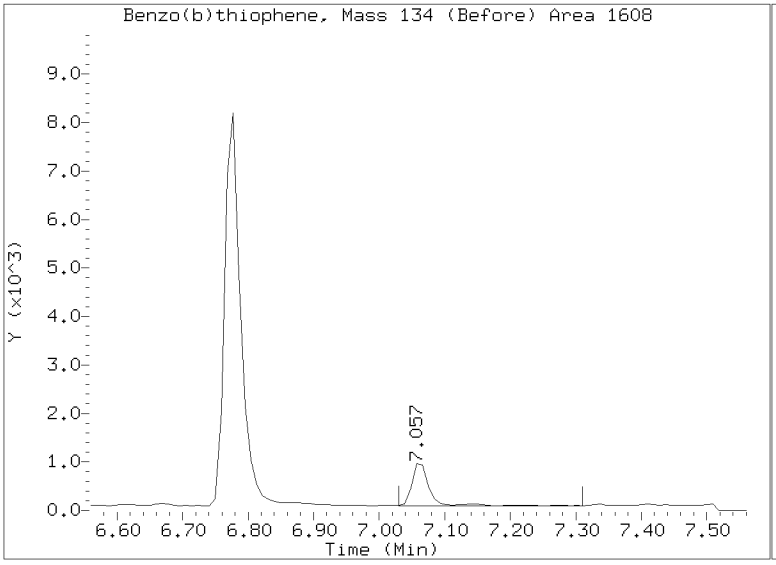
* Only compounds listed in the work order have been verified by the analyst *

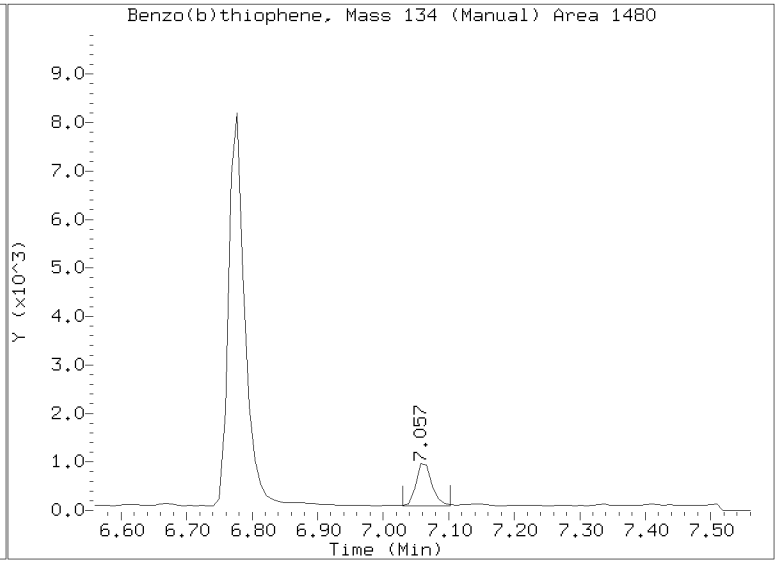
Quant Ion Manual Peak Adjustment Report

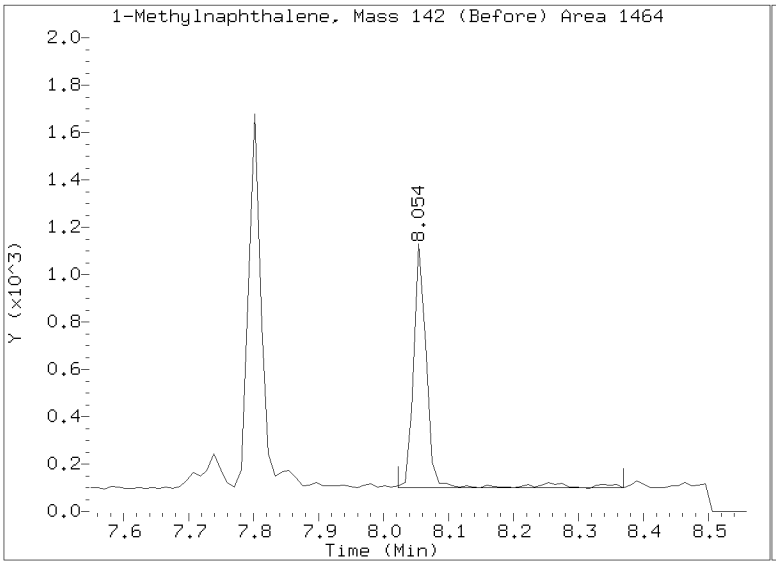
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041607.D
Injection Date: 16-APR-2021 12:58
Lab ID:21C0456-06 Client ID:
Report Date: 04/17/2021 08:33

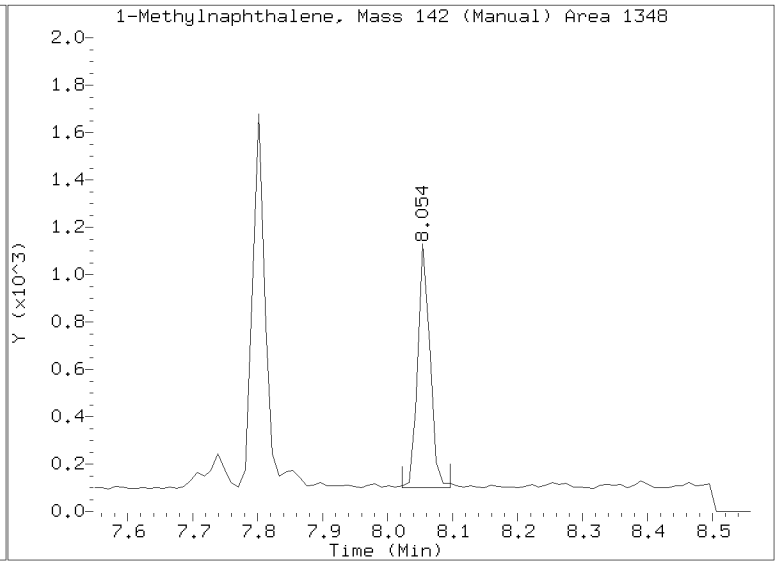






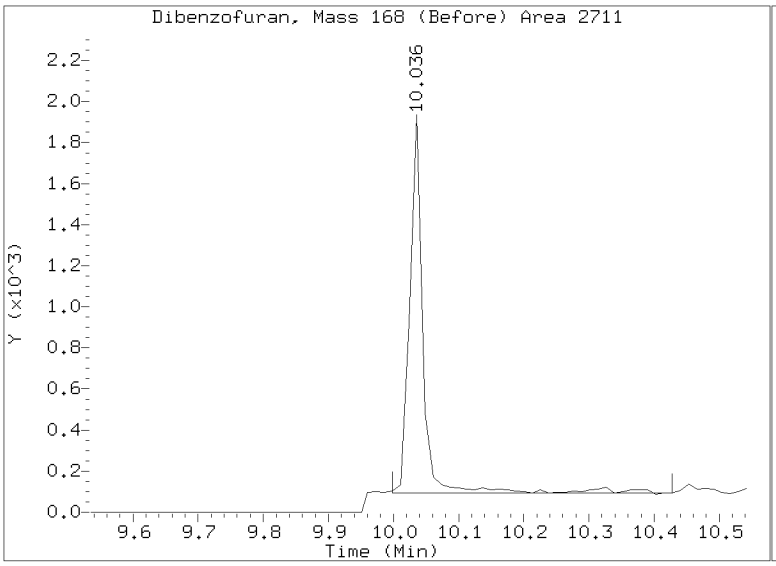


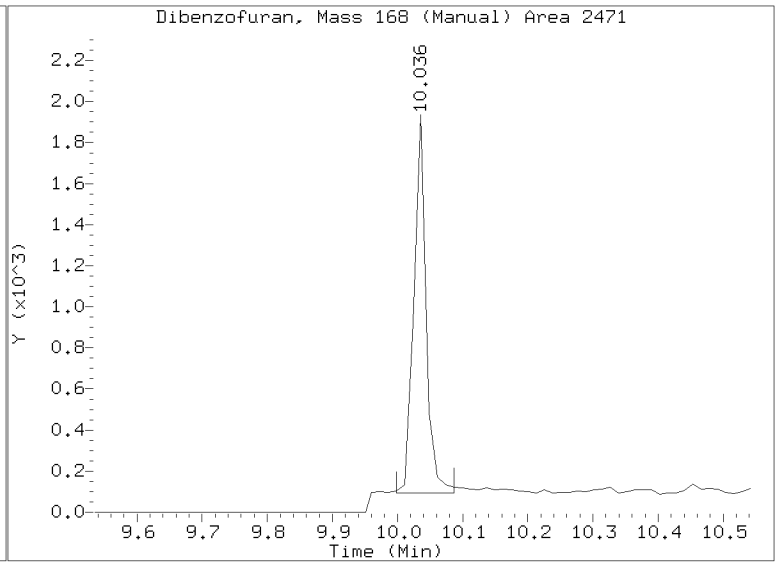


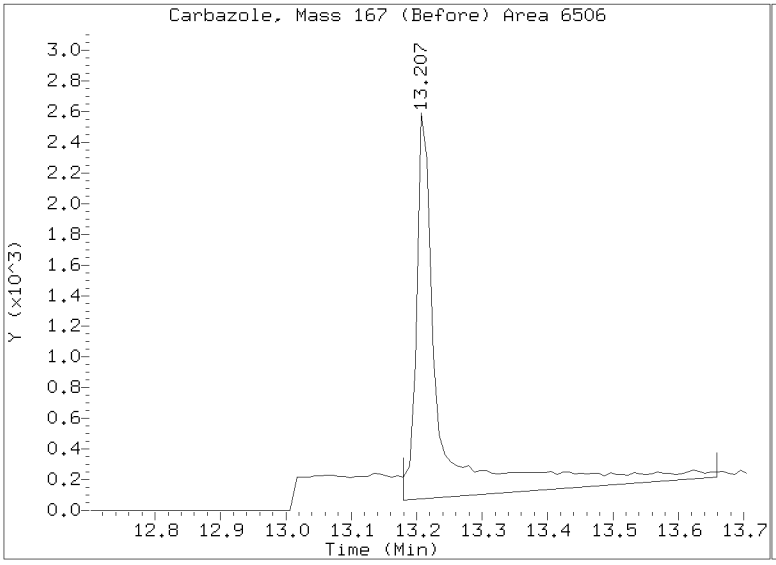


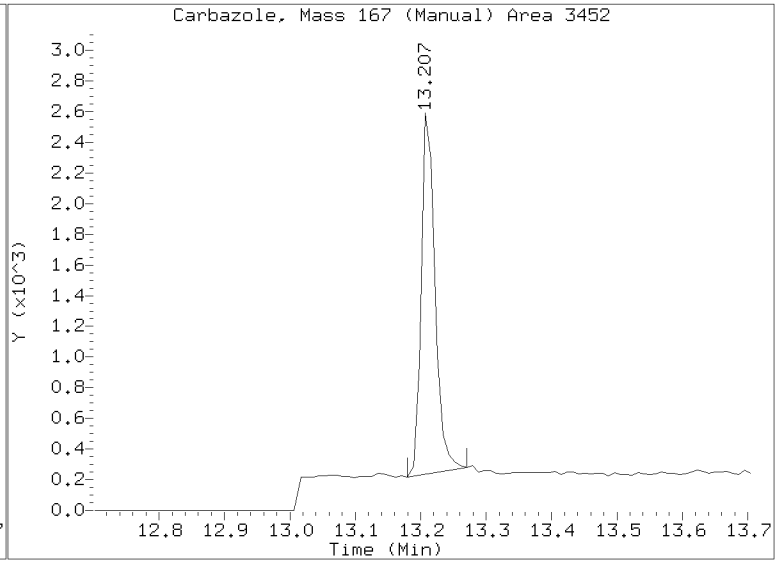
Quant Ion Manual Peak Adjustment Report

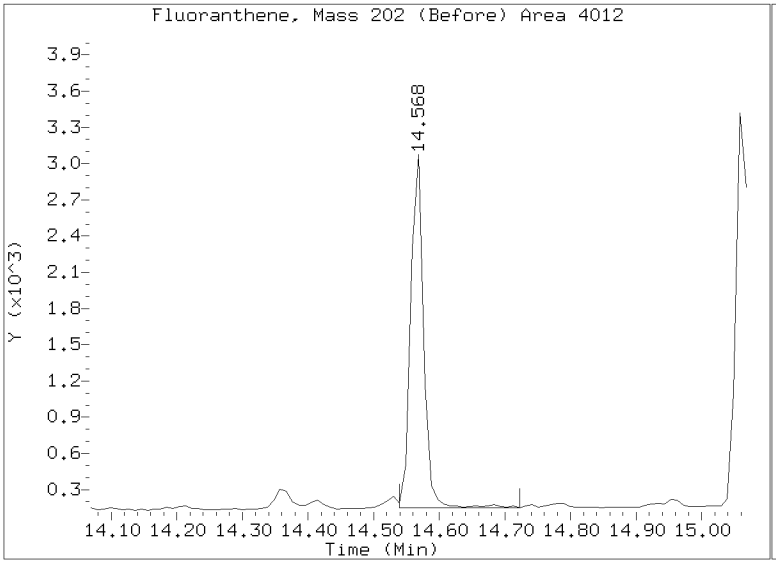
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041607.D
Injection Date: 16-APR-2021 12:58
Lab ID:21C0456-06 Client ID:
Report Date: 04/17/2021 08:33

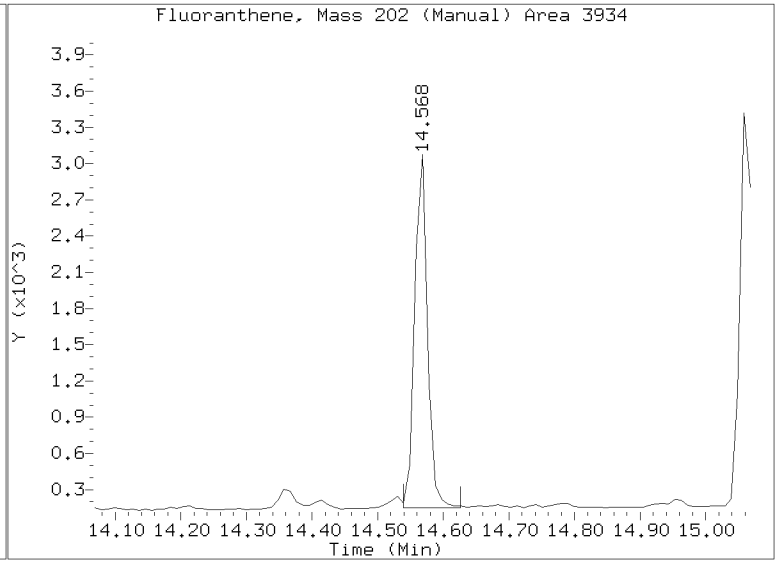






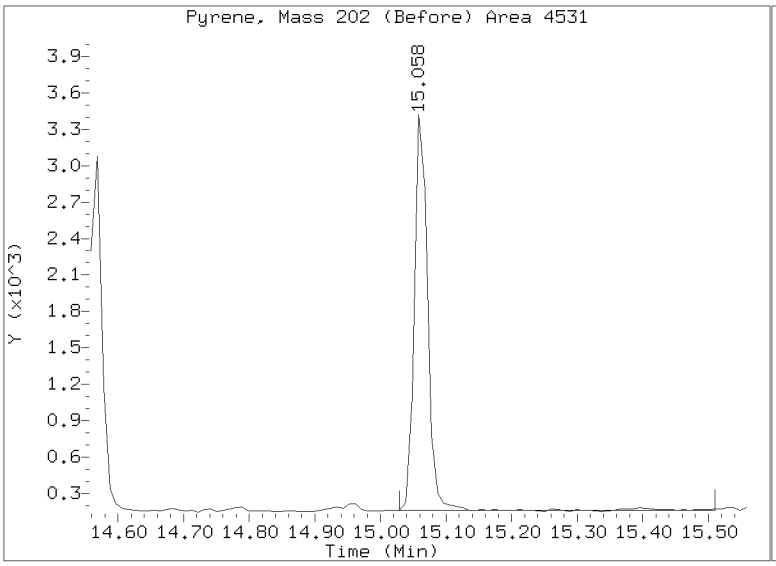


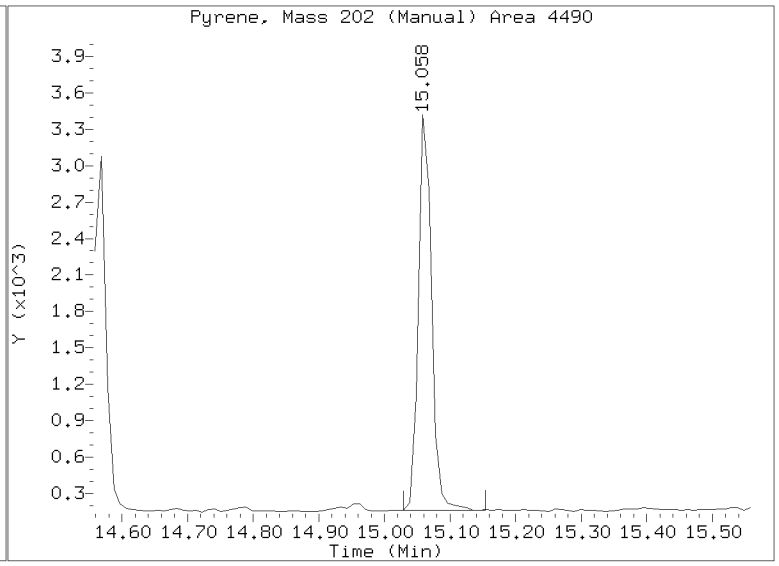


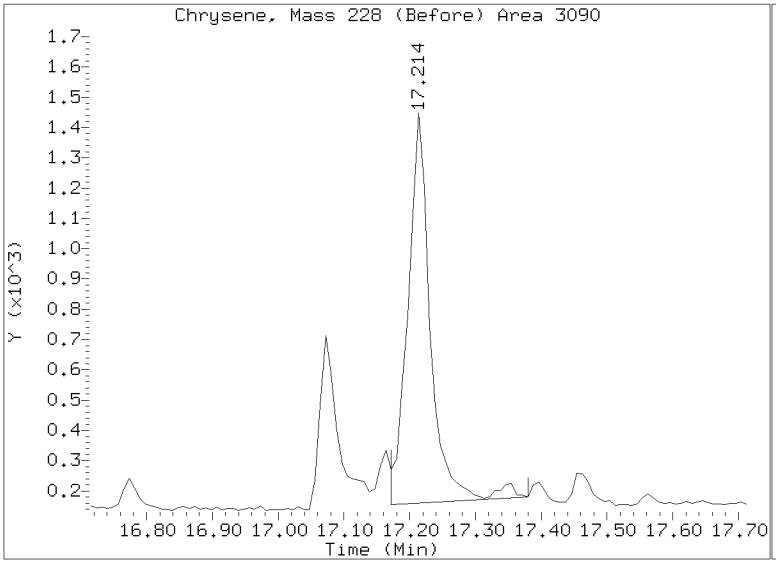


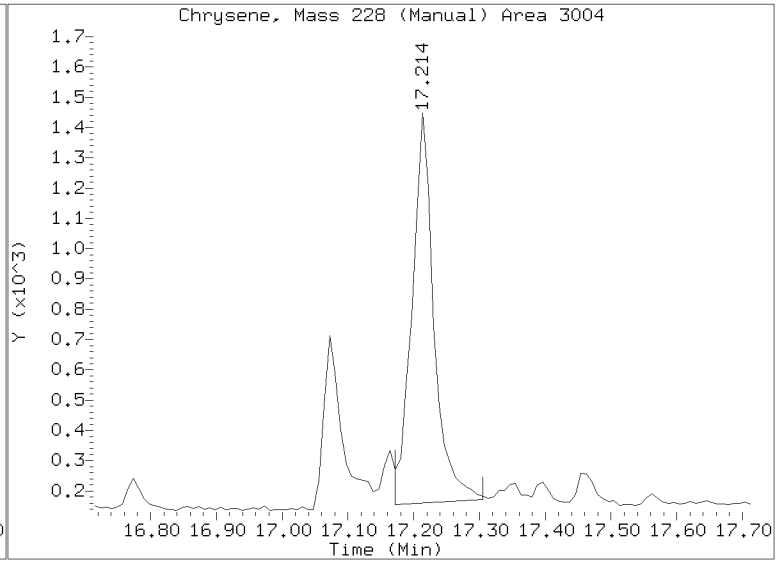
Quant Ion Manual Peak Adjustment Report

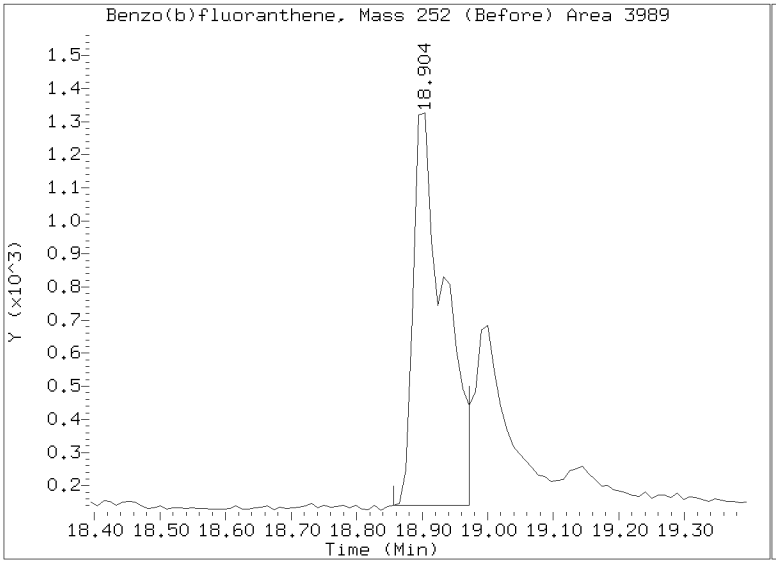
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041607.D
Injection Date: 16-APR-2021 12:58
Lab ID:21C0456-06 Client ID:
Report Date: 04/17/2021 08:33

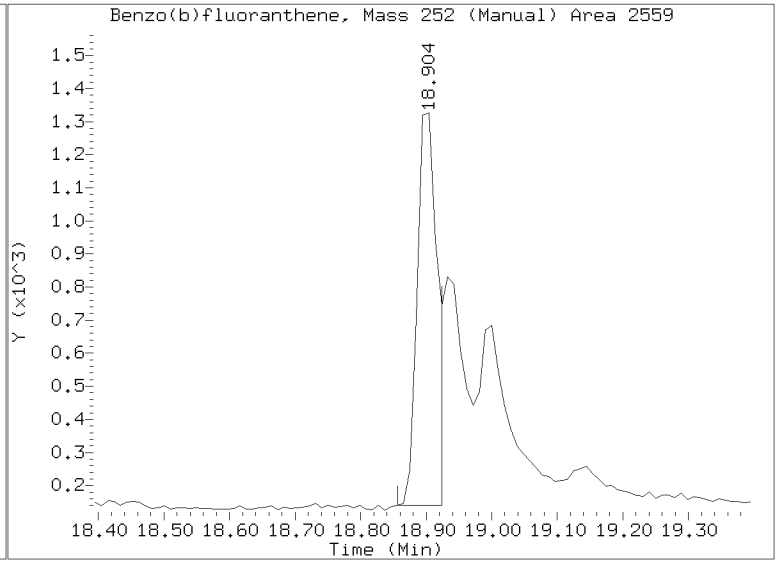






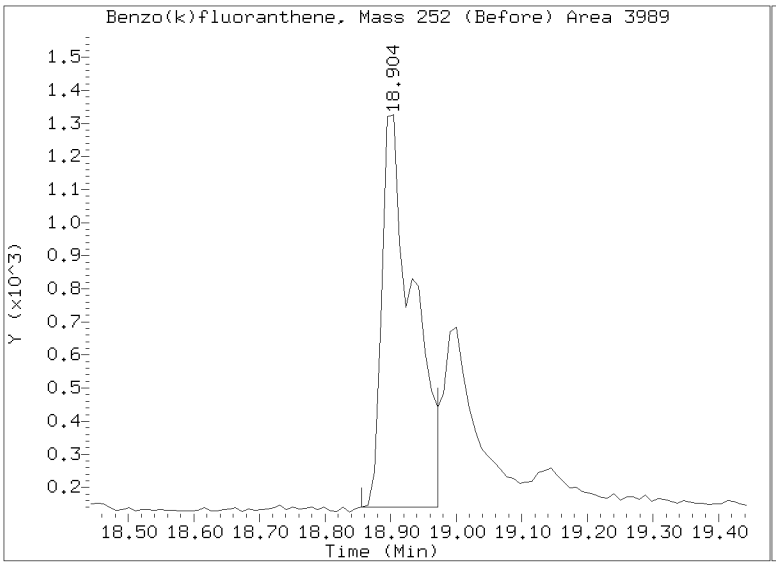


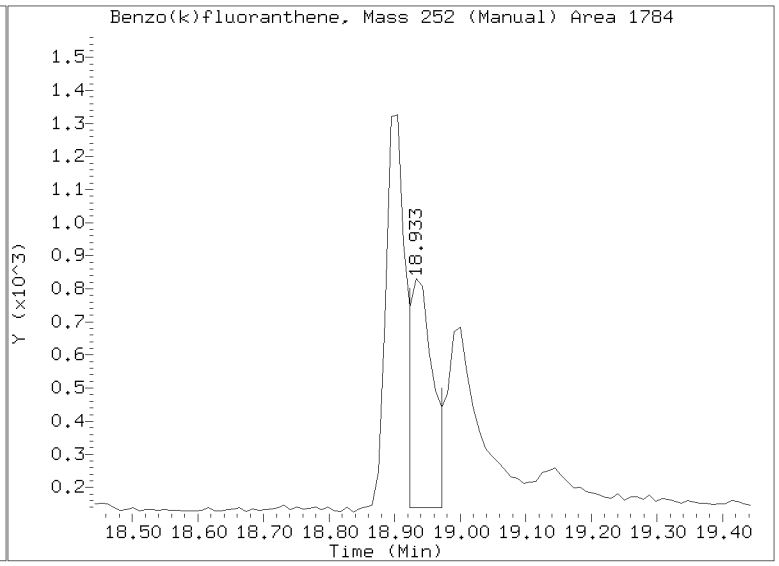


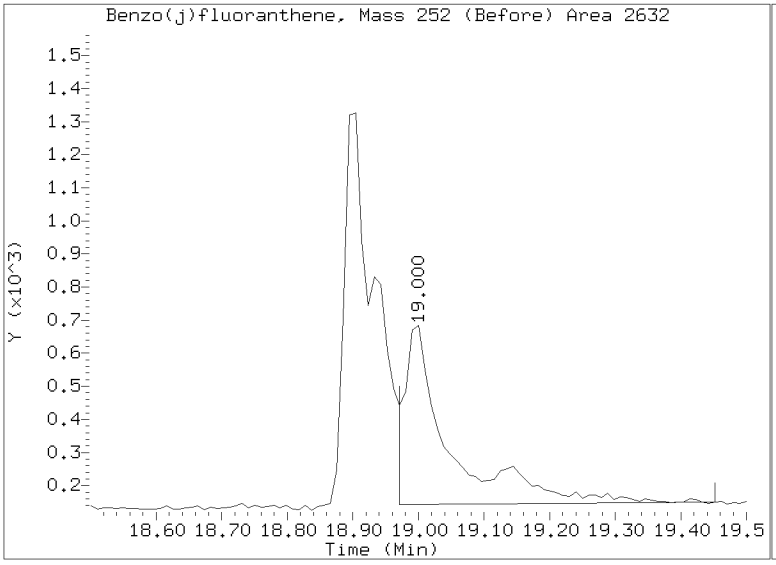


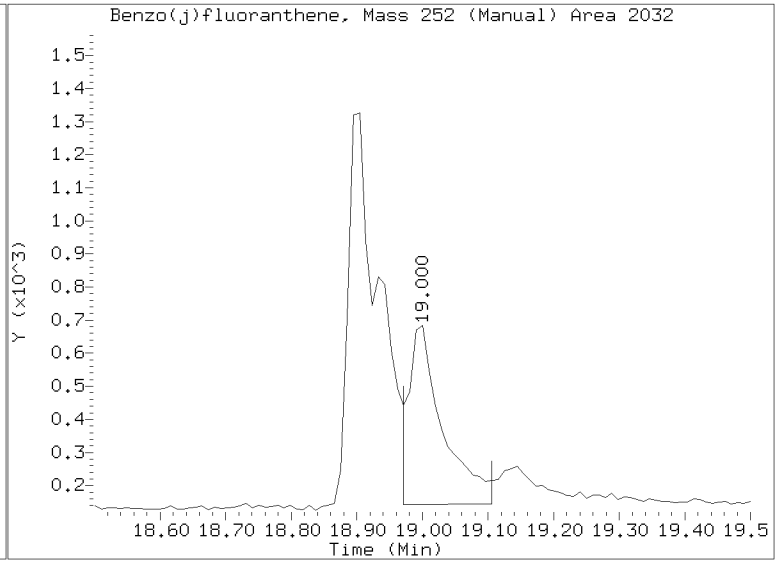
Quant Ion Manual Peak Adjustment Report

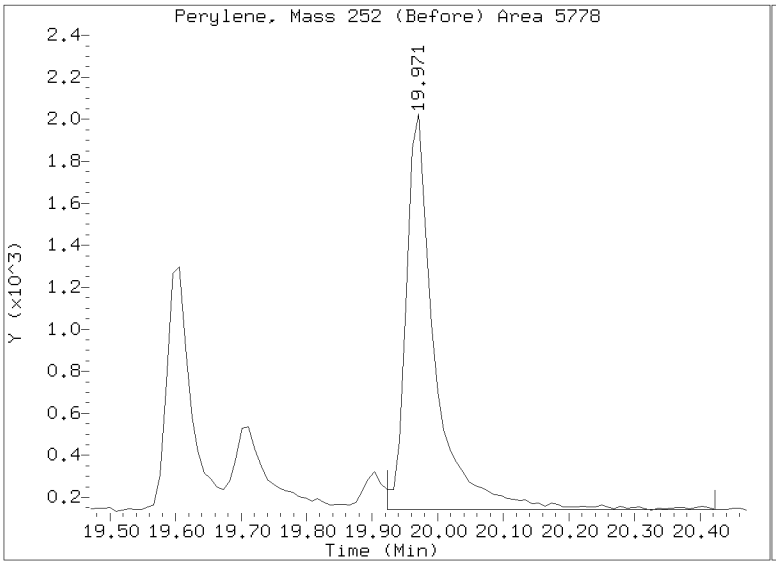
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041607.D
Injection Date: 16-APR-2021 12:58
Lab ID:21C0456-06 Client ID:
Report Date: 04/17/2021 08:33

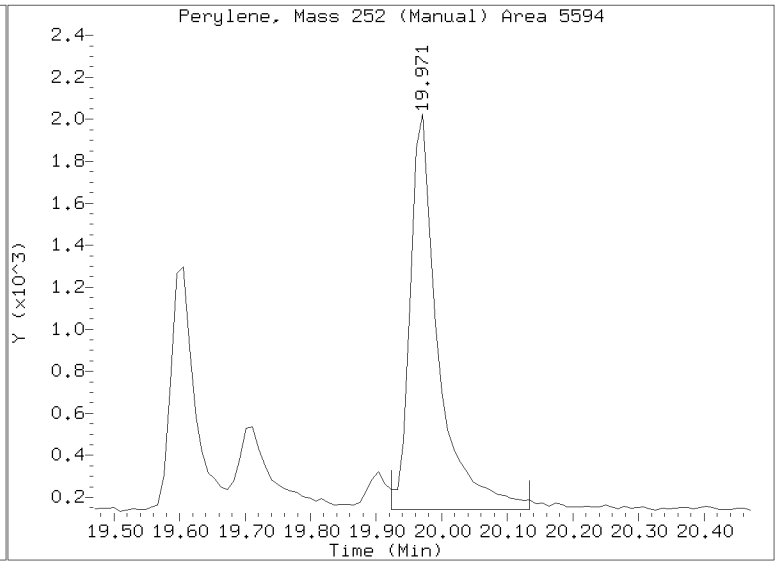






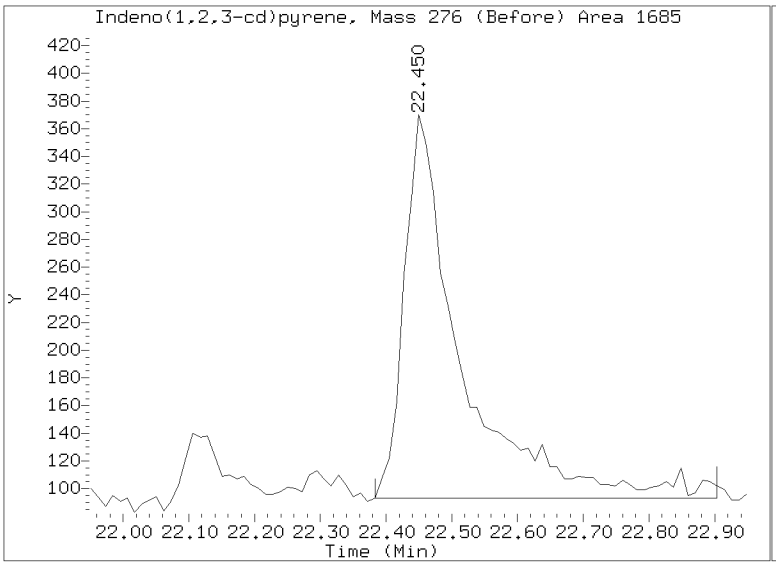


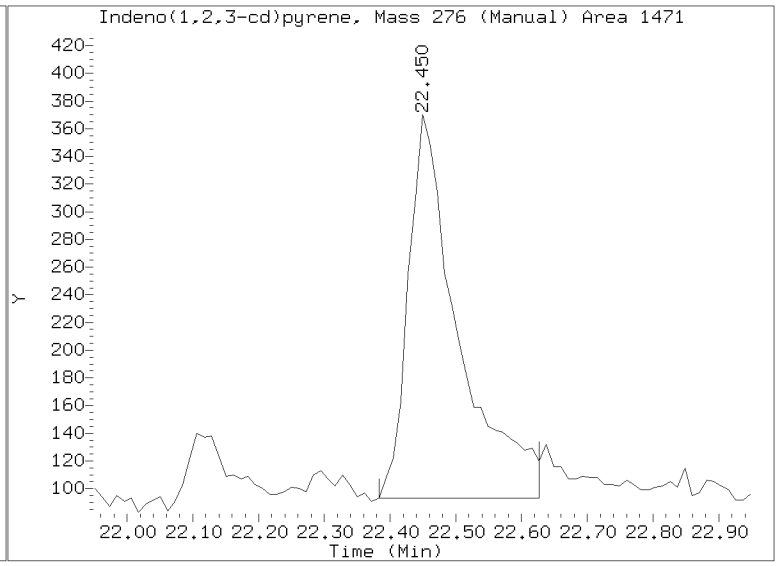


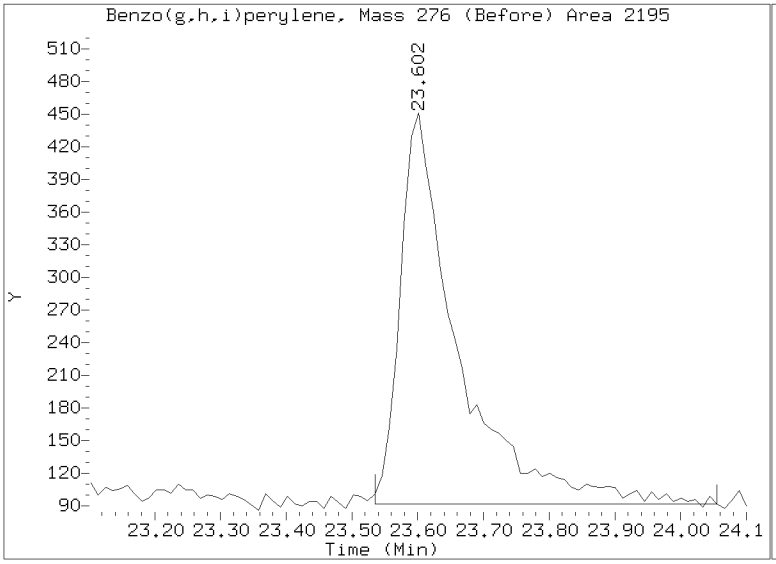


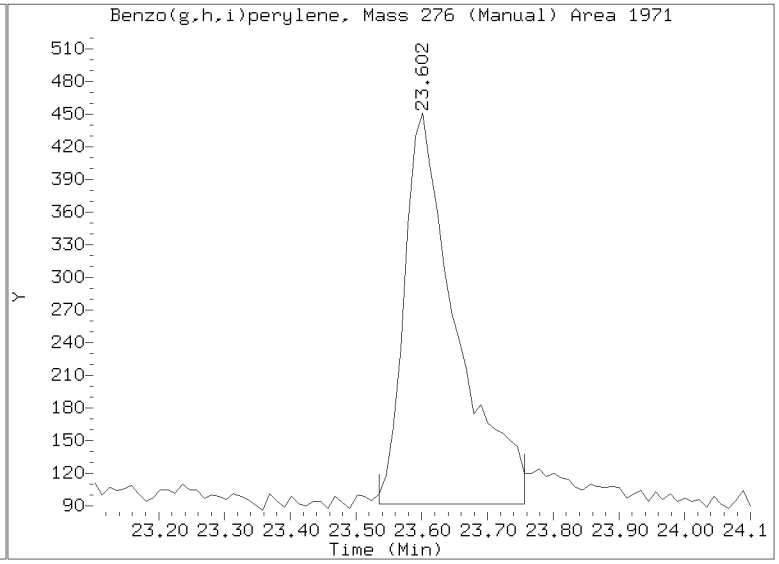
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041607.D
Injection Date: 16-APR-2021 12:58
Lab ID:21C0456-06 Client ID:
Report Date: 04/17/2021 08:33









MW-SPL2(S)-033021

Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8270E-SIM
Polynuclear Aromatic Hydrocarbons - low level

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-07 B	SDG:	21C0456
Sampled:	03/30/21 14:25	Prepared:	04/05/21 17:54	File ID:	NT1121041608.D
% Solids:		Preparation:	EPA 3510C SepF	Analyzed:	04/16/21 13:31
Batch:	BJD0015	Sequence:	SJD0232	Initial/Final:	500 mL / 0.5 mL
Instrument:	NT11	Column:	RXi-17Sil-MS	Calibration:	DH00073
Cleanups:	Silica Gel				

CAS NO.	COMPOUND	DILUTION	(ug/L)	Q	DL	RL
91-20-3	Naphthalene	1	0.005	J	0.001	0.010
91-57-6	2-Methylnaphthalene	1	0.003	J	0.001	0.010
90-12-0	1-Methylnaphthalene	1	0.002	J	0.0009	0.010
91-58-7	2-Chloronaphthalene	1	0.010	U	0.001	0.010
208-96-8	Acenaphthylene	1	0.010	U	0.002	0.010
83-32-9	Acenaphthene	1	0.010	U	0.003	0.010
132-64-9	Dibenzofuran	1	0.002	J	0.002	0.010
86-73-7	Fluorene	1	0.010	U	0.002	0.010
85-01-8	Phenanthrene	1	0.002	J	0.001	0.010
120-12-7	Anthracene	1	0.005	J	0.001	0.010
86-74-8	Carbazole	1	0.010	U	0.001	0.010
206-44-0	Fluoranthene	1	0.002	J	0.002	0.010
129-00-0	Pyrene	1	0.002	J	0.001	0.010
56-55-3	Benzo(a)anthracene	1	0.010	U	0.0008	0.010
218-01-9	Chrysene	1	0.010	U	0.0009	0.010
205-99-2	Benzo(b)fluoranthene	1	0.010	U	0.0005	0.010
207-08-9	Benzo(k)fluoranthene	1	0.010	U	0.003	0.010
205-82-3	Benzo(j)fluoranthene	1	0.010	U	0.002	0.010
	Benzofluoranthenes, Total	1	0.010	U	0.004	0.010
50-32-8	Benzo(a)pyrene	1	0.010	U	0.002	0.010
1985-5-0	Perylene	1	0.010	U	0.006	0.010
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.010	U	0.001	0.010
53-70-3	Dibenzo(a,h)anthracene	1	0.010	U	0.001	0.010
191-24-2	Benzo(g,h,i)perylene	1	0.010	U	0.001	0.010

SURROGATES	ADDED:(ug/L)	(ug/L)	% REC	QC LIMITS	Q
2-Methylnaphthalene-d10	0.30000	0.195	65.1	42 - 120	
Dibenzo[a,h]anthracene-d14	0.30000	0.209	69.8	29 - 120	
Fluoranthene-d10	0.30000	0.202	67.2	57 - 120	

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Page 1

Date : 16-APR-2021 13:31

Client ID:

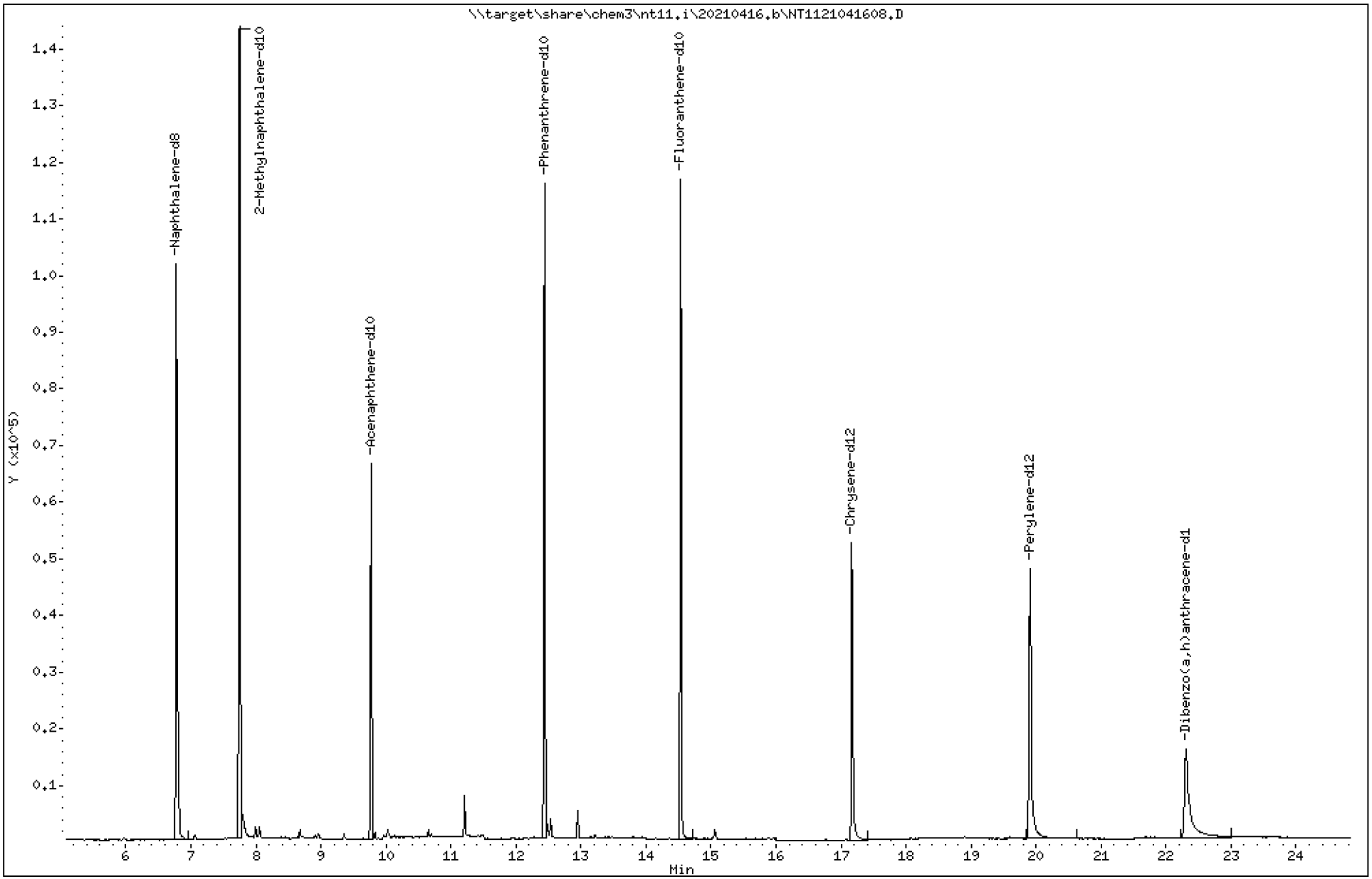
Instrument: nt11.i

Sample Info: 21C0456-07

Operator: VTS

Column phase: Rxi-17Sil MS

Column diameter: 0.25



Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

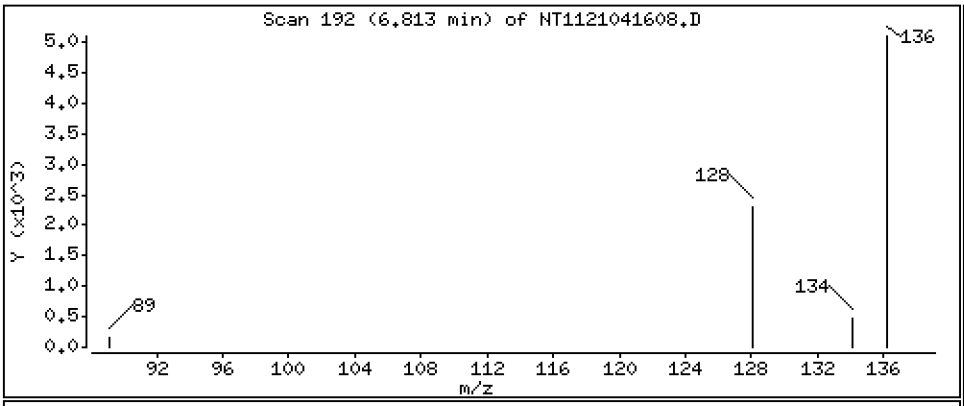
Operator: VTS

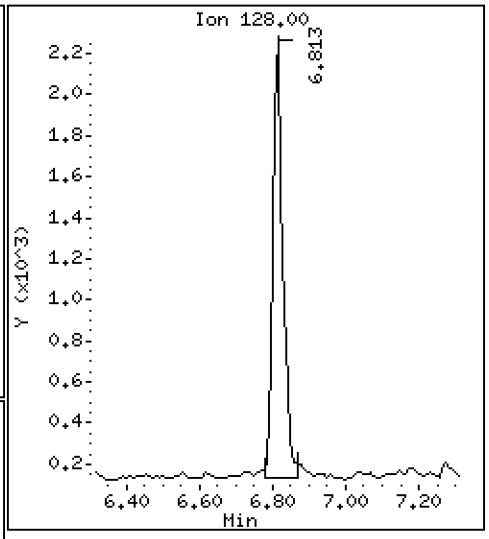
Column phase: Rxi-17Sil MS

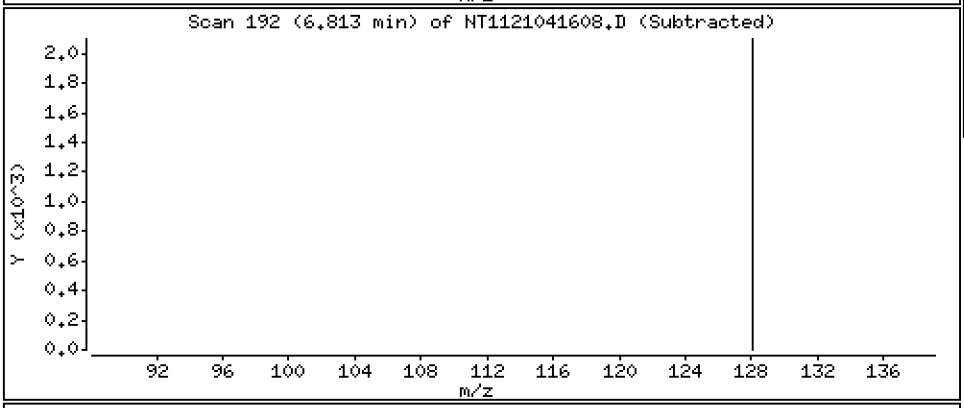
Column diameter: 0.25

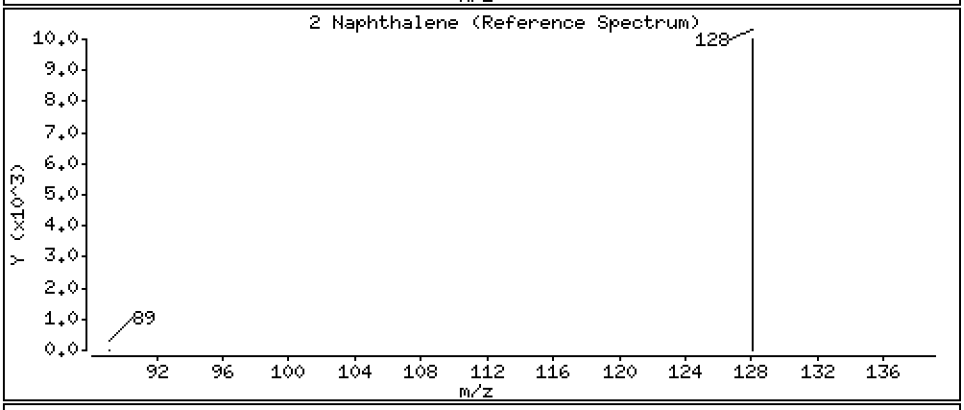
2 Naphthalene

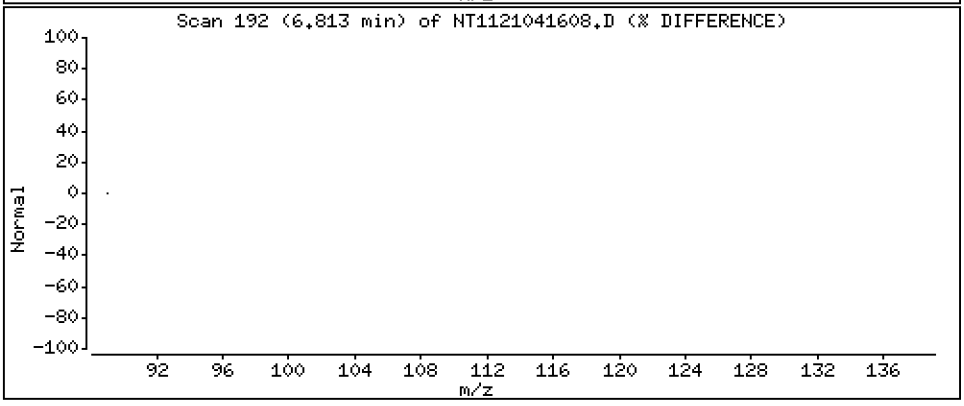
Concentration: 4.57 ng/mL











Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

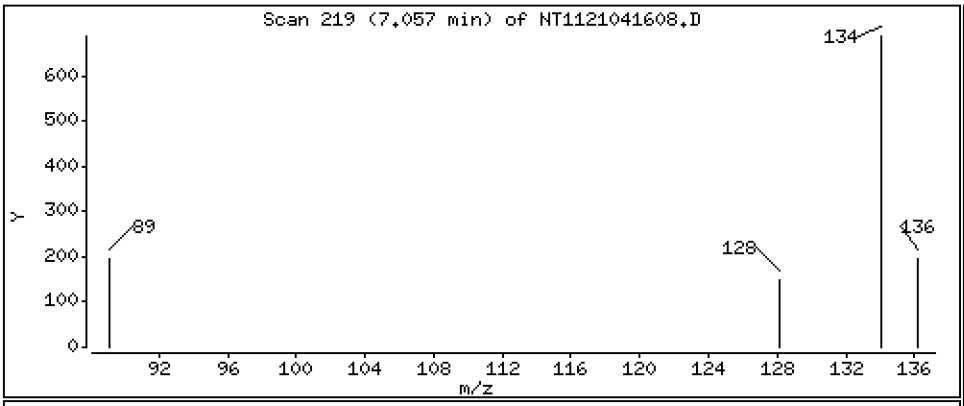
Operator: VTS

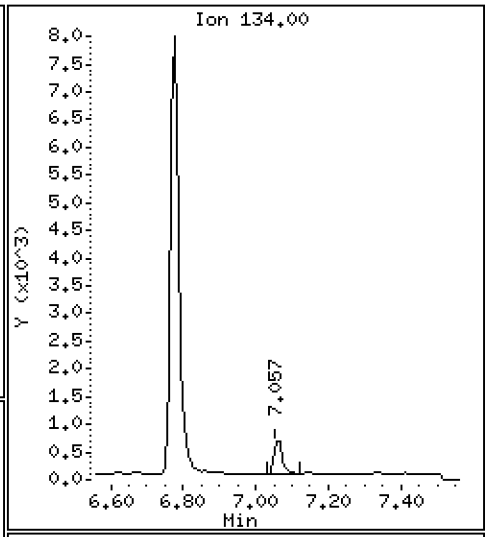
Column phase: Rxi-17Sil MS

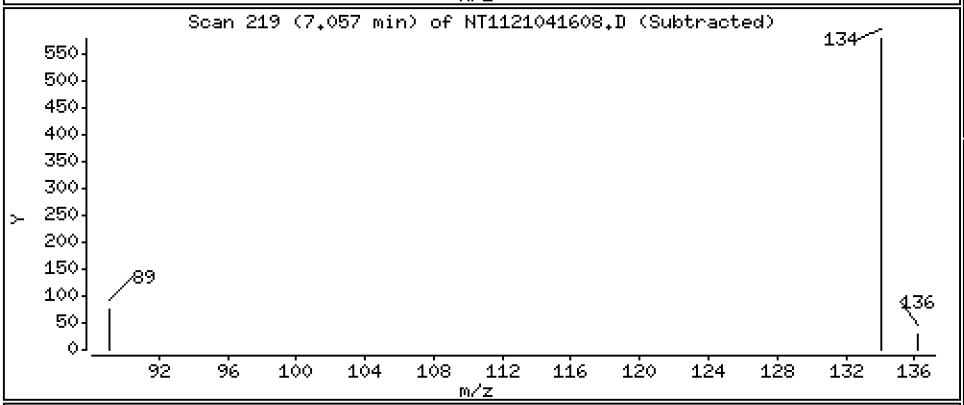
Column diameter: 0.25

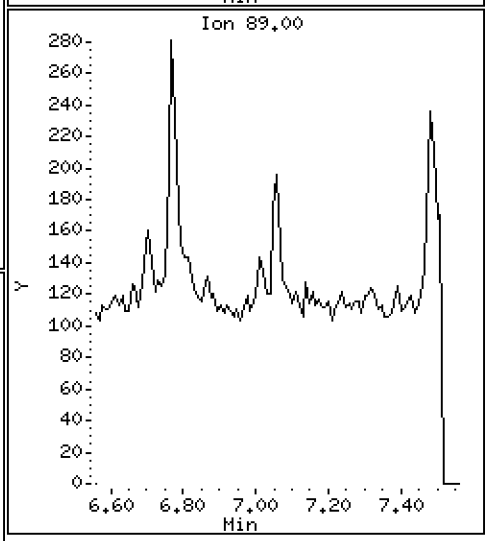
3 Benzo(b)thiophene

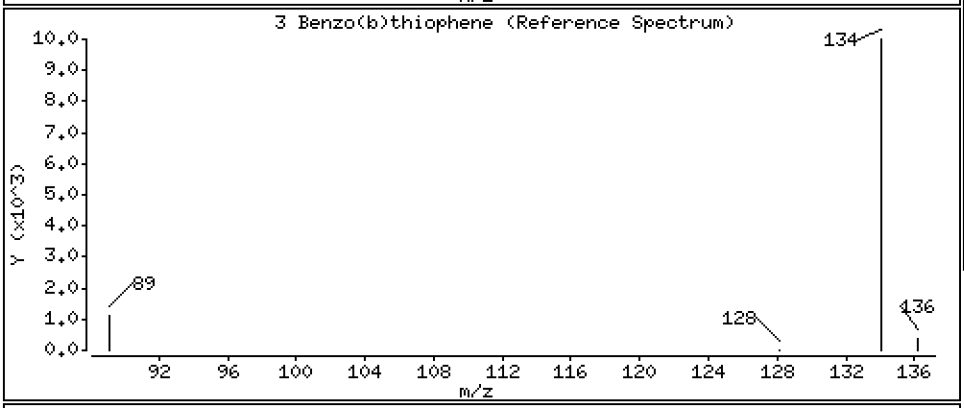
Concentration: 1.42 ng/mL

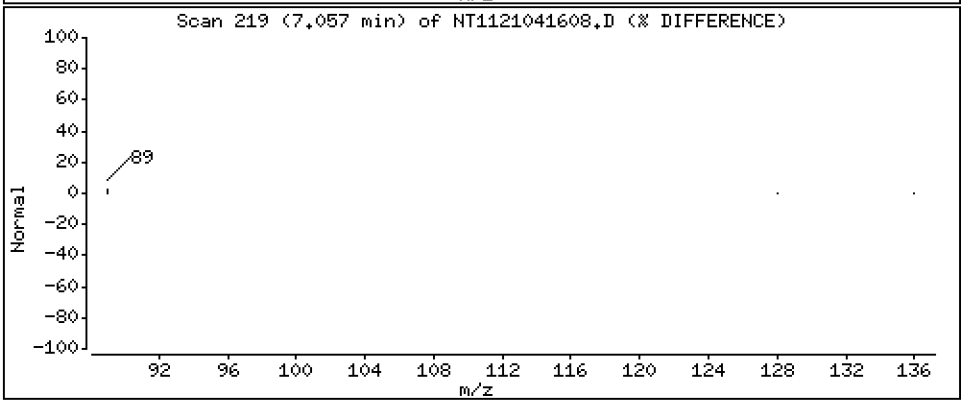












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

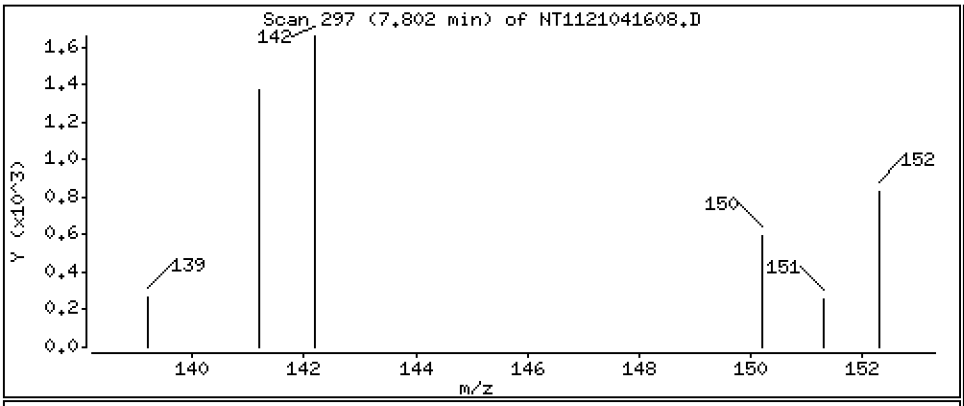
Operator: VTS

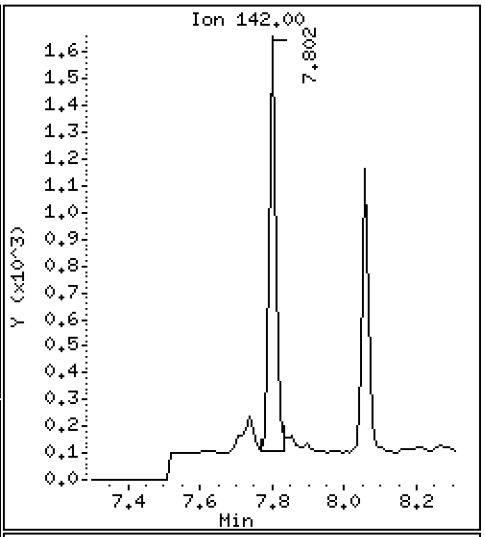
Column phase: Rxi-17Sil MS

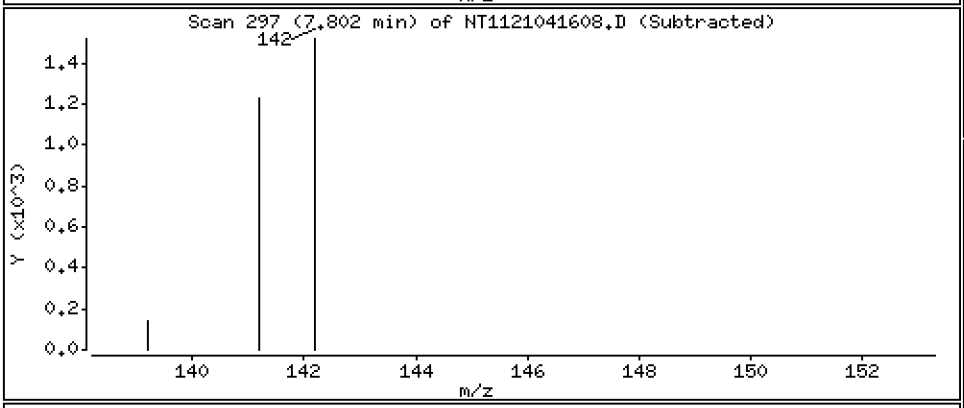
Column diameter: 0.25

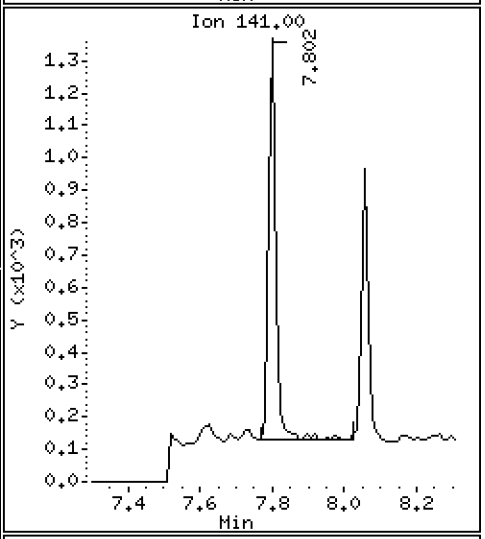
5 2-Methylnaphthalene

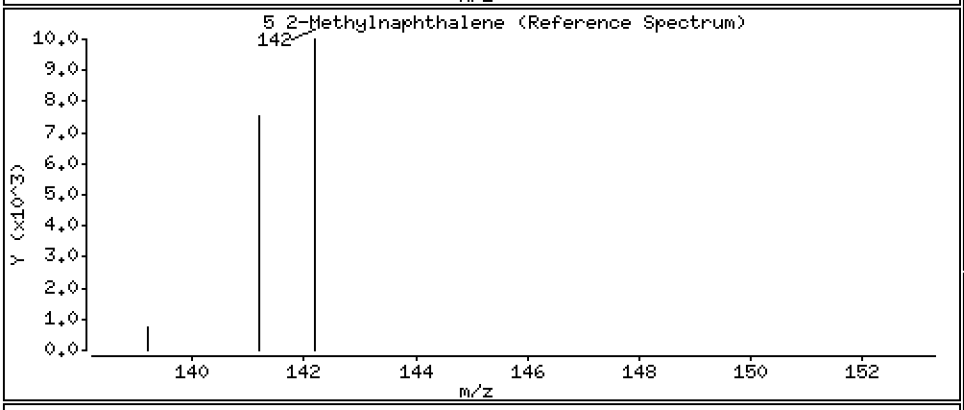
Concentration: 2.73 ng/mL

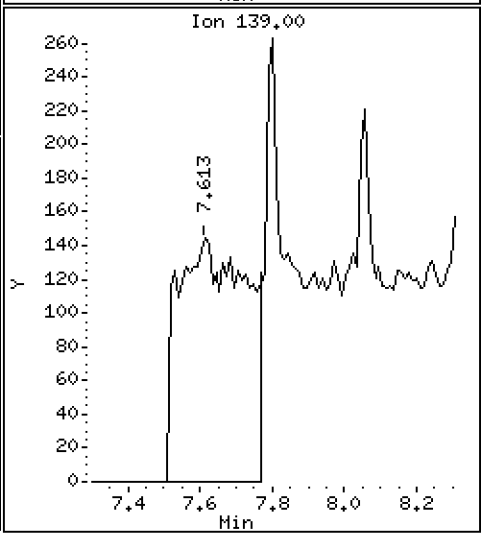


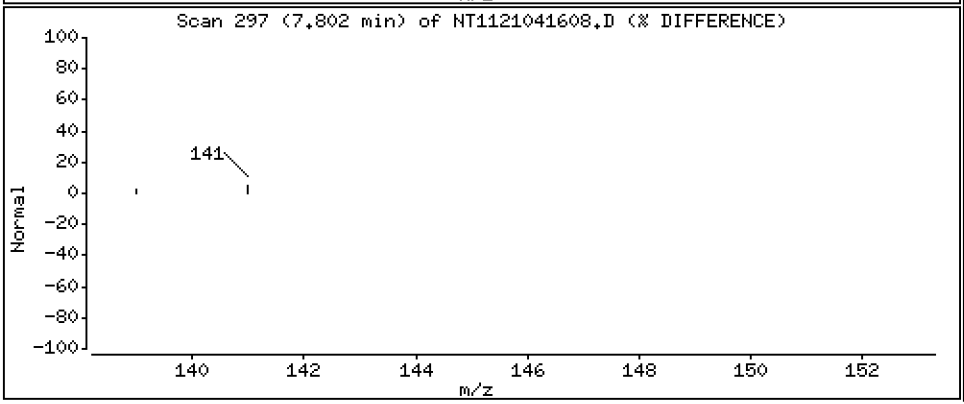












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

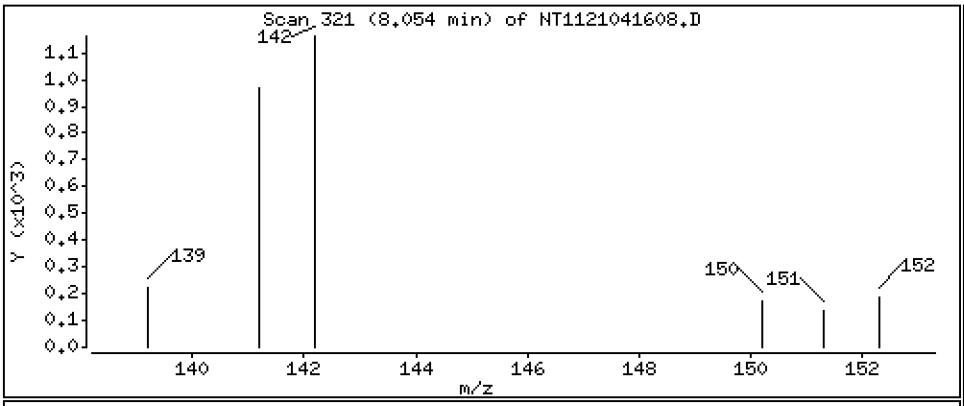
Operator: VTS

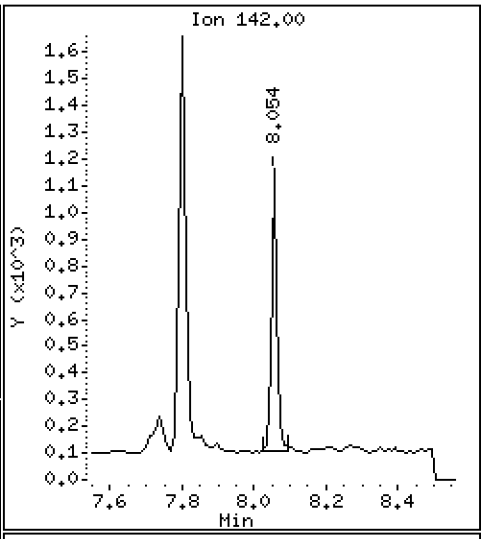
Column phase: Rxi-17Sil MS

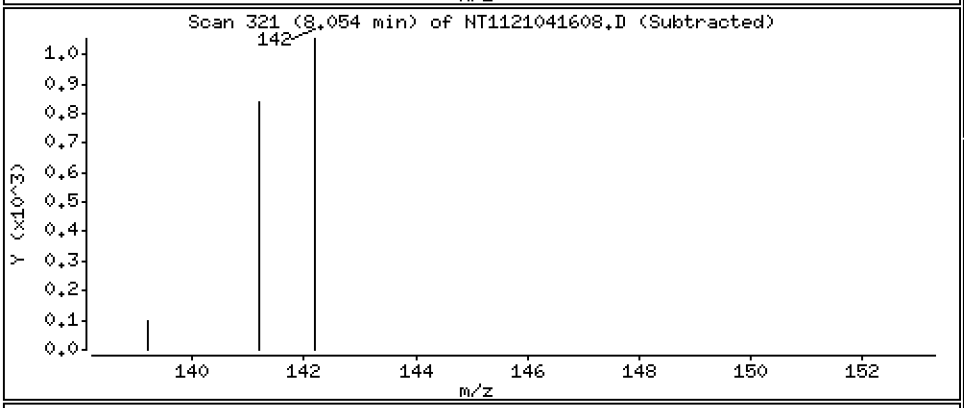
Column diameter: 0.25

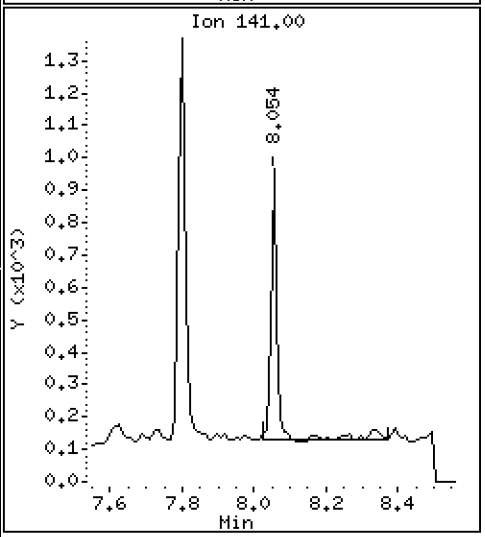
6 1-Methylnaphthalene

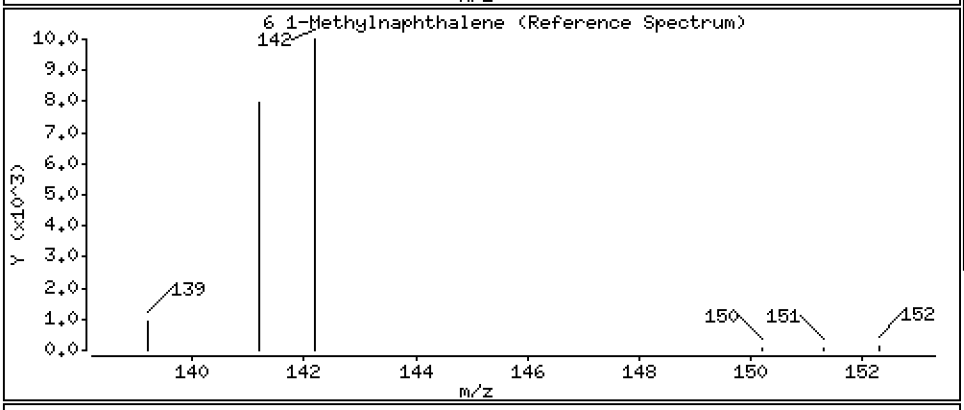
Concentration: 1.96 ng/mL

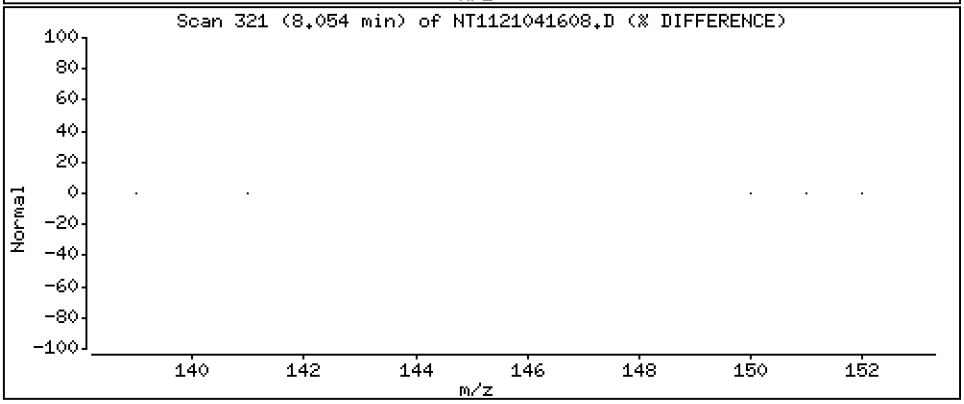












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

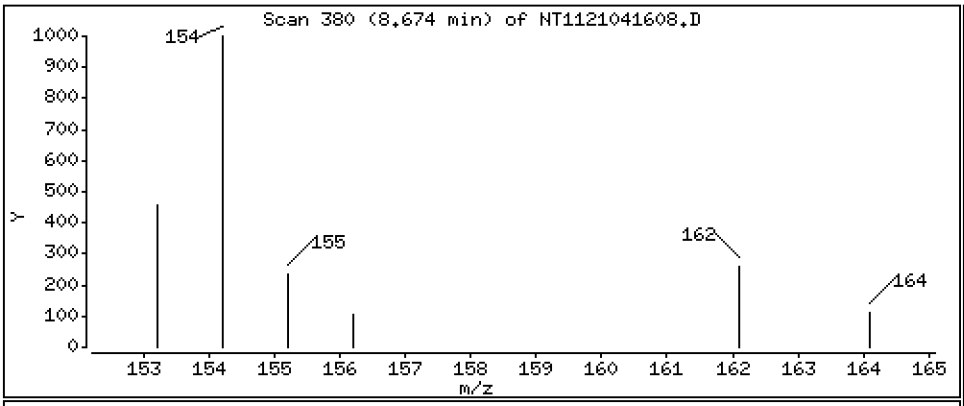
Operator: VTS

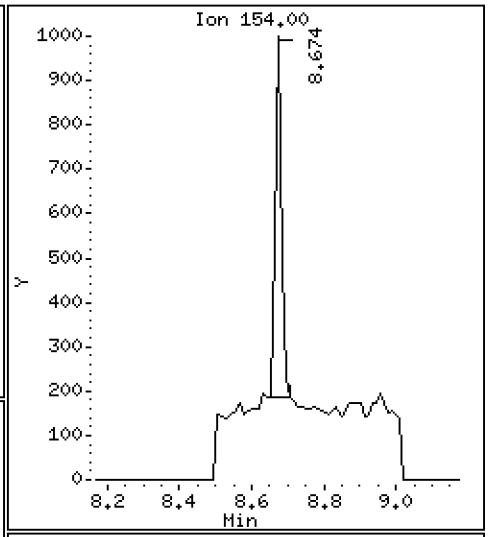
Column phase: Rxi-17Sil MS

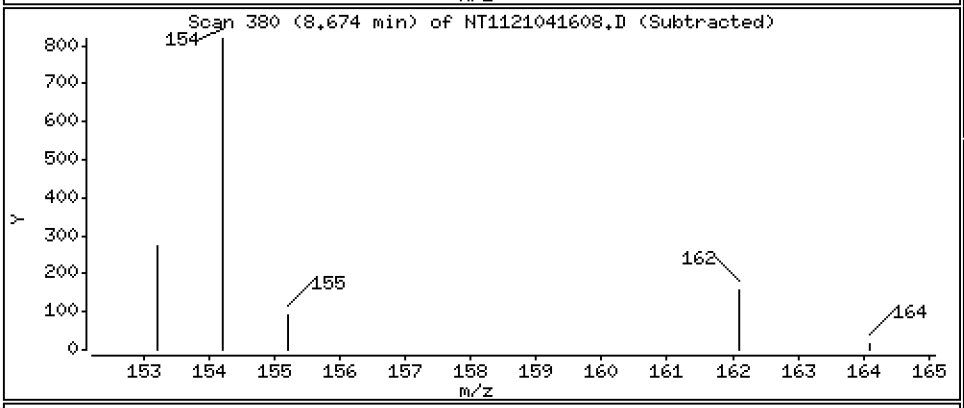
Column diameter: 0.25

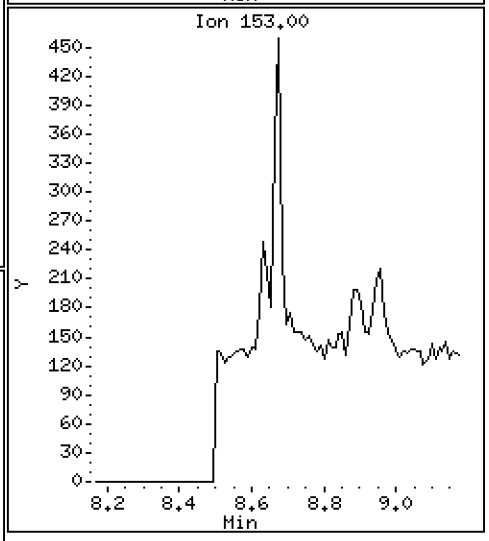
8 Biphenyl

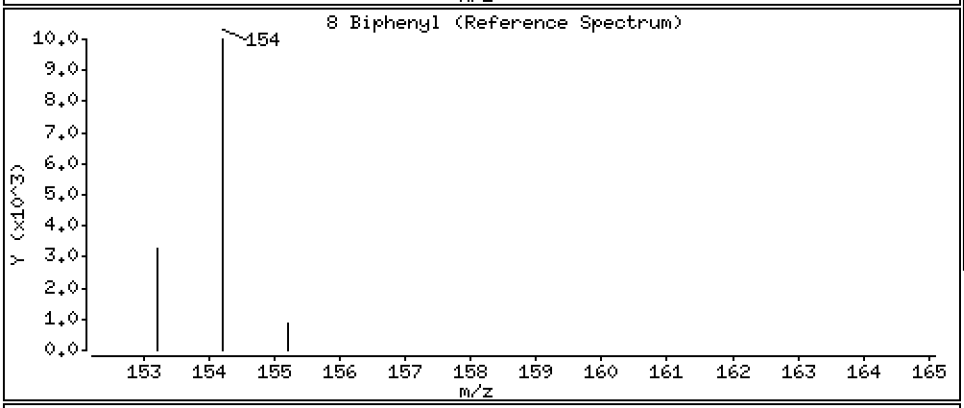
Concentration: 1.02 ng/mL

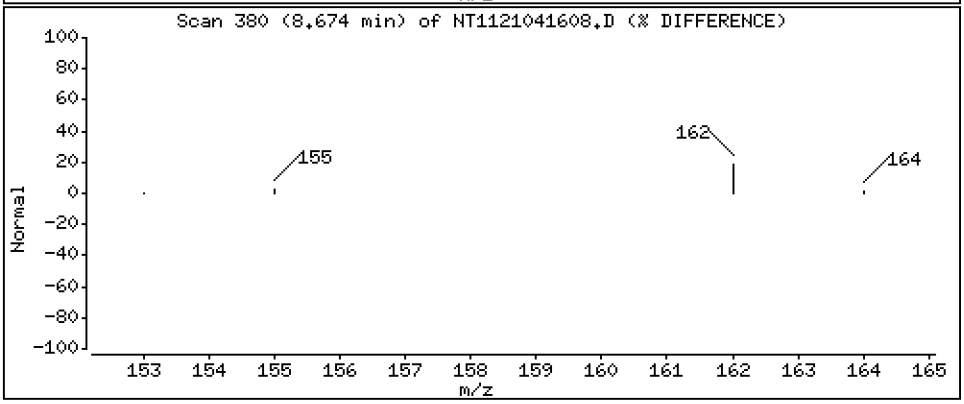












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

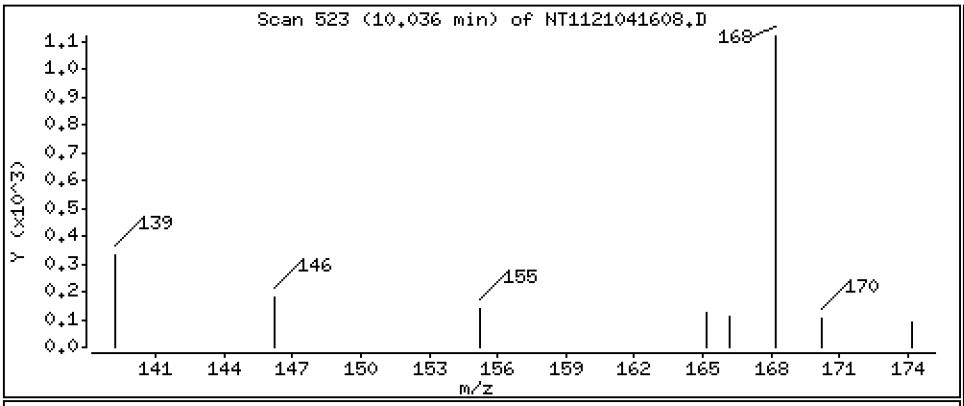
Operator: VTS

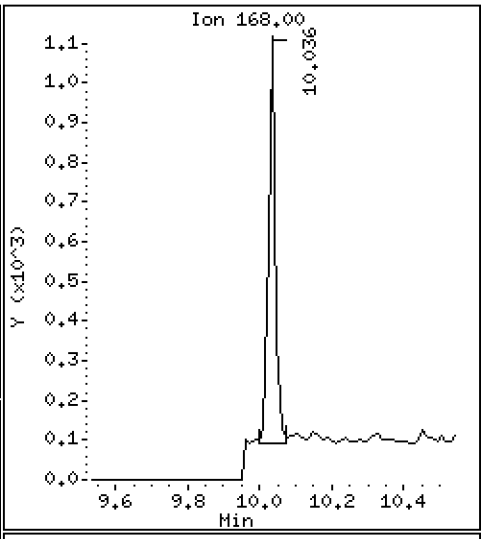
Column phase: Rxi-17Sil MS

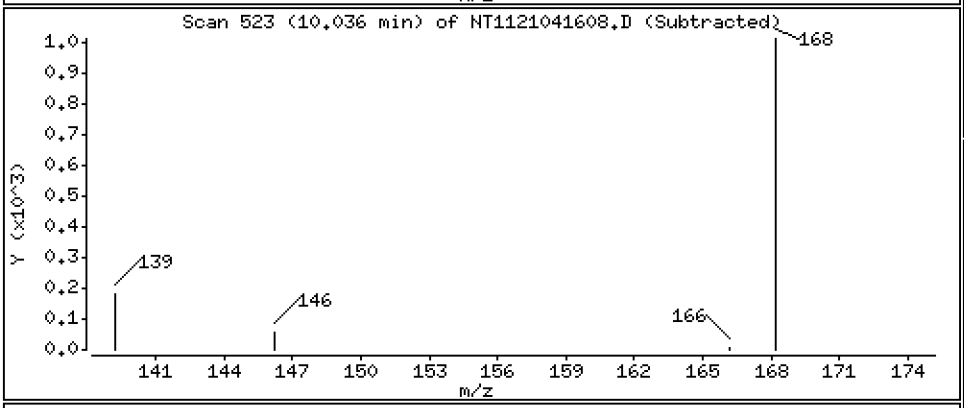
Column diameter: 0.25

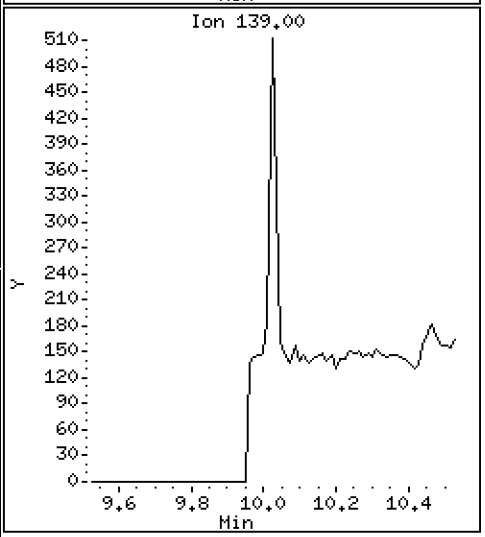
13 Dibenzofuran

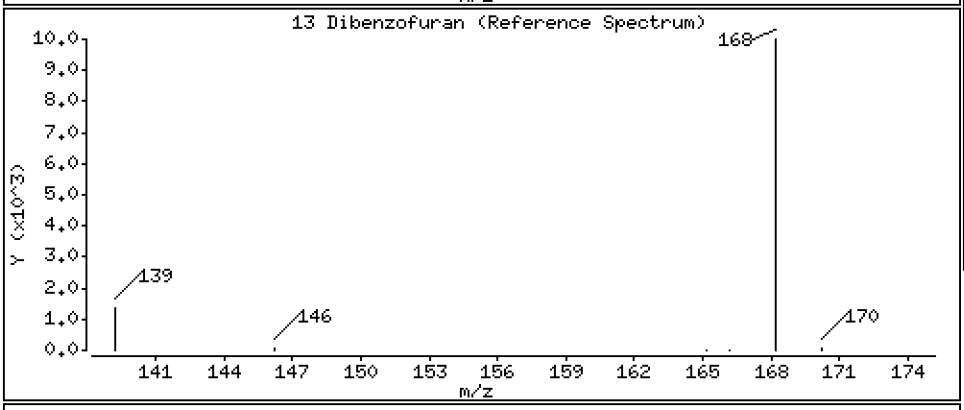
Concentration: 1.74 ng/mL

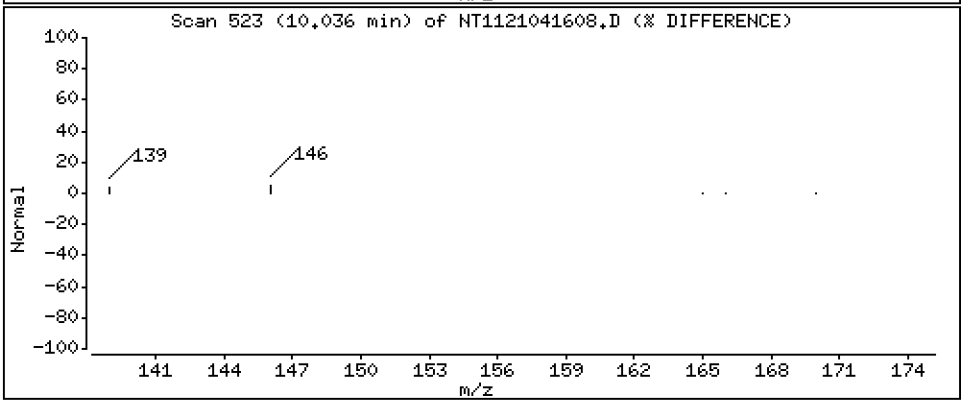












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

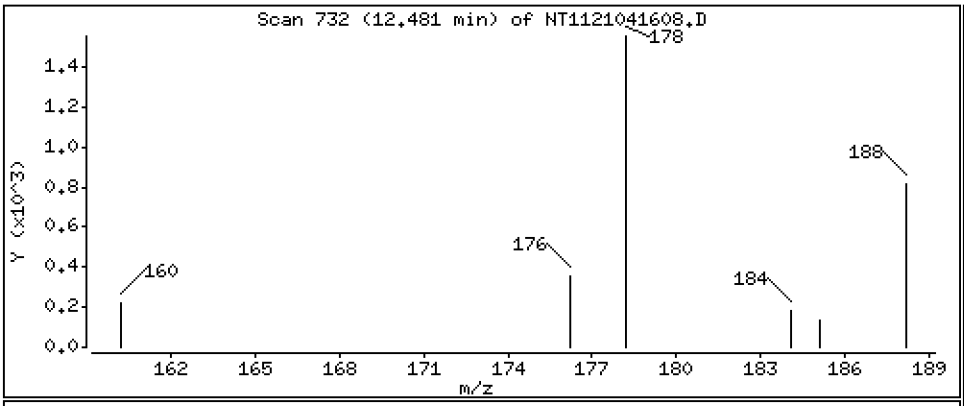
Operator: VTS

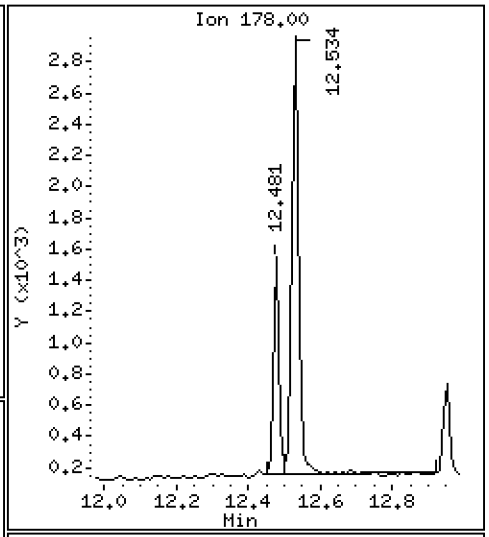
Column phase: Rxi-17Sil MS

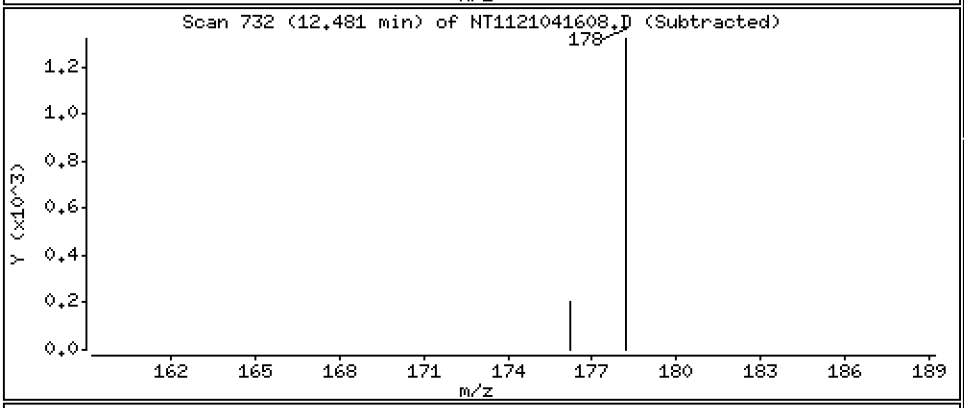
Column diameter: 0.25

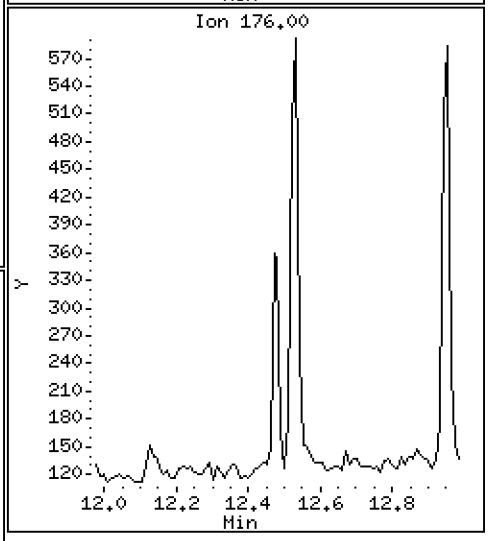
19 Phenanthrene

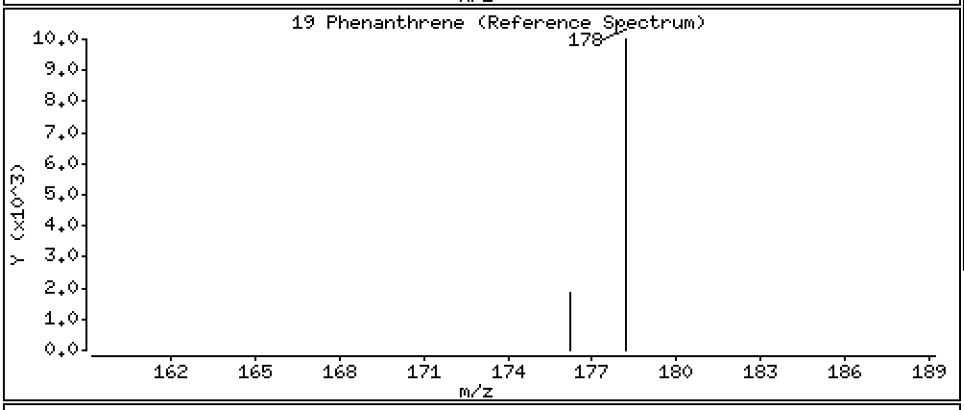
Concentration: 2.28 ng/mL

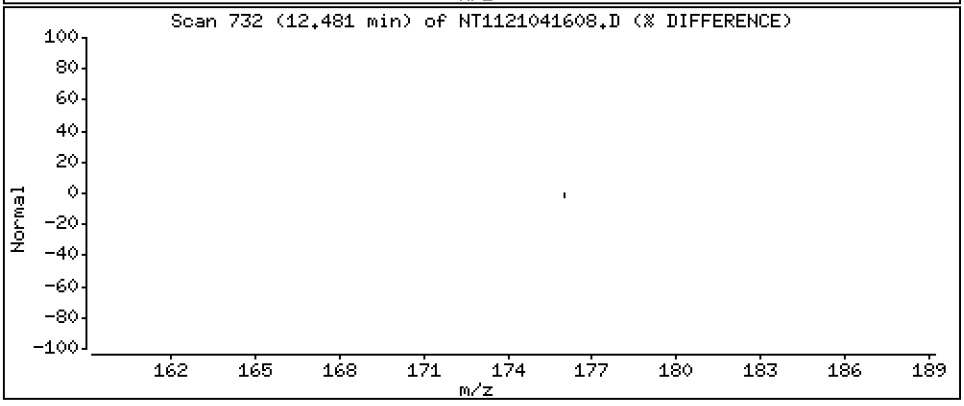












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

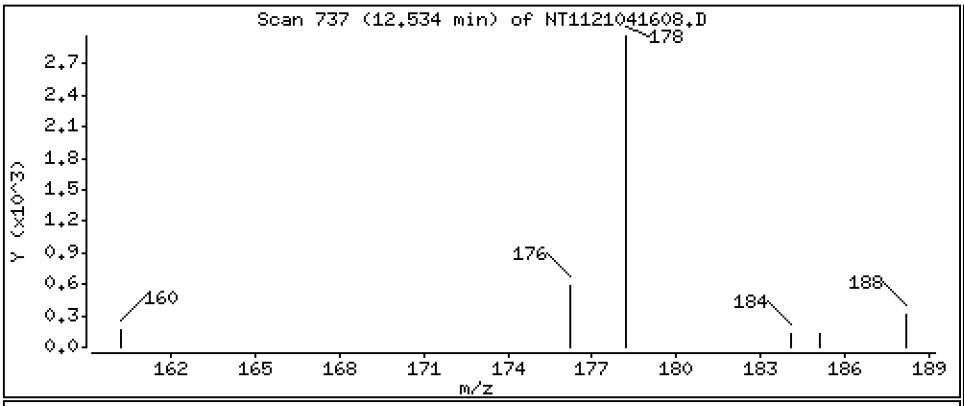
Operator: VTS

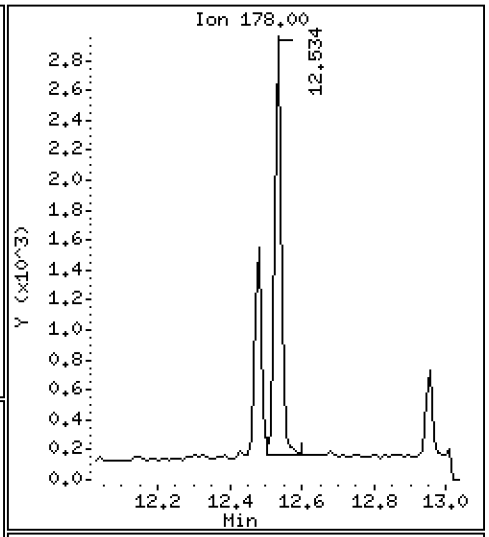
Column phase: Rxi-17Sil MS

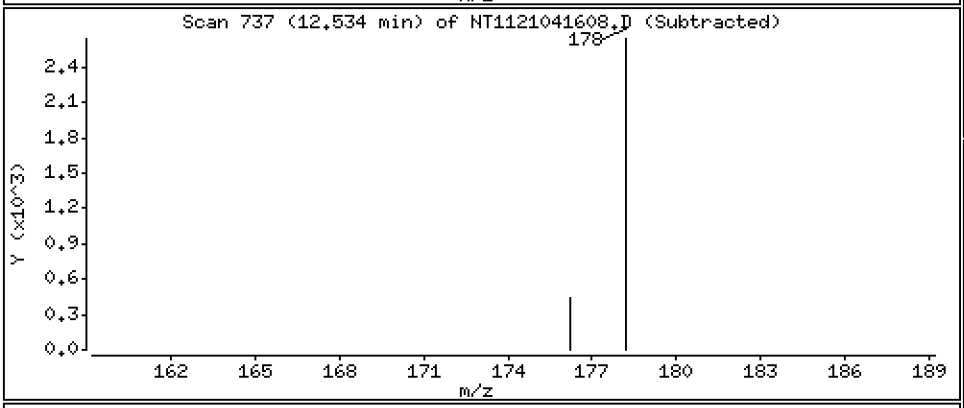
Column diameter: 0.25

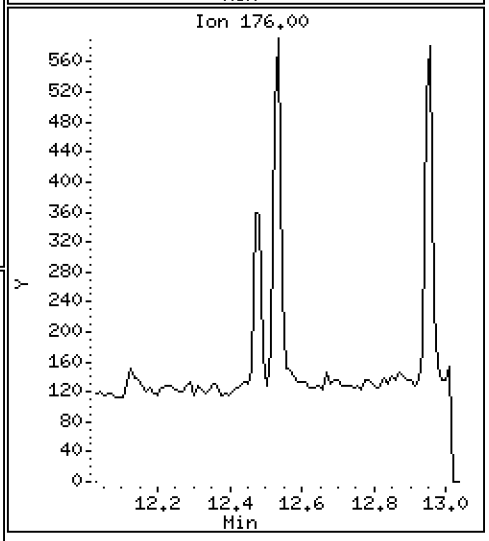
21 Anthracene

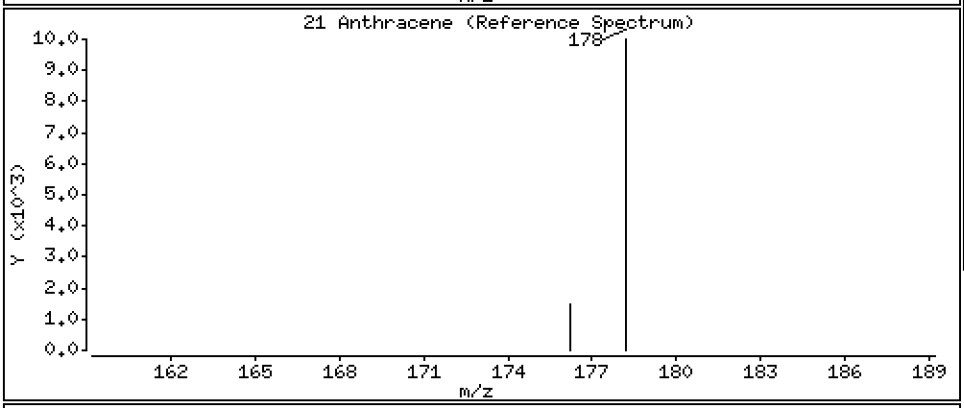
Concentration: 4.60 ng/mL

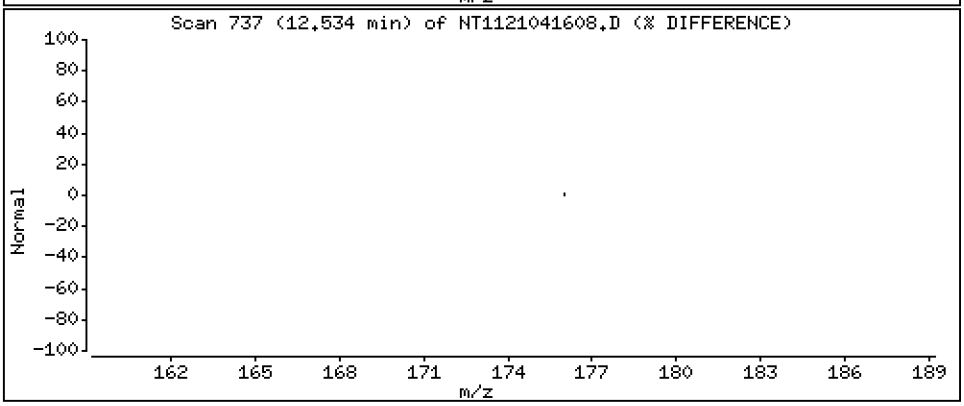












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

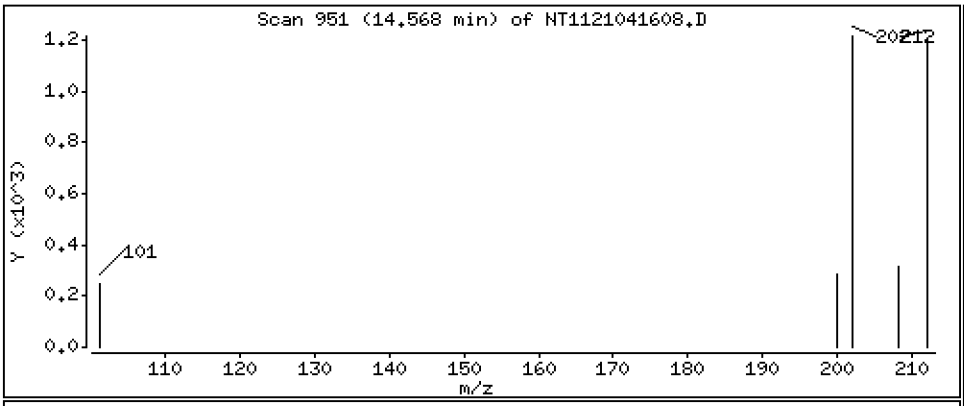
Operator: VTS

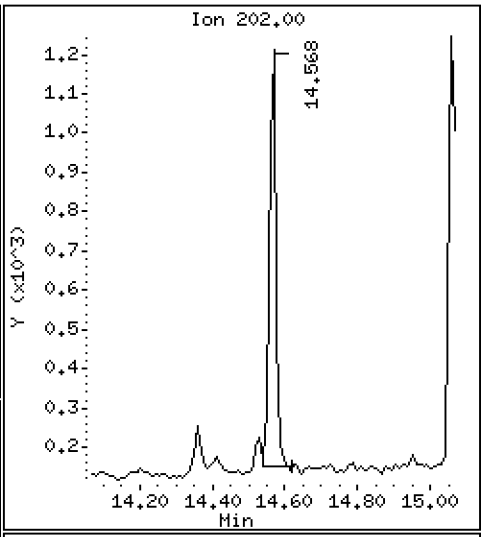
Column phase: Rxi-17Sil MS

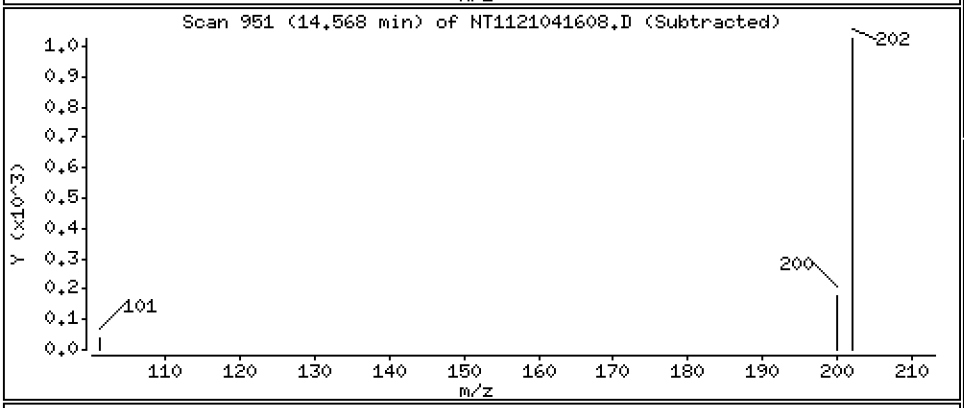
Column diameter: 0.25

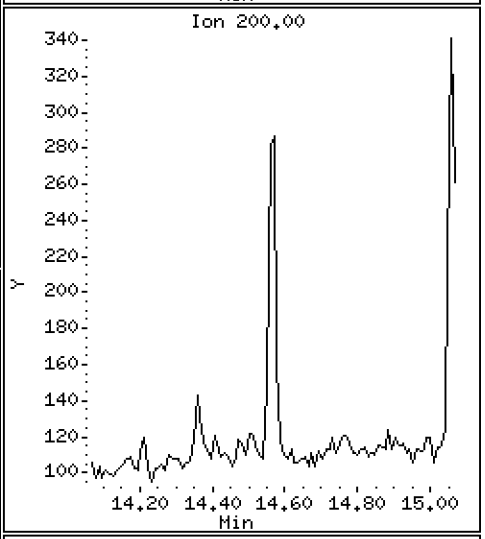
25 Fluoranthene

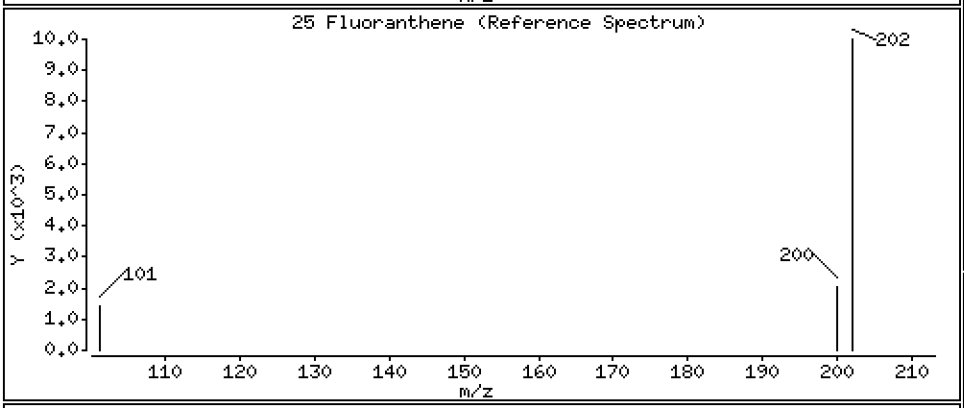
Concentration: 1.79 ng/mL

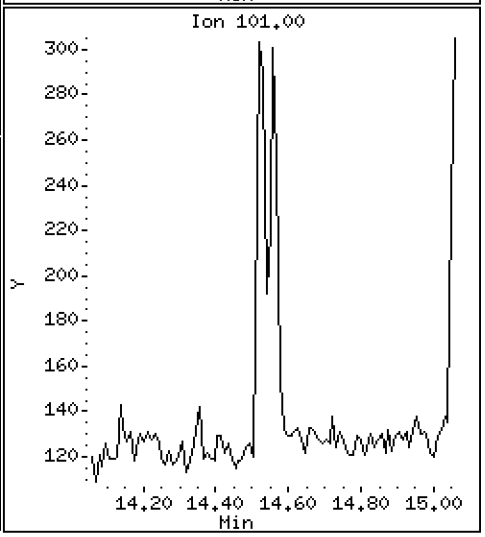


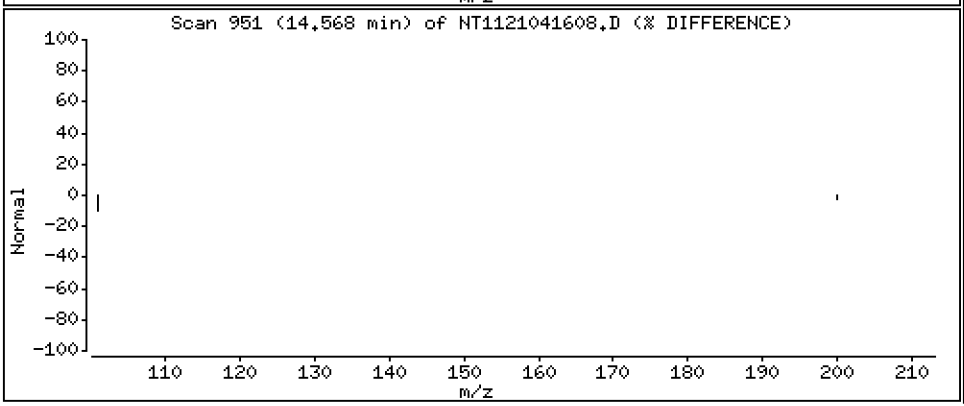












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

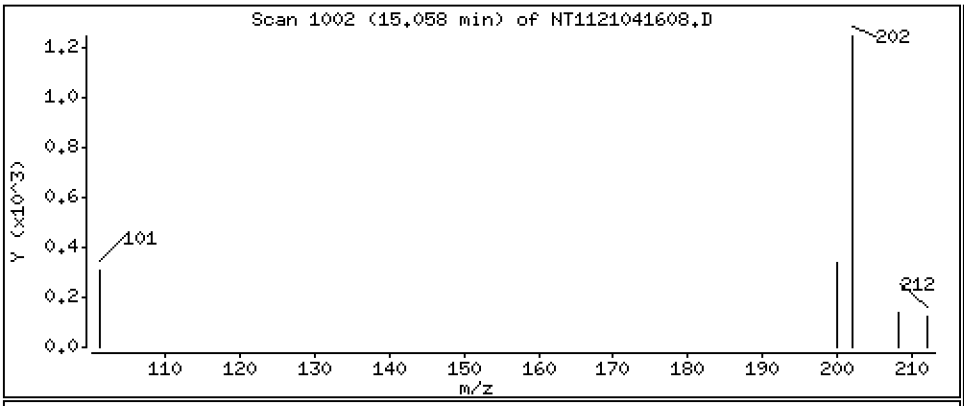
Operator: VTS

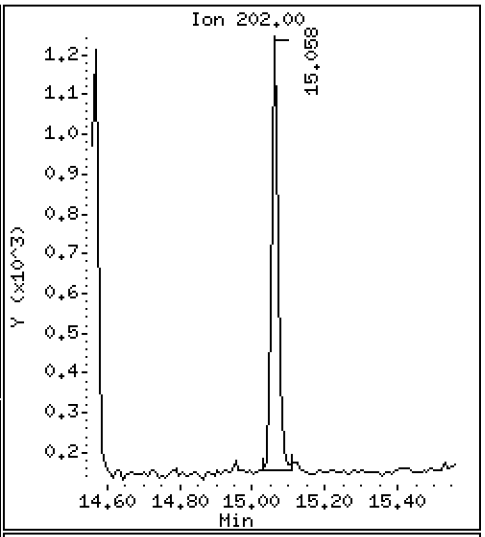
Column phase: Rxi-17Sil MS

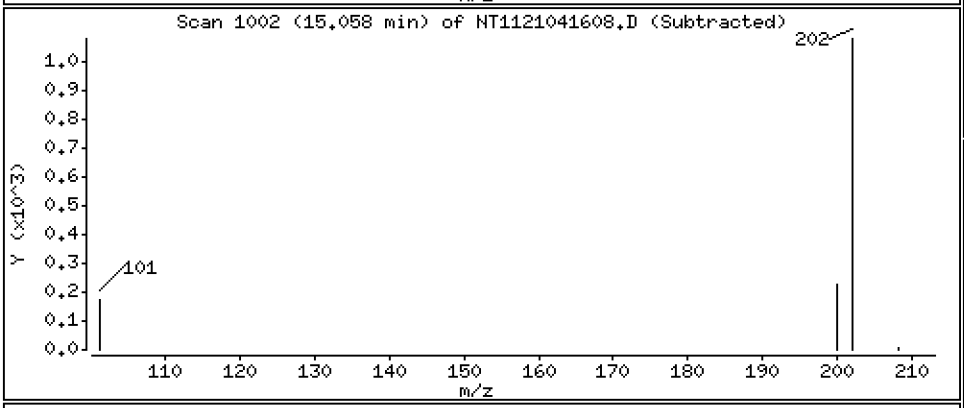
Column diameter: 0.25

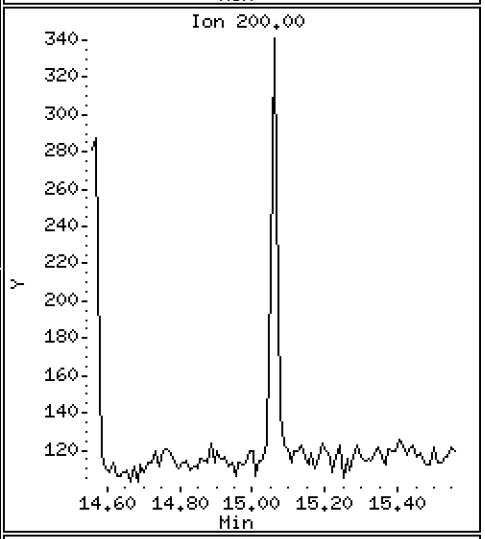
26 Pyrene

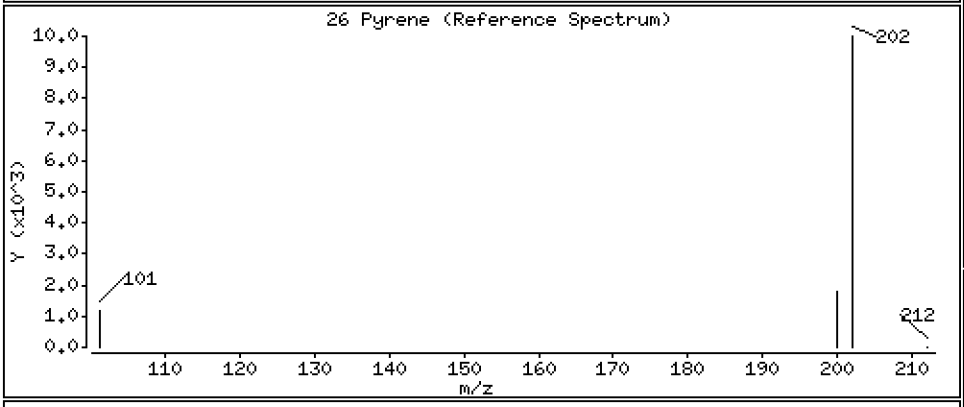
Concentration: 1.92 ng/mL

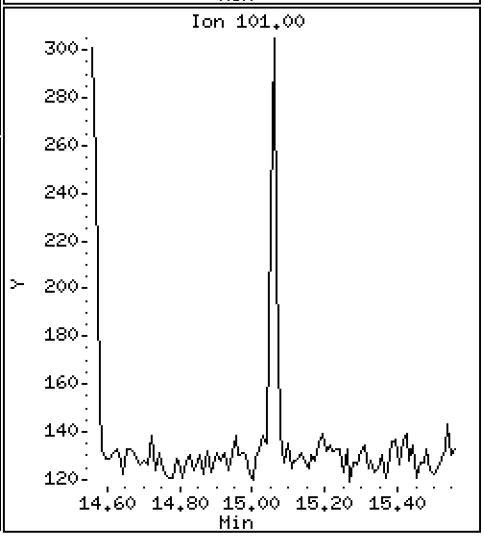


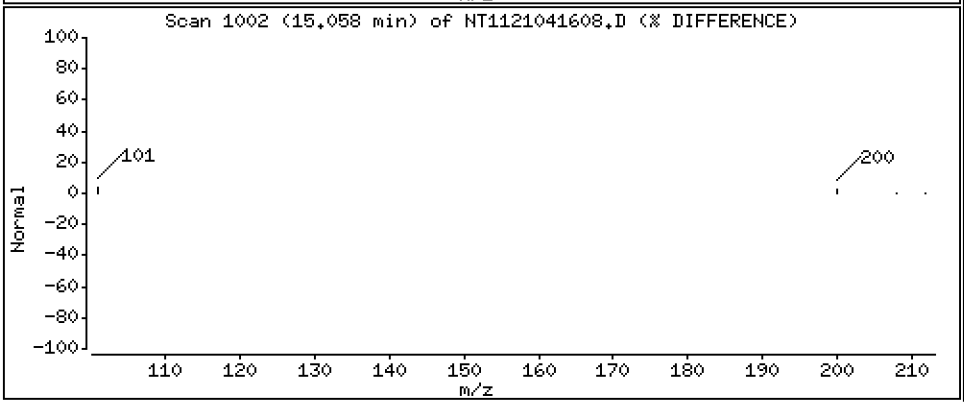












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D

Date : 16-APR-2021 13:31

Client ID:

Instrument: nt11.i

Sample Info: 21C0456-07

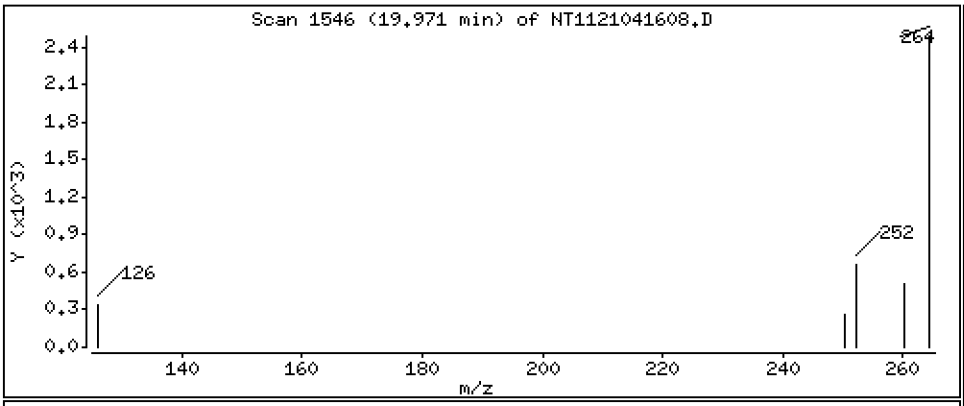
Operator: VTS

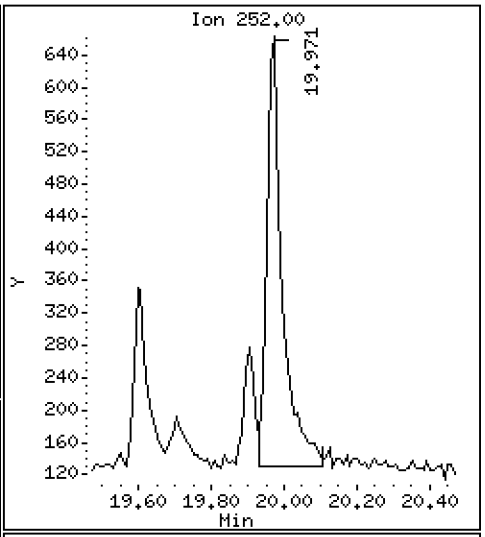
Column phase: Rxi-17Sil MS

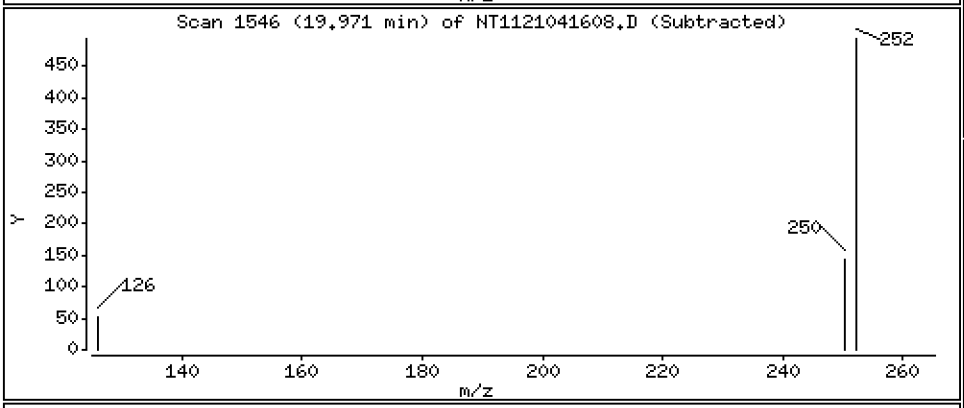
Column diameter: 0.25

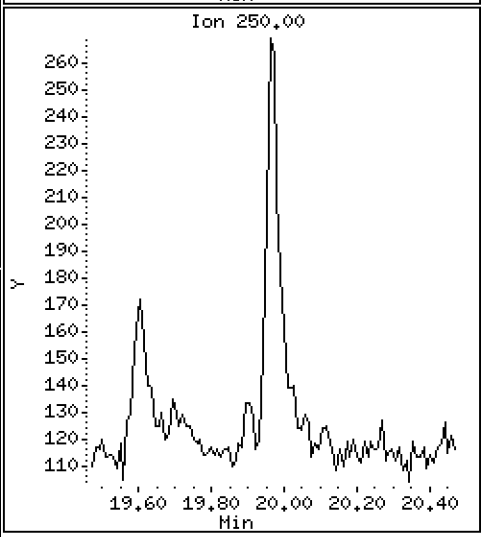
37 Perylene

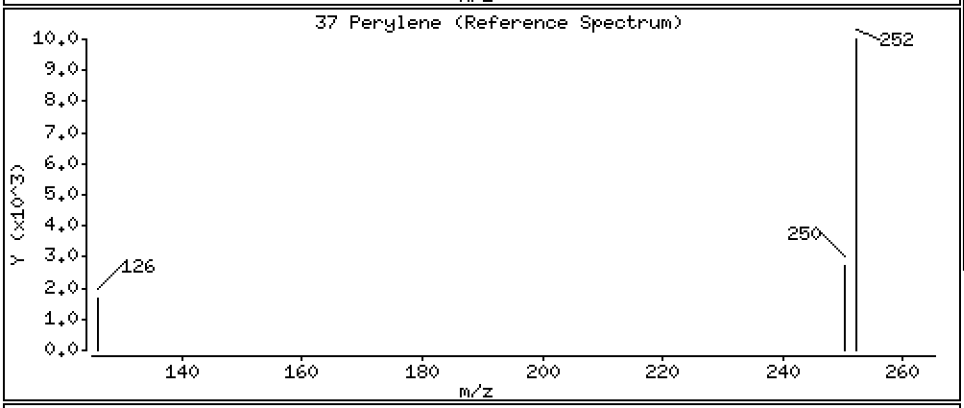
Concentration: 2.42 ng/mL

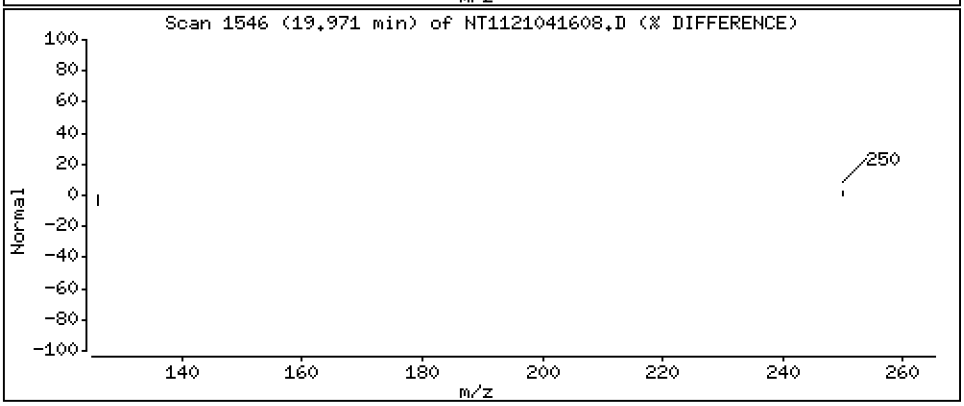












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041608.D
Lab Smp Id: 21C0456-07
Inj Date : 16-APR-2021 13:31 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : 21C0456-07
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.777	6.777	(1.000)	154294	200.000	
	2 Naphthalene	128	6.813	6.813	(1.005)	4091	4.56653	4.57(M)
	3 Benzo(b)thiophene	134	7.057	7.057	(1.041)	1007	1.42481	1.42
$	4 2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	121254	195.444	195
	5 2-Methylnaphthalene	142	7.801	7.801	(1.151)	1969	2.72638	2.73(M)
	6 1-Methylnaphthalene	142	8.054	8.054	(1.188)	1319	1.96472	1.96(M)
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	8.673	8.673	(0.888)	952	1.02319	1.02(M)
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	Compound Not Detected.					
*	11 Acenaphthene-d10	164	9.770	9.770	(1.000)	80240	200.000	
	12 Acenaphthene	153	Compound Not Detected.					
	13 Dibenzofuran	168	10.036	10.036	(1.027)	1416	1.74225	1.74(M)
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	Compound Not Detected.					
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.439	12.439	(1.000)	120190	200.000	
	19 Phenanthrene	178	12.481	12.481	(1.003)	1790	2.27666	2.28
	21 Anthracene	178	12.533	12.533	(1.008)	3614	4.60039	4.60(M)
	22 Carbazole	167	Compound Not Detected.					
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	14.530	14.530	(1.168)	126992	201.532	202
	25 Fluoranthene	202	14.568	14.568	(1.171)	1407	1.79495	1.79(M)
	26 Pyrene	202	15.058	15.058	(1.211)	1545	1.92121	1.92(M)
	27 Benzo(a)anthracene	228	Compound Not Detected.					
*	28 Chrysene-d12	240	17.163	17.163	(1.000)	88262	200.000	
	29 Chrysene	228	Compound Not Detected.					
	30 Benzo(b)fluoranthene	252	Compound Not Detected.					
	31 Benzo(k)fluoranthene	252	Compound Not Detected.					
	32 Benzo(j)fluoranthene	252	Compound Not Detected.					
	34 Benzo(e)pyrene	252	Compound Not Detected.					
	35 Benzo(a)pyrene	252	Compound Not Detected.					
*	36 Perylene-d12	264	19.903	19.903	(1.000)	103186	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
	37 Perylene	252	19.970	19.970	(1.003)	1615	2.41651	2.42(M)
$	38 Dibenzo(a,h)anthracene-d14	292	22.305	22.305	(1.121)	84369	209.288	209
	39 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	40 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
	41 Benzo(g,h,i)perylene	276	Compound Not Detected.					

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041608.D
Lab Smp Id: 21C0456-07
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 10:42
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	154294	8.58
11 Acenaphthene-d10	80301	40151	160602	80240	-0.08
18 Phenanthrene-d10	121929	60965	243858	120190	-1.43
28 Chrysene-d12	94055	47028	188110	88262	-6.16
36 Perylene-d12	114179	57090	228358	103186	-9.63

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	-0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	-0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	-0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	-0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041608.D

Lab ID: 21C0456-07
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 13:31

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1121041602.D

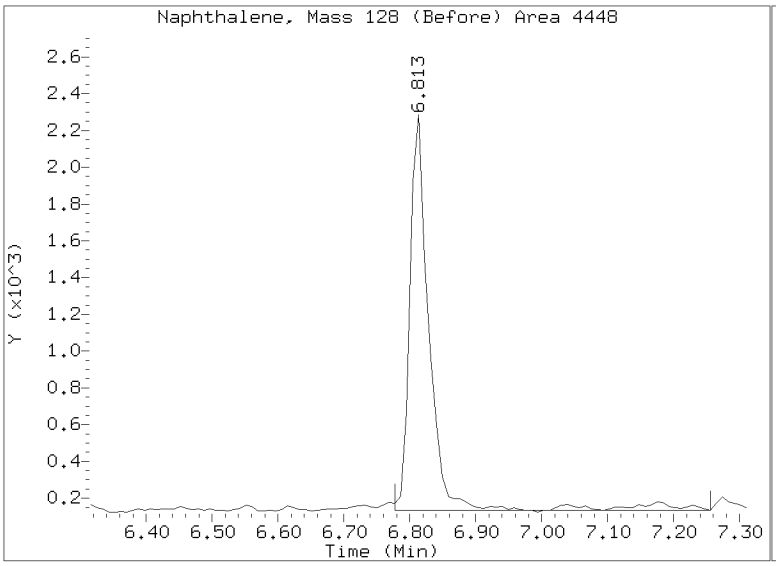
On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

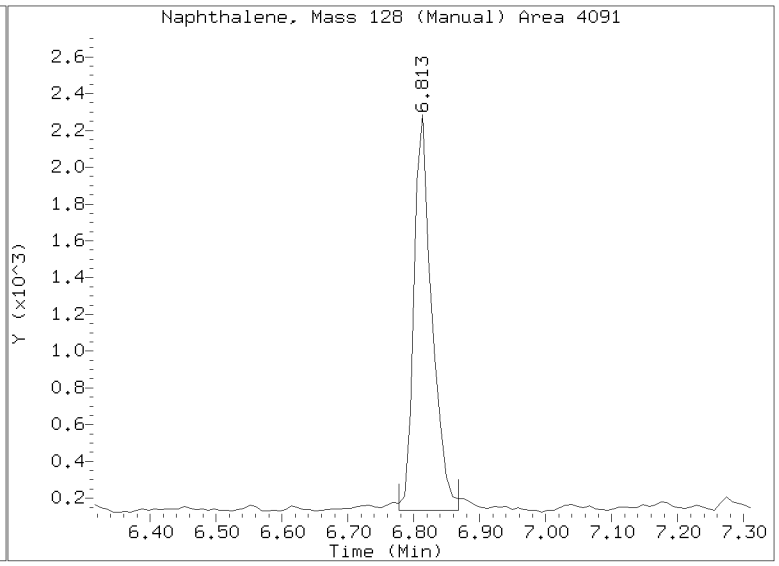
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

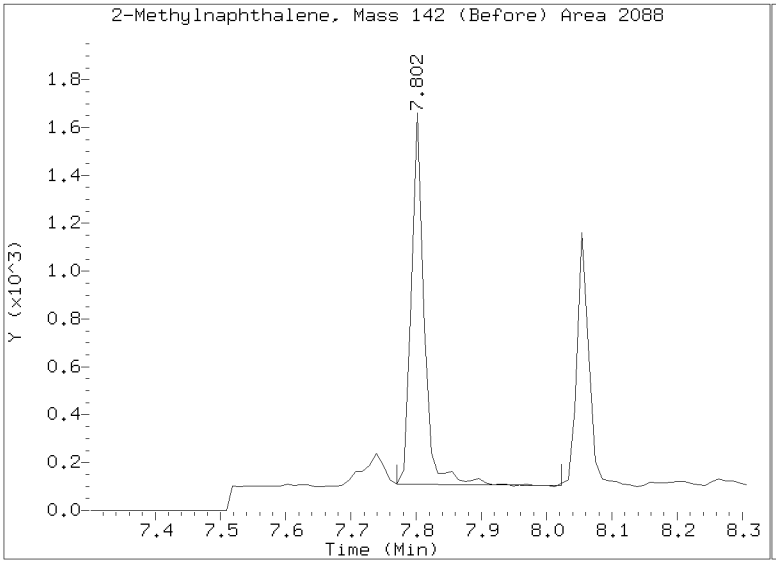
* Only compounds listed in the work order have been verified by the analyst *

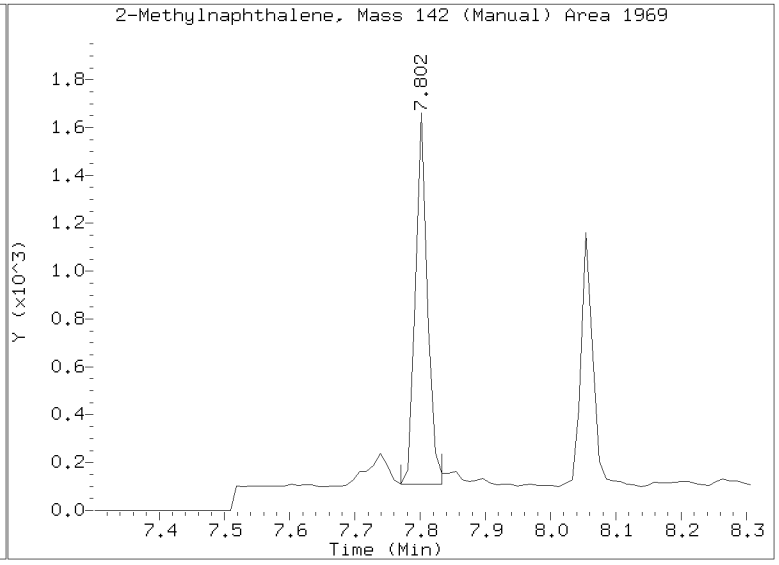
Quant Ion Manual Peak Adjustment Report

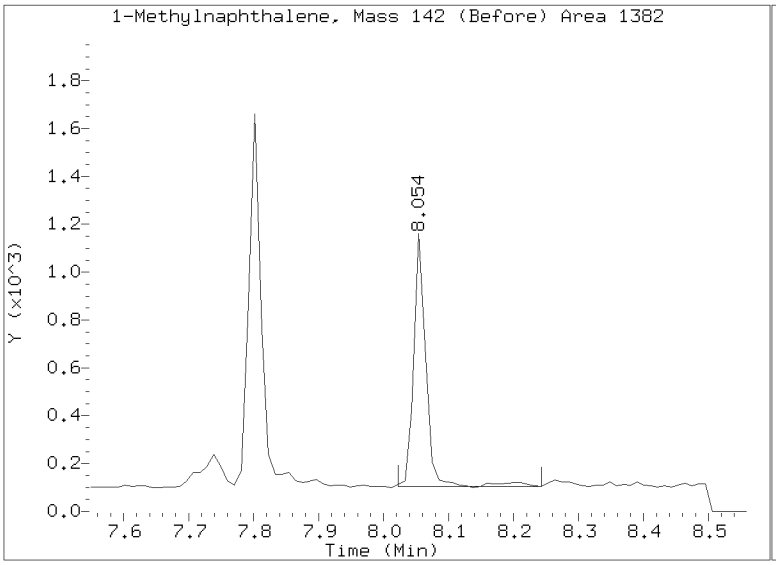
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041608.D
Injection Date: 16-APR-2021 13:31
Lab ID:21C0456-07 Client ID:
Report Date: 04/17/2021 08:33

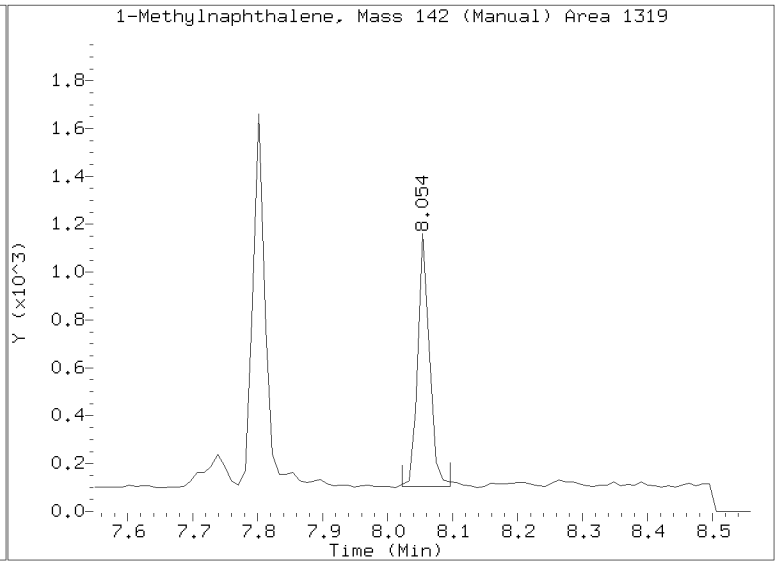






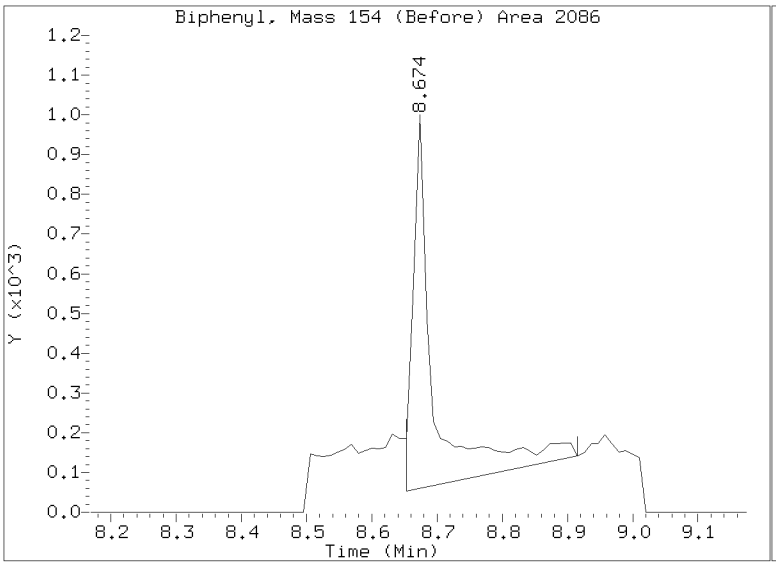


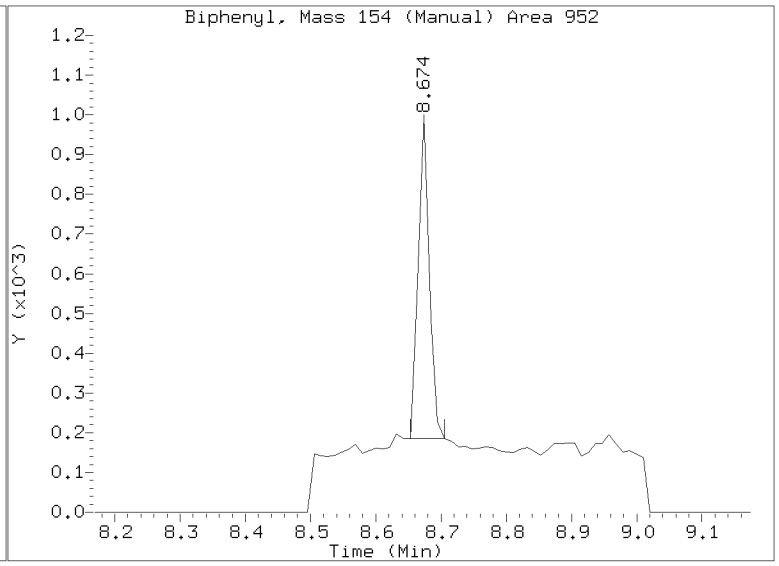


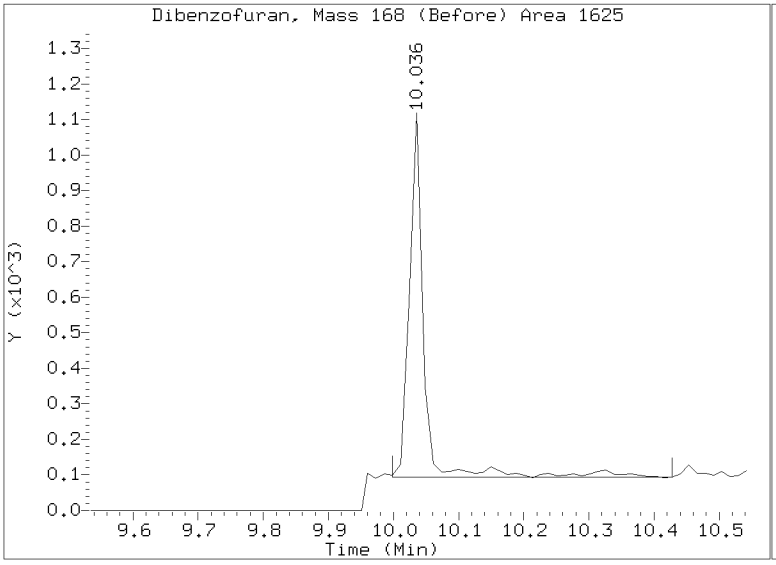


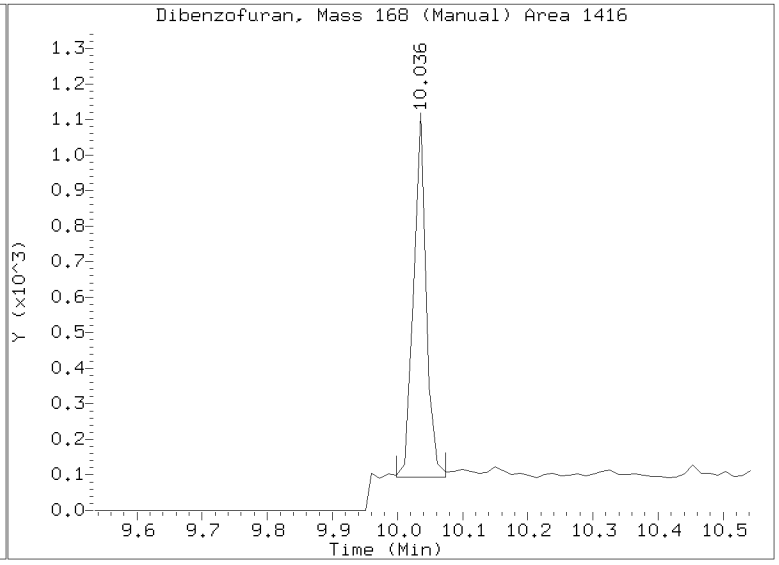
Quant Ion Manual Peak Adjustment Report

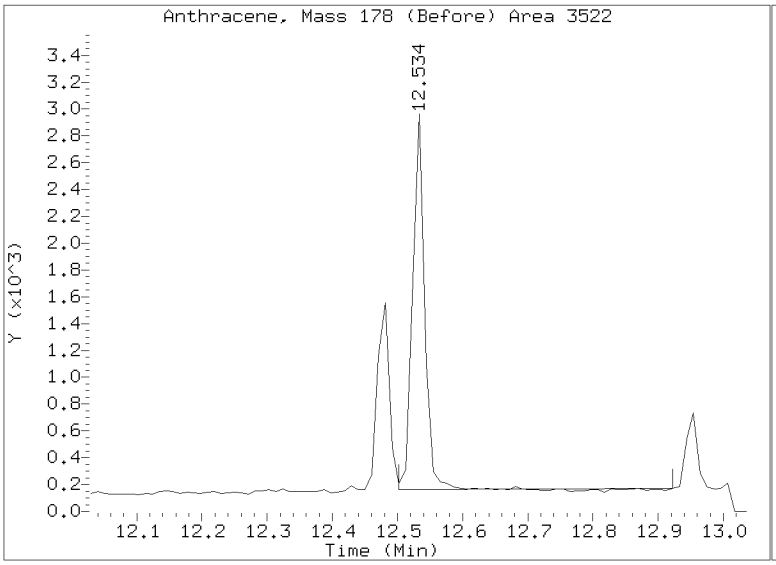
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041608.D
Injection Date: 16-APR-2021 13:31
Lab ID:21C0456-07 Client ID:
Report Date: 04/17/2021 08:33

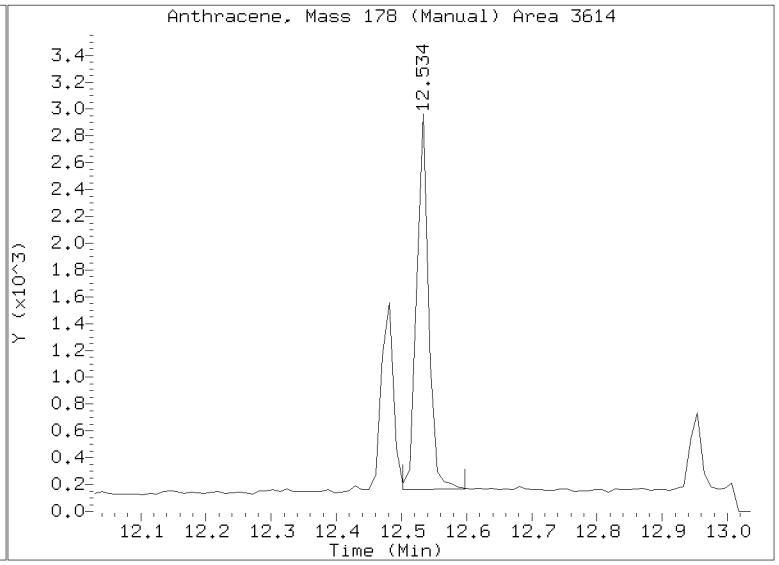






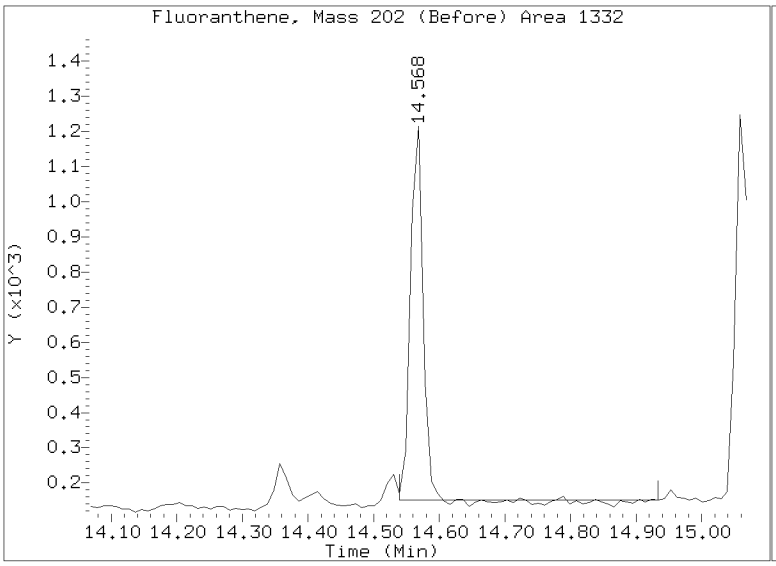


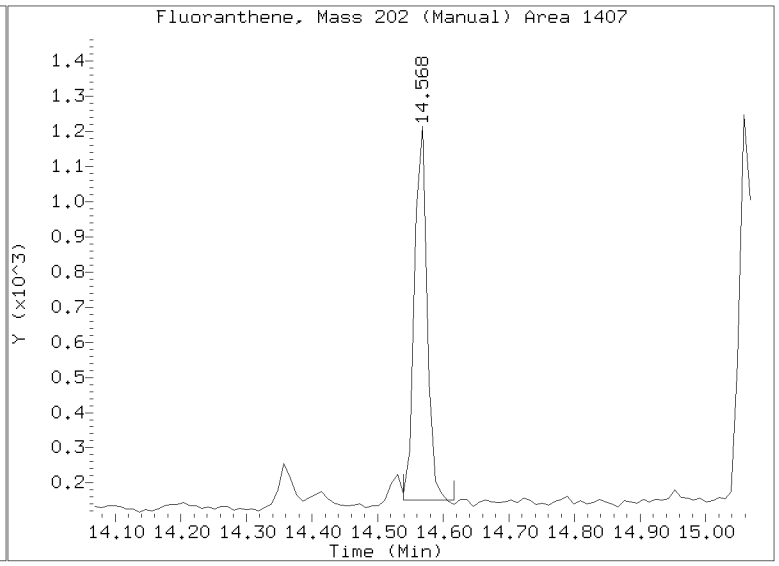


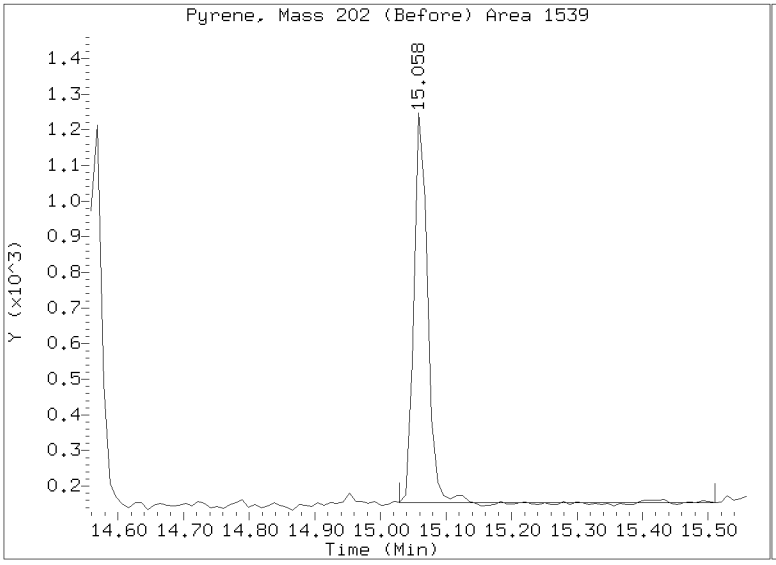


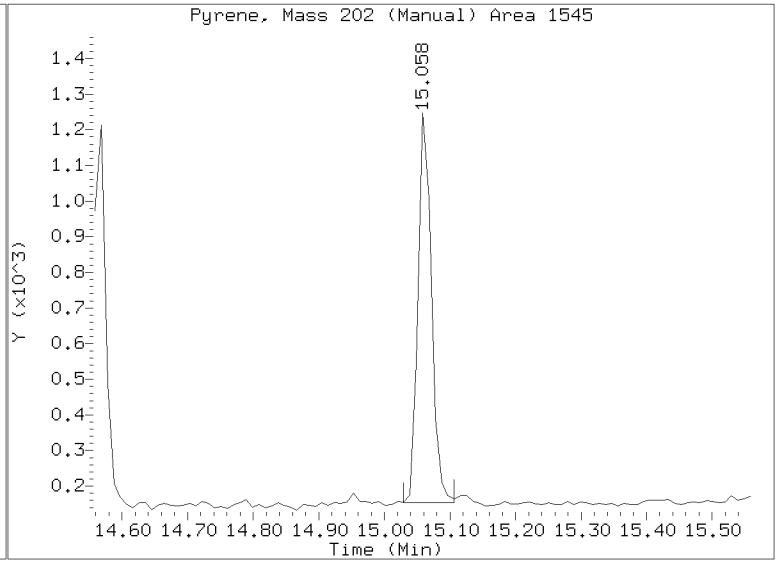
Quant Ion Manual Peak Adjustment Report

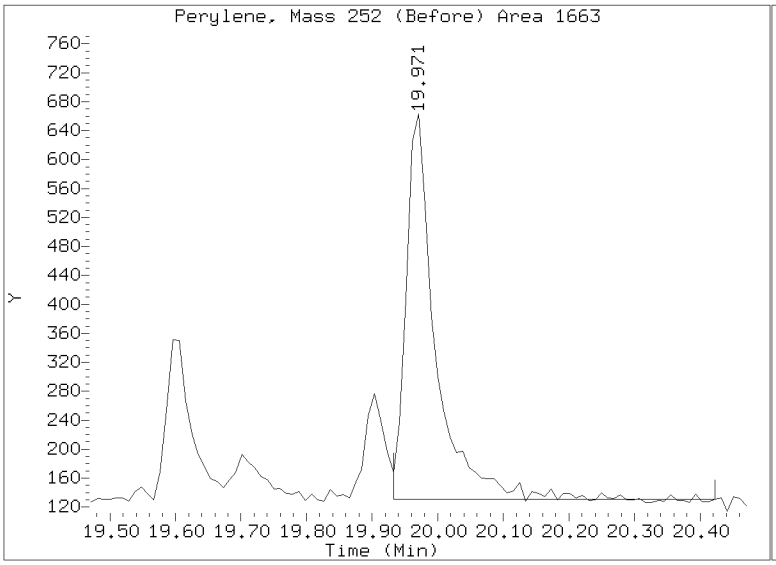
Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041608.D
Injection Date: 16-APR-2021 13:31
Lab ID:21C0456-07 Client ID:
Report Date: 04/17/2021 08:33

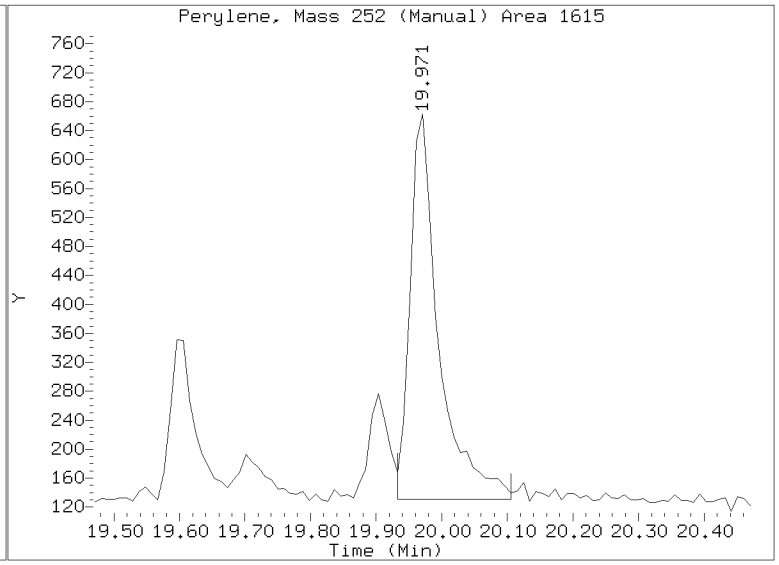












PREPARATION BATCH SUMMARY

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Batch: BJD0015 Batch Matrix: Water Preparation: EPA 3510C SepF

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW-SPL1(S)-033021	21C0456-05	NT1121041606.D	04/05/21 17:54	
MW-SPL101(S)-033021	21C0456-06	NT1121041607.D	04/05/21 17:54	
MW-SPL2(S)-033021	21C0456-07	NT1121041608.D	04/05/21 17:54	
Blank	BJD0015-BLK1	NT1121041604.D	04/05/21 17:54	
LCS	BJD0015-BS1	NT1121041605.D	04/05/21 17:54	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJD0015

Prepared using: EPA 3510C SepF

8270E-SIM PAH Low (0.01ug/L or 0.5ug/kg) in Water

Matrix: Water **Date Prepared:** 4/5/21 **Balance ID:** _____ **Set Up By:** 4/1/21 CTB

The following standards may be missing from this batch!

Designator	Description
QLS 2	QLS Spike

Analysis: 8270E-SIM PAH Low (0.01ug/L or 0.5ug/kg)

Lab Number & Container	Initial (mL) Actual	Silica Gel Clean (1:1) (REQ)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
21C0456-05 B	(500.00) 500	(1:1)	0.5	0.5	
21C0456-06 B	(500.00) ↓	(1:1)	0.5	0.5	
21C0456-07 B	(500.00) ↓	(1:1)	0.5	0.5	

Batch QC

Lab Number	Initial (mL) Actual	Silica Gel Clean (1:1) (REQ)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BJD0015-BLK1	(500.00) 500	(1:1)	0.5	0.5	
BJD0015-BS1	(500.00) ↓	(1:1)	0.5	0.5	

DP 4/5/21 — Client ID verified By / Date

DM 4-13-21 — Preparation Reviewed By / Date

4/5/21 17:54 — Extraction Date and Time

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJD0015

Prepared using: EPA 3510C SepF

8270E-SIM PAH Low (0.01ug/L or 0.5ug/kg) in Water

Prep Steps

KD
80°C

(1) 2 3 4 5 6

VLB 4/16/21
Analyst/Date

TurboVap
Post Silica Gel
Shakeout

1 2 3 (4) 5

4-13-21
DM **Analyst/Date**

Vialing

4-13-21
DM **Analyst/Date**

Reagents Used

Station/Reagent	Standard ID
Separatory Funnel Analyst: TW Date: 4/5/2021	
Methylene Chloride	JØØ2465
Anhydrous Sodium Sulfate	JØØ3527
KD Analyst: VLB Date: 4/16/21	
Methylene Chloride	JØØ2465
Vialing Analyst: DM Date: 4-13-21	
Methylene Chloride	JØØ2465
0% Silica Gel	IØ11337
Neutral Glass Wool	JØØ3346
Anhydrous Sodium Sulfate	JØØ2722

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 1.5/7.5µg/mL	1 (J000841) Exp: 05/22/2021 TW	100µL	TW	DP
Spike 1.5/7.5µg/mL	18 (J000839) Exp: 10/03/2021 TW	100µL	TW	DP

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator inthe Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).

ORGANICS PREPARATION BENCH SHEET

Batch: BJD0015

Prepared using: EPA 3510C SepF

8270E-SIM PAH Low (0.01ug/L or 0.5ug/kg) in Water

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. USE ONLY NON-SCRATCHED GLASSWARE. 2. Rinse all glassware with DCM. 3. Add Surr/Spk 4. Extract 3X with 30mL DCM. 5. KD (no drying column) at 80°. (Thoroughly rinse Snyder Columns with DCM)! 6. Transfer directly to Scintillation vials from KD. 7. Silica Gel Clean-up Shakeout is REQUIRED. (Scintillation vial shakeout): Add one scoop (approx 0.5g) of LL Silica Gel. Vortex for 1min. Pass thru turbo drying column with glass wool and sodium sulfate plug and DCM. 8. TurboVap. 9. Vial in DCM. (Pre-clean vialing syringes thoroughly)! 10. Post screen extracts with any color. Archive (Y) N	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: LC SIM PNA Extraction Batch: BJD0015

Total Solids Batch: N/A Work Order(s): 21C0456

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☑ Turbid/Color= All Samples = light yellow, slightly turbid	JW 4/5/2021
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
☐ Share Samples Y / N	
☐ Multiple Jars Y / N	
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

: BJD0015
Batch Comment: **NONE**
Project: Port of Tacoma - Kaiser GWM 2021
Project Comments: <G>No matrix QC requirements. Last round had high sulfur odor</G><C>Cn samples may have high sulfide</C>
Work Order:21C0456
Work Order Comments: <G>Std QC only - no special matrix QC required. Last round had high sulfur odor</G><C>Cn samples may have high sulfide</C>
Sample: 21C0456-05
Sample Comments: **NONE**
Sample: 21C0456-06
Sample Comments: **NONE**
Sample: 21C0456-07
Sample Comments: **NONE**

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Cleanup Batch:	CJD0112	Cleanup Type:	Silica Gel
Cleanup Method:	EPA 3630C Silica Gel Cleanup	Analysis:	EPA 8270E-SIM

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW-SPL1(S)-033021	21C0456-05	NT1121041606.D	04/13/2021	
MW-SPL101(S)-033021	21C0456-06	NT1121041607.D	04/13/2021	
MW-SPL2(S)-033021	21C0456-07	NT1121041608.D	04/13/2021	
Blank	BJD0015-BLK1	NT1121041604.D	04/13/2021	
LCS	BJD0015-BS1	NT1121041605.D	04/13/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJD0112

Matrix: Water **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 4/13/2021 11:36:54AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21C0456-05	B	MW-SPL1(S)-033021	B 01	0.5	0.5	70E-SIM PAH Low (0.01ug/L or 0.5ug/	4/13/2021	DDM	
21C0456-06	B	MW-SPL101(S)-033021	B 01	0.5	0.5	70E-SIM PAH Low (0.01ug/L or 0.5ug/	4/13/2021	DDM	
21C0456-07	B	MW-SPL2(S)-033021	B 01	0.5	0.5	70E-SIM PAH Low (0.01ug/L or 0.5ug/	4/13/2021	DDM	
BJD0015-BLK1	-	Blank	-	0.5	0.5	-	4/13/2021	DDM	
BJD0015-BS1	-	LCS	-	0.5	0.5	-	4/13/2021	DDM	

Form I

METHOD BLANK DATA SHEET

EPA 8270E-SIM

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	21C0456
Client:	Anchor QEA, LLC			Project:	Port of Tacoma - Kaiser GWM 20
Matrix:	Water	Laboratory ID:	BJD0015-BLK1	File ID:	NT1121041604.D
Sampled:	N/A	Prepared:	04/05/21 17:54	Analyzed:	04/16/21 11:22
Solids:		Preparation:	EPA 3510C SepF	Initial/Final:	500 mL / 0.5 mL
Batch:	BJD0015	Sequence:	SJD0232	Calibration:	DH00073
Instrument:	NT11	Column:	RXi-17Sil-MS	Cleanups:	Silica Gel

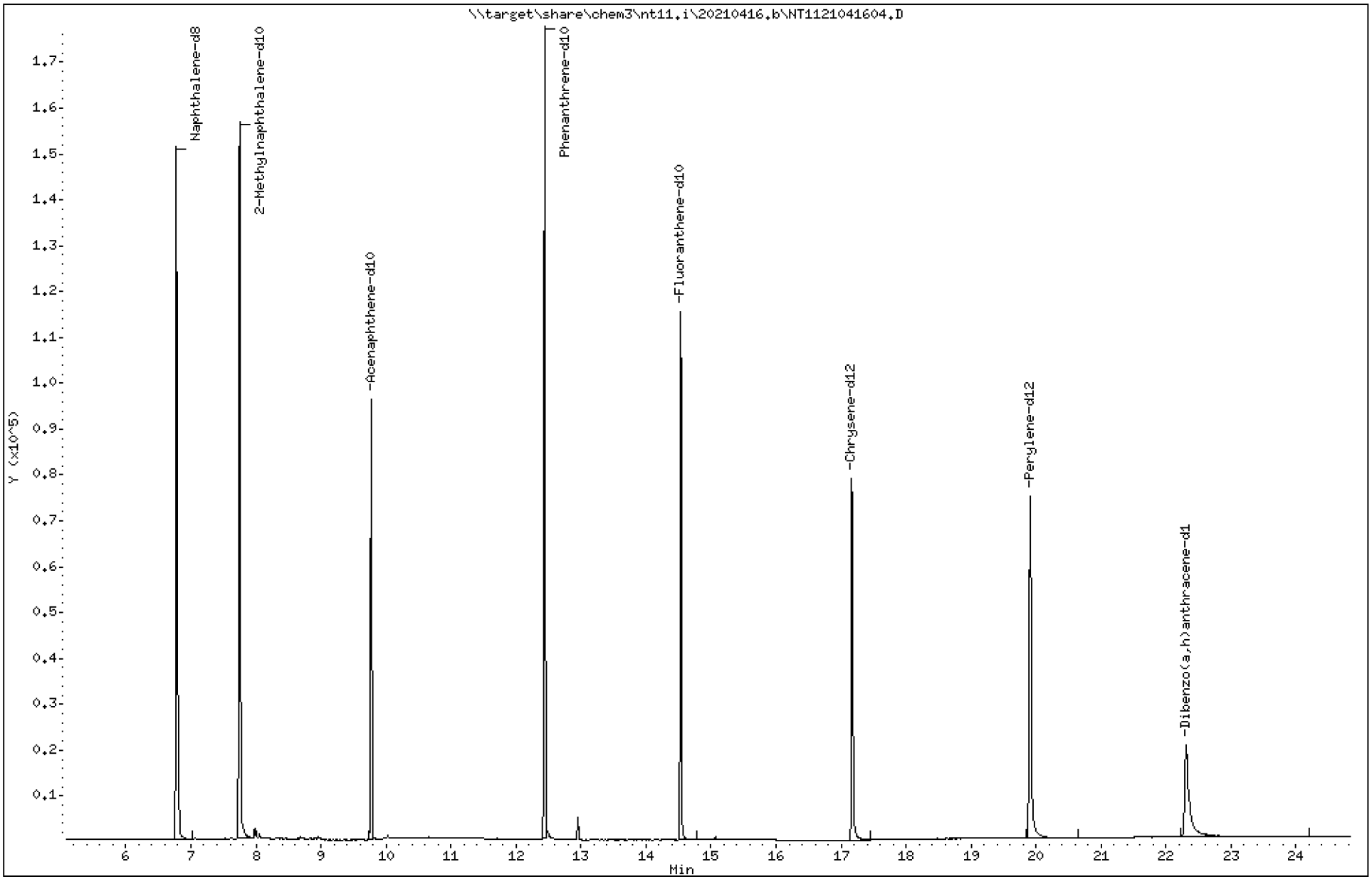
CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
91-20-3	Naphthalene	1	0.010	U	0.001	0.010
91-57-6	2-Methylnaphthalene	1	0.010	U	0.001	0.010
90-12-0	1-Methylnaphthalene	1	0.010	U	0.0009	0.010
91-58-7	2-Chloronaphthalene	1	0.010	U	0.001	0.010
208-96-8	Acenaphthylene	1	0.010	U	0.002	0.010
83-32-9	Acenaphthene	1	0.010	U	0.003	0.010
132-64-9	Dibenzofuran	1	0.010	U	0.002	0.010
86-73-7	Fluorene	1	0.010	U	0.002	0.010
85-01-8	Phenanthrene	1	0.010	U	0.001	0.010
120-12-7	Anthracene	1	0.010	U	0.001	0.010
86-74-8	Carbazole	1	0.010	U	0.001	0.010
206-44-0	Fluoranthene	1	0.010	U	0.002	0.010
129-00-0	Pyrene	1	0.010	U	0.001	0.010
56-55-3	Benzo(a)anthracene	1	0.010	U	0.0008	0.010
218-01-9	Chrysene	1	0.010	U	0.0009	0.010
205-99-2	Benzo(b)fluoranthene	1	0.010	U	0.0005	0.010
207-08-9	Benzo(k)fluoranthene	1	0.010	U	0.003	0.010
205-82-3	Benzo(j)fluoranthene	1	0.010	U	0.002	0.010
	Benzofluoranthenes, Total	1	0.010	U	0.004	0.010
50-32-8	Benzo(a)pyrene	1	0.010	U	0.002	0.010
1985-5-0	Perylene	1	0.010	U	0.006	0.010
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.010	U	0.001	0.010
53-70-3	Dibenzo(a,h)anthracene	1	0.010	U	0.001	0.010
191-24-2	Benzo(g,h,i)perylene	1	0.010	U	0.001	0.010

SURROGATES	ADDED (ug/L)	CONC. (ug/L)	% REC	QC LIMITS	Q
2-Methylnaphthalene-d10	0.30000	0.143	47.6	42 - 120	
Dibenzo[a,h]anthracene-d14	0.30000	0.170	56.5	29 - 120	
Fluoranthene-d10	0.30000	0.149	49.5	57 - 120	*

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041604.D
Date : 16-APR-2021 11:22
Client ID:
Sample Info: BJD0015-BLK1

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041604.D

Date : 16-APR-2021 11:22

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BLK1

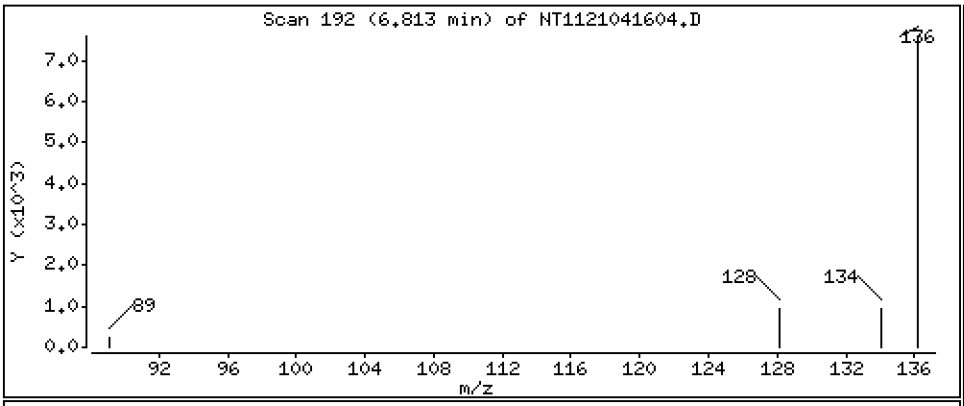
Operator: VTS

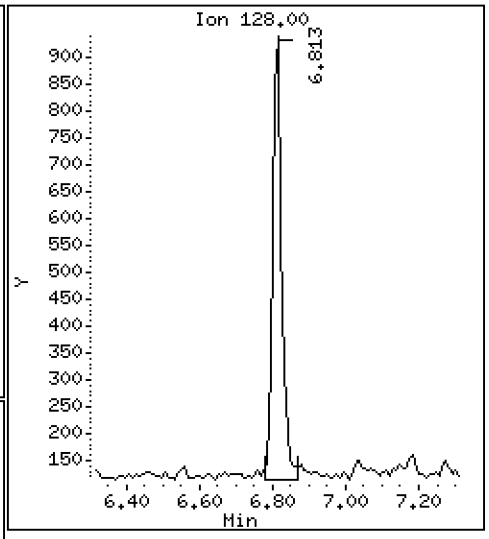
Column phase: Rxi-17Sil MS

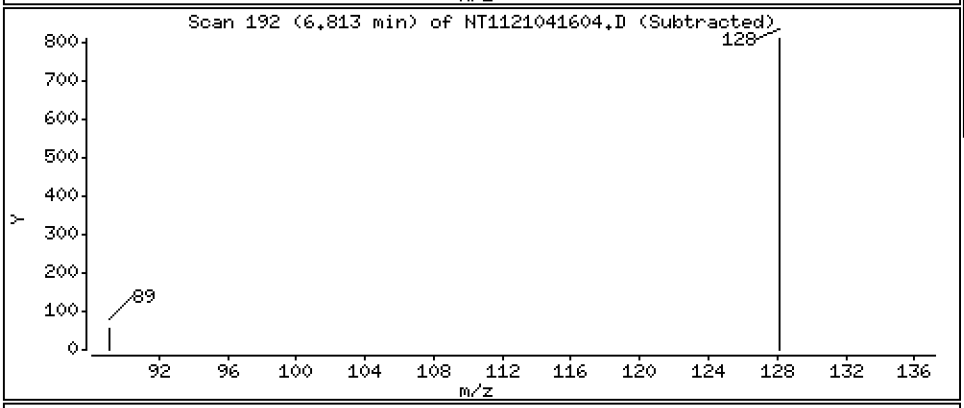
Column diameter: 0.25

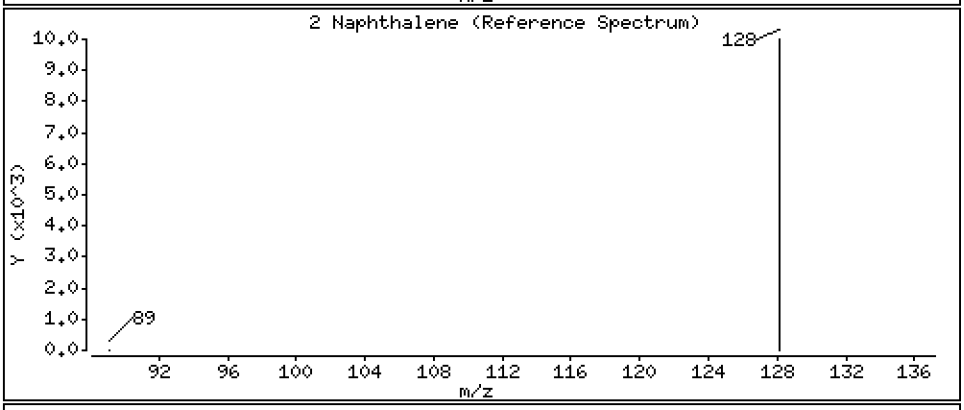
2 Naphthalene

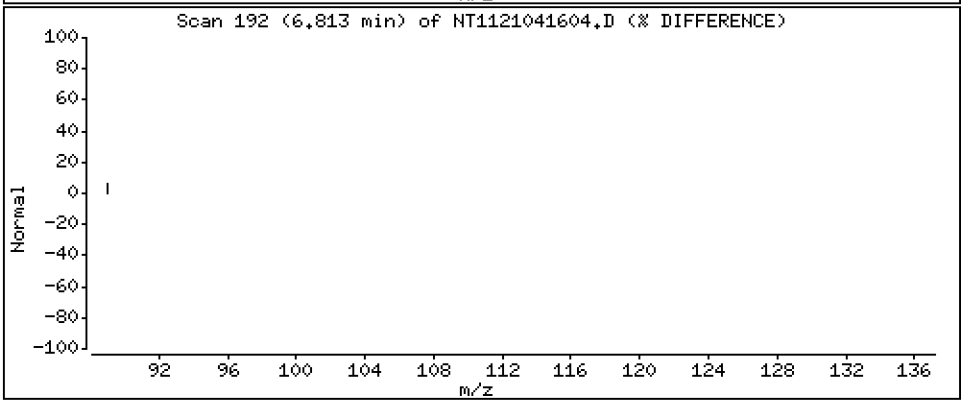
Concentration: 1.10 ng/mL











Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041604.D

Date : 16-APR-2021 11:22

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BLK1

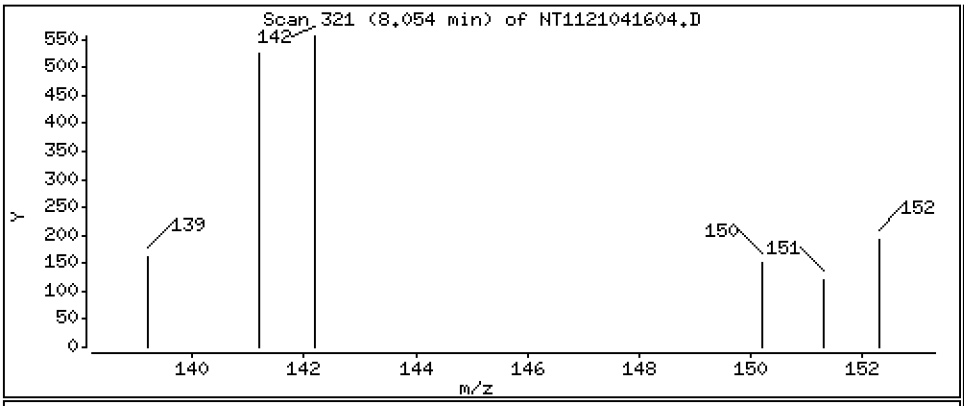
Operator: VTS

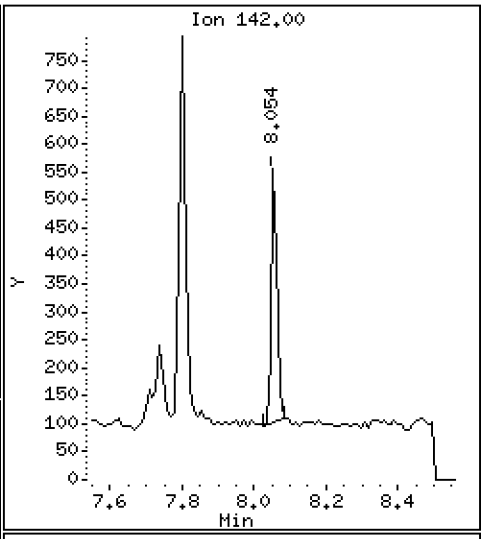
Column phase: Rxi-17Sil MS

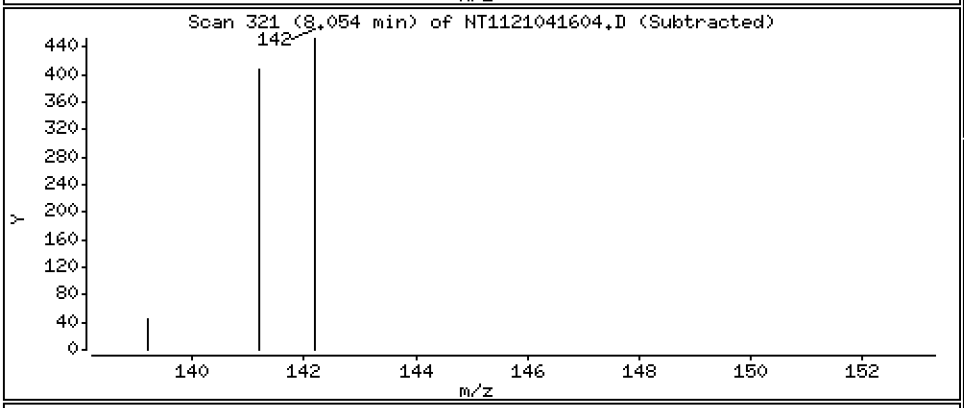
Column diameter: 0.25

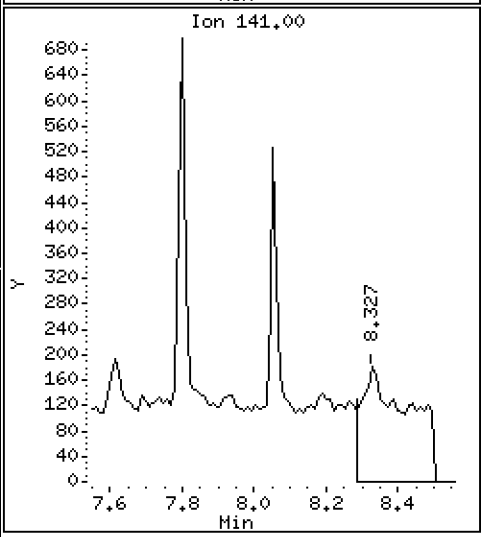
6 1-Methylnaphthalene

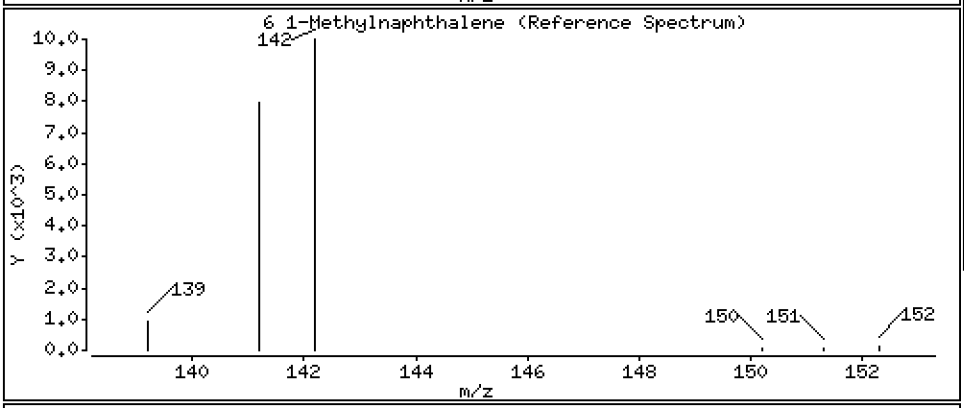
Concentration: 0.595 ng/mL

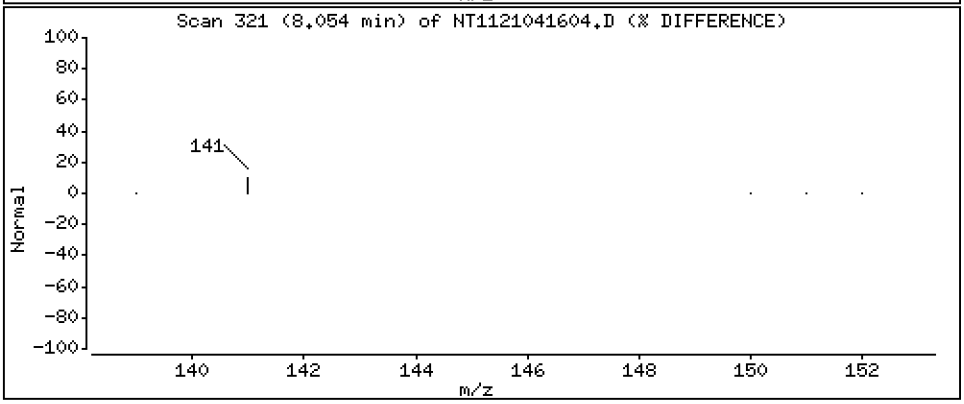












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041604.D
Lab Smp Id: BJD0015-BLK1
Inj Date : 16-APR-2021 11:22 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : BJD0015-BLK1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1	Naphthalene-d8	136	6.777	6.777	(1.000)	224176	200.000	
	2	Naphthalene	128	6.813	6.813	(1.005)	1431	1.09940	1.10(M)
	3	Benzo(b)thiophene	134	Compound Not Detected.					
$	4	2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	128638	142.710	143
	5	2-Methylnaphthalene	142	Compound Not Detected.					
	6	1-Methylnaphthalene	142	8.054	8.054	(1.188)	580	0.59463	0.595(M)
	7	2-Chloronaphthalene	162	Compound Not Detected.					
	8	Biphenyl	154	Compound Not Detected.					
	9	2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10	Acenaphthylene	152	Compound Not Detected.					
*	11	Acenaphthene-d10	164	9.770	9.770	(1.000)	114192	200.000	
	12	Acenaphthene	153	Compound Not Detected.					
	13	Dibenzofuran	168	Compound Not Detected.					
	14	2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16	Fluorene	166	Compound Not Detected.					
	17	Dibenzothiophene	184	Compound Not Detected.					
*	18	Phenanthrene-d10	188	12.439	12.439	(1.000)	174927	200.000	
	19	Phenanthrene	178	Compound Not Detected.					
	21	Anthracene	178	Compound Not Detected.					
	22	Carbazole	167	Compound Not Detected.					
	23	1-Methylphenanthrene	192	Compound Not Detected.					
$	24	Fluoranthene-d10	212	14.530	14.530	(1.168)	136257	148.572	149
	25	Fluoranthene	202	Compound Not Detected.					
	26	Pyrene	202	Compound Not Detected.					
	27	Benzo(a)anthracene	228	Compound Not Detected.					
*	28	Chrysene-d12	240	17.163	17.163	(1.000)	128451	200.000	
	29	Chrysene	228	Compound Not Detected.					
	30	Benzo(b)fluoranthene	252	Compound Not Detected.					
	31	Benzo(k)fluoranthene	252	Compound Not Detected.					
	32	Benzo(j)fluoranthene	252	Compound Not Detected.					
	34	Benzo(e)pyrene	252	Compound Not Detected.					
	35	Benzo(a)pyrene	252	Compound Not Detected.					
*	36	Perylene-d12	264	19.903	19.903	(1.000)	152372	200.000	
	37	Perylene	252	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
$ 38 Dibenzo(a,h)anthracene-d14	292	22.316	22.305	(1.121)	100559	169.568	170
39 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
40 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
41 Benzo(g,h,i)perylene	276	Compound Not Detected.					

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041604.D
Lab Smp Id: BJD0015-BLK1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 10:42
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	224176	57.75
11 Acenaphthene-d10	80301	40151	160602	114192	42.20
18 Phenanthrene-d10	121929	60965	243858	174927	43.47
28 Chrysene-d12	94055	47028	188110	128451	36.57
36 Perylene-d12	114179	57090	228358	152372	33.45

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041604.D

Lab ID: BJD0015-BLK1
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 11:22

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1121041602.D

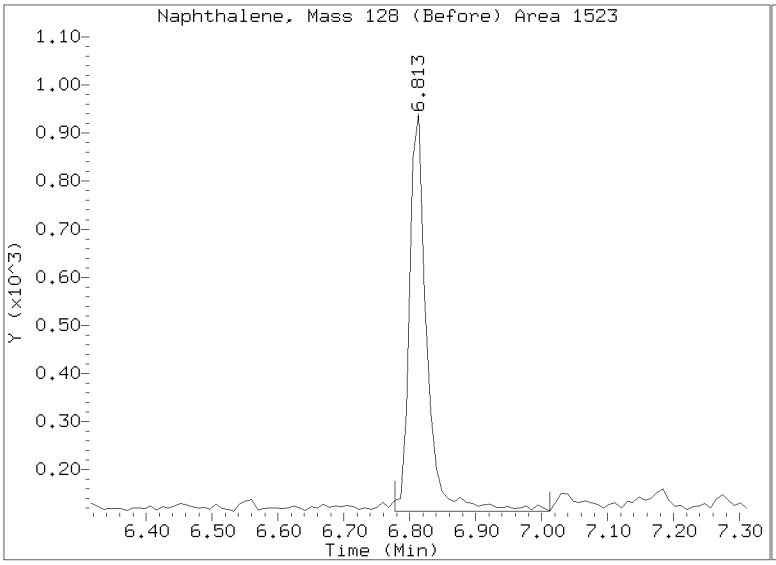
On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

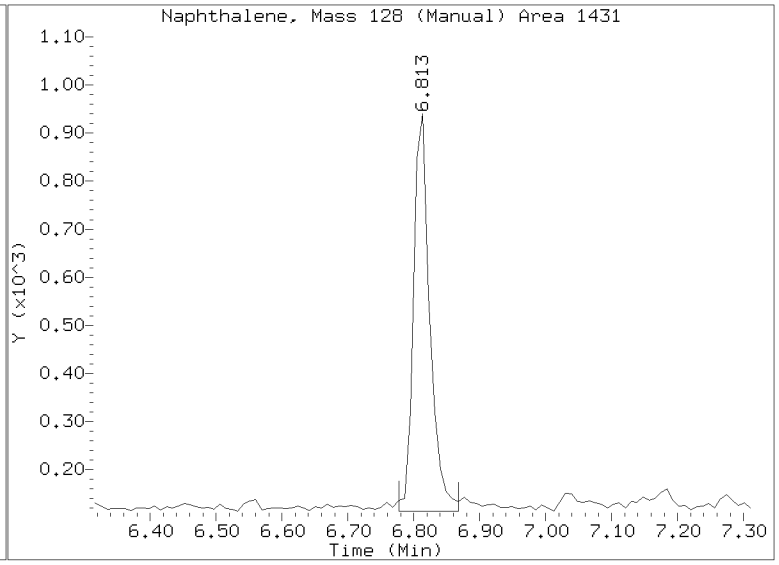
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

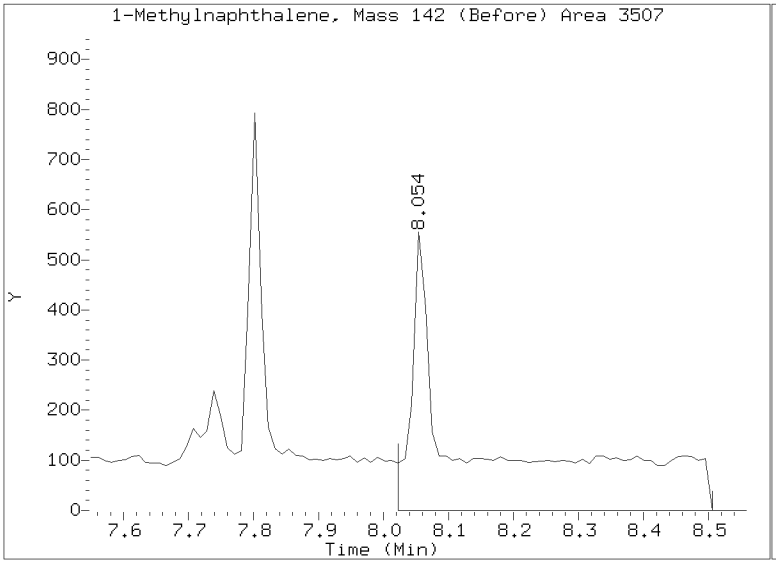
* Only compounds listed in the work order have been verified by the analyst *

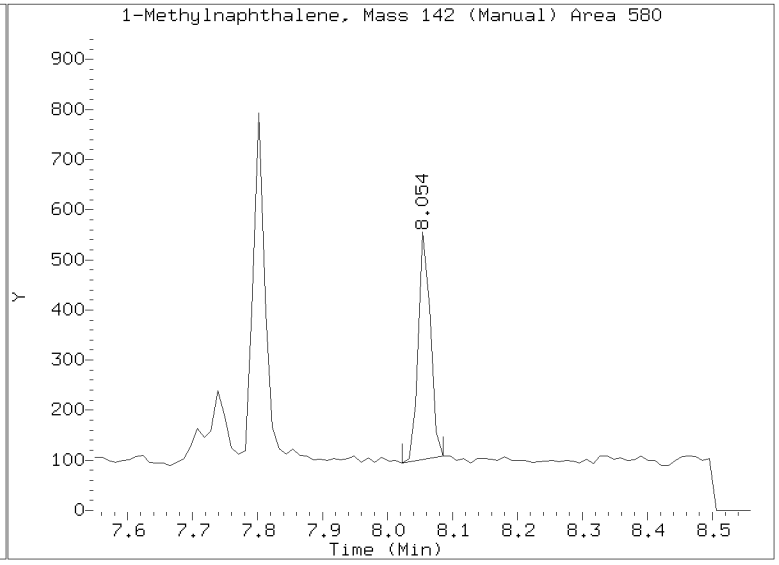
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt11.i/20210416.b/NT1121041604.D
Injection Date: 16-APR-2021 11:22
Lab ID:BJD0015-BLK1 Client ID:
Report Date: 04/17/2021 08:33









LCS / LCS DUPLICATE RECOVERY

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Matrix:	Water	Analyzed:	04/16/21 11:54
Batch:	BJD0015	Laboratory ID:	BJD0015-BS1
Preparation:	EPA 3510C SepF	Sequence Name:	LCS
Initial/Final:	500 mL / 0.5 mL		

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Naphthalene	0.300	0.167		55.8	37 - 120
2-Methylnaphthalene	0.300	0.175		58.2	37 - 120
1-Methylnaphthalene	0.300	0.181		60.4	29 - 120
2-Chloronaphthalene	0.300	0.148	Q	49.5	30 - 160
Acenaphthylene	0.300	0.151		50.3	41 - 120
Acenaphthene	0.300	0.154		51.5	41 - 120
Dibenzofuran	0.300	0.156	Q	52.1	38 - 120
Fluorene	0.300	0.166		55.3	43 - 120
Phenanthrene	0.300	0.180		59.9	41 - 120
Anthracene	0.300	0.160		53.2	40 - 120
Carbazole	0.300	0.184		61.4	30 - 160
Fluoranthene	0.300	0.182		60.8	45 - 120
Pyrene	0.300	0.182		60.6	41 - 120
Benzo(a)anthracene	0.300	0.171		57.0	42 - 120
Chrysene	0.300	0.170		56.8	44 - 120
Benzo(b)fluoranthene	0.300	0.162		54.1	44 - 120
Benzo(k)fluoranthene	0.300	0.186		62.1	50 - 120
Benzo(j)fluoranthene	0.300	0.180		59.9	39 - 160
Benzofluoranthenes, Total	0.900	0.528		58.7	46 - 120
Benzo(a)pyrene	0.300	0.172		57.3	35 - 120
Perylene	0.300	0.153		50.9	30 - 160
Indeno(1,2,3-cd)pyrene	0.300	0.204		68.0	37 - 120
Dibenzo(a,h)anthracene	0.300	0.199		66.5	34 - 120
Benzo(g,h,i)perylene	0.300	0.197		65.8	38 - 120

* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

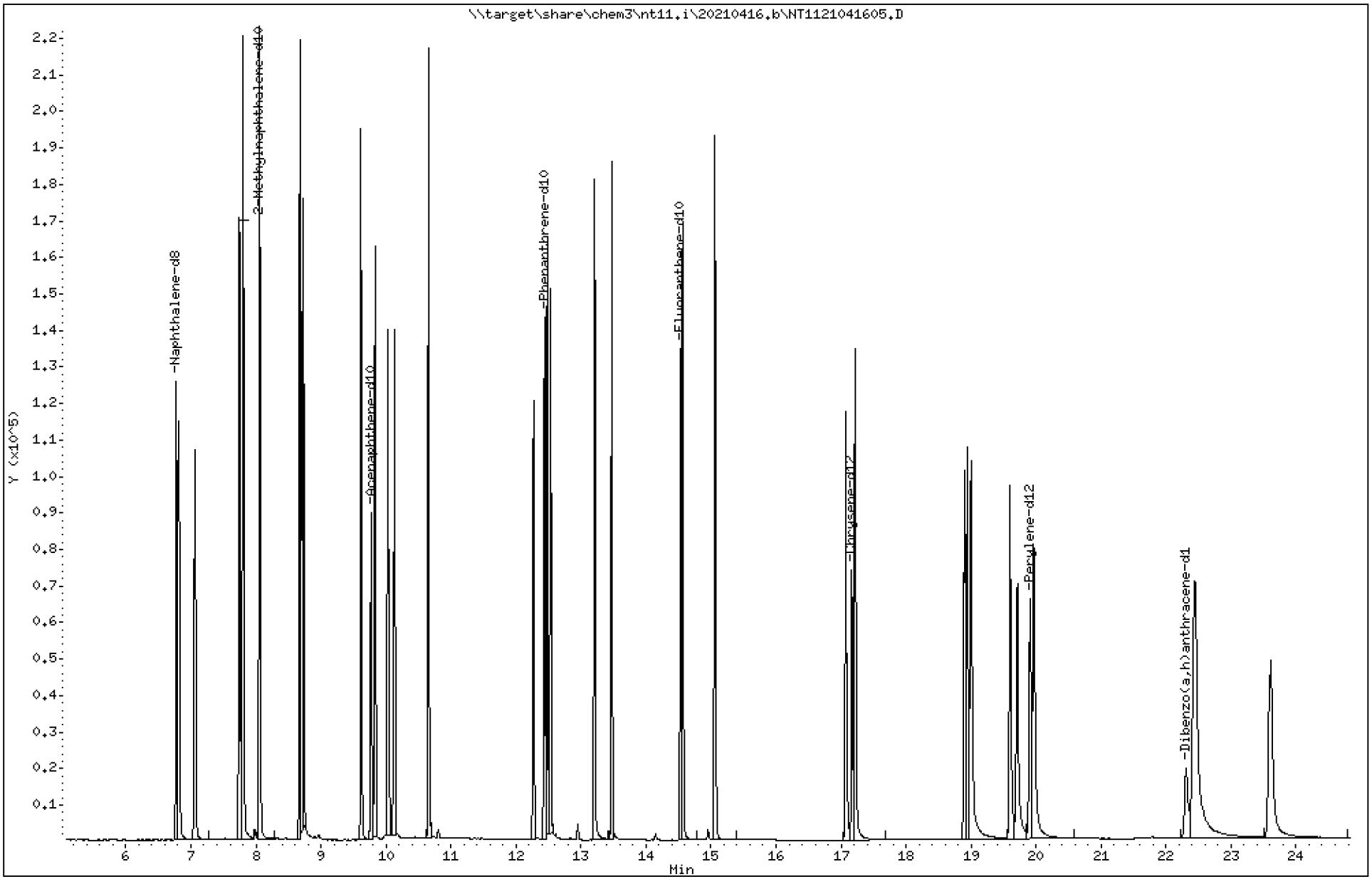
Instrument: nt11.i

Sample Info: BJD0015-BS1

Operator: VTS

Column phase: Rxi-17Sil MS

Column diameter: 0.25



Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

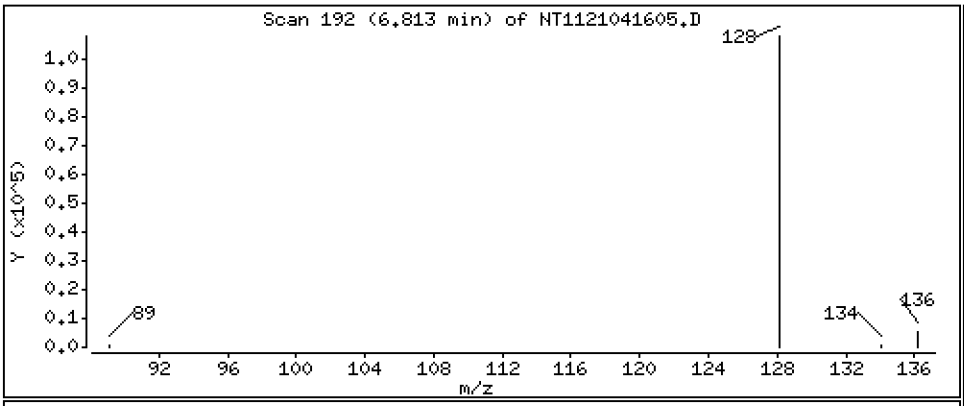
Operator: VTS

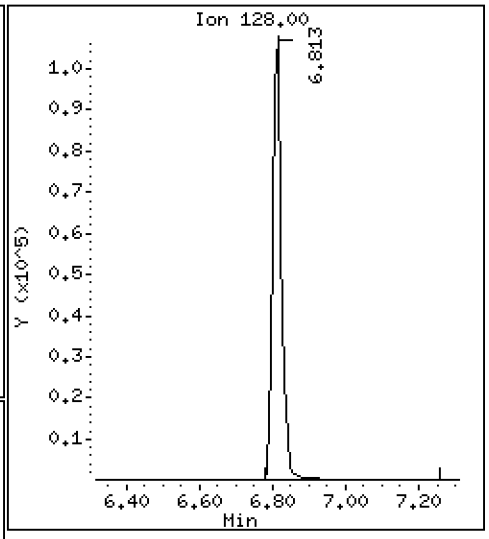
Column phase: Rxi-17Sil MS

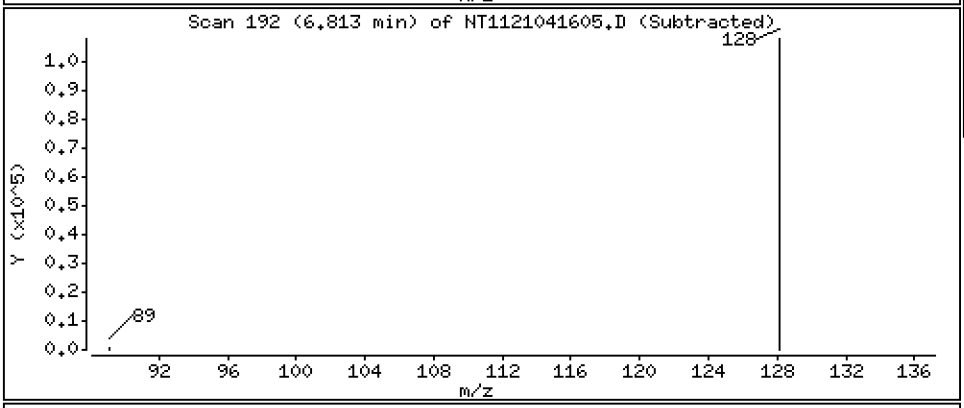
Column diameter: 0.25

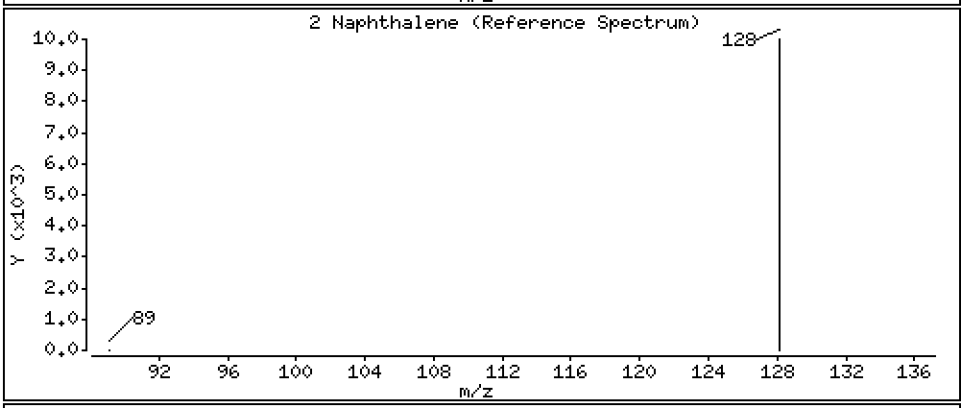
2 Naphthalene

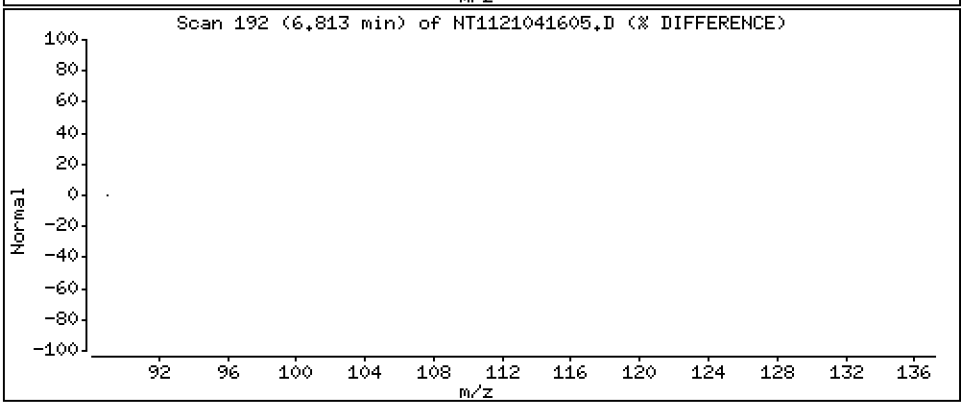
Concentration: 167 ng/mL











Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

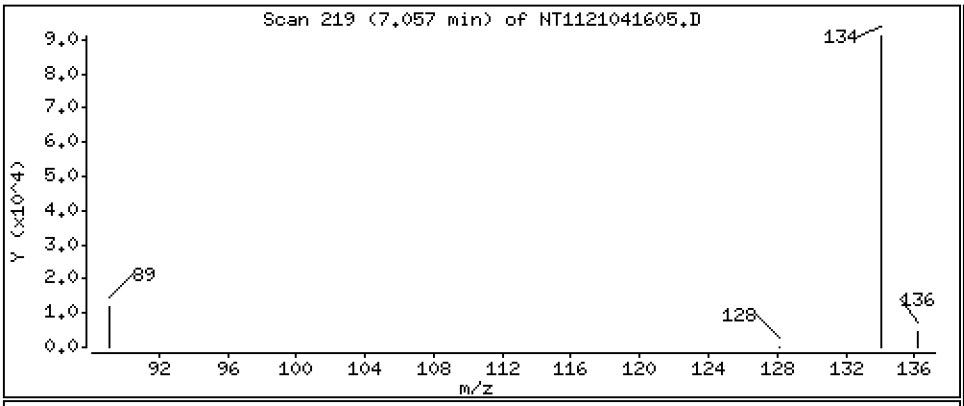
Operator: VTS

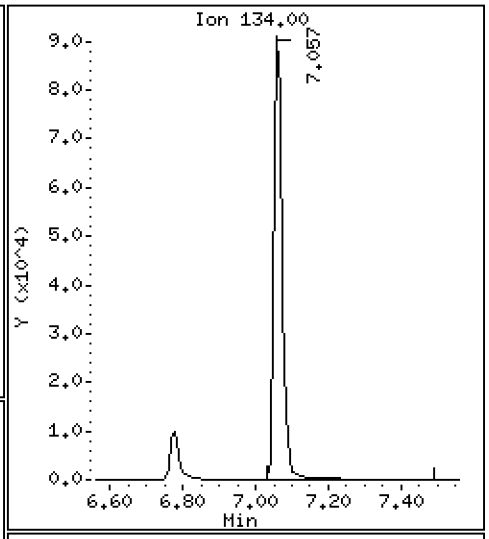
Column phase: Rxi-17Sil MS

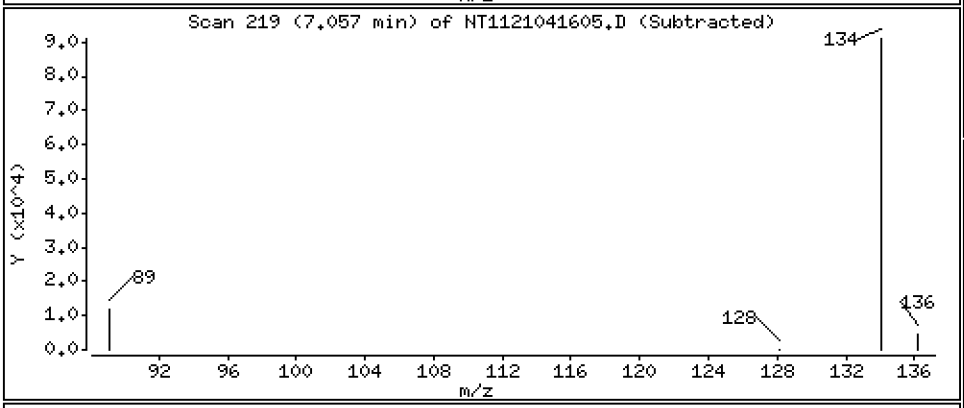
Column diameter: 0.25

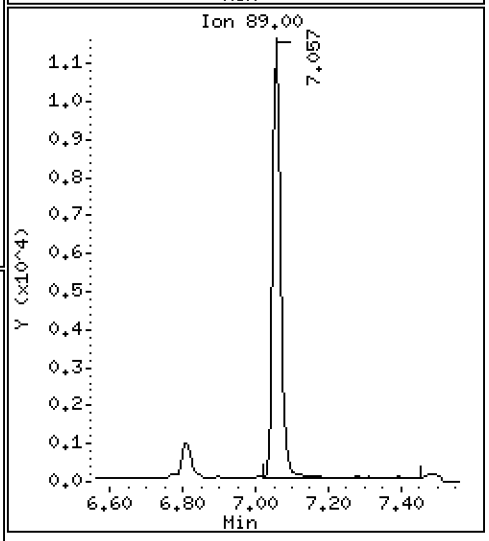
3 Benzo(b)thiophene

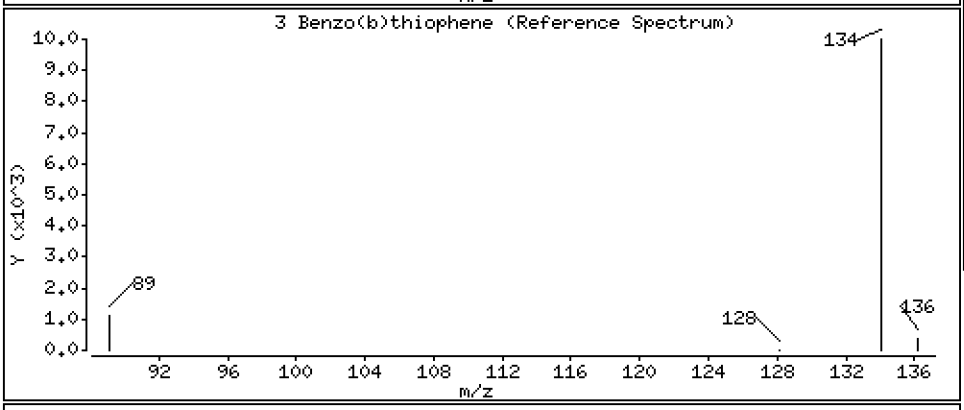
Concentration: 172 ng/mL

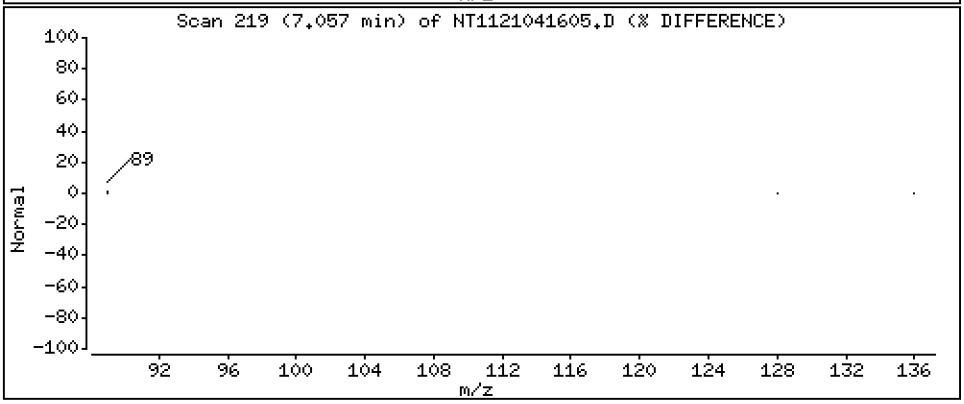












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

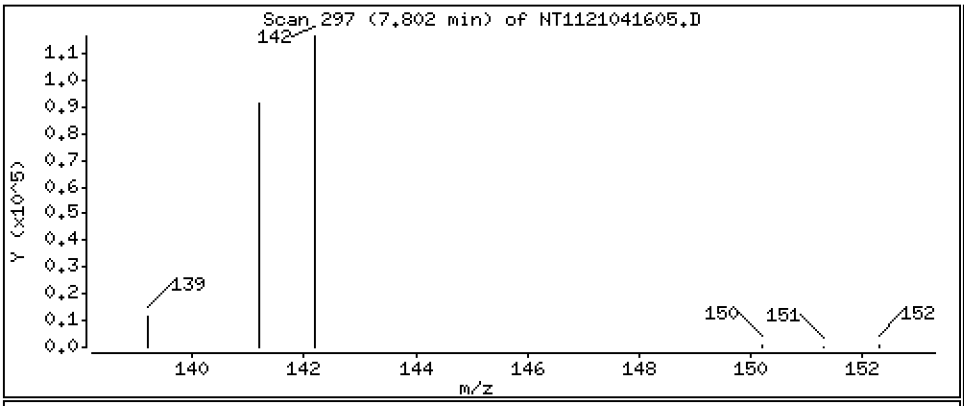
Operator: VTS

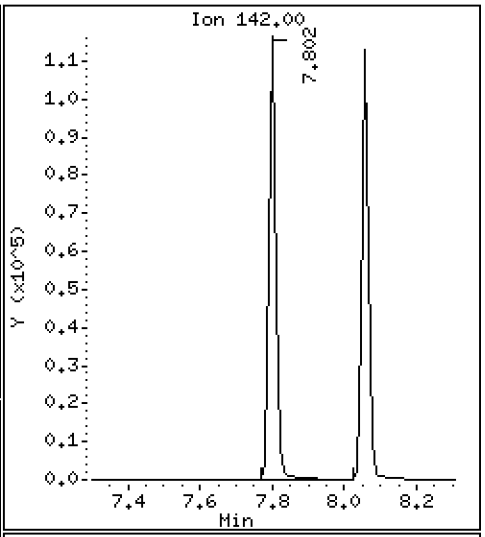
Column phase: Rxi-17Sil MS

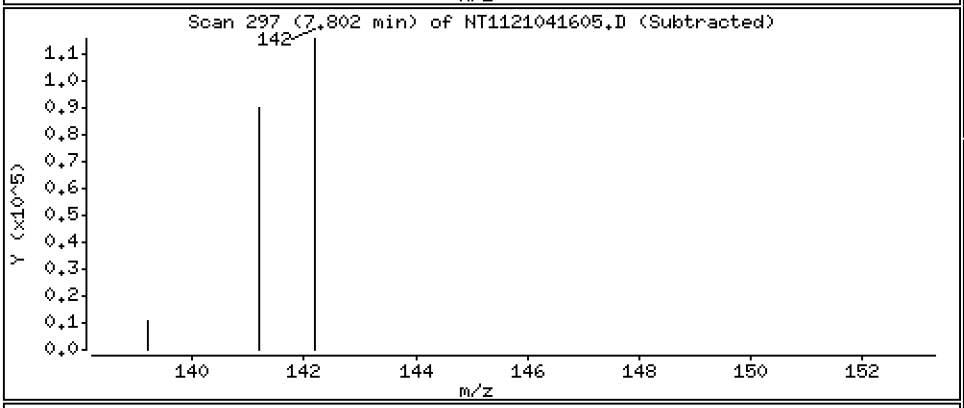
Column diameter: 0.25

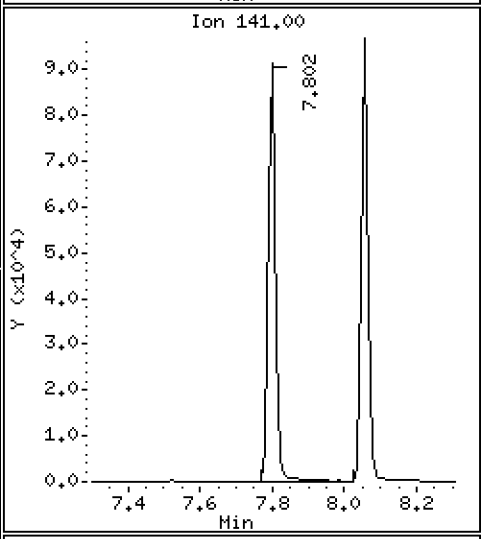
5 2-Methylnaphthalene

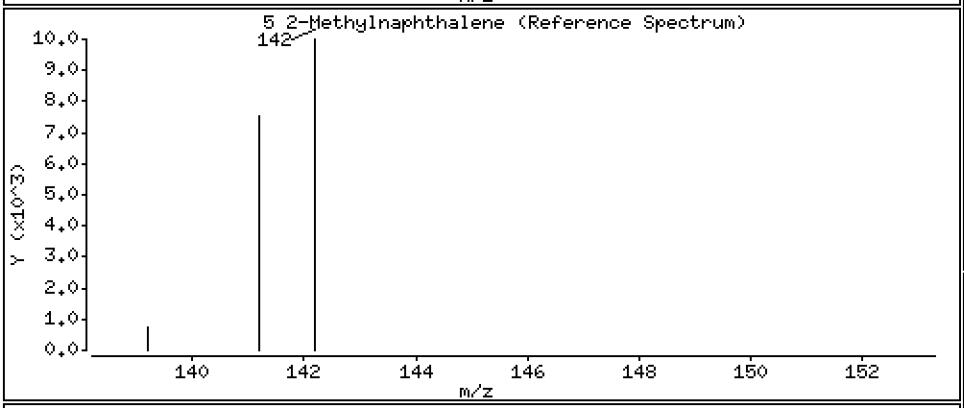
Concentration: 175 ng/mL

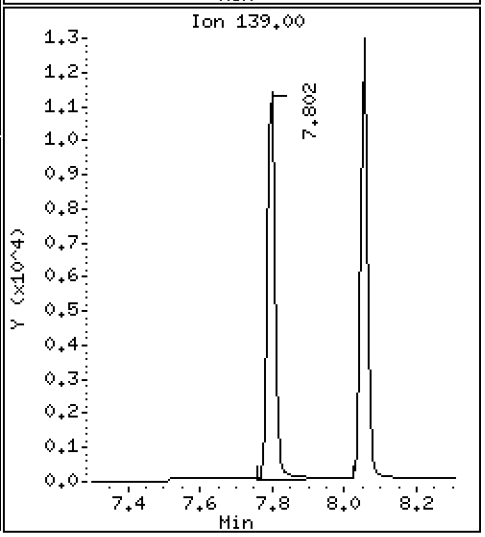


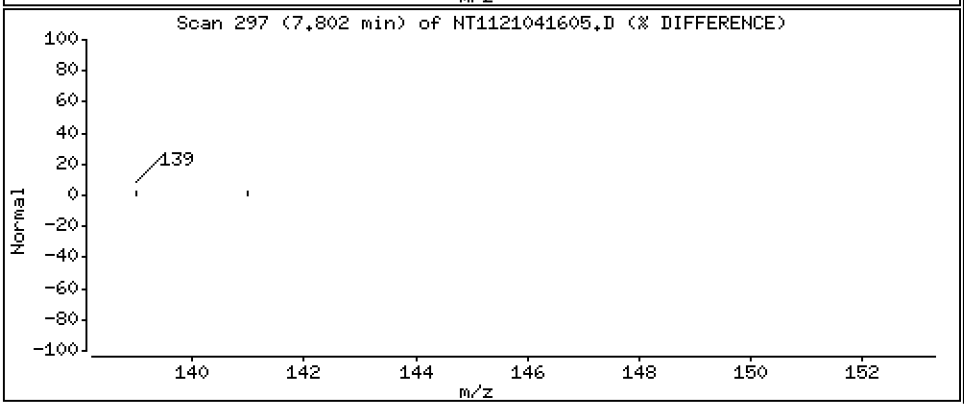












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

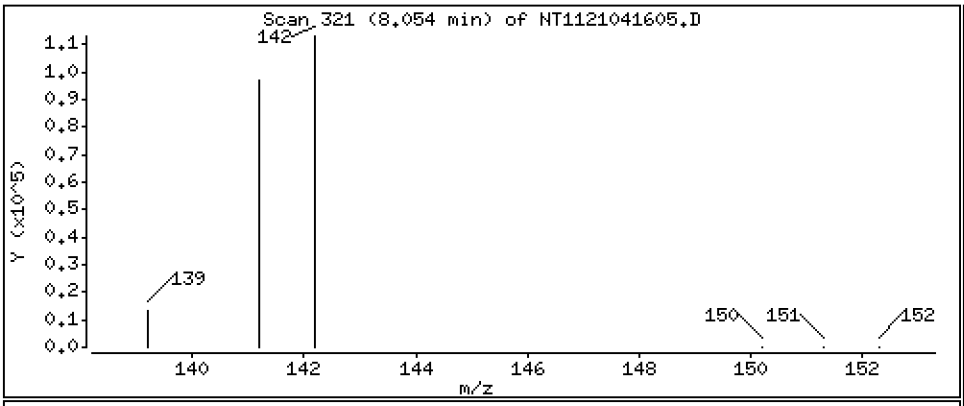
Operator: VTS

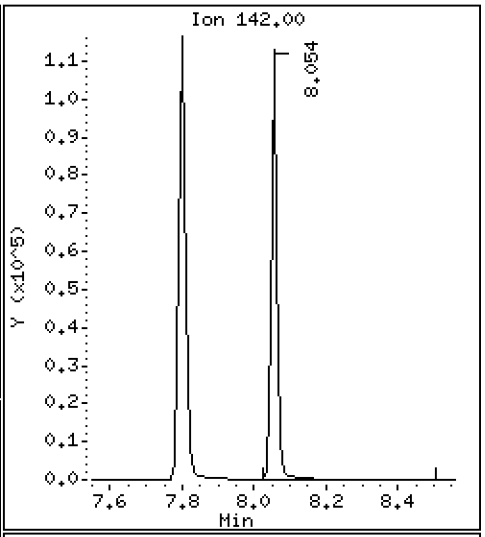
Column phase: Rxi-17Sil MS

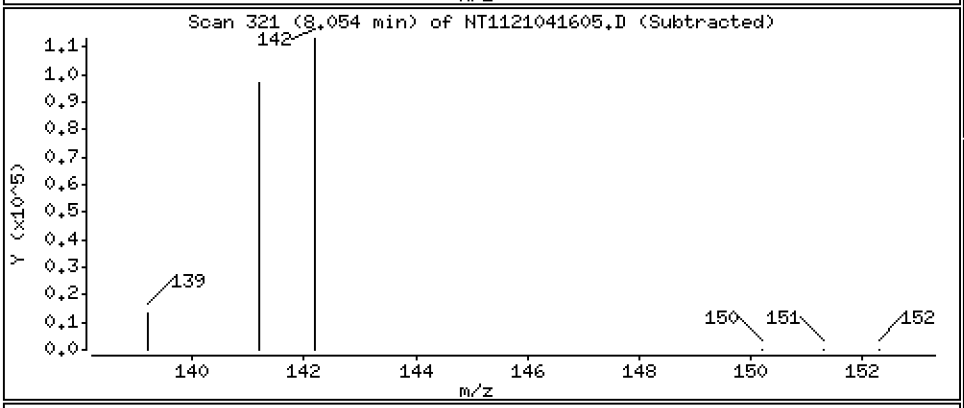
Column diameter: 0.25

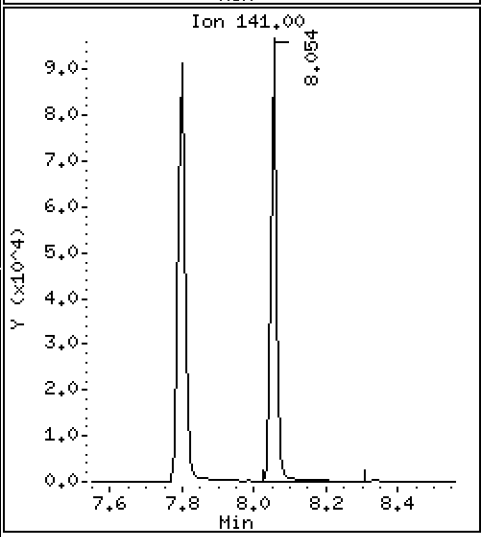
6 1-Methylnaphthalene

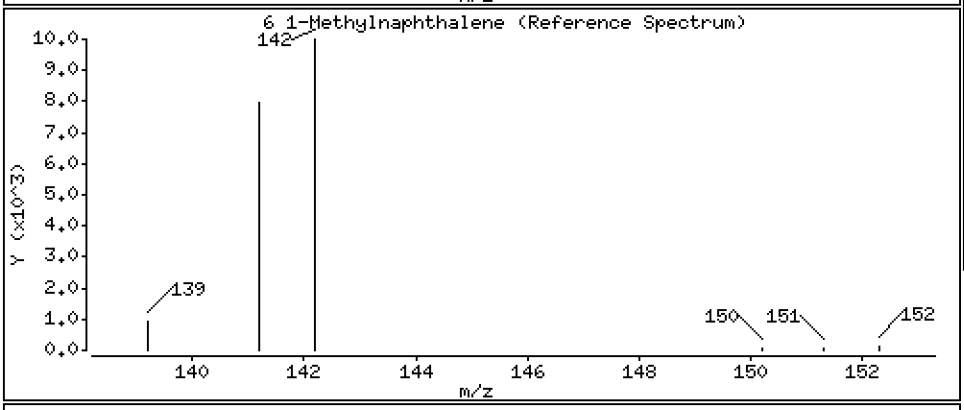
Concentration: 181 ng/mL

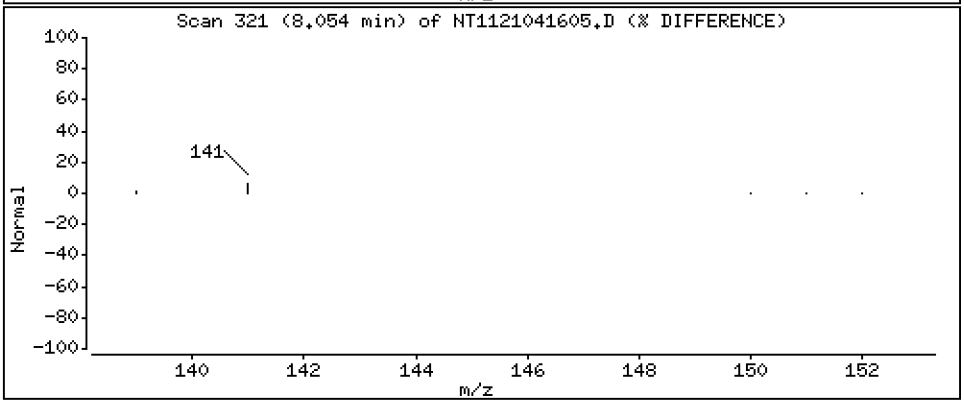












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

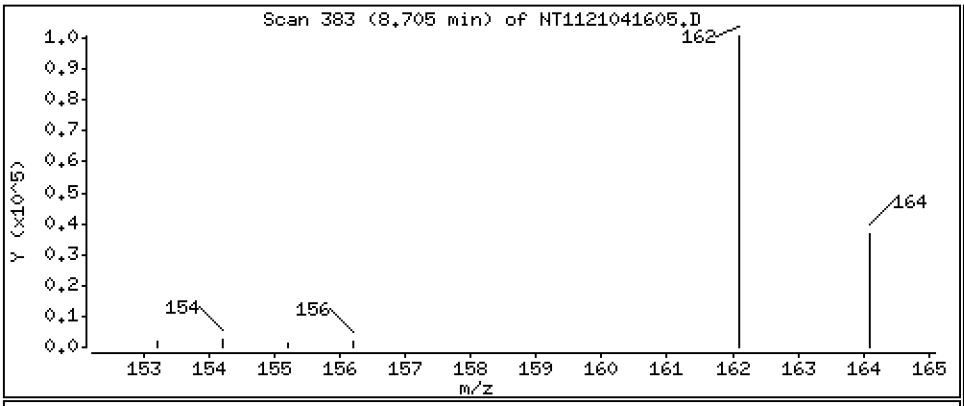
Operator: VTS

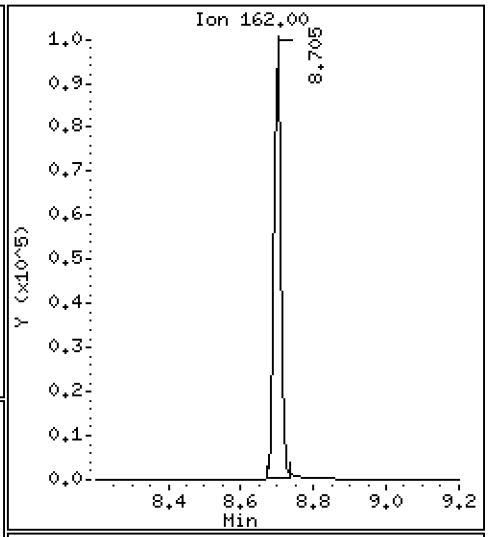
Column phase: Rxi-17Sil MS

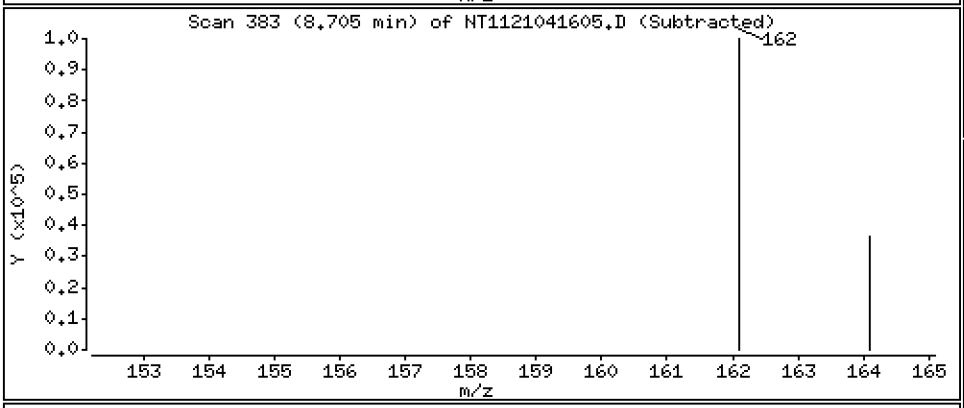
Column diameter: 0.25

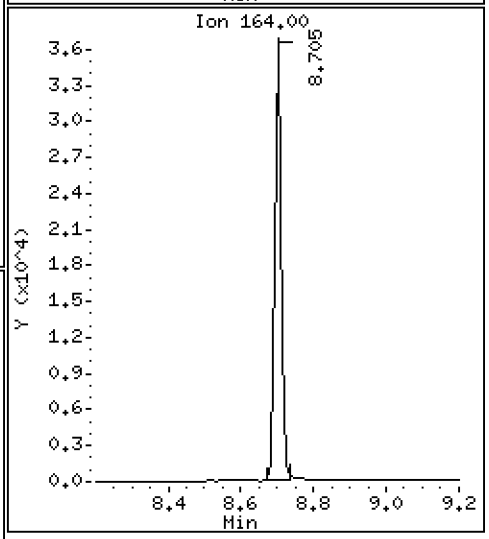
7 2-Chloronaphthalene

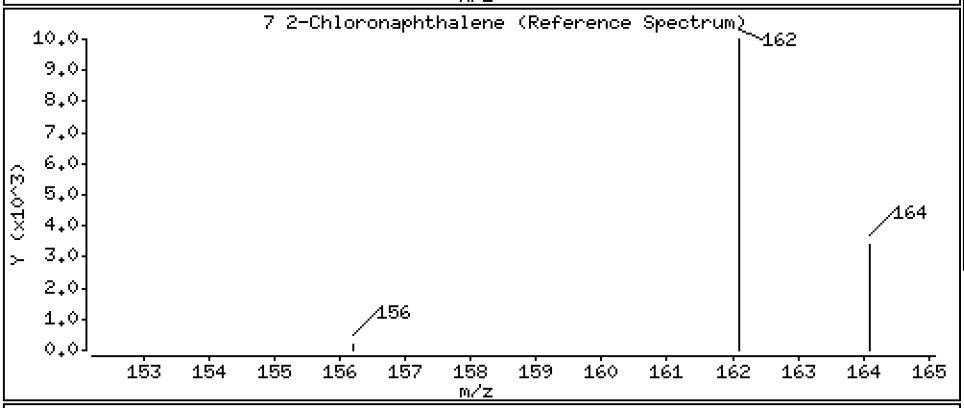
Concentration: 148 ng/mL

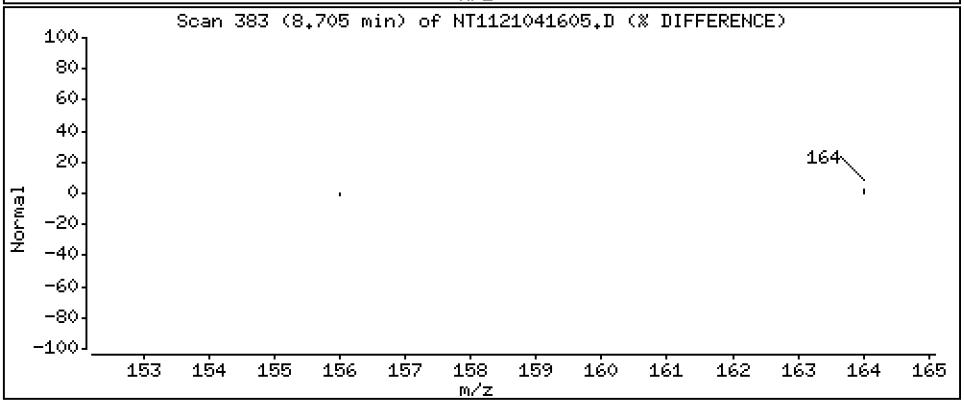












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

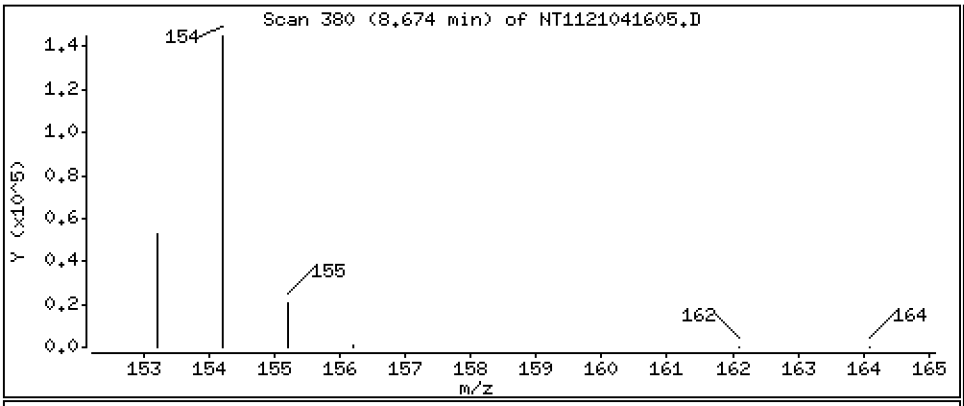
Operator: VTS

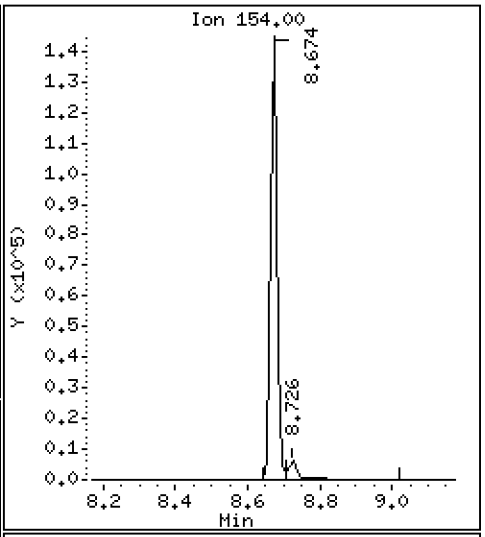
Column phase: Rxi-17Sil MS

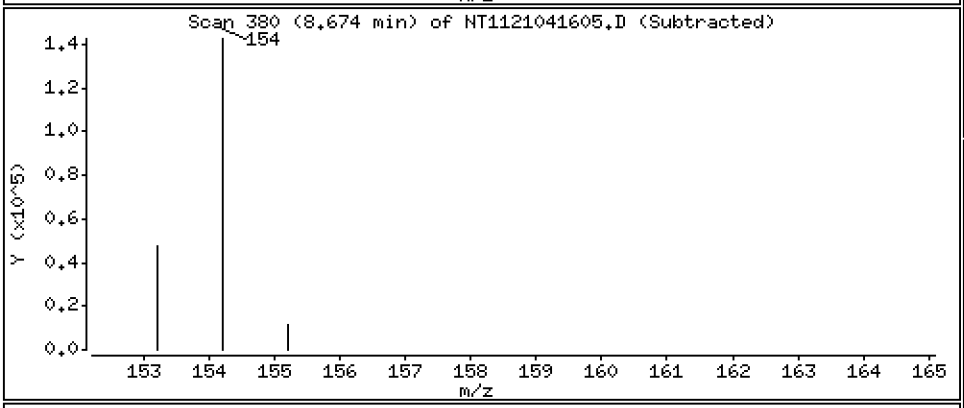
Column diameter: 0.25

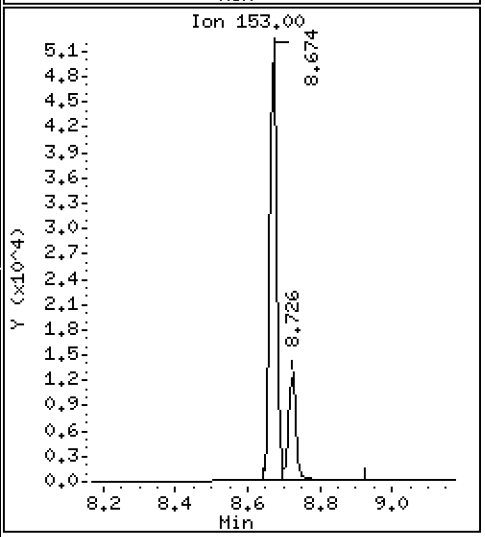
8 Biphenyl

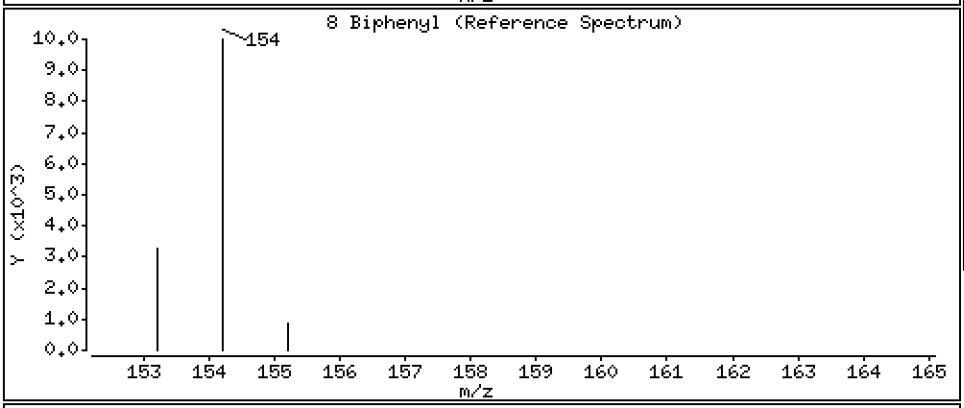
Concentration: 151 ng/mL

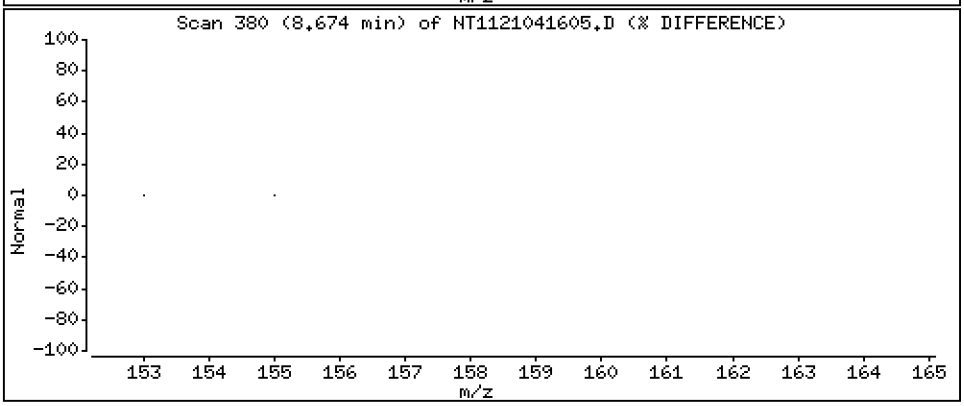












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

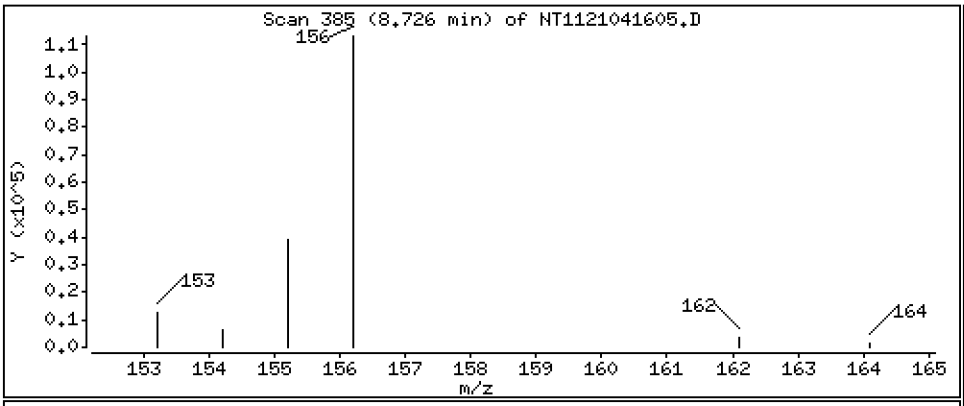
Operator: VTS

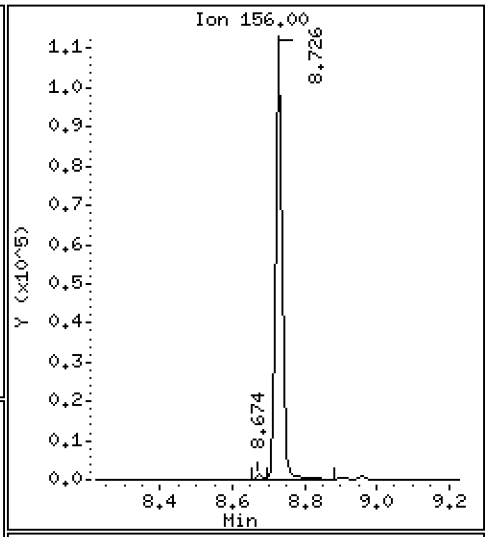
Column phase: Rxi-17Sil MS

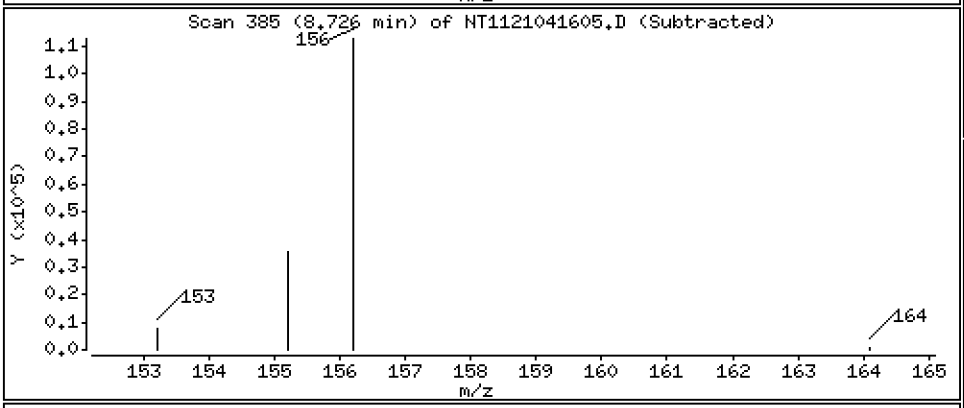
Column diameter: 0.25

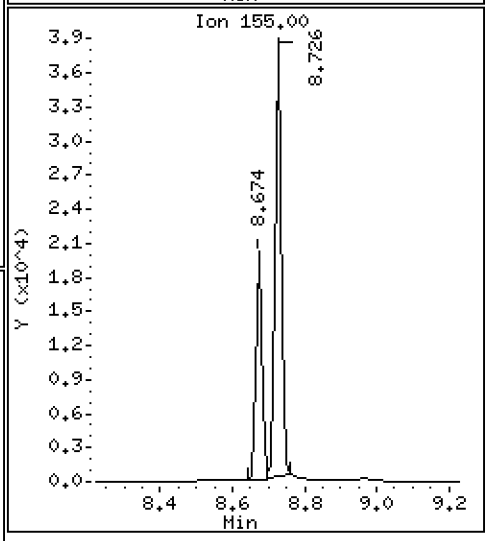
9 2,6-Dimethylnaphthalene

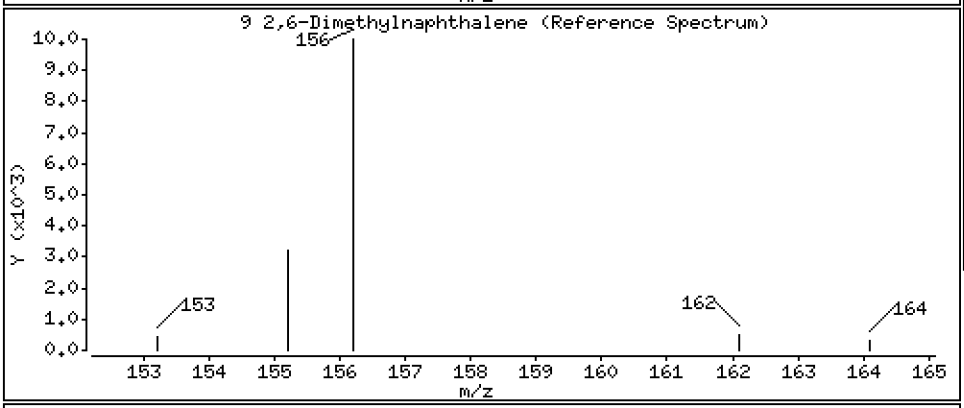
Concentration: 158 ng/mL

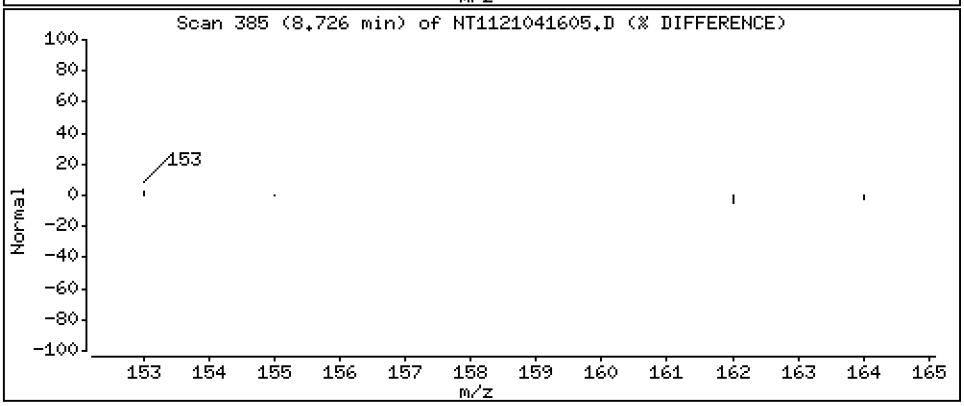












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

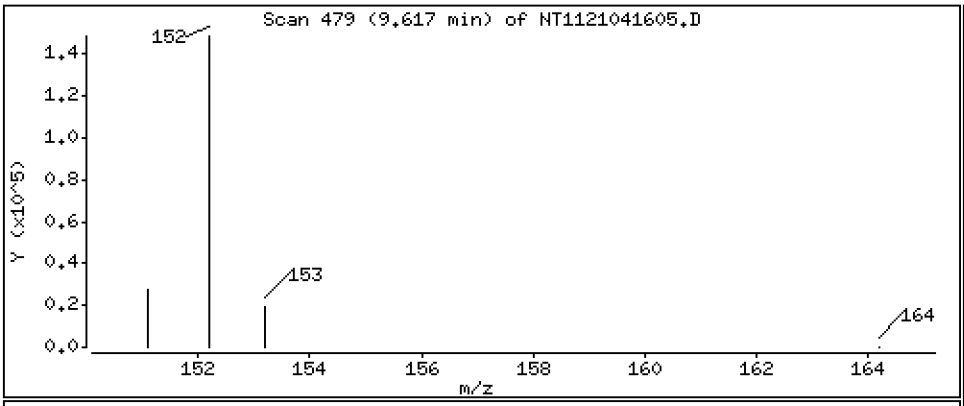
Operator: VTS

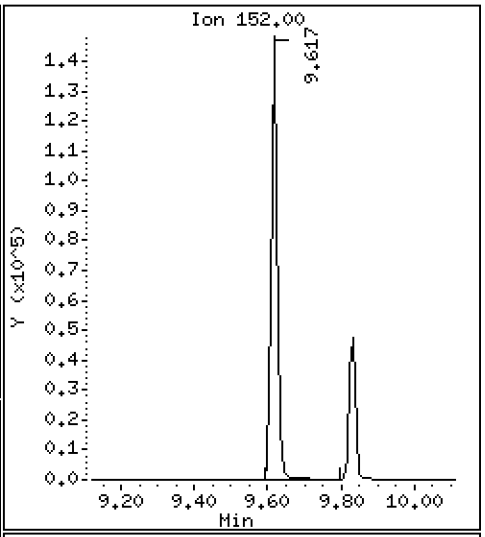
Column phase: Rxi-17Sil MS

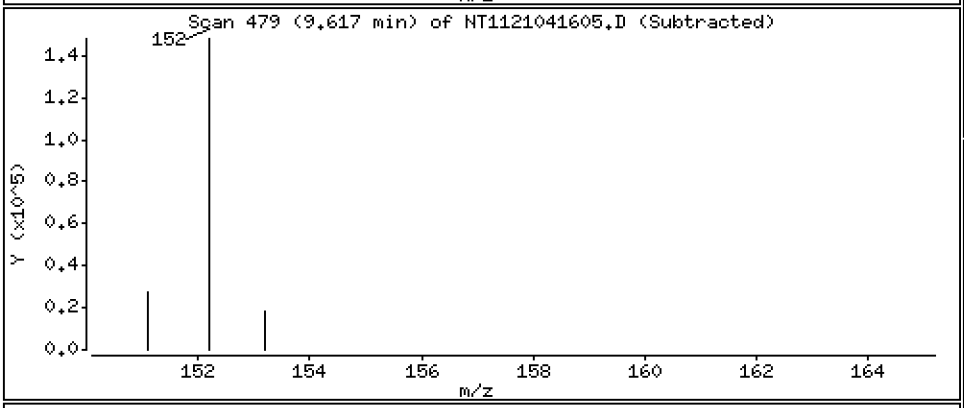
Column diameter: 0.25

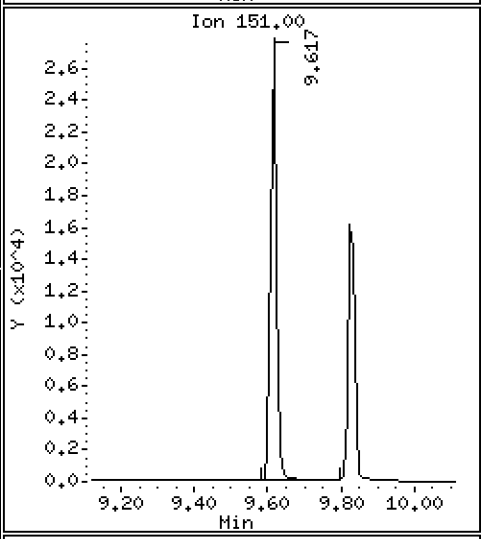
10 Acenaphthylene

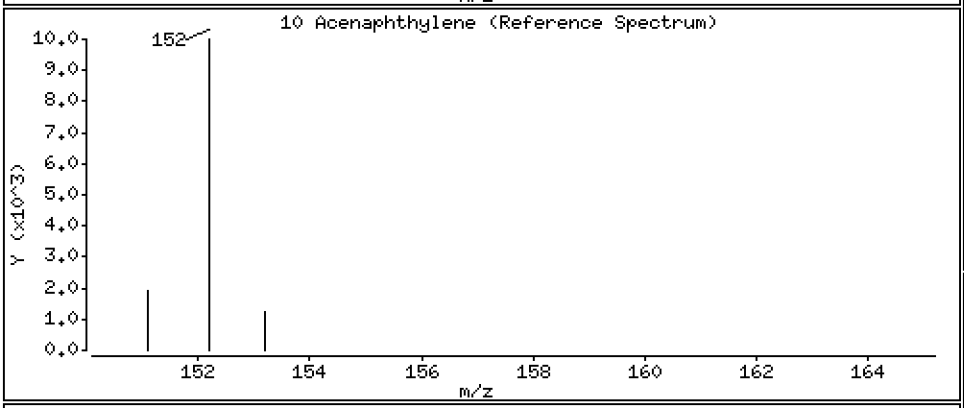
Concentration: 151 ng/mL

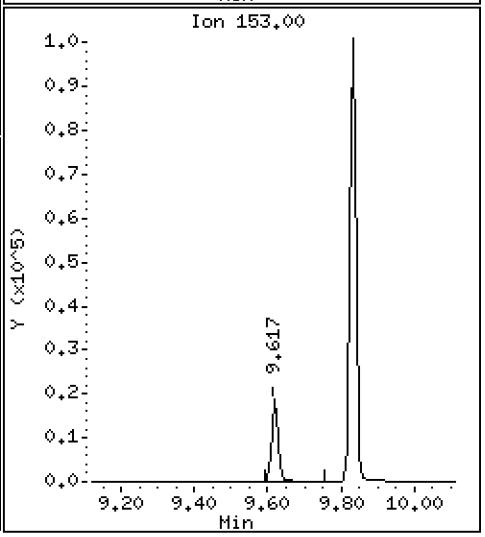


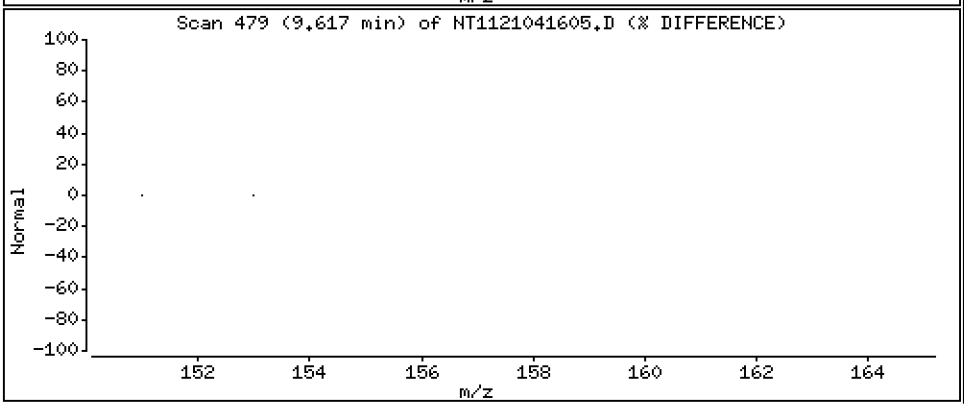












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

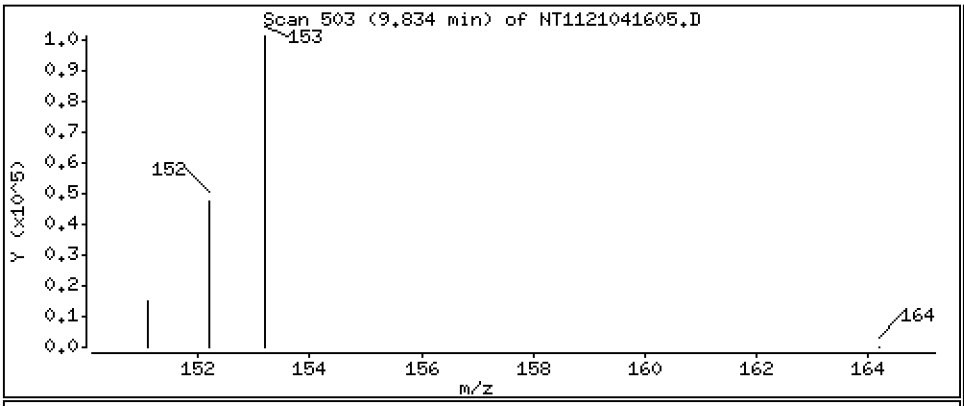
Operator: VTS

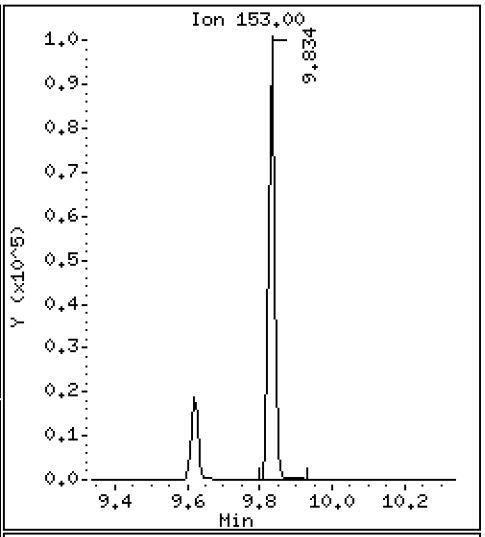
Column phase: Rxi-17Sil MS

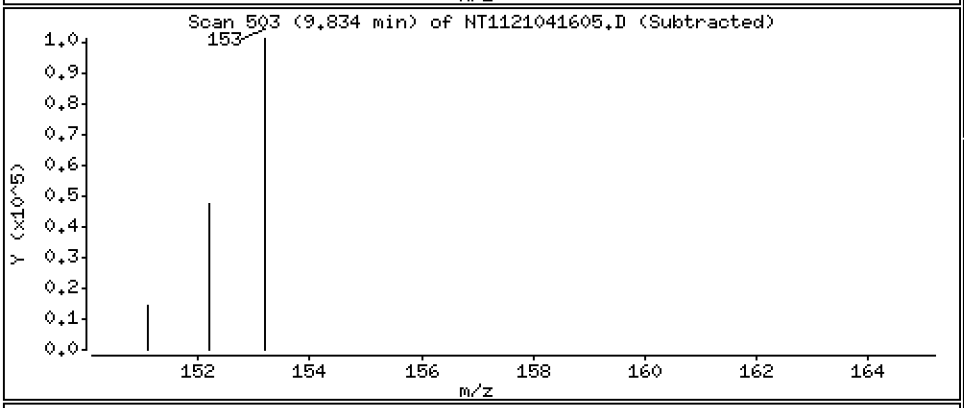
Column diameter: 0.25

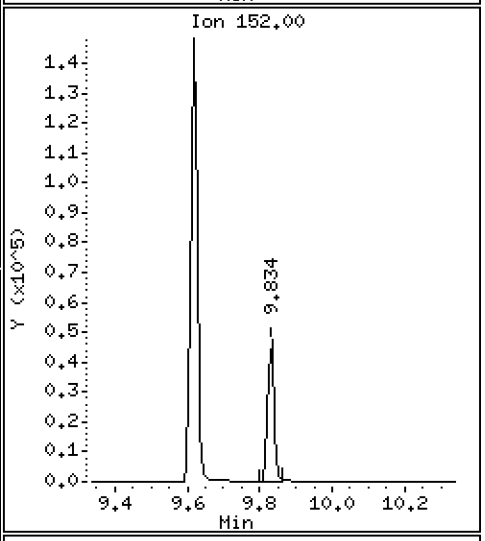
12 Acenaphthene

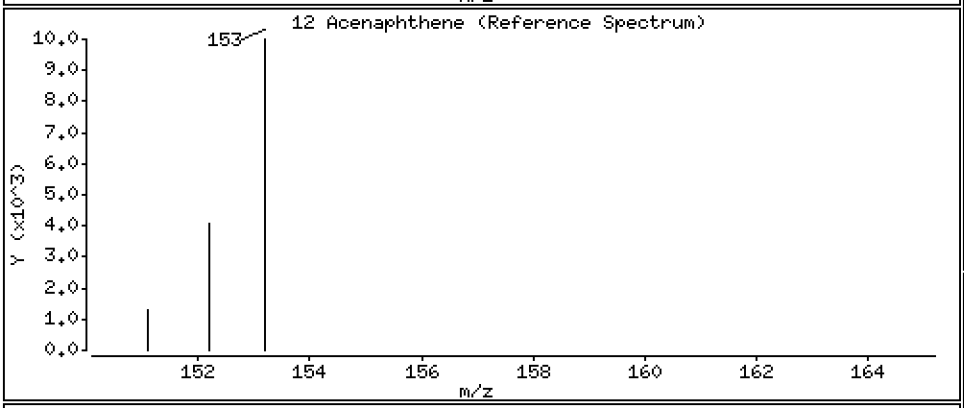
Concentration: 154 ng/mL

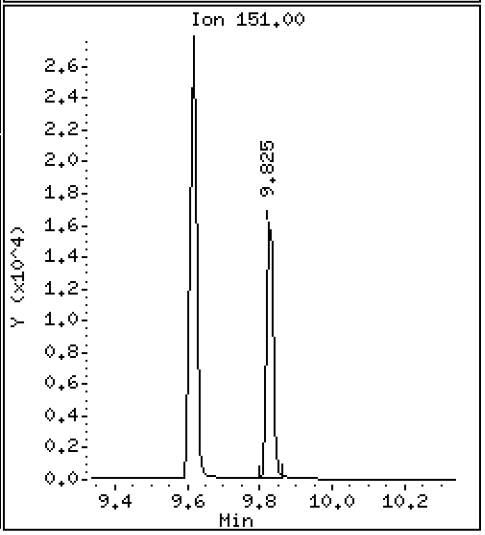


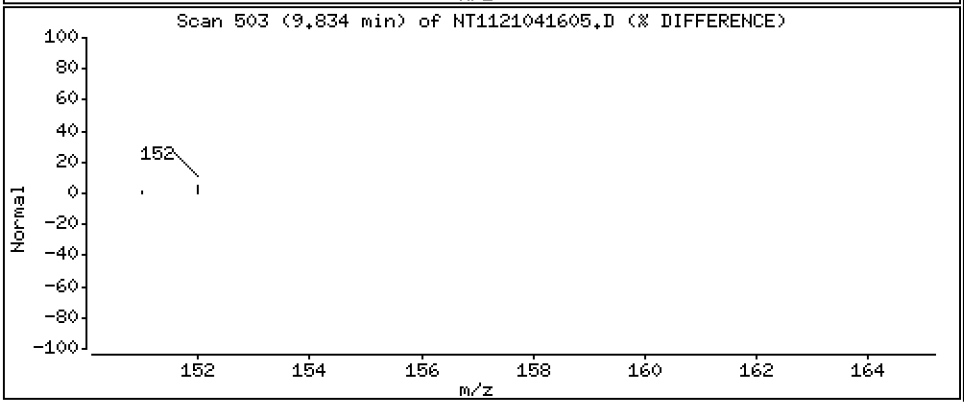












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

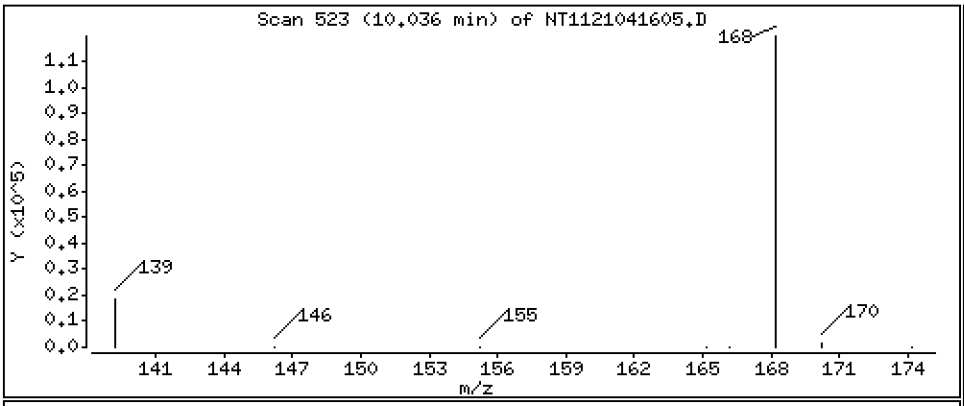
Operator: VTS

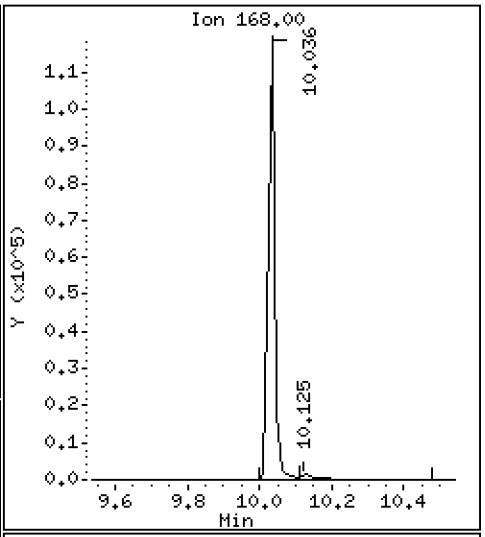
Column phase: Rxi-17Sil MS

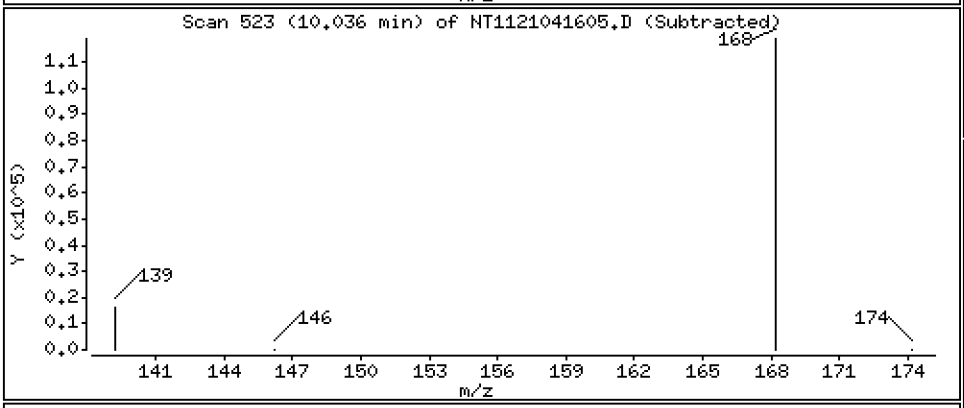
Column diameter: 0.25

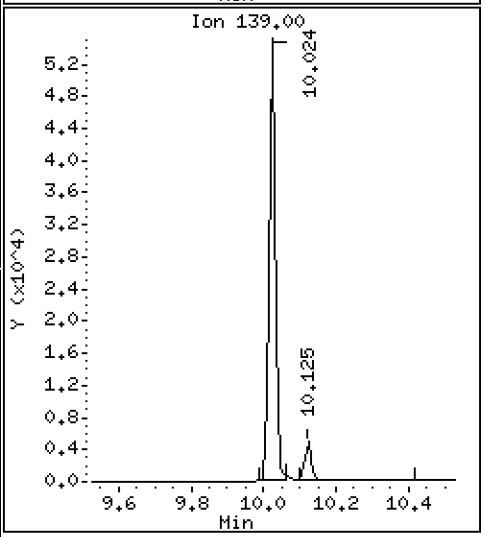
13 Dibenzofuran

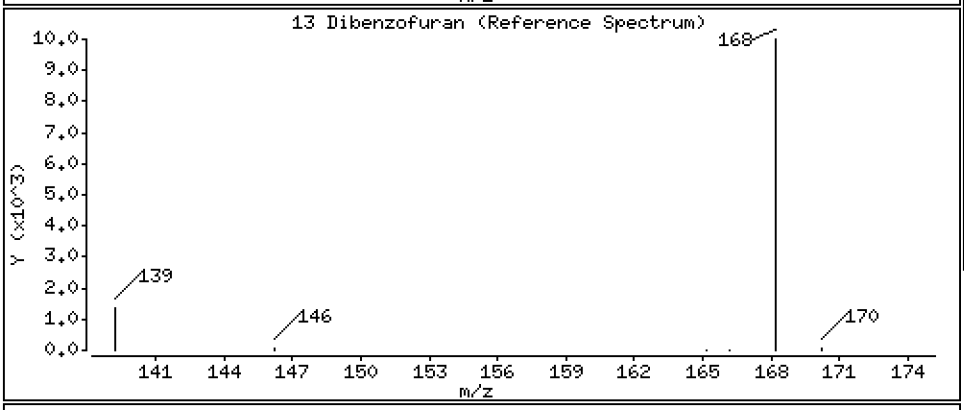
Concentration: 156 ng/mL

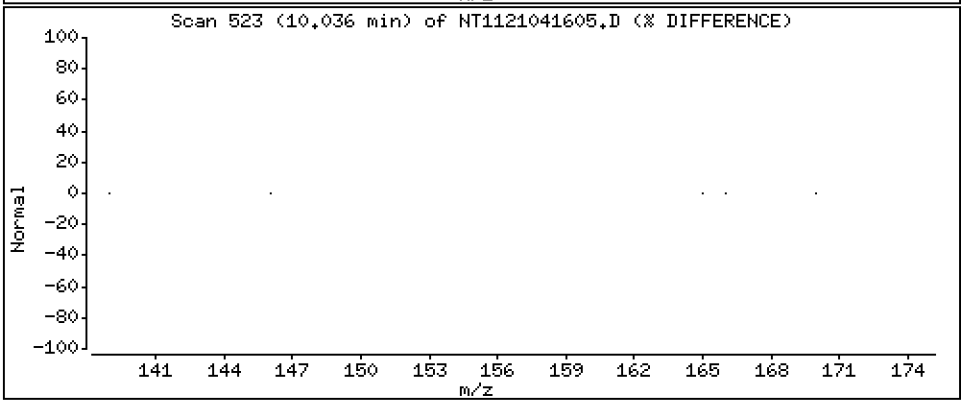












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

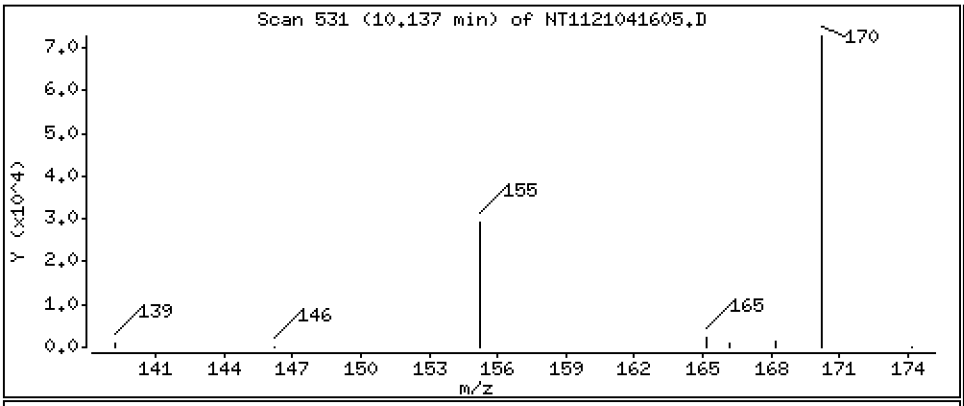
Operator: VTS

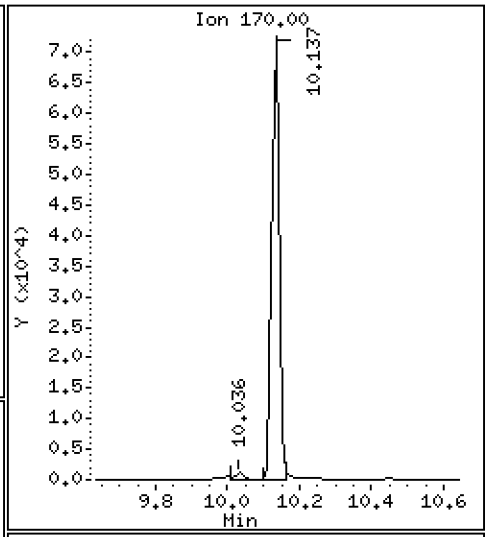
Column phase: Rxi-17Sil MS

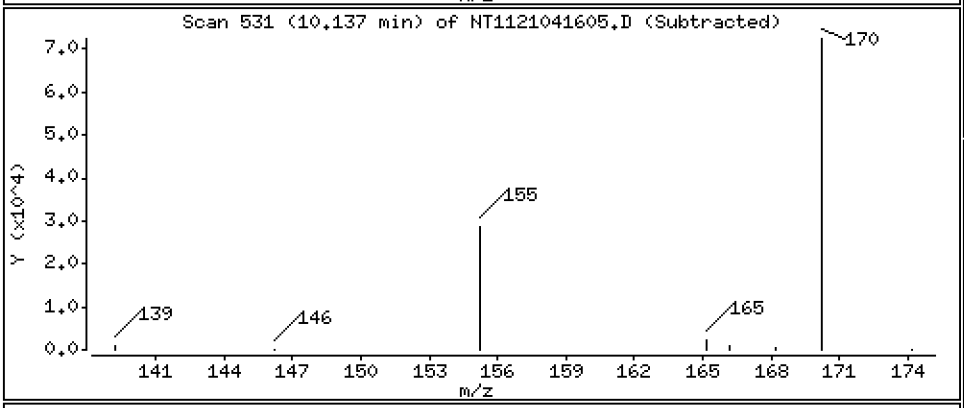
Column diameter: 0.25

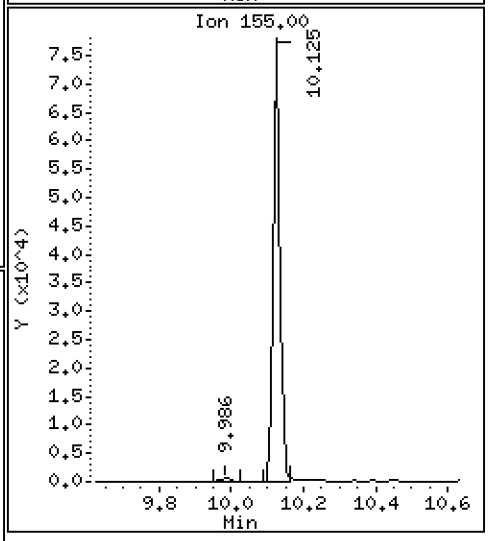
14 2,3,5-Trimethylnaphthalene

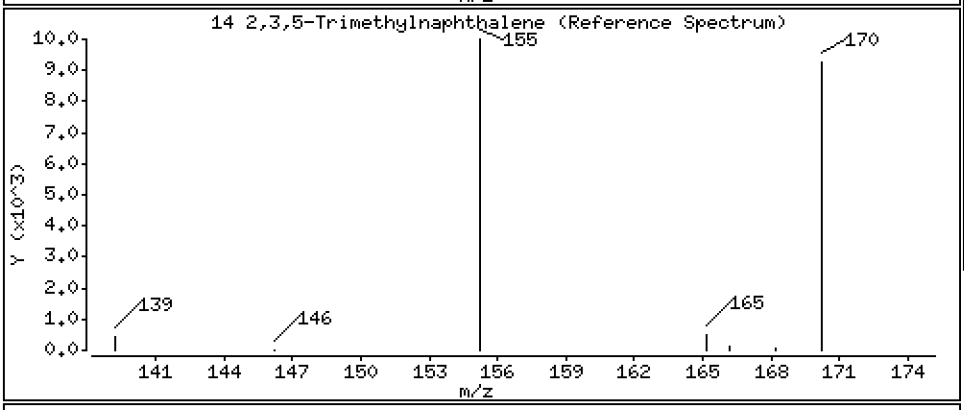
Concentration: 160 ng/mL

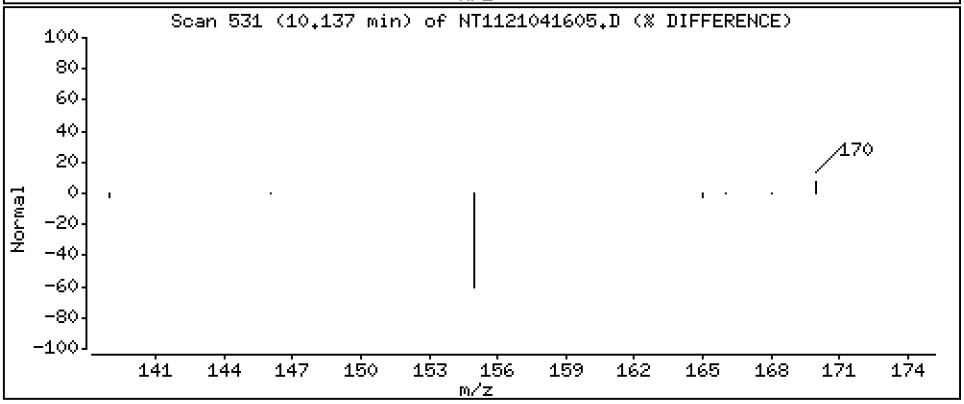












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

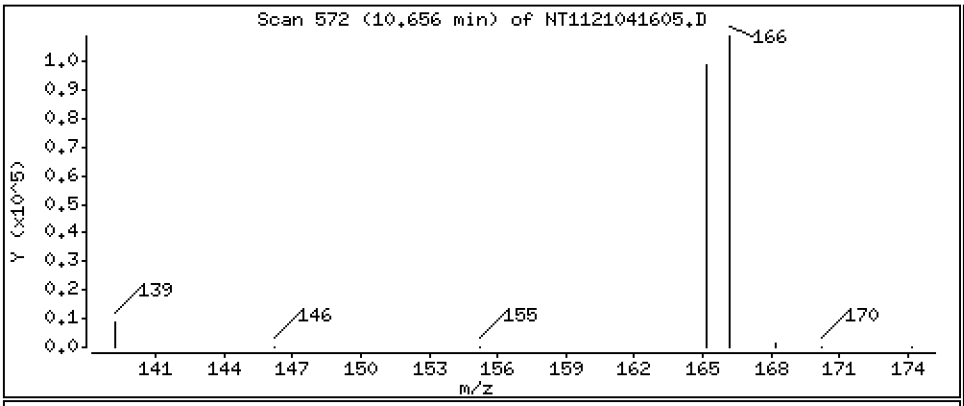
Operator: VTS

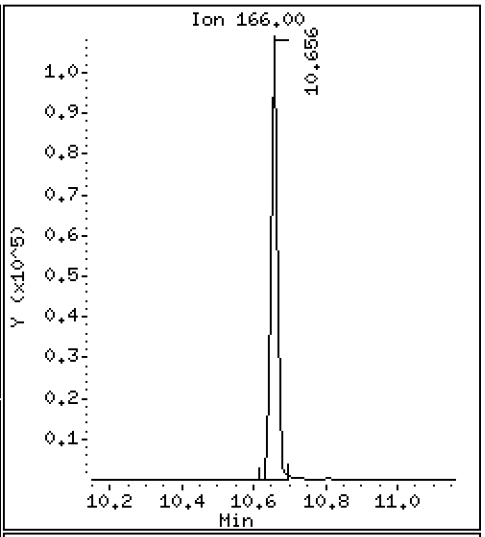
Column phase: Rxi-17Sil MS

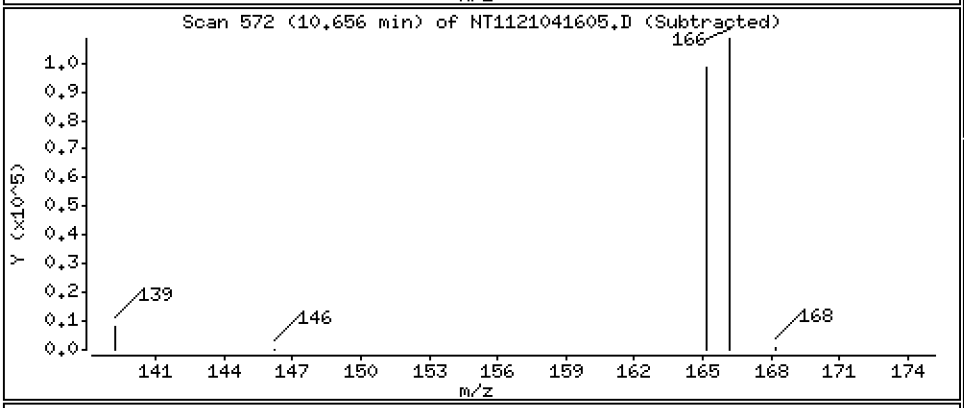
Column diameter: 0.25

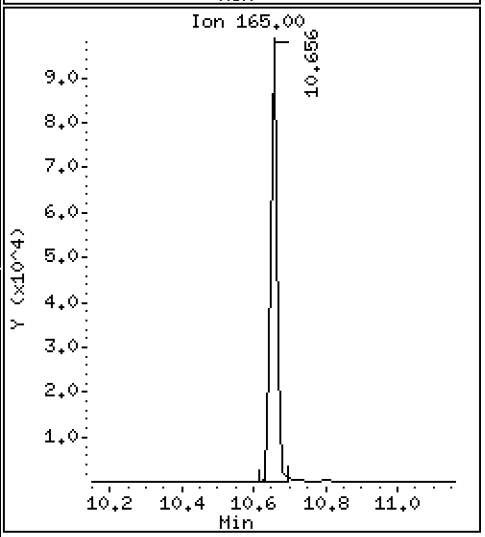
16 Fluorene

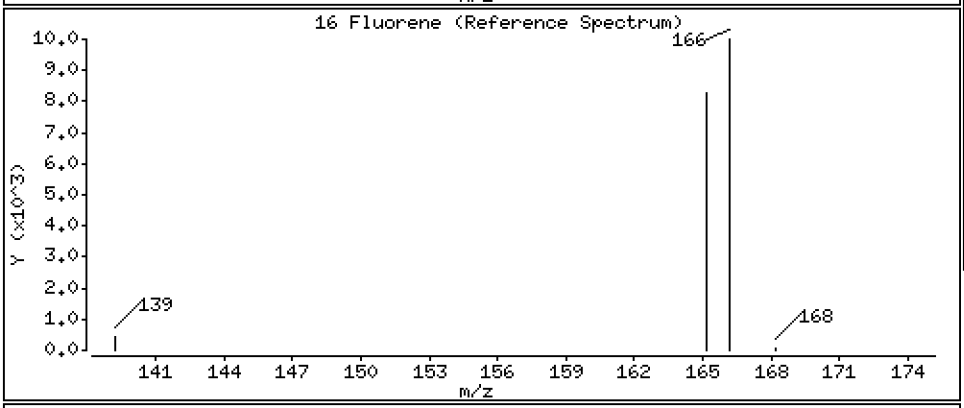
Concentration: 166 ng/mL

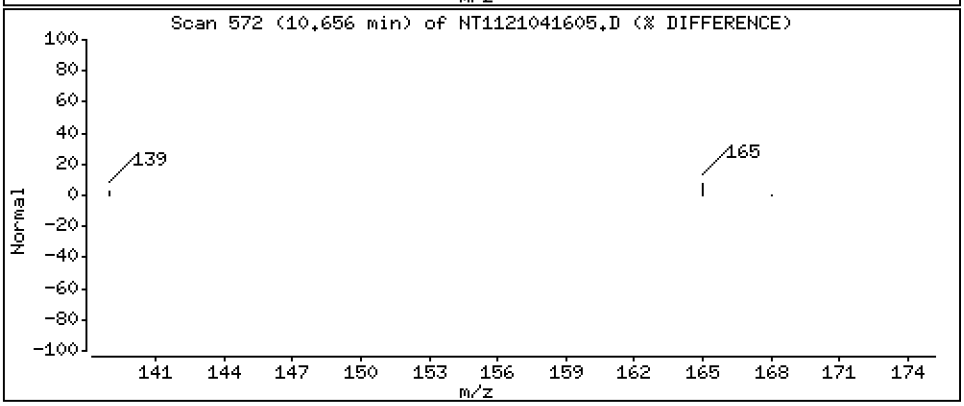












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

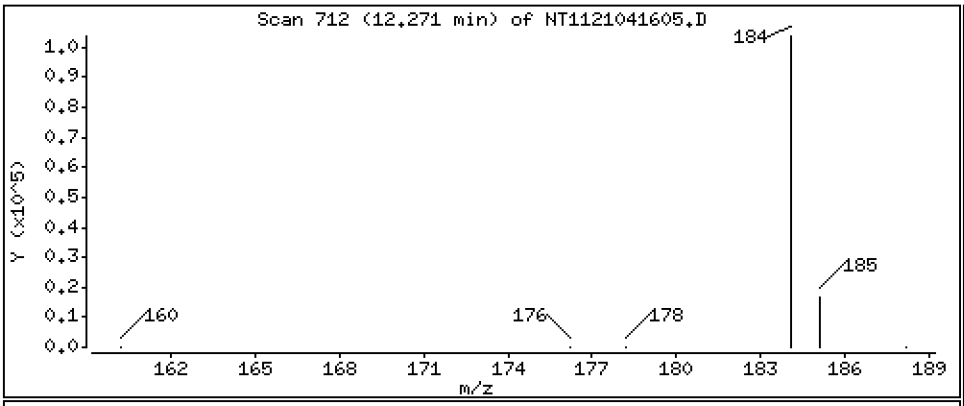
Operator: VTS

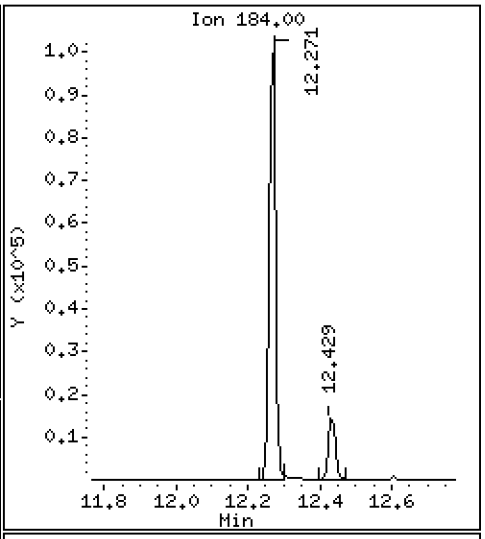
Column phase: Rxi-17Sil MS

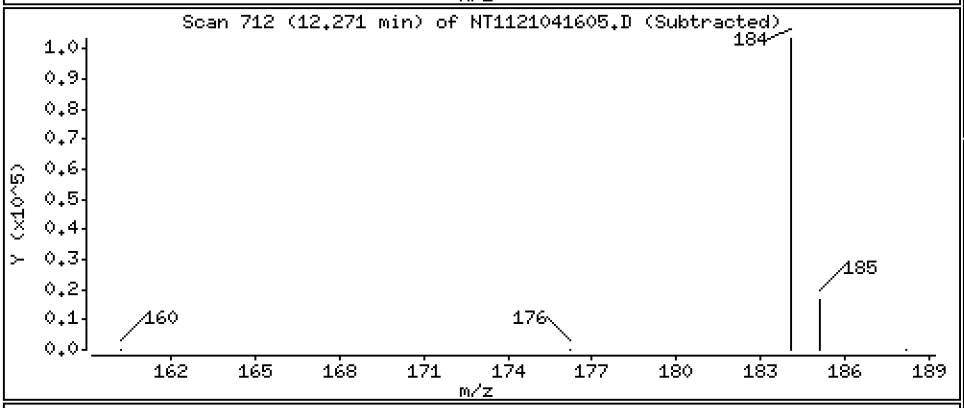
Column diameter: 0.25

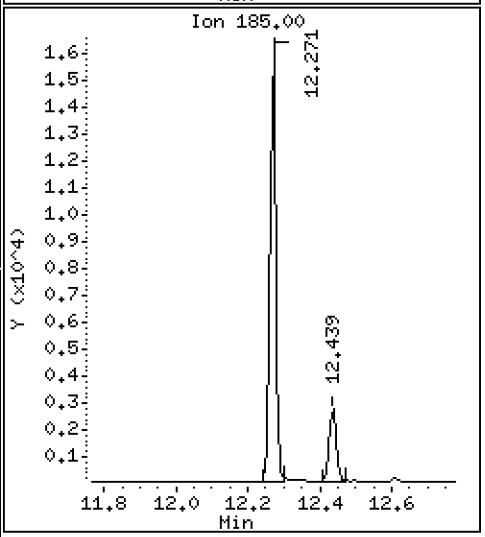
17 Dibenzothiophene

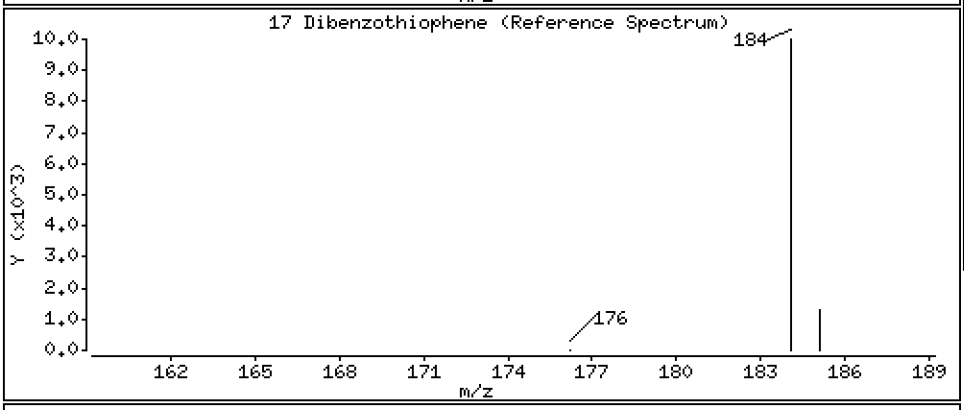
Concentration: 171 ng/mL

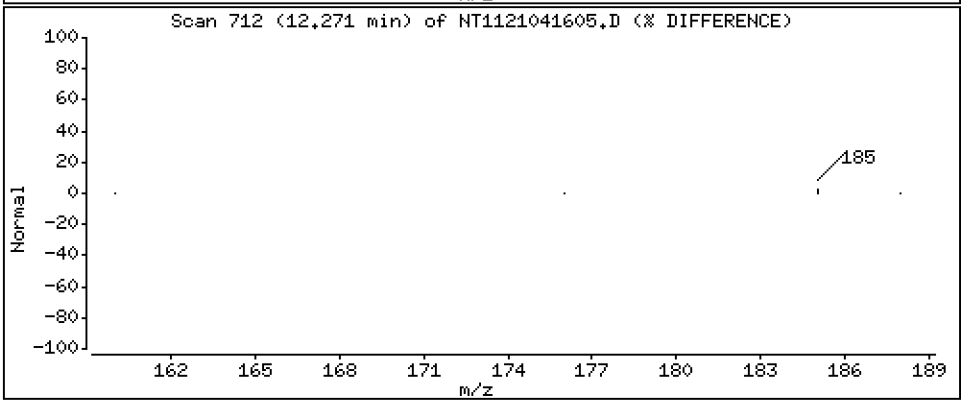












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

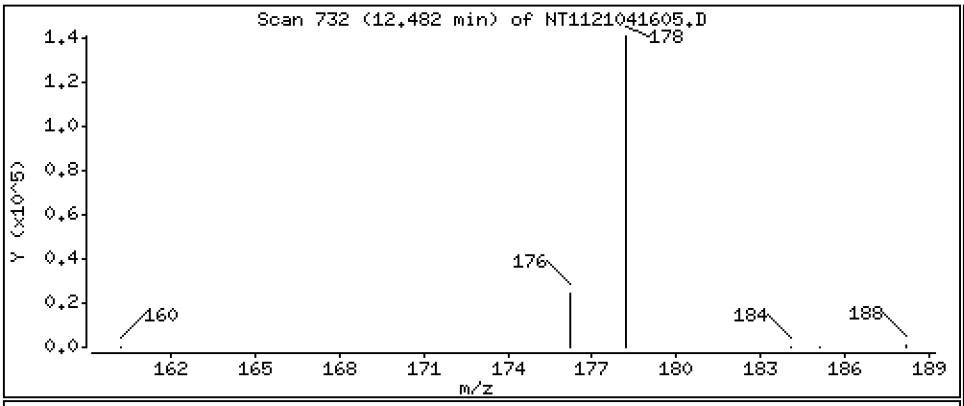
Operator: VTS

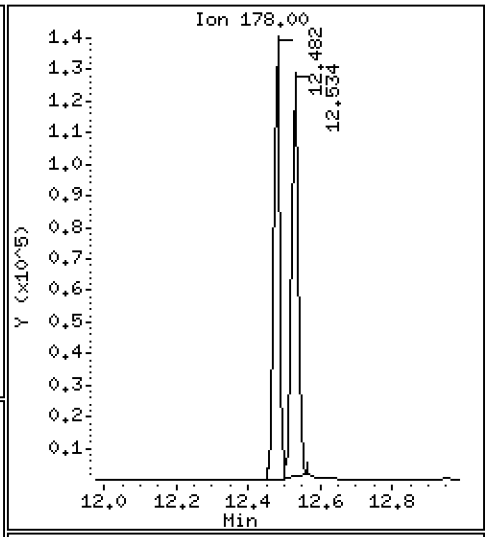
Column phase: Rxi-17Sil MS

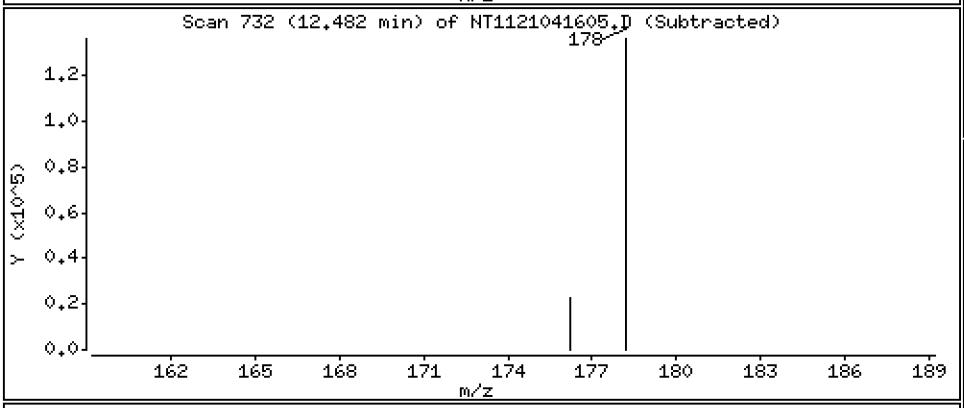
Column diameter: 0.25

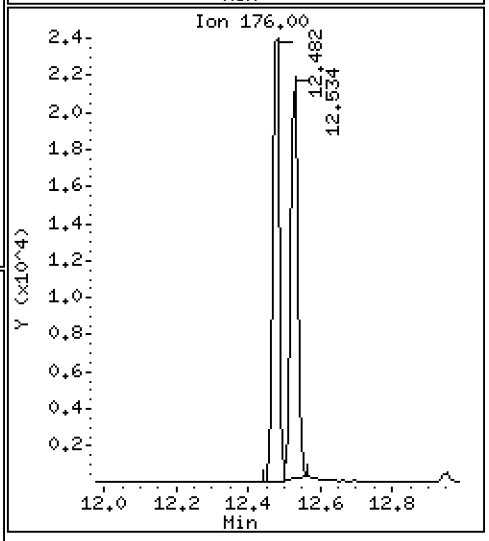
19 Phenanthrene

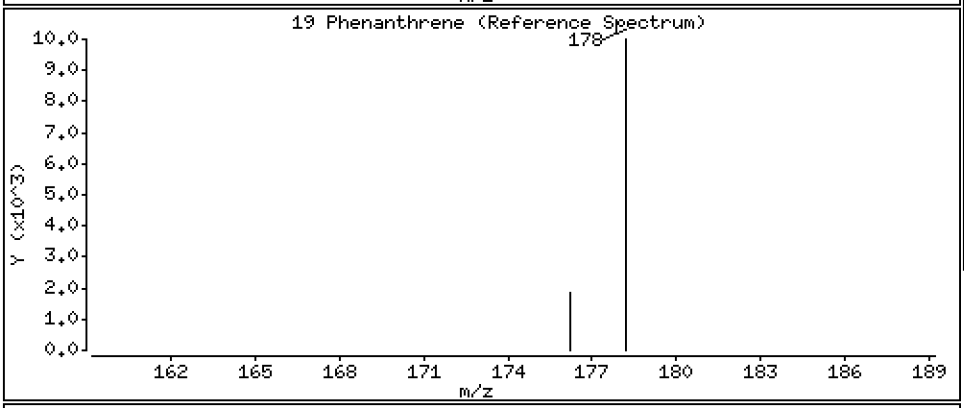
Concentration: 180 ng/mL

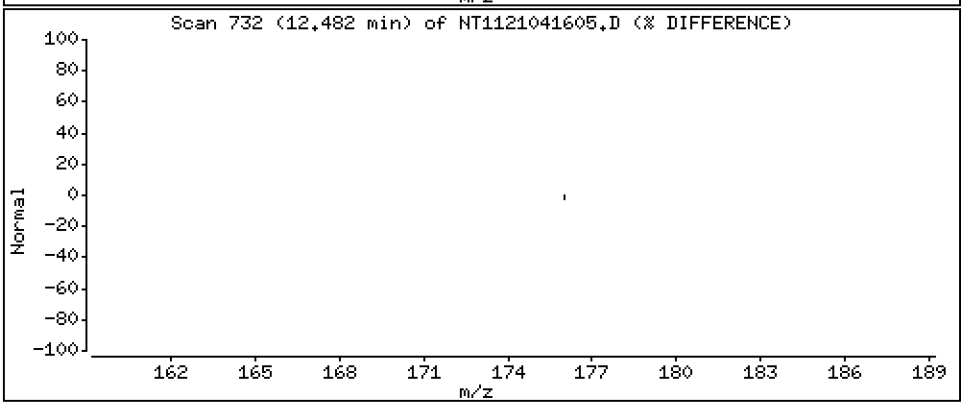












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

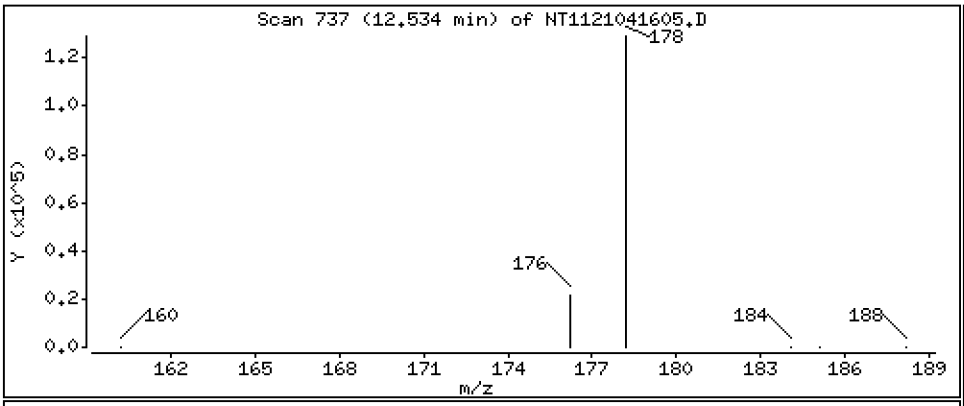
Operator: VTS

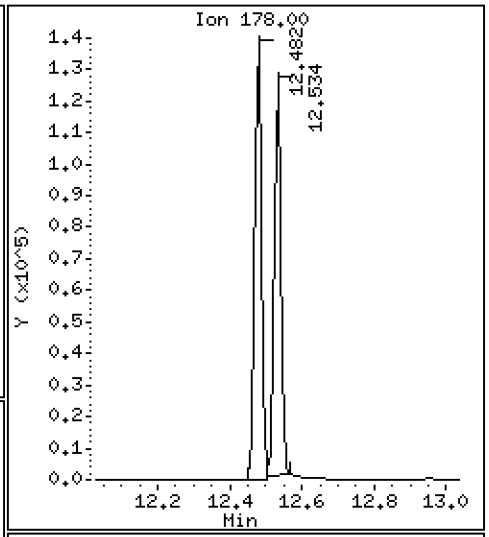
Column phase: Rxi-17Sil MS

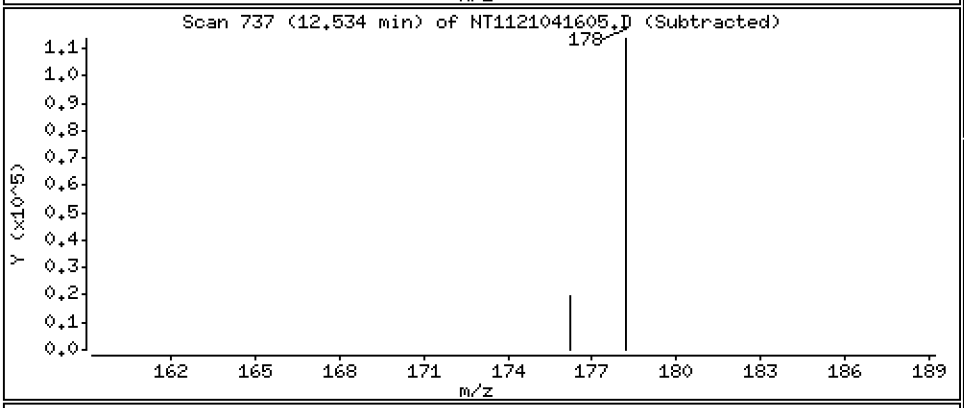
Column diameter: 0.25

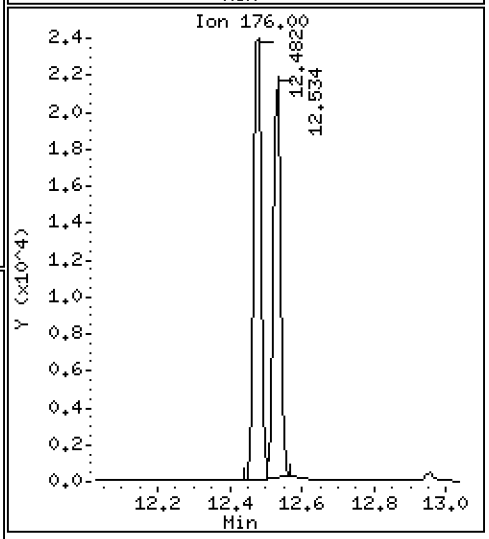
21 Anthracene

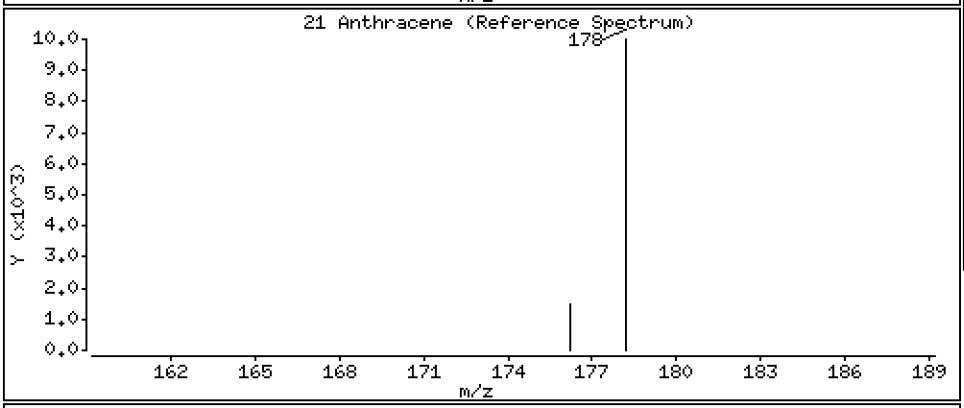
Concentration: 160 ng/mL

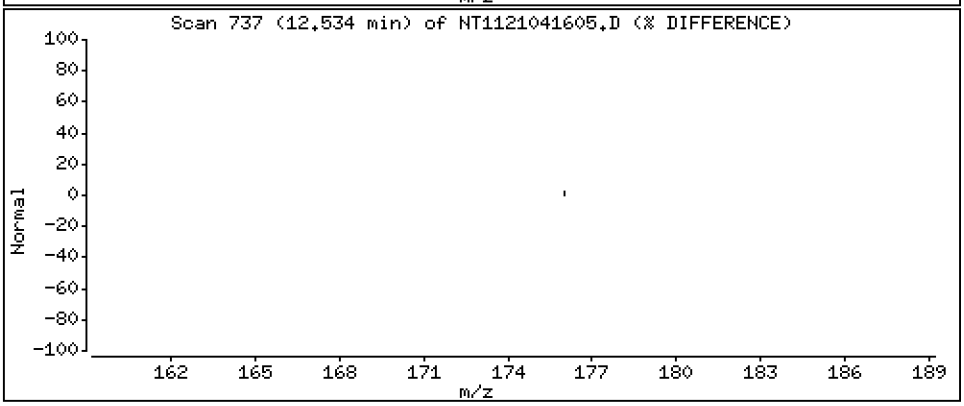












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

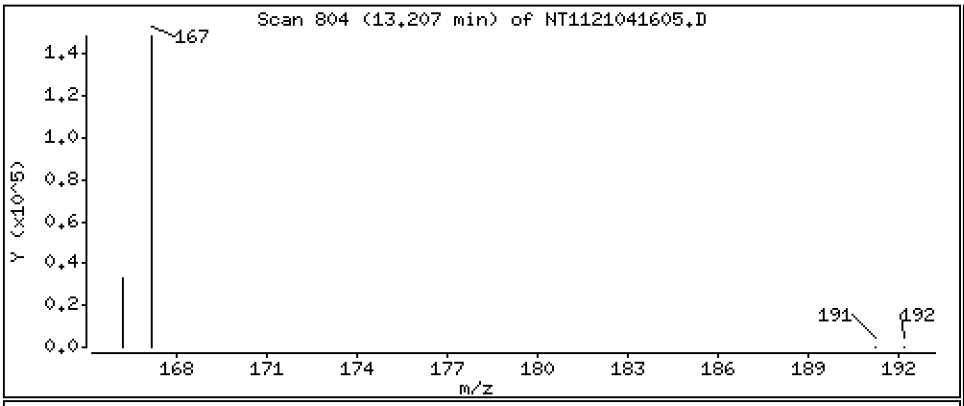
Operator: VTS

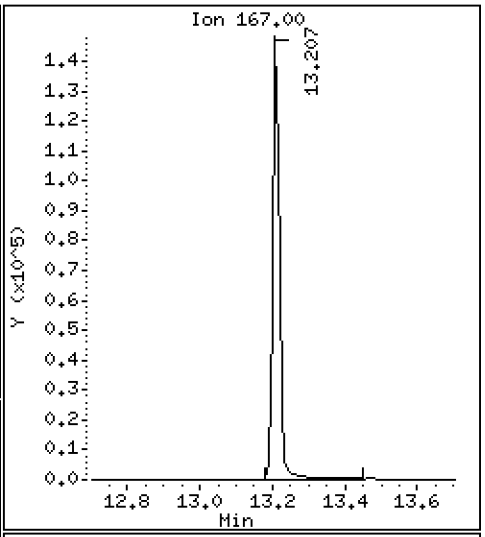
Column phase: Rxi-17Sil MS

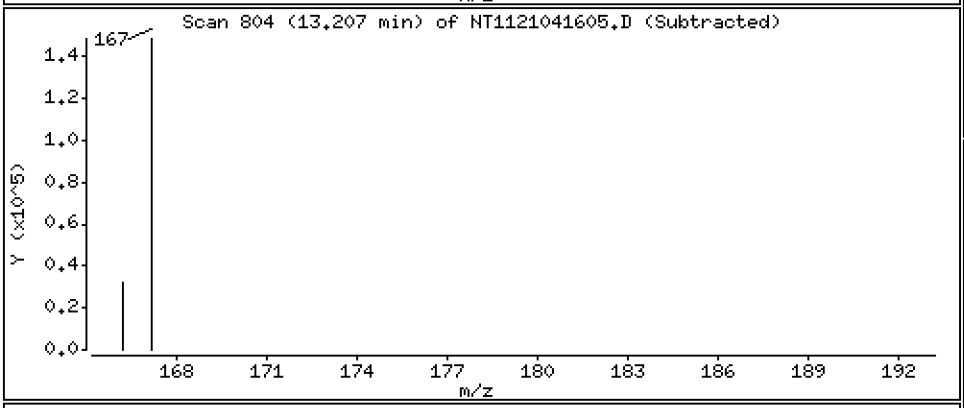
Column diameter: 0.25

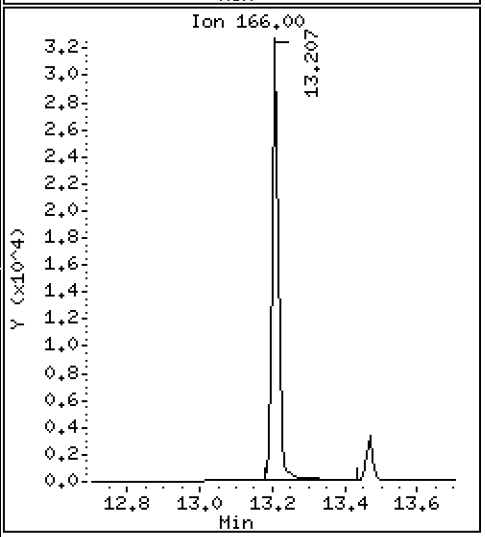
22 Carbazole

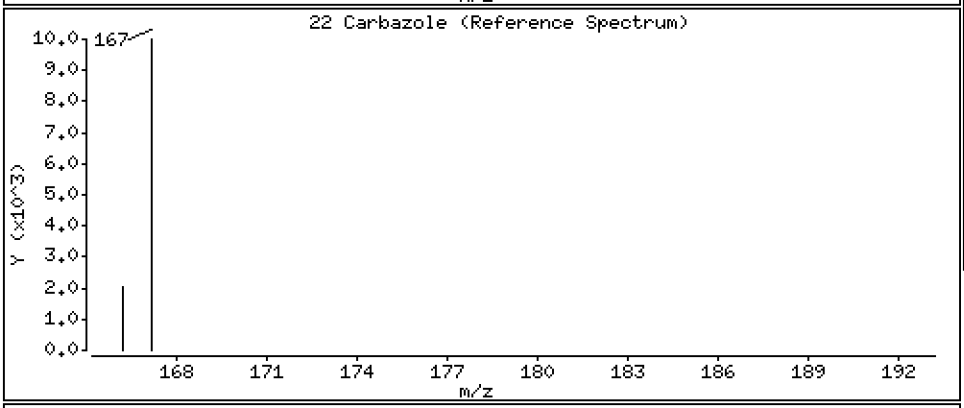
Concentration: 184 ng/mL

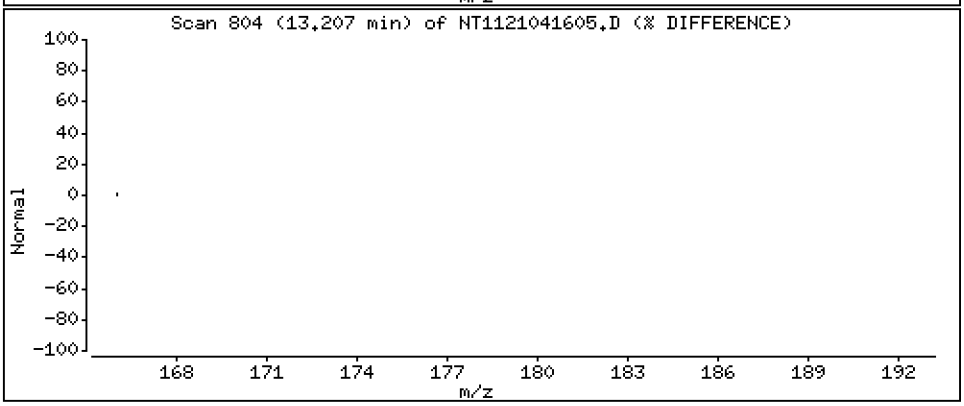












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

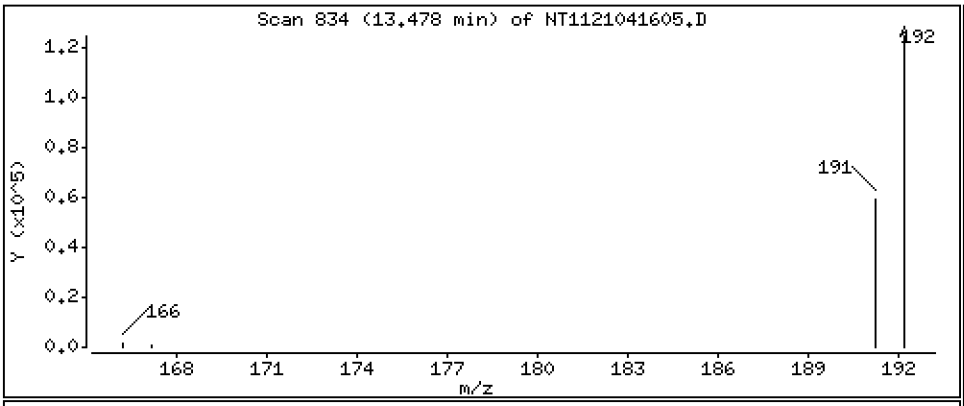
Operator: VTS

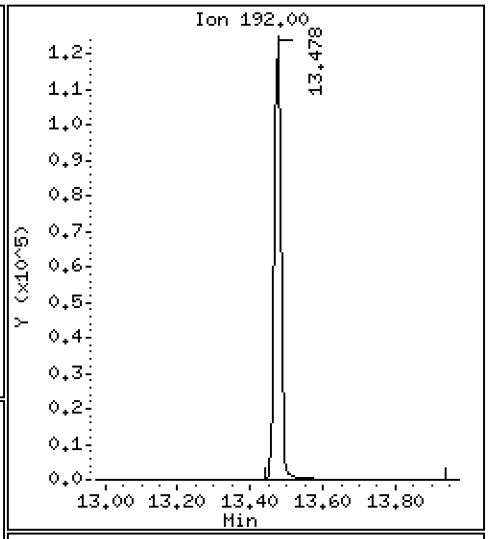
Column phase: Rxi-17Sil MS

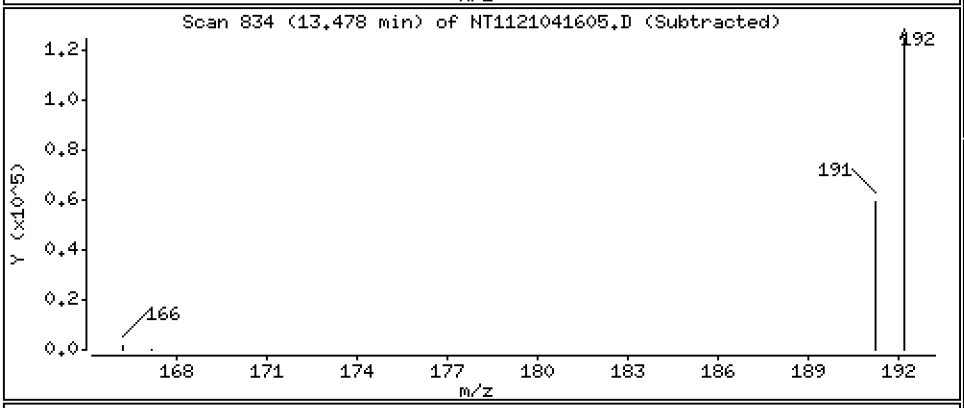
Column diameter: 0.25

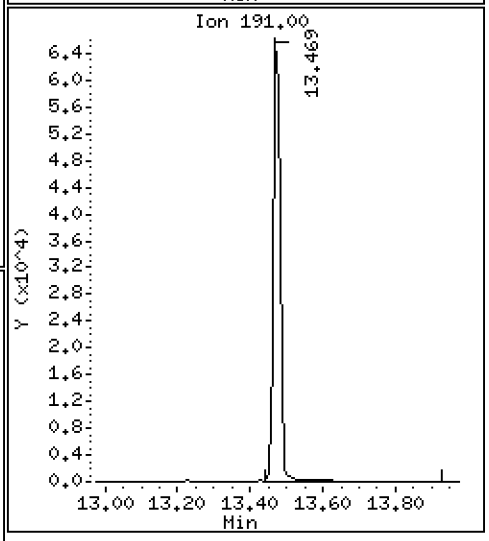
23 1-Methylphenanthrene

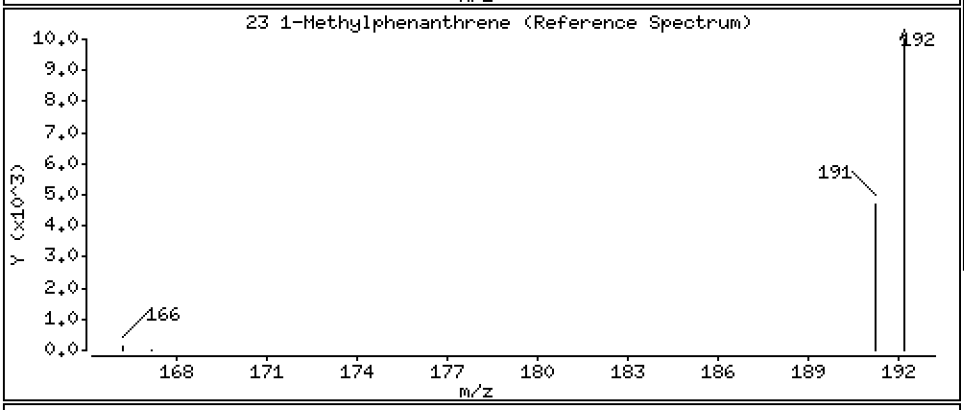
Concentration: 185 ng/mL

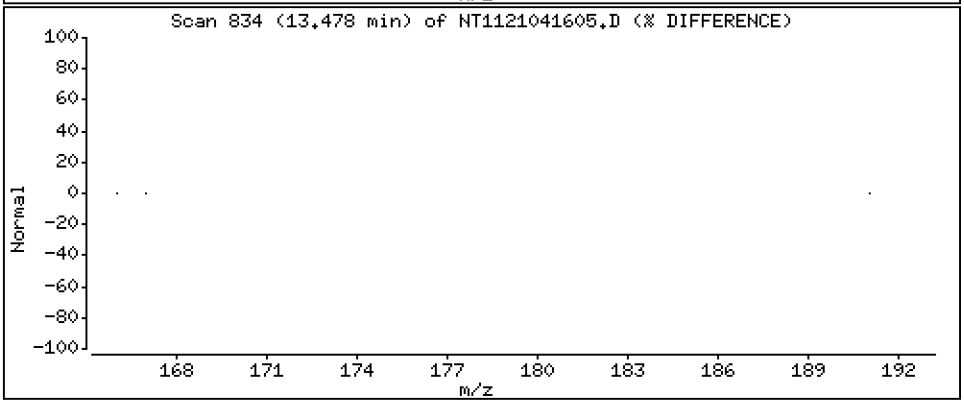












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

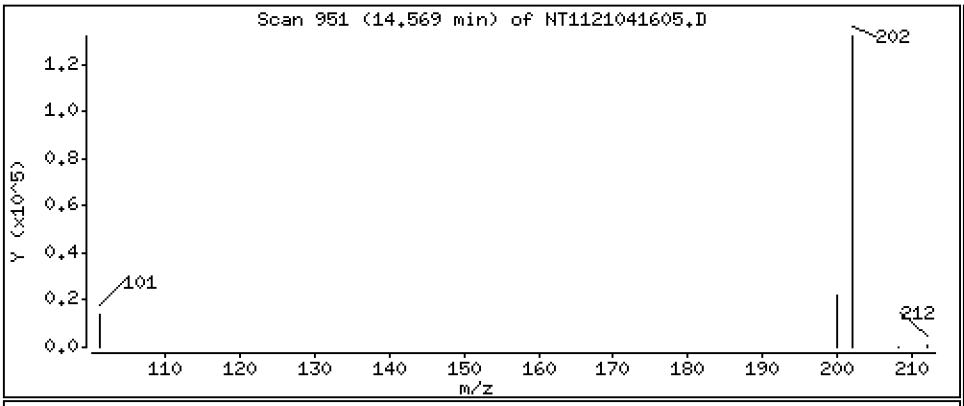
Operator: VTS

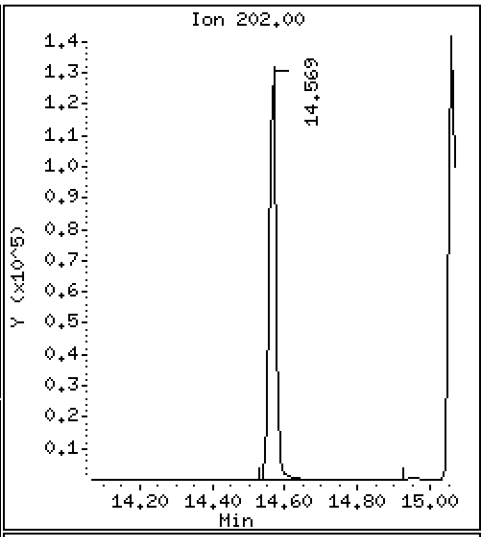
Column phase: Rxi-17Sil MS

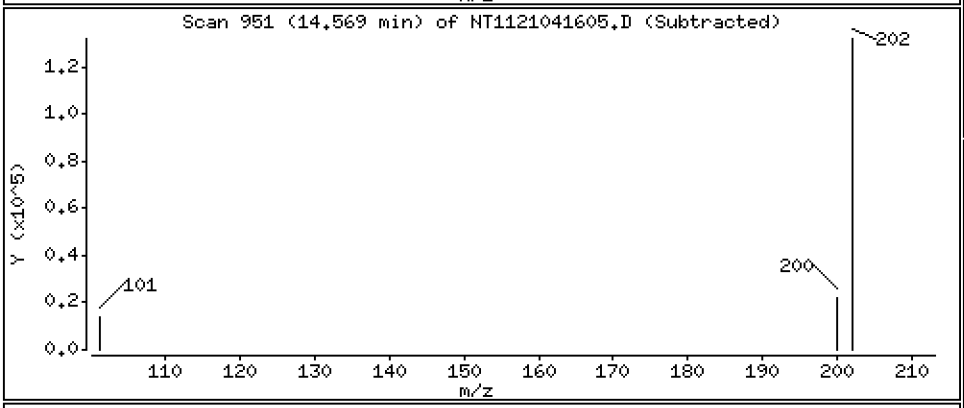
Column diameter: 0.25

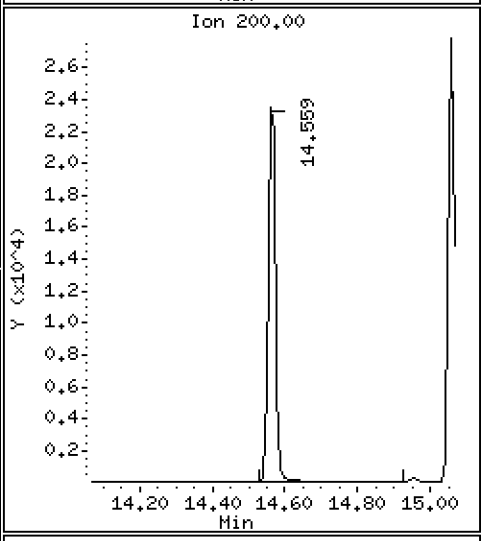
25 Fluoranthene

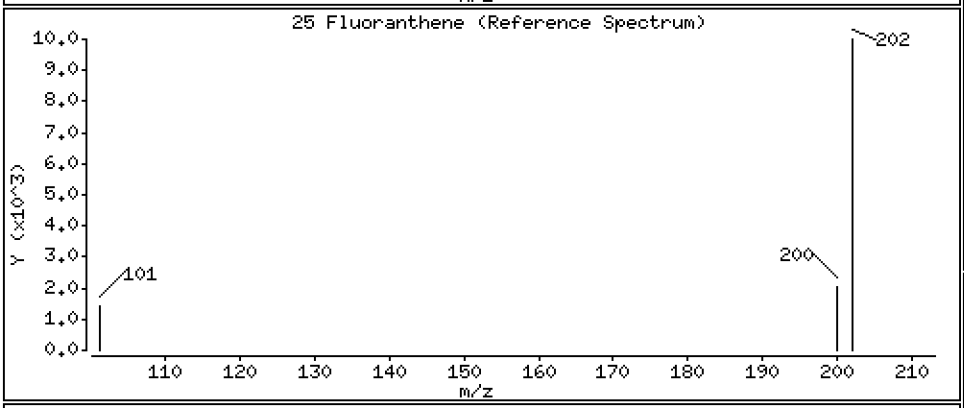
Concentration: 182 ng/mL

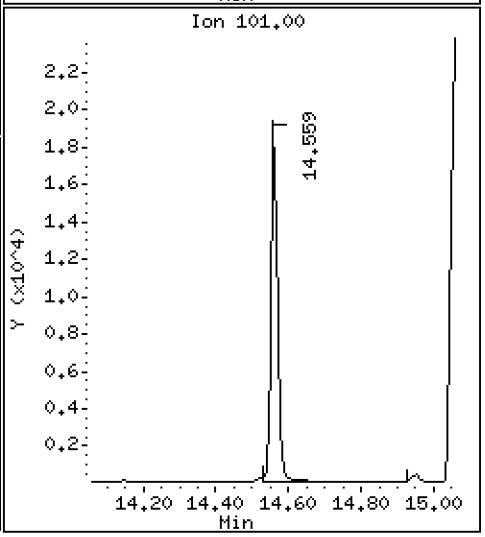


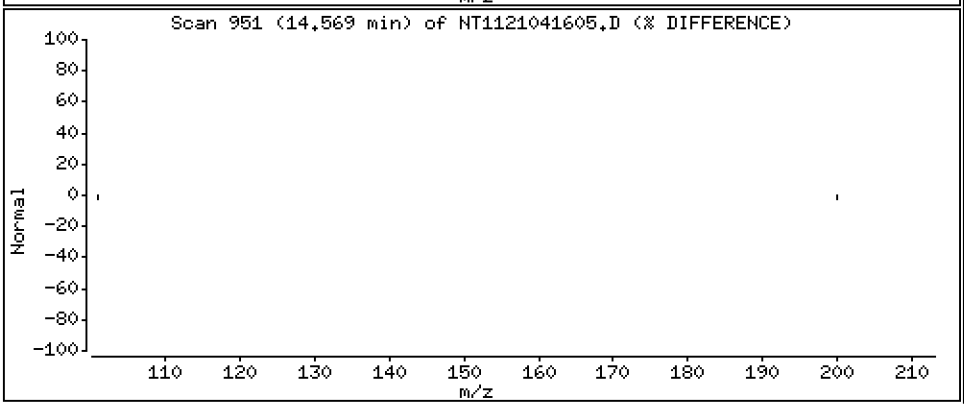












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

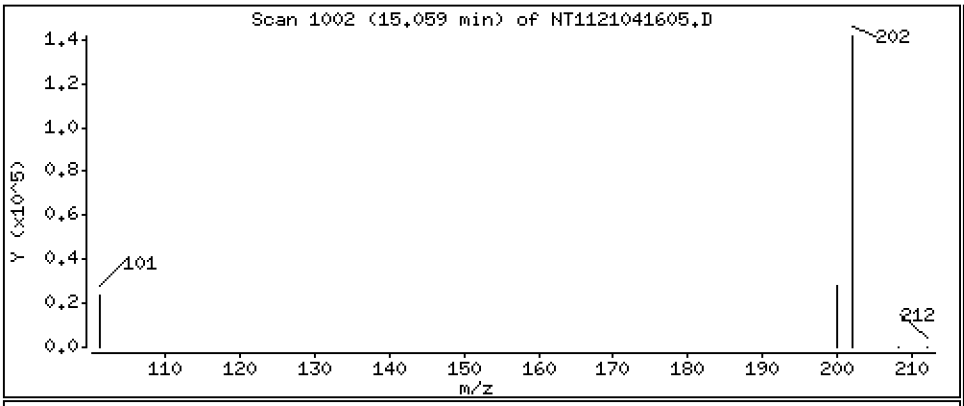
Operator: VTS

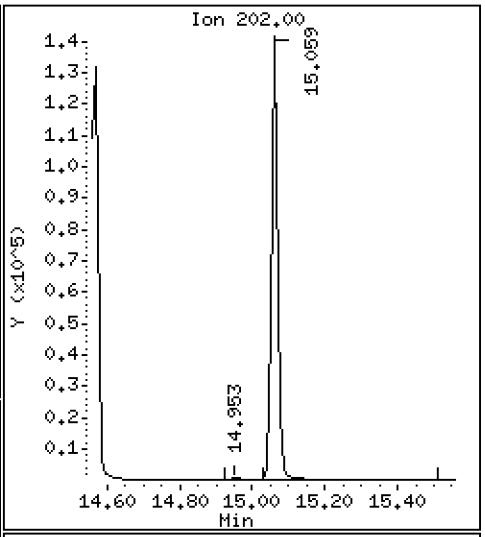
Column phase: Rxi-17Sil MS

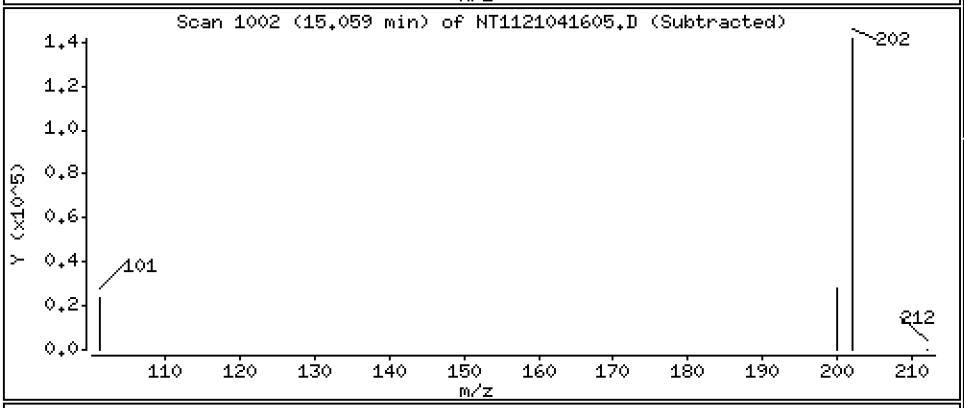
Column diameter: 0.25

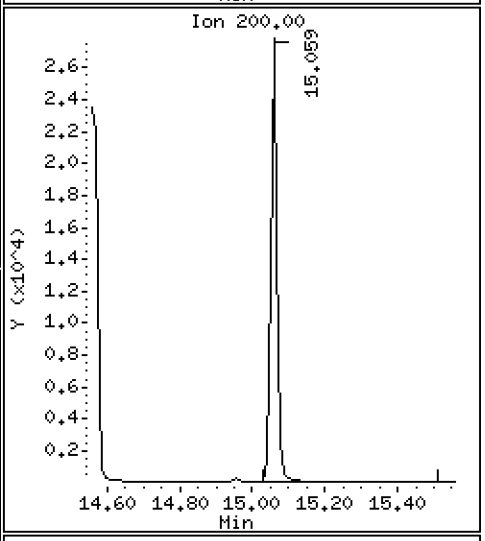
26 Pyrene

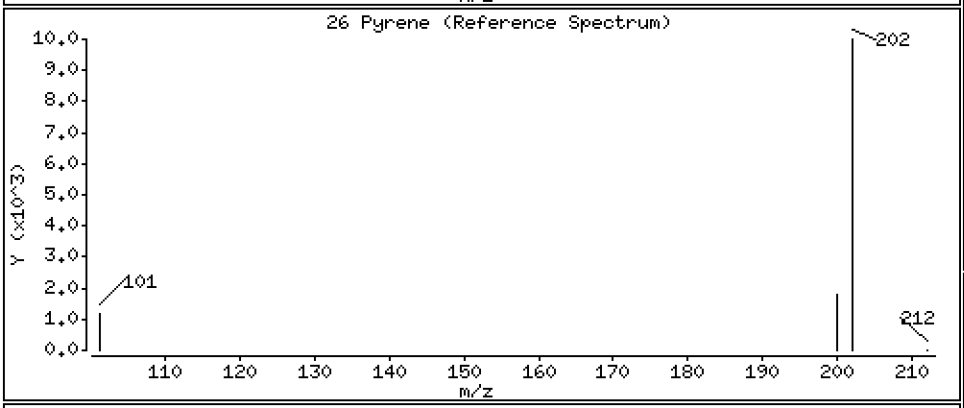
Concentration: 182 ng/mL

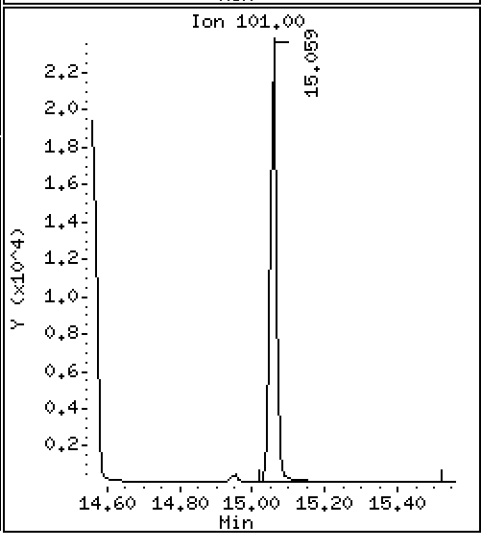


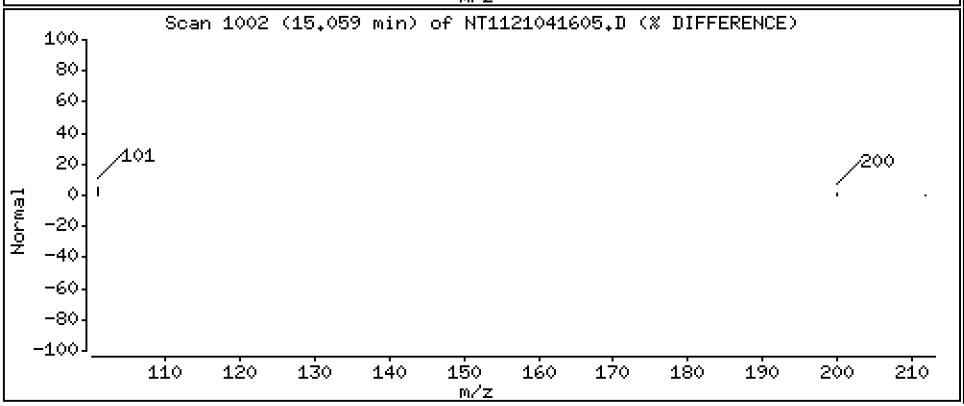












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

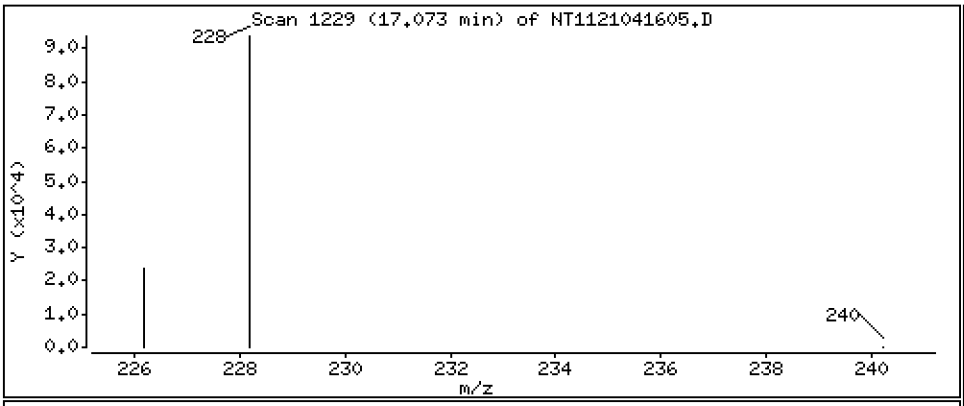
Operator: VTS

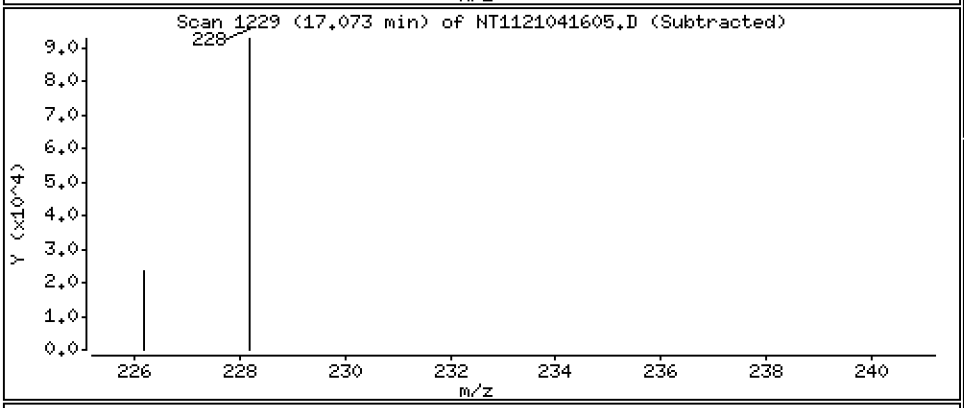
Column phase: Rxi-17Sil MS

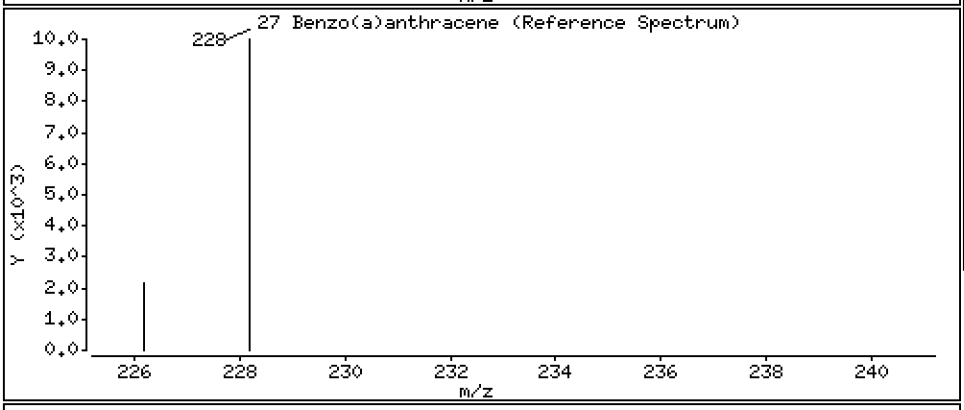
Column diameter: 0.25

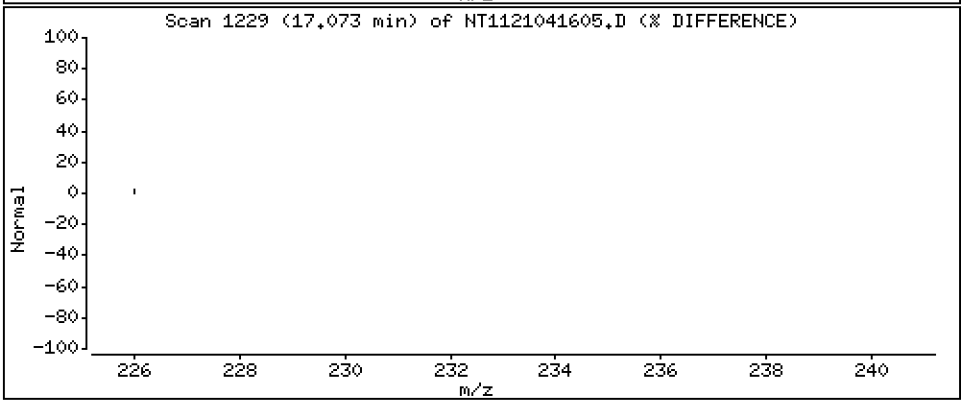
27 Benzo(a)anthracene

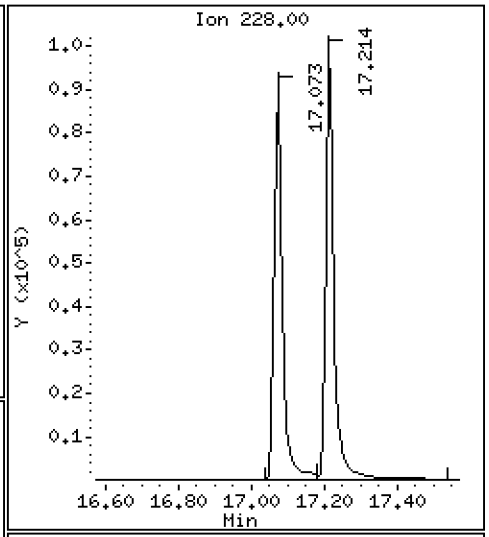
Concentration: 171 ng/mL

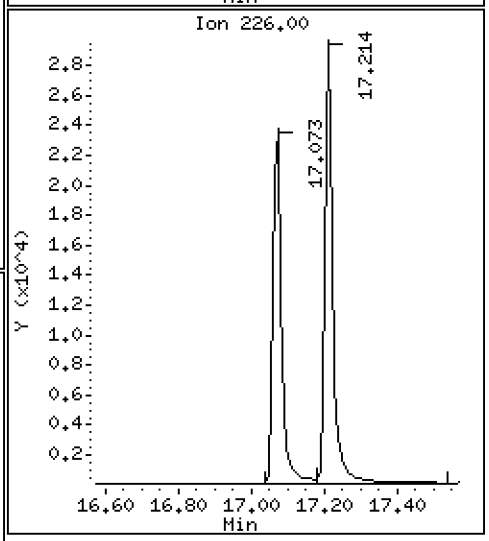












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

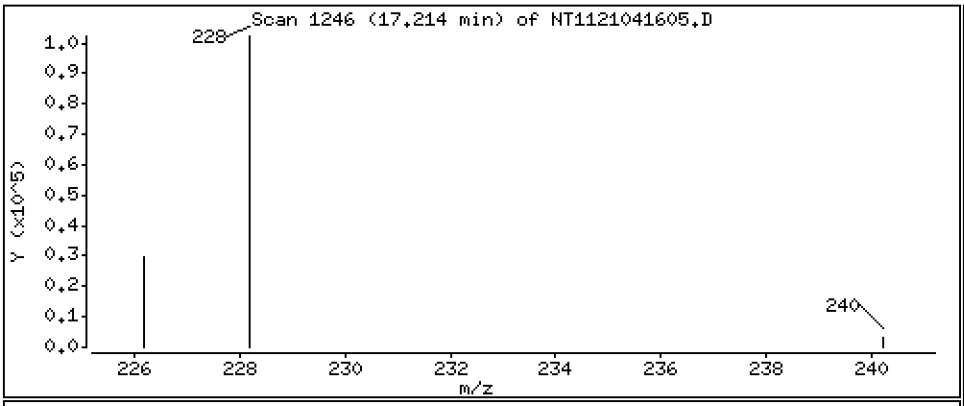
Operator: VTS

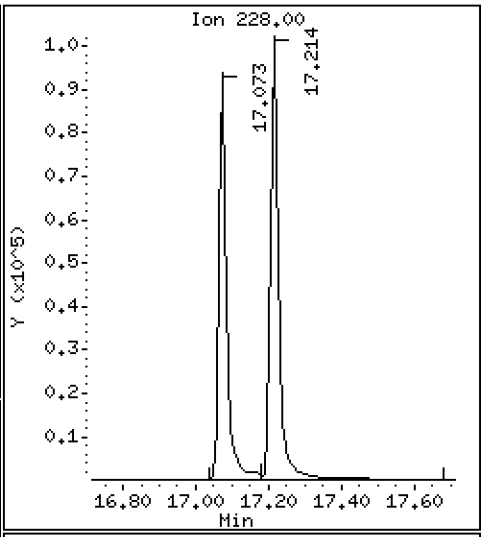
Column phase: Rxi-17Sil MS

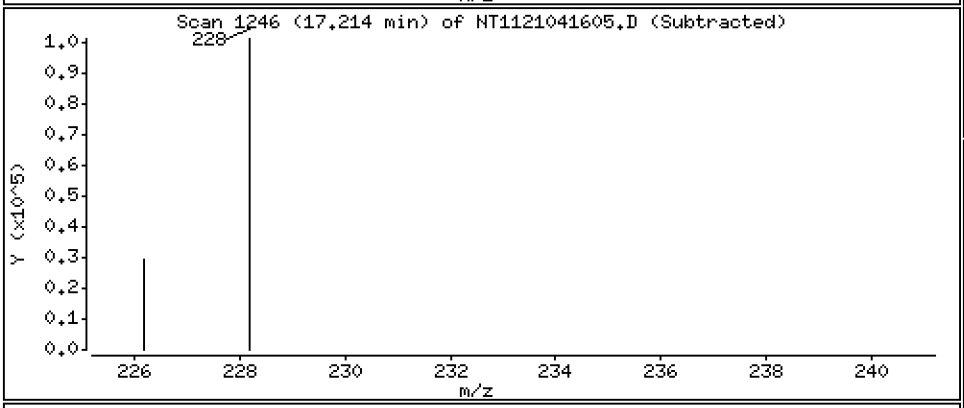
Column diameter: 0.25

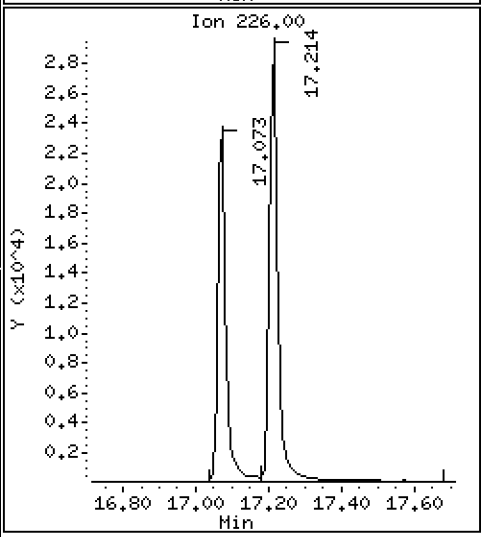
29 Chrysene

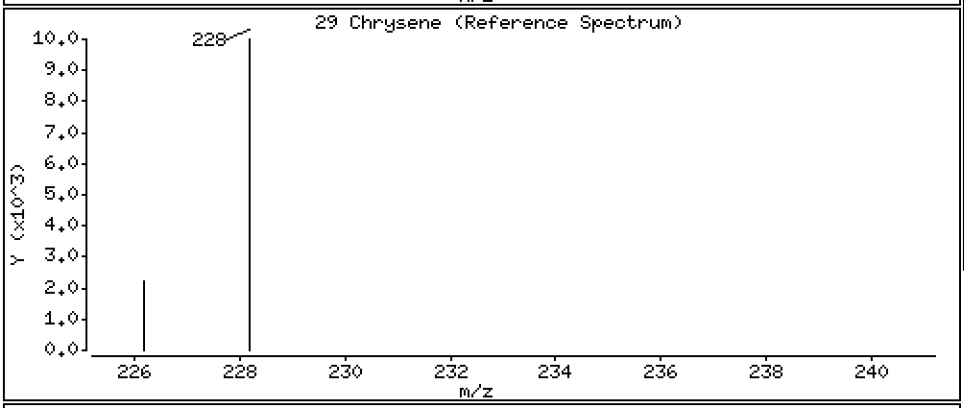
Concentration: 170 ng/mL

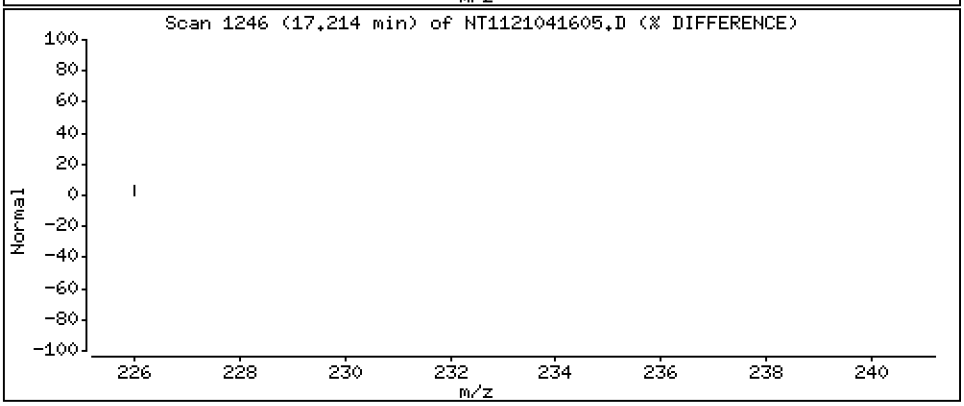












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

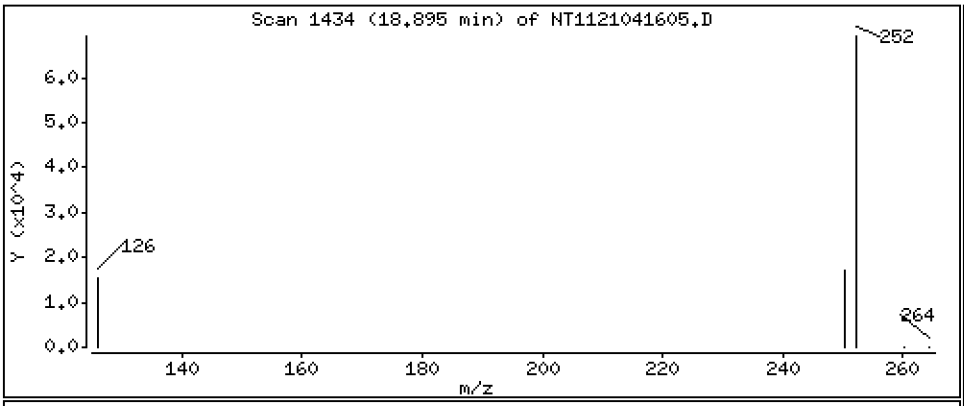
Operator: VTS

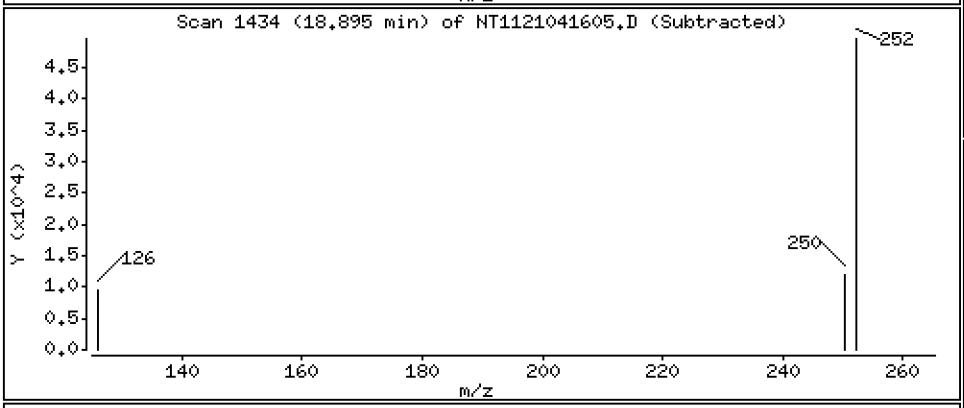
Column phase: Rxi-17Sil MS

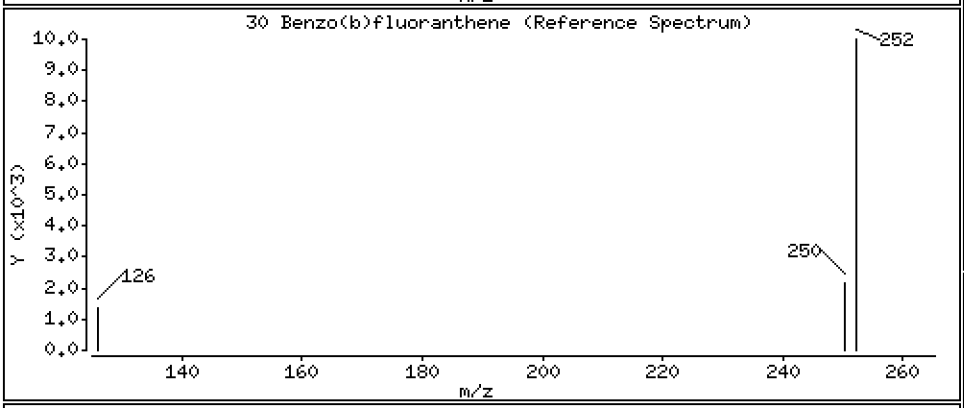
Column diameter: 0.25

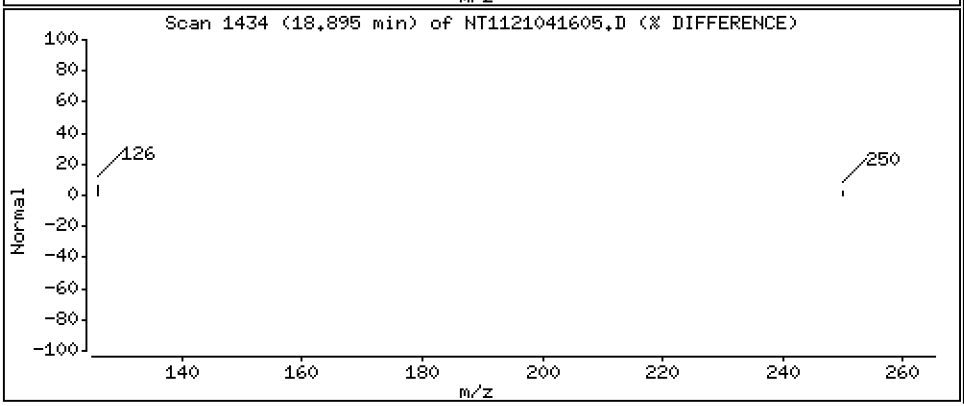
30 Benzo(b)fluoranthene

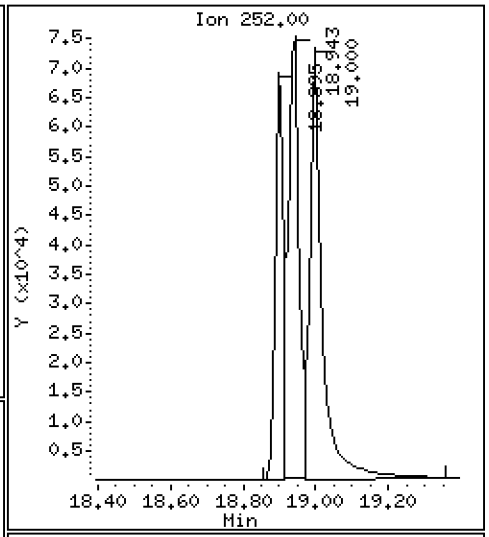
Concentration: 162 ng/mL

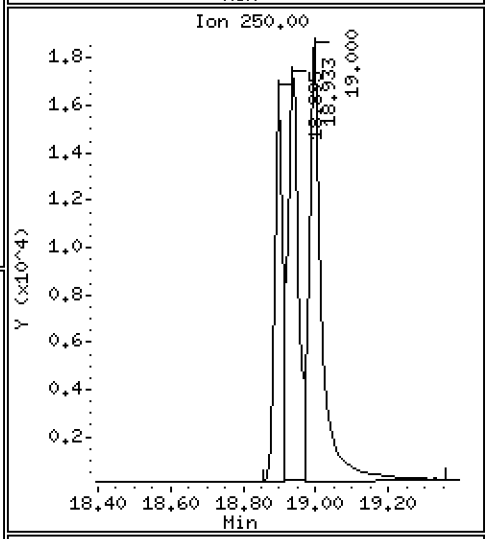


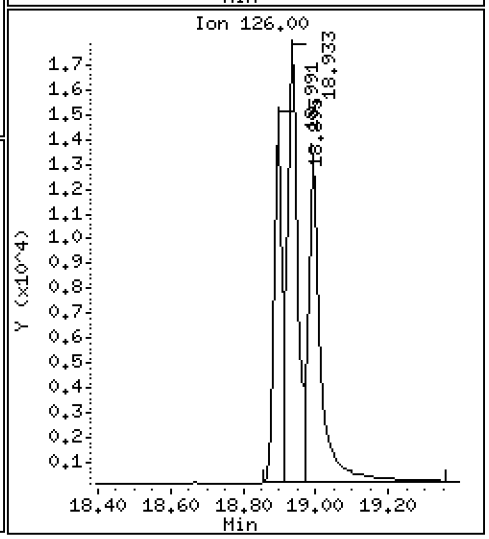












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

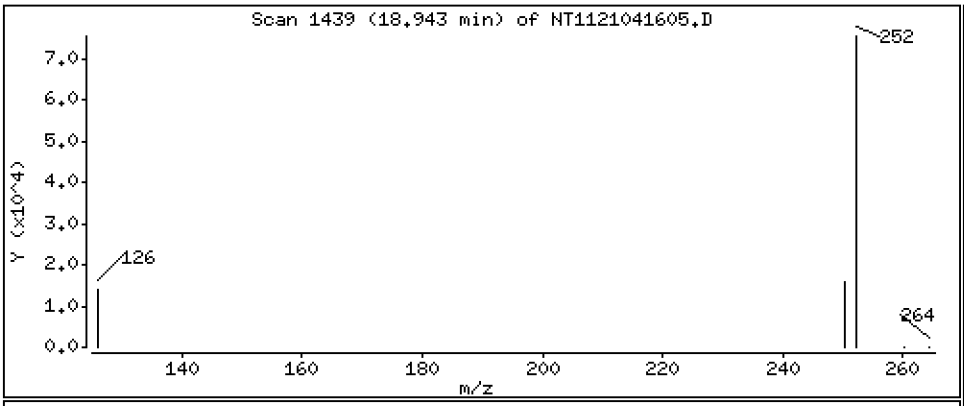
Operator: VTS

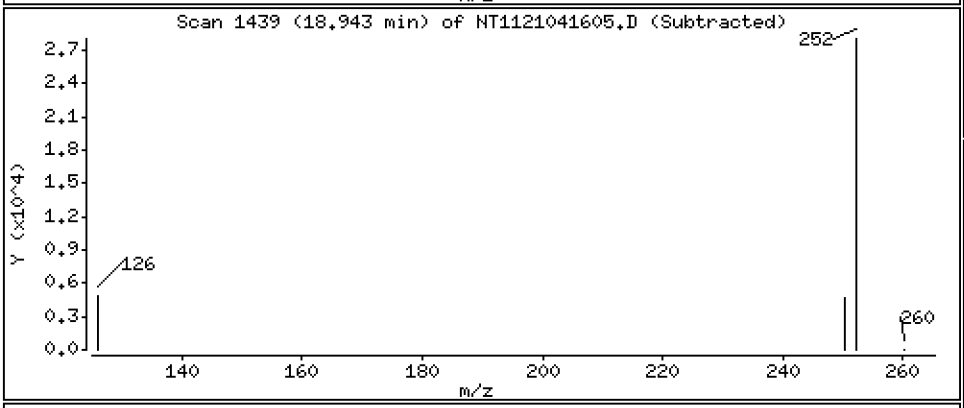
Column phase: Rxi-17Sil MS

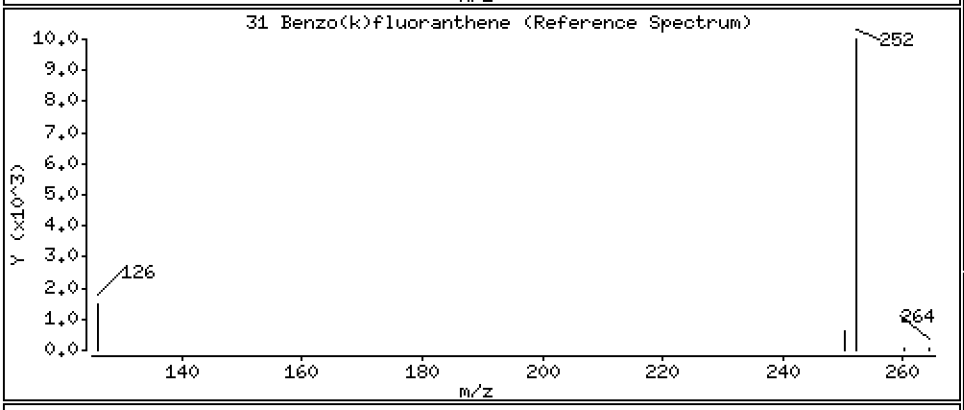
Column diameter: 0.25

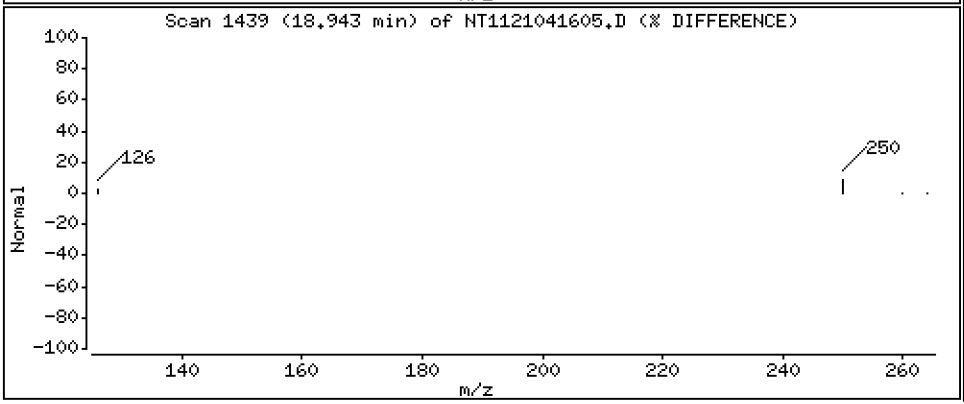
31 Benzo(k)fluoranthene

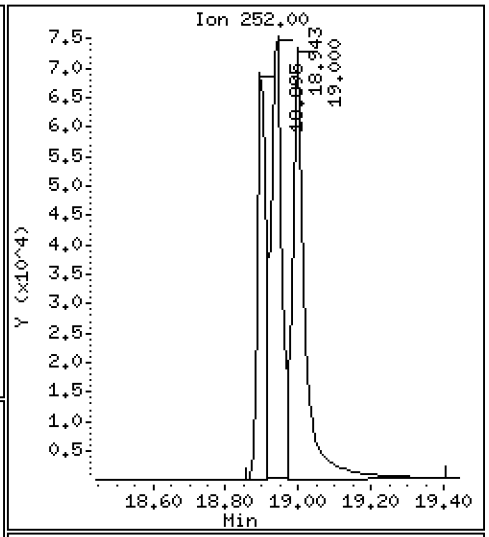
Concentration: 186 ng/mL

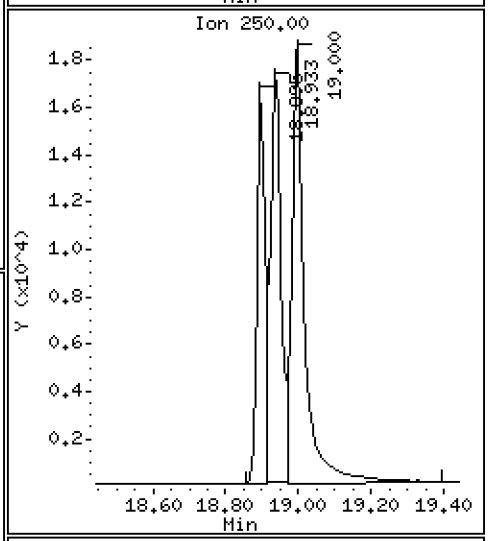


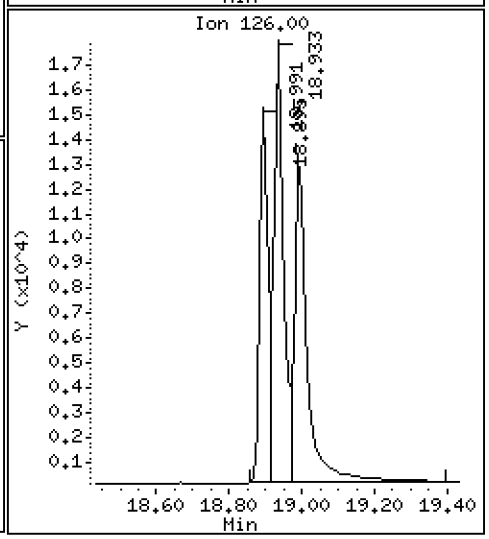












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

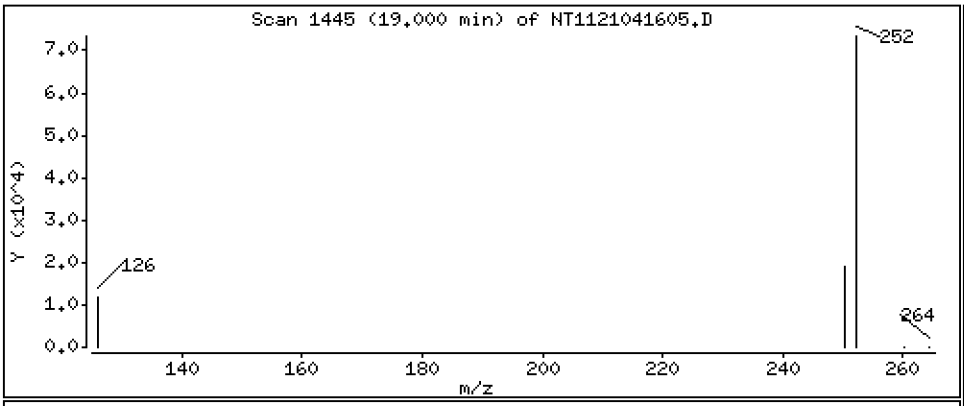
Operator: VTS

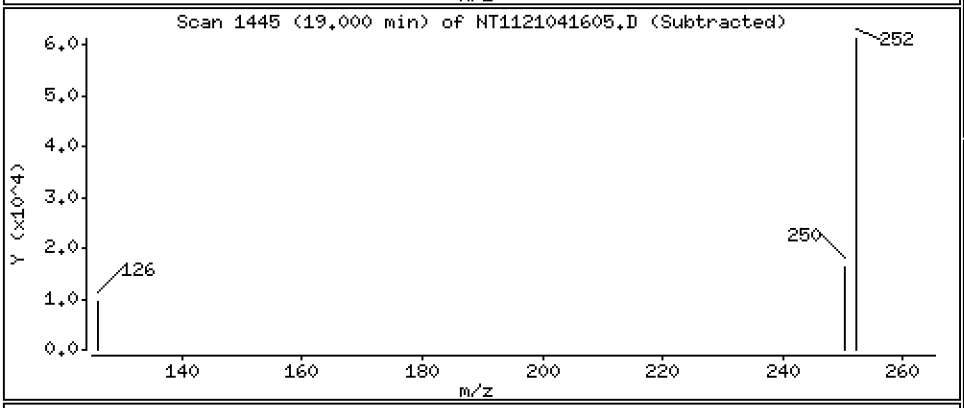
Column phase: Rxi-17Sil MS

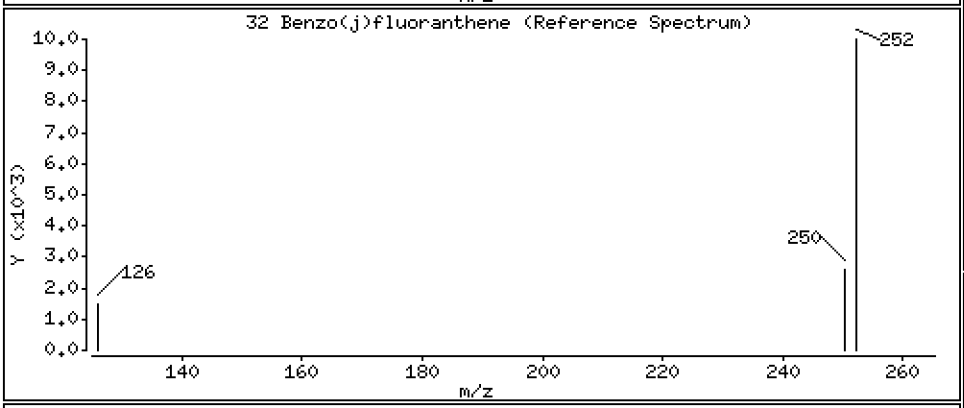
Column diameter: 0.25

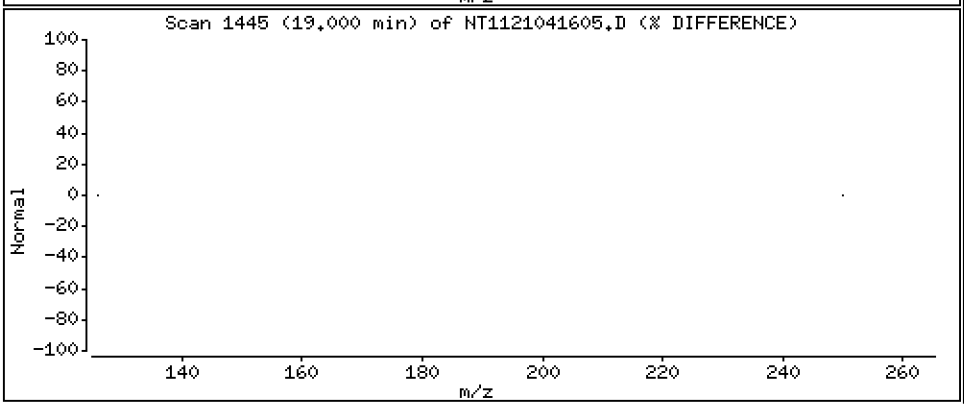
32 Benzo(j)fluoranthene

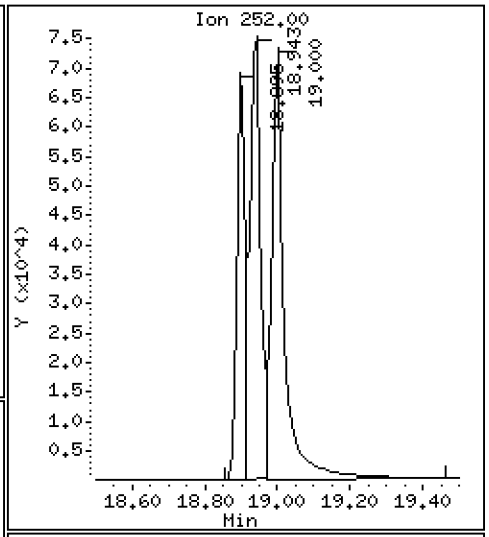
Concentration: 180 ng/mL

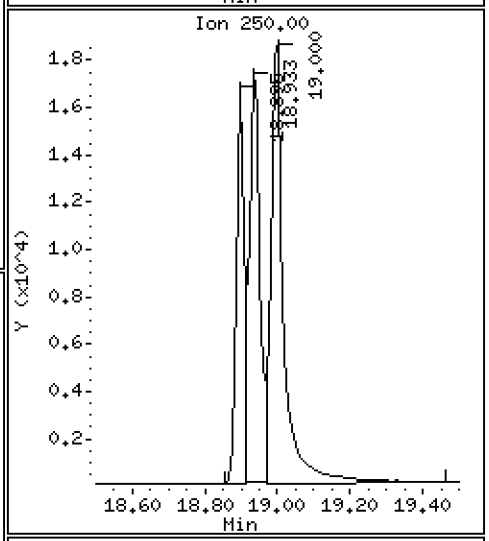


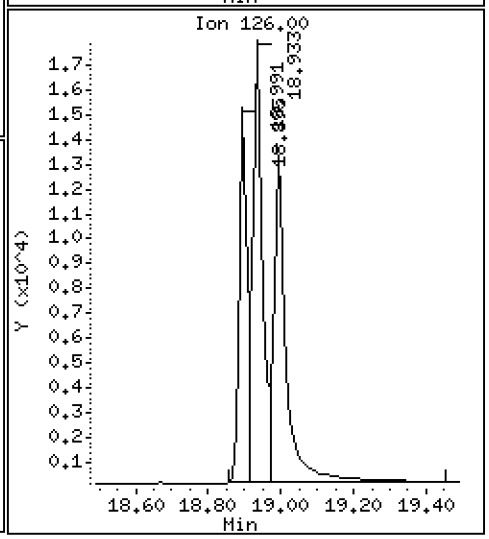












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

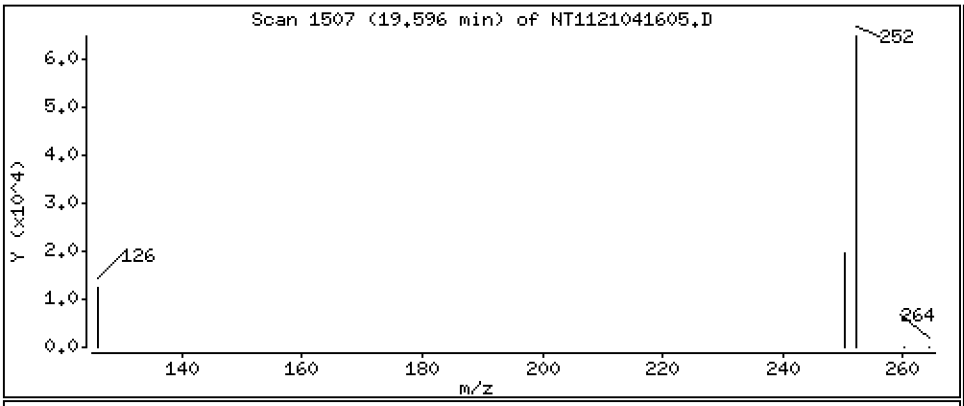
Operator: VTS

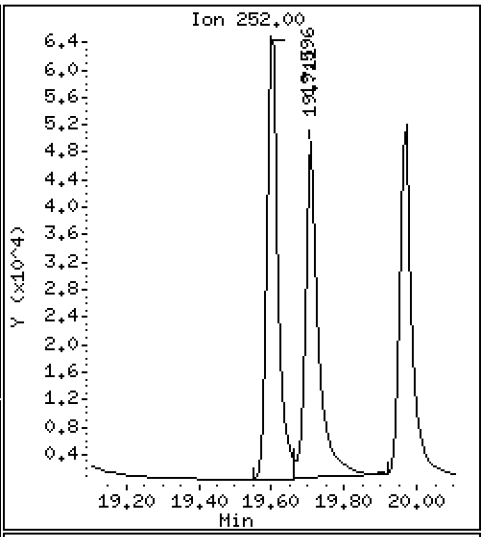
Column phase: Rxi-17Sil MS

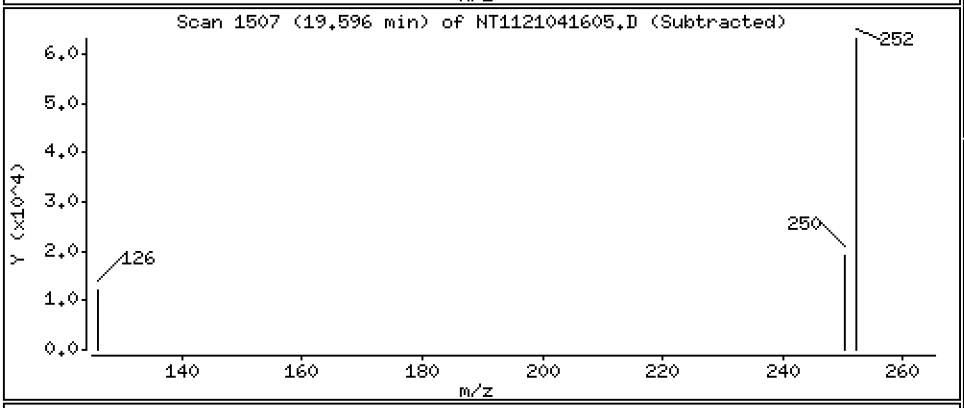
Column diameter: 0.25

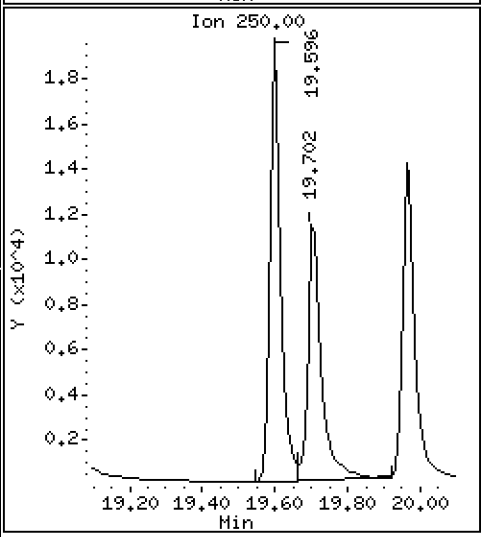
34 Benzo(e)pyrene

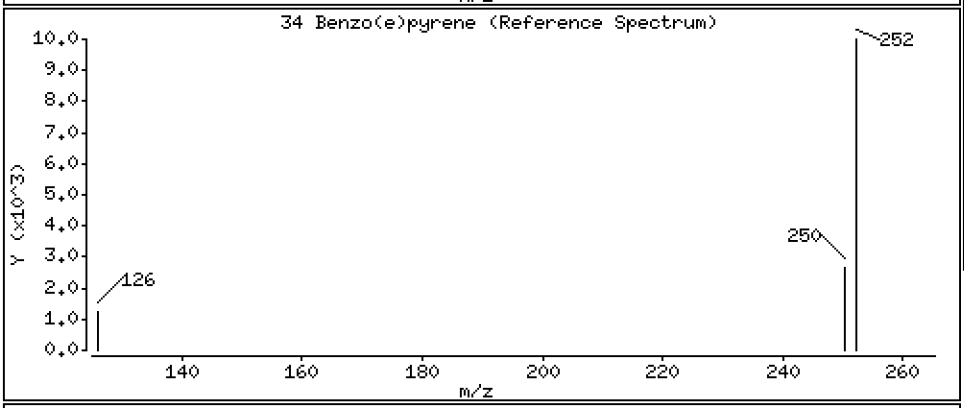
Concentration: 174 ng/mL

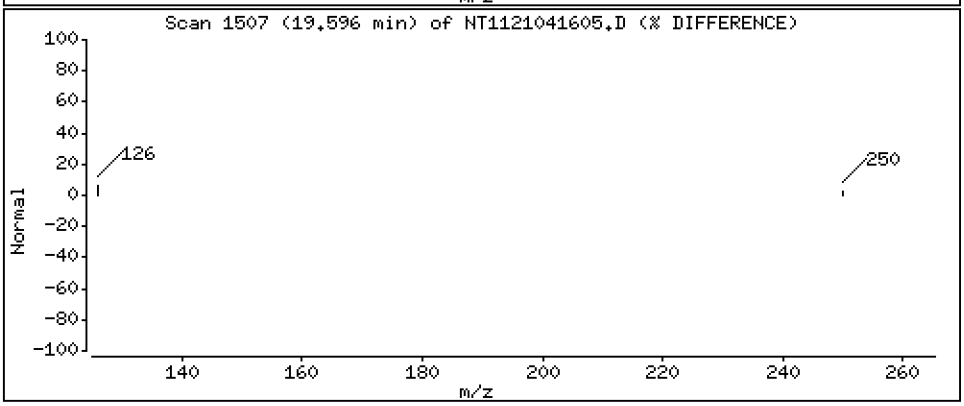












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

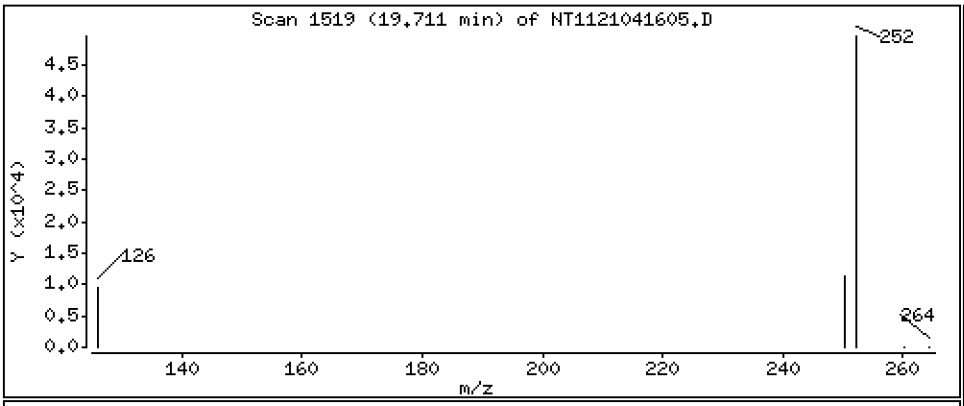
Operator: VTS

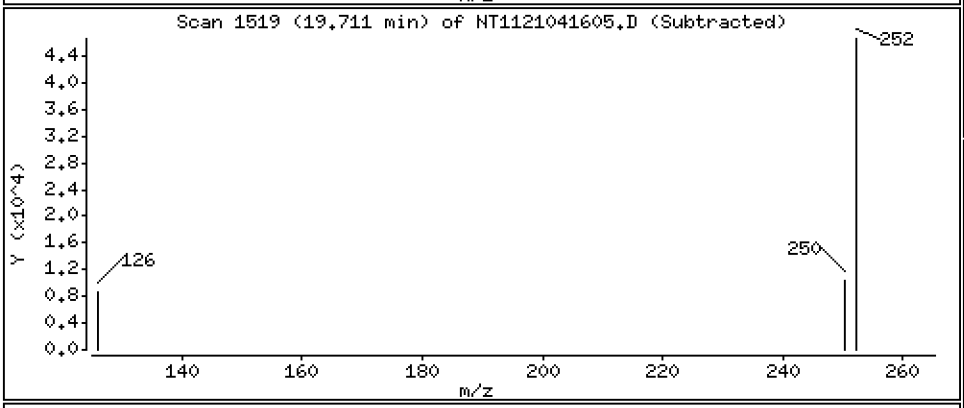
Column phase: Rxi-17Sil MS

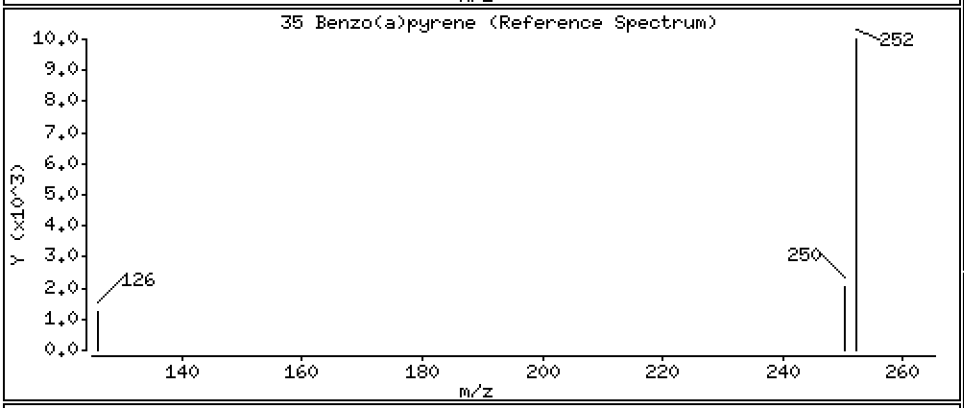
Column diameter: 0.25

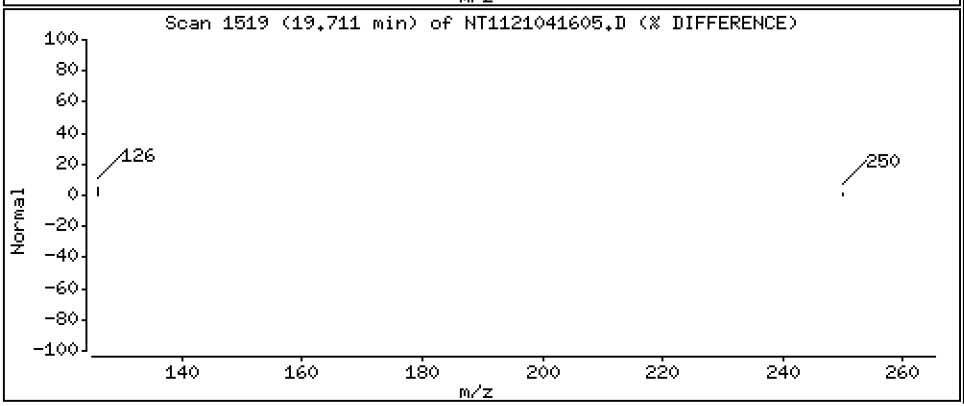
35 Benzo(a)pyrene

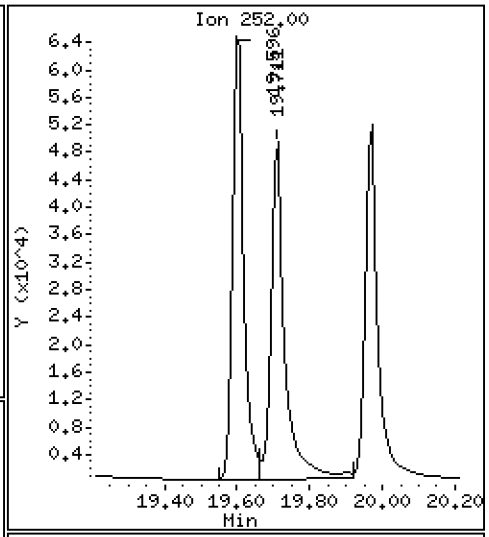
Concentration: 172 ng/mL

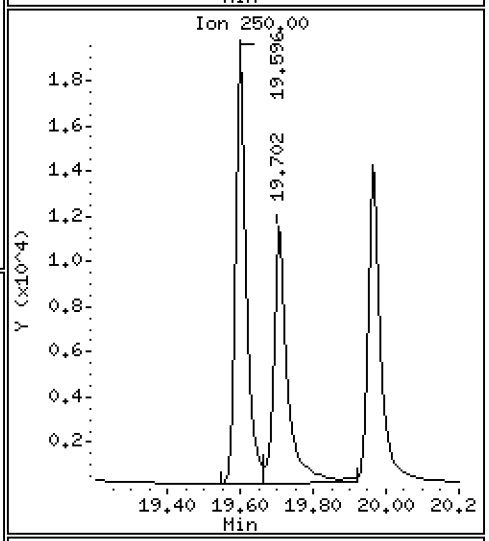


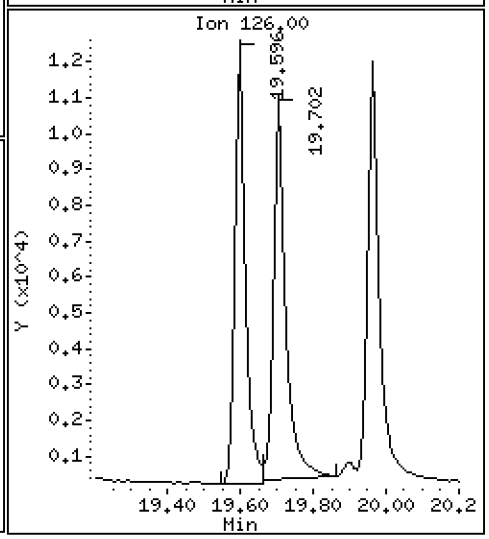












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

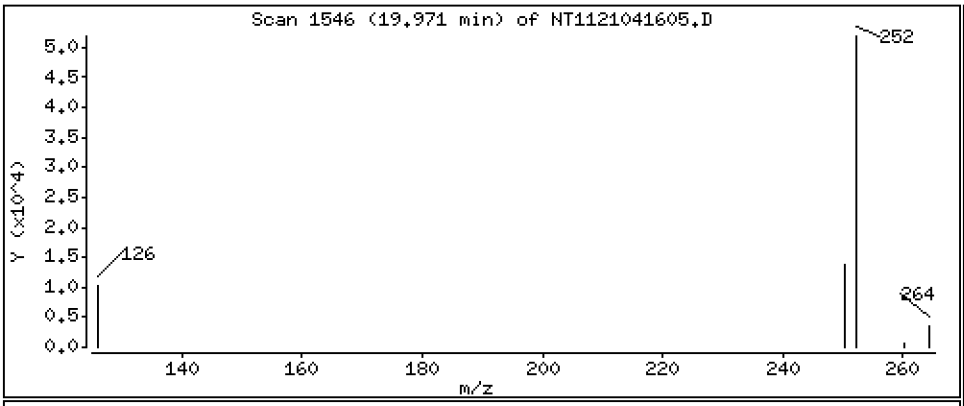
Operator: VTS

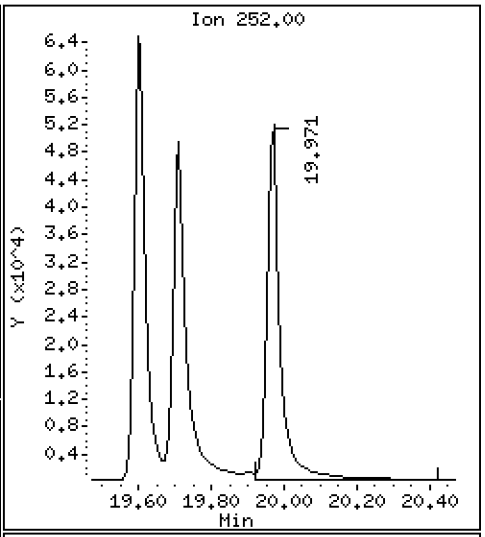
Column phase: Rxi-17Sil MS

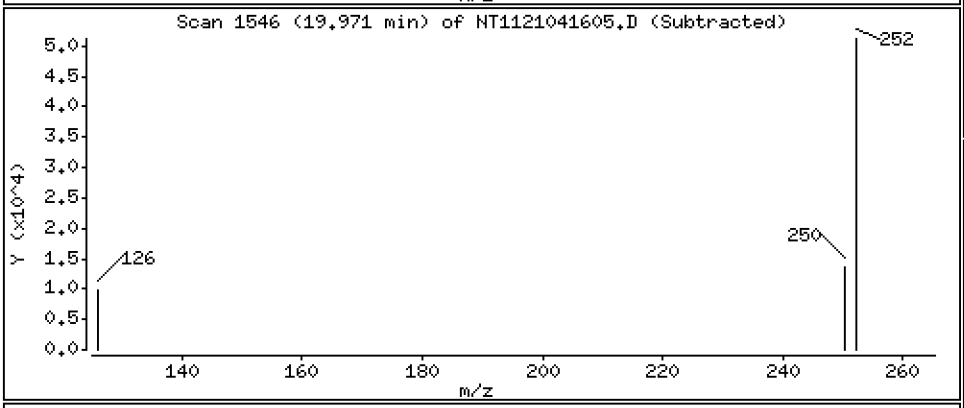
Column diameter: 0.25

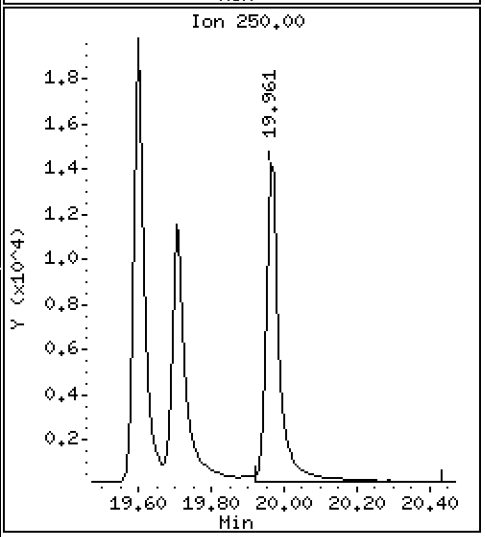
37 Perylene

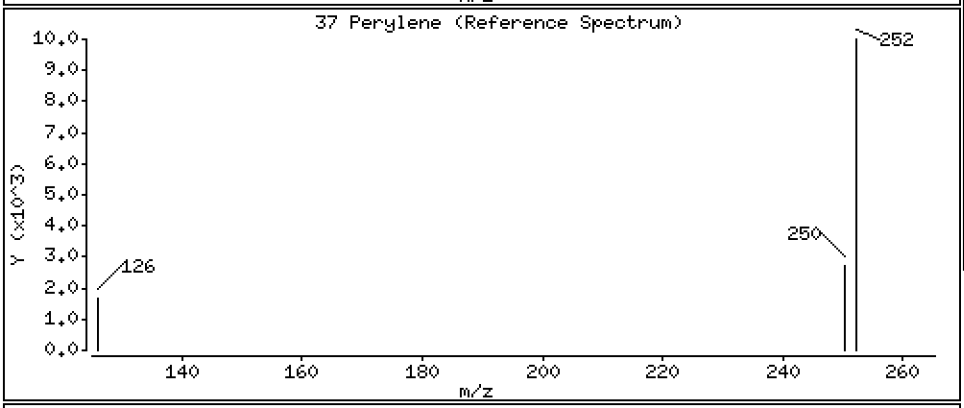
Concentration: 153 ng/mL

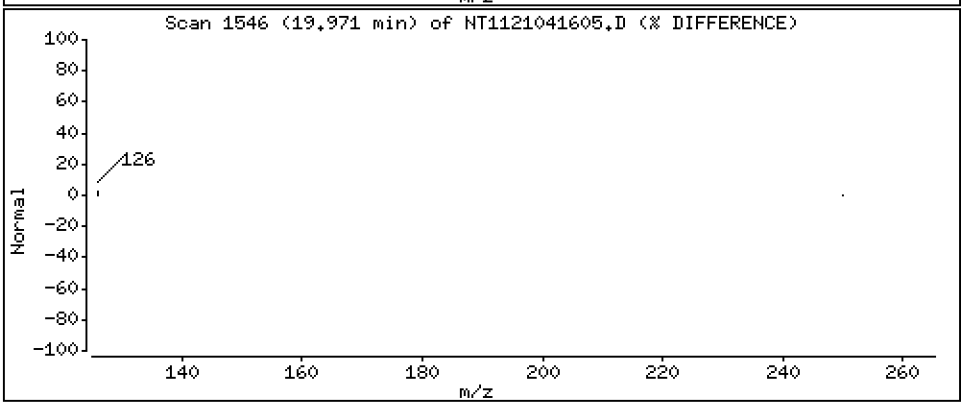












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

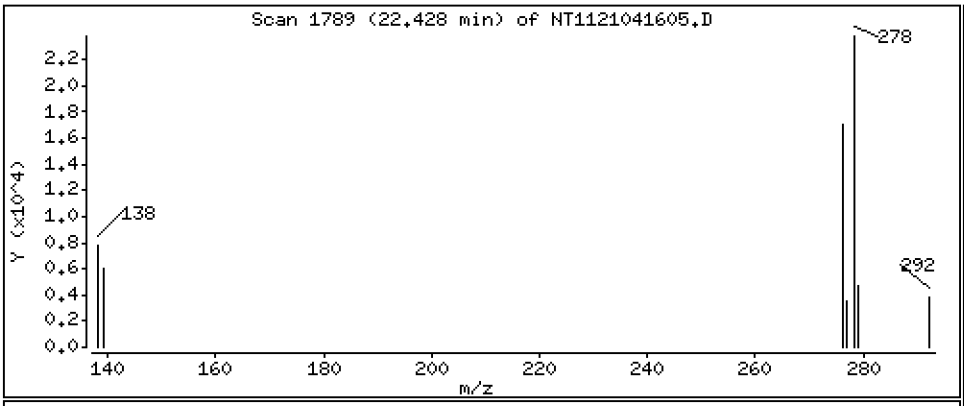
Operator: VTS

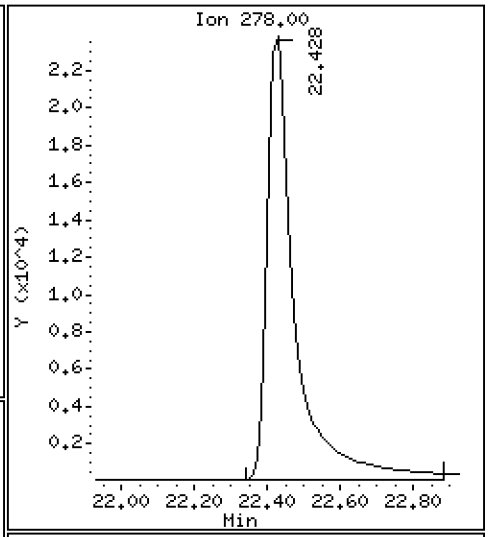
Column phase: Rxi-17Sil MS

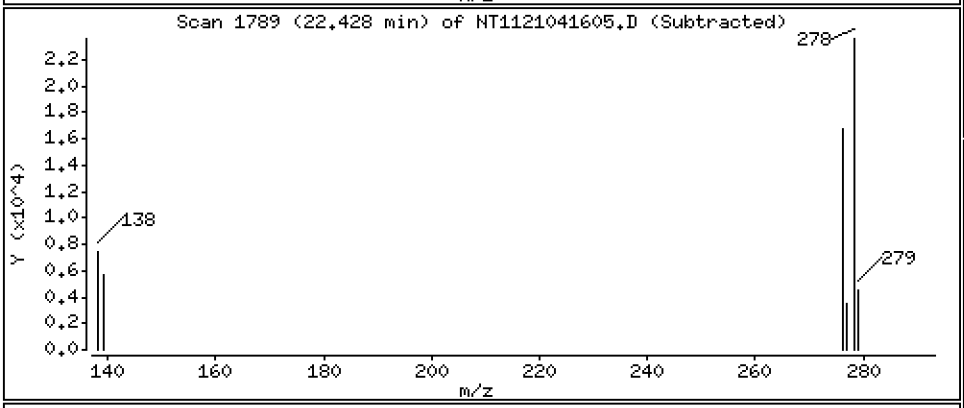
Column diameter: 0.25

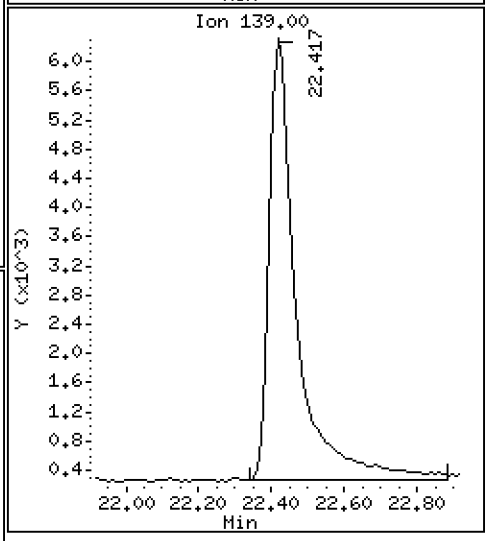
39 Dibenzo(a,h)anthracene

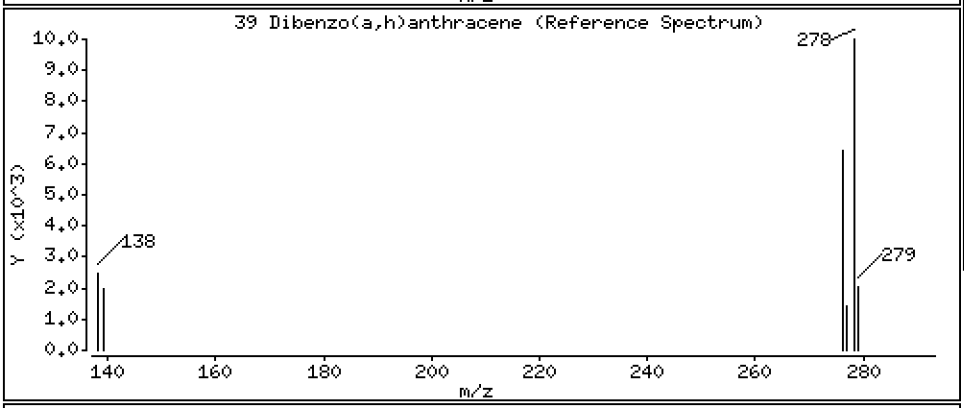
Concentration: 199 ng/mL

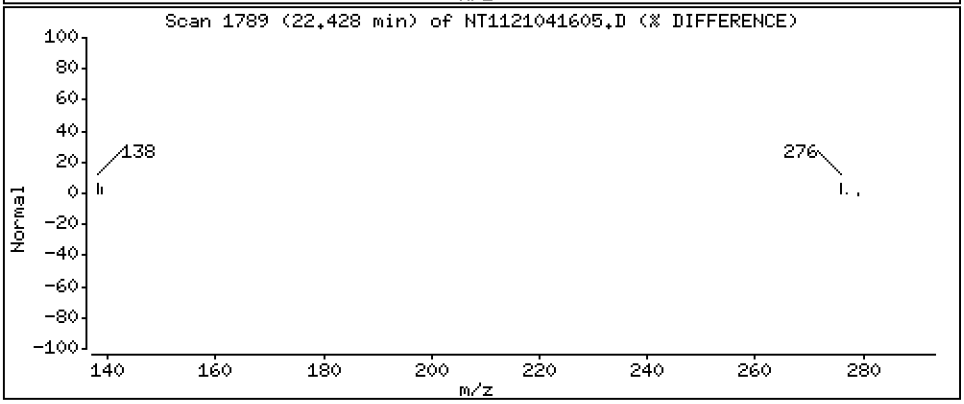












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

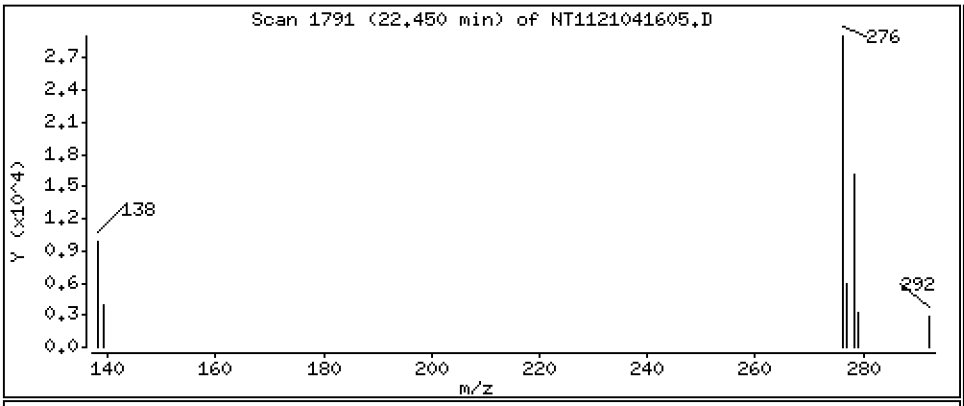
Operator: VTS

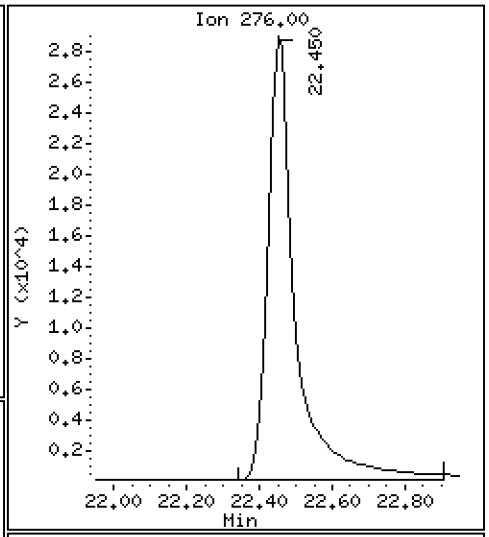
Column phase: Rxi-17Sil MS

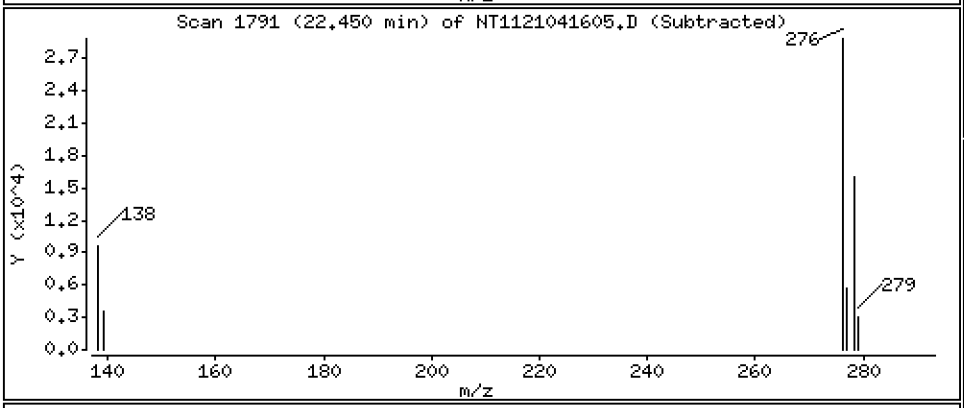
Column diameter: 0.25

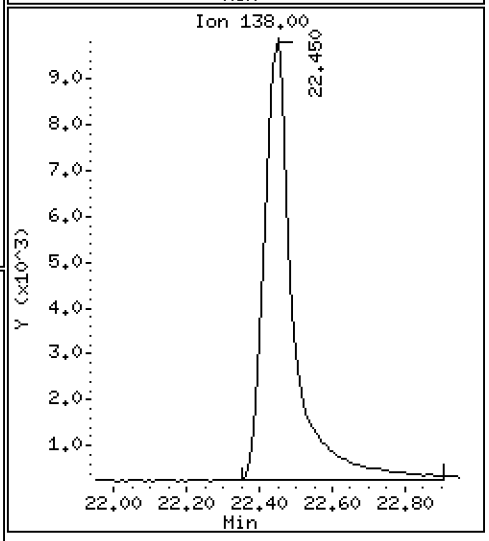
40 Indeno(1,2,3-cd)pyrene

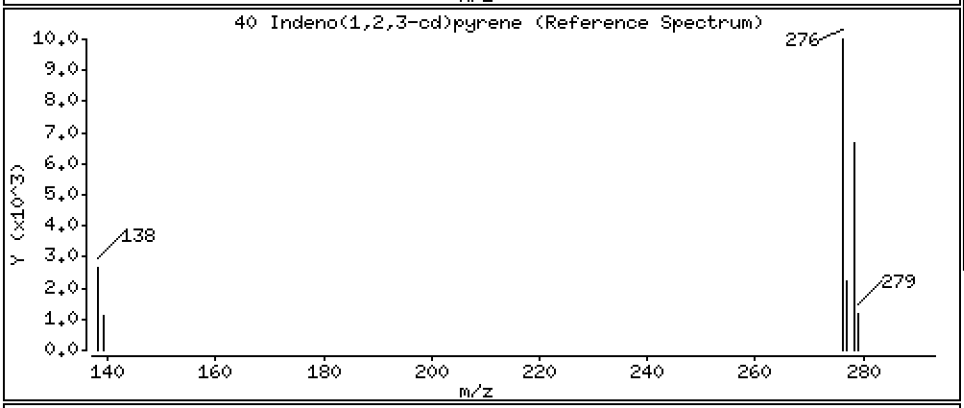
Concentration: 204 ng/mL

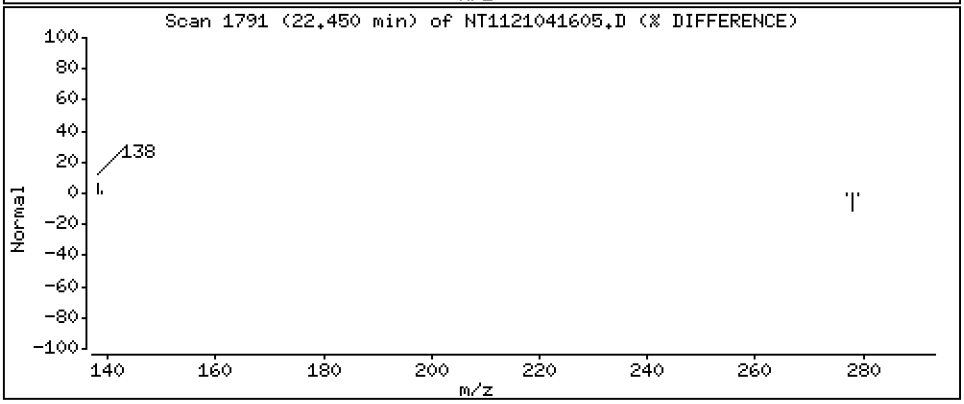












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D

Date : 16-APR-2021 11:54

Client ID:

Instrument: nt11.i

Sample Info: BJD0015-BS1

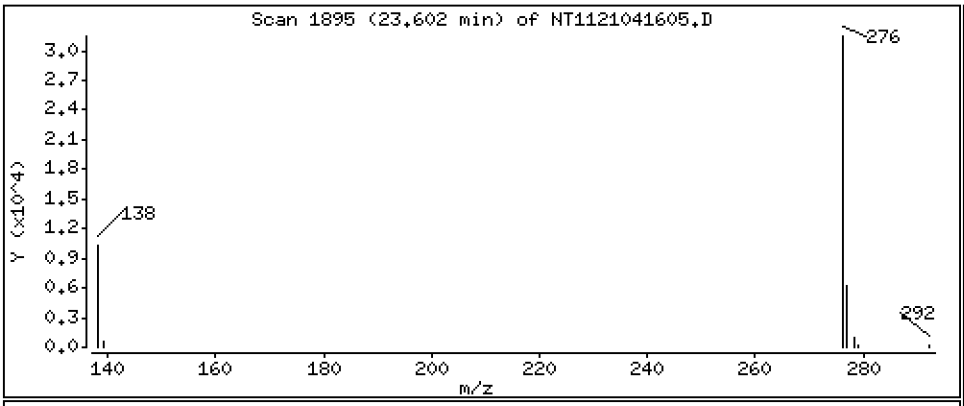
Operator: VTS

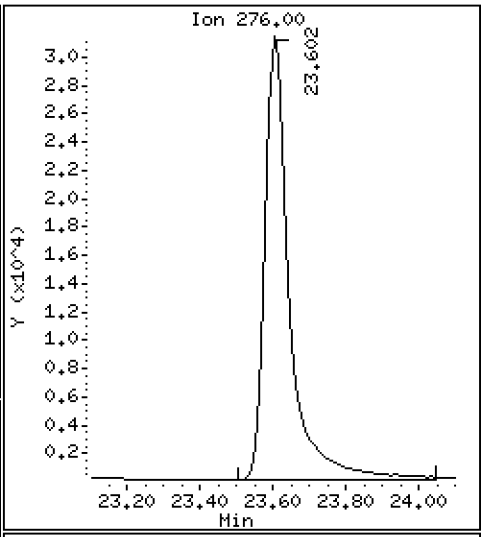
Column phase: Rxi-17Sil MS

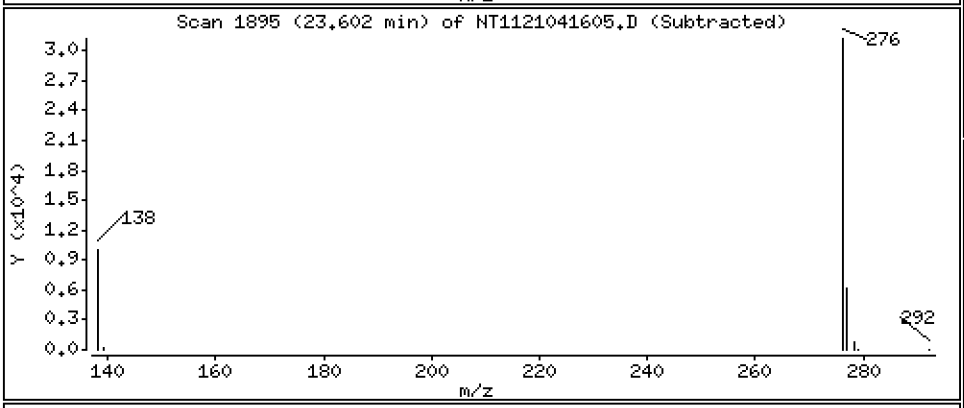
Column diameter: 0.25

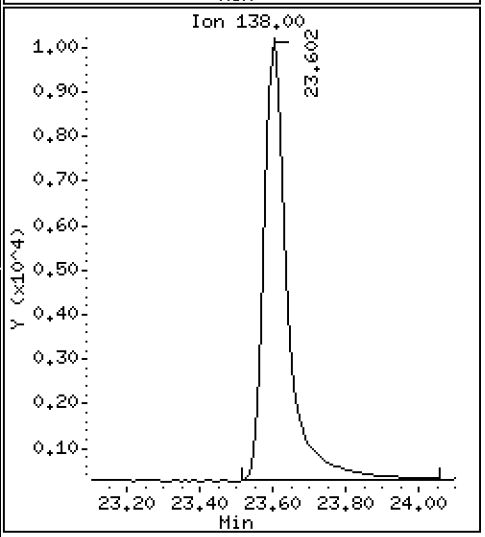
41 Benzo(g,h,i)perylene

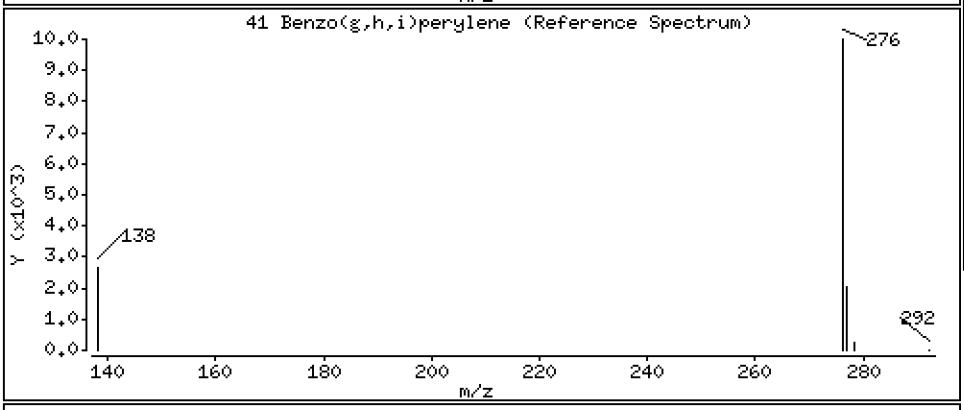
Concentration: 197 ng/mL

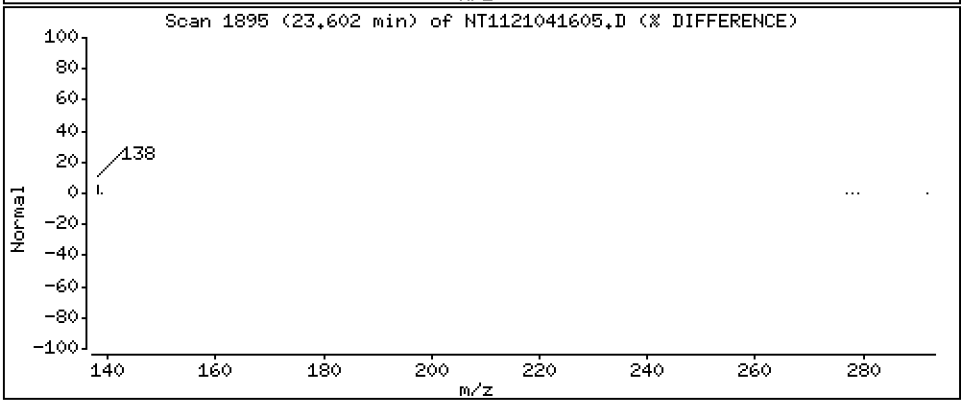












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041605.D
Lab Smp Id: BJD0015-BS1
Inj Date : 16-APR-2021 11:54 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : BJD0015-BS1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.777	6.777	(1.000)	187032	200.000	
	2 Naphthalene	128	6.813	6.813	(1.005)	181711	167.329	167
	3 Benzo(b)thiophene	134	7.057	7.057	(1.041)	147419	172.073	172
$	4 2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	139637	185.677	186
	5 2-Methylnaphthalene	142	7.802	7.801	(1.151)	152959	174.723	175
	6 1-Methylnaphthalene	142	8.054	8.054	(1.188)	147501	181.252	181
	7 2-Chloronaphthalene	162	8.705	8.705	(0.891)	130693	148.370	148
	8 Biphenyl	154	8.673	8.673	(0.888)	177626	151.450	151
	9 2,6-Dimethylnaphthalene	156	8.726	8.726	(0.893)	137317	157.799	158
	10 Acenaphthylene	152	9.616	9.616	(0.984)	175134	150.922	151
*	11 Acenaphthene-d10	164	9.770	9.770	(1.000)	101146	200.000	
	12 Acenaphthene	153	9.833	9.833	(1.006)	118552	154.468	154
	13 Dibenzofuran	168	10.036	10.036	(1.027)	160209	156.378	156
	14 2,3,5-Trimethylnaphthalene	170	10.137	10.137	(1.038)	100917	160.152	160
	16 Fluorene	166	10.655	10.655	(1.091)	130859	165.819	166
	17 Dibenzothiophene	184	12.271	12.271	(0.986)	144930	170.864	171
*	18 Phenanthrene-d10	188	12.439	12.439	(1.000)	153210	200.000	
	19 Phenanthrene	178	12.481	12.481	(1.003)	180144	179.741	180
	21 Anthracene	178	12.534	12.533	(1.008)	159944	159.719	160
	22 Carbazole	167	13.207	13.207	(1.062)	196544	184.188	184
	23 1-Methylphenanthrene	192	13.478	13.478	(1.084)	163351	184.512	185
$	24 Fluoranthene-d10	212	14.530	14.530	(1.168)	144604	180.023	180
	25 Fluoranthene	202	14.568	14.568	(1.171)	182170	182.312	182
	26 Pyrene	202	15.058	15.058	(1.211)	186341	181.776	182
	27 Benzo(a)anthracene	228	17.072	17.072	(0.995)	142288	171.068	171
*	28 Chrysene-d12	240	17.163	17.163	(1.000)	113230	200.000	
	29 Chrysene	228	17.213	17.213	(1.003)	159474	170.276	170
	30 Benzo(b)fluoranthene	252	18.894	18.894	(0.949)	117585	162.198	162
	31 Benzo(k)fluoranthene	252	18.942	18.942	(0.952)	177512	186.351	186
	32 Benzo(j)fluoranthene	252	19.000	19.000	(0.955)	184912	179.628	180
	34 Benzo(e)pyrene	252	19.596	19.605	(0.985)	142955	174.135	174
	35 Benzo(a)pyrene	252	19.711	19.711	(0.990)	130174	171.927	172
*	36 Perylene-d12	264	19.903	19.903	(1.000)	133186	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
	37 Perylene	252	19.970	19.970	(1.003)	131776	152.761	153
$	38 Dibenzo(a,h)anthracene-d14	292	22.305	22.305	(1.121)	104998	201.935	202
	39 Dibenzo(a,h)anthracene	278	22.427	22.427	(1.127)	124360	199.458	199
	40 Indeno(1,2,3-cd)pyrene	276	22.449	22.449	(1.128)	149996	204.003	204
	41 Benzo(g,h,i)perylene	276	23.601	23.601	(1.186)	145142	197.428	197

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041605.D
Lab Smp Id: BJD0015-BS1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 10:42
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	187032	31.62
11 Acenaphthene-d10	80301	40151	160602	101146	25.96
18 Phenanthrene-d10	121929	60965	243858	153210	25.66
28 Chrysene-d12	94055	47028	188110	113230	20.39
36 Perylene-d12	114179	57090	228358	133186	16.65

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041605.D

Lab ID: BJD0015-BS1
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 11:54

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1121041602.D

On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Analytical Resources, Incorporated
Analytical Chemists and Consultants

MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
EPA 8270E-SIM

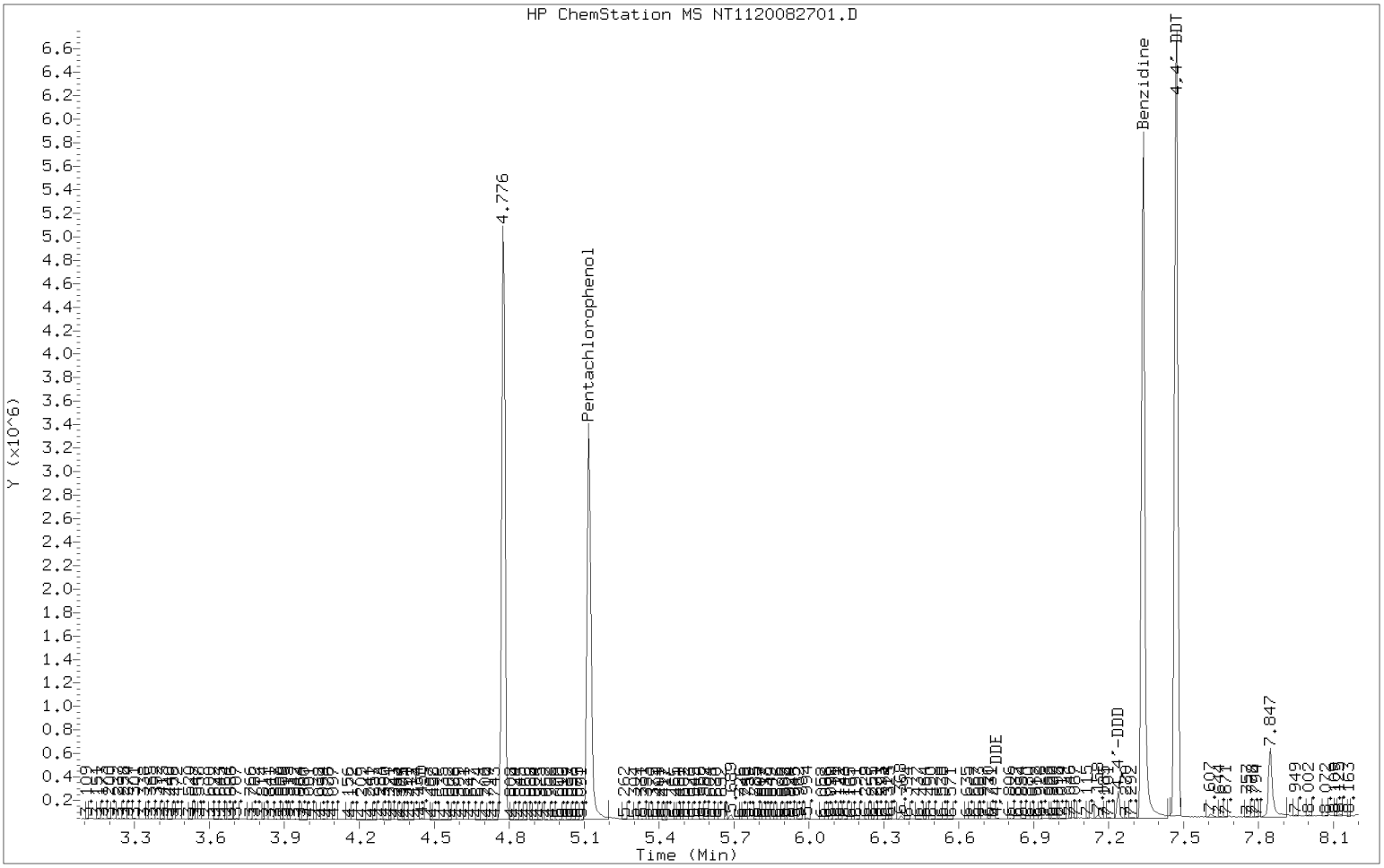
Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Lab File ID:	NT1120082701.D	Injection Date:	08/27/20
Instrument ID:	NT11	Injection Time:	12:20
Sequence:	SIH0304	Lab Sample ID:	SIH0304-TUN1

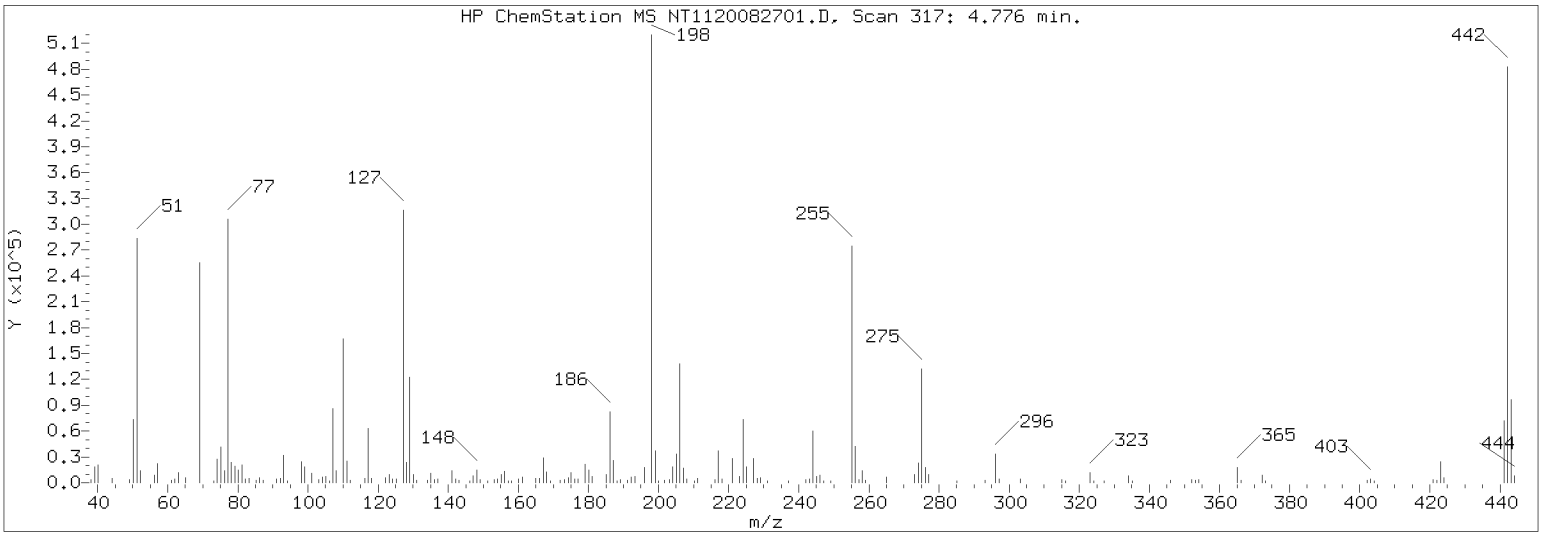
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
68	Less than 2% of 69	0	PASS
69	Less than 100% of 198	48.1	PASS
70	Less than 2% of 69	0	PASS
197	Less than 2% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	7.19	PASS
365	1 - 100% of 198	3.42	PASS
441	Less than 150% of 443	75.1	PASS
442	1 - 200% of 198	98.2	PASS
443	15 - 24% of 442	20.3	PASS
4,4'-DDD	Less than 20% of 4,4'-DDT		
4,4'-DDE	Less than 20% of 4,4'-DDT		
4,4'-DDT	Base peak, 100% relative abundance		

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SIH0304-TUN1	NT1120082701.D	08/27/2020	12:20
Cal Standard	SIH0304-CAL4	NT1120082702.D	08/27/2020	12:35
Cal Standard	SIH0304-CAL6	NT1120082703.D	08/27/2020	13:07
Cal Standard	SIH0304-CAL1	NT1120082704.D	08/27/2020	13:38
Cal Standard	SIH0304-CAL5	NT1120082705.D	08/27/2020	14:08
Cal Standard	SIH0304-CAL2	NT1120082706.D	08/27/2020	14:38
Cal Standard	SIH0304-CAL3	NT1120082707.D	08/27/2020	15:08
Secondary Cal Check	SIH0304-SCV1	NT1120082708.D	08/27/2020	15:38
Initial Cal Blank	SIH0304-ICB1	NT1120082709.D	08/27/2020	16:09

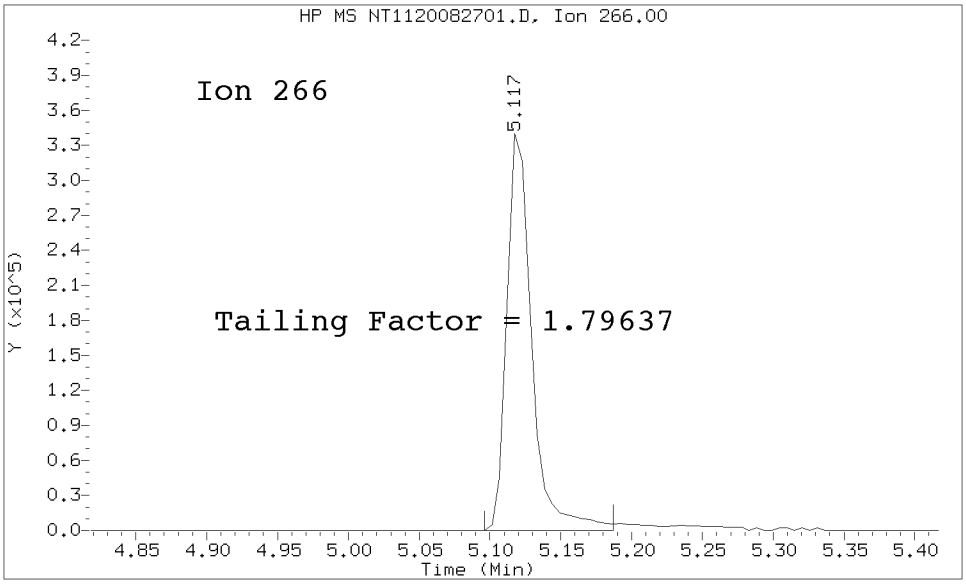
DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20200827.b/NT1120082701.D/NT1120082701.D
Method Used: \20200827.b\DFTPP8270E.m Inst: nt11
Injection Date: 27-AUG-2020 12:20 Operator: VTS
Sample Info: SIH0304-TUN1 SIH0304-TUN1
Report Date: 08/28/2020 09:13



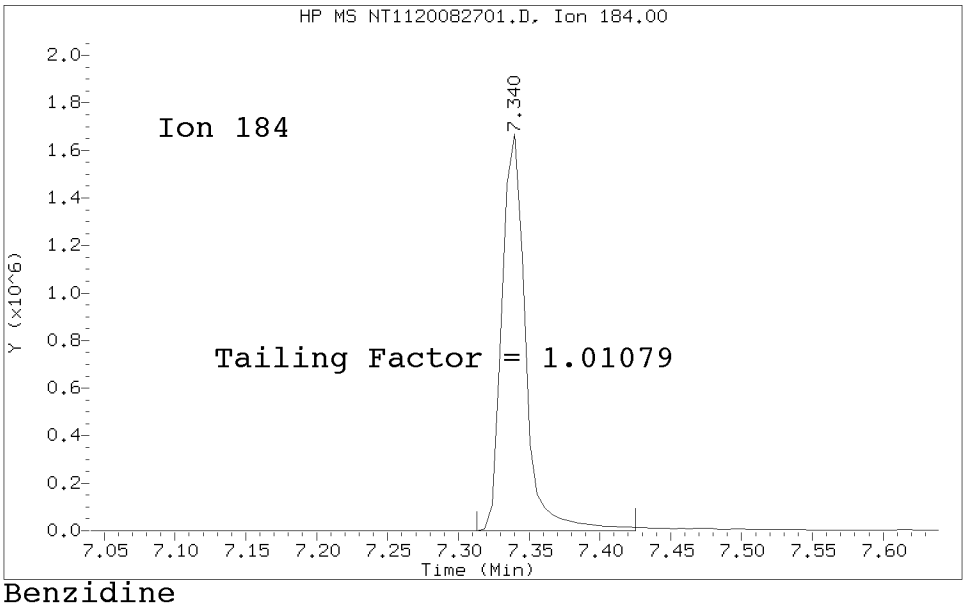


Datafile Analyzed: /20200827.b/NT1120082701.D/NT1120082701.D
Method Used: \20200827.b\DFTPP8270E.m\sw846ddt.m Inst: nt11
Injection Date: 27-AUG-2020 12:20 Operator: JZ
Sample Info: SIH0304-TUN1
Report Date: 08/28/2020 09:13



Pentachlorophenol
==========
Exp. RT = 5.123
Found RT = 5.117

Tail Factor = 1.796 Maximum Allowed = 2.0



Benzidine
==========
Exp. RT = 7.345
Found RT = 7.340

Tail Factor = 1.011 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.7963738	2.000	PASS
Benzidine	1.0107875	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	998892			N/A
4,4-DDE	1889	0.2	20.0	PASS
4,4-DDD	41313	4.0	20.0	PASS
4,4-DDD + DDE	43202	4.1	20.0	PASS

Tuning Sample, nt11.i/20200827.b/NT1120082701.D, *** PASSED ***

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	48.14
70	Less than 2.00% of mass 69	0.00 (0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.19
365	1.00 - 100.00% of mass 198	3.42
441	Less than 150.00% of mass 443	14.99 (75.09)
442	Less than 200.00% of mass 198	98.16
443	15.00 - 24.00% of mass 442	19.96 (20.34)

Data File: NT1120082701.D
Spectrum: Avg. Scans 316-318 (4.78), Background Scan 312
Location of Maximum: 198.00
Number of points: 174

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	1941	117.00	50320	181.00	6022	256.00	34600
39.00	15485	118.00	4195	185.00	8139	257.00	2333
49.00	2696	122.00	4235	186.00	66480	258.00	12282
50.00	58784	123.00	7120	187.00	19448	259.00	1560
51.00	232000	124.00	3163	188.00	863	265.00	5119
52.00	11752	125.00	3394	189.00	3482	273.00	7663
56.00	7248	127.00	261888	191.00	1743	274.00	19792
57.00	17960	128.00	19768	192.00	5434	275.00	108560
61.00	2132	129.00	98776	193.00	5882	276.00	14774
62.00	3434	130.00	8462	196.00	14144	277.00	8657
63.00	9639	131.00	1030	198.00	427584	285.00	827
65.00	4977	134.00	2918	199.00	30744	293.00	1754
69.00	205824	135.00	8793	200.00	1923	296.00	28640
73.00	741	136.00	2894	201.00	1926	297.00	3772
74.00	21400	137.00	4091	203.00	3001	303.00	3540
75.00	33352	141.00	11851	204.00	15126	315.00	2477
76.00	11950	142.00	4210	205.00	25776	316.00	1506
77.00	251584	143.00	2814	206.00	113792	323.00	10571
78.00	17936	146.00	1656	207.00	14203	324.00	1453
79.00	14518	147.00	6952	208.00	3651	327.00	1524
80.00	11761	148.00	12680	210.00	739	334.00	6431
81.00	17192	149.00	2872	211.00	4346	335.00	1429
82.00	3943	151.00	833	216.00	2822	346.00	2166
83.00	4206	153.00	3641	217.00	28896	352.00	3275
85.00	2620	154.00	3375	218.00	3980	353.00	1910
86.00	4622	155.00	7357	221.00	23072	354.00	2621
87.00	1664	156.00	10070	222.00	1872	365.00	14621
91.00	3958	157.00	1498	223.00	6518	366.00	2204
92.00	4127	158.00	1417	224.00	61440	372.00	6406
93.00	24808	160.00	3642	225.00	14926	373.00	1390
94.00	1588	161.00	5920	227.00	23088	383.00	671
98.00	18864	165.00	4518	228.00	3791	402.00	2025
99.00	16217	166.00	3866	229.00	4874	403.00	3639
101.00	9486	167.00	23472	231.00	1648	404.00	703
103.00	2079	168.00	11061	235.00	745	421.00	3401
104.00	5375	169.00	1468	237.00	1492	422.00	2551
105.00	5151	172.00	887	242.00	2576	423.00	23288
106.00	1478	173.00	2891	243.00	3821	424.00	4186
107.00	70976	174.00	5335	244.00	48984	441.00	64096
108.00	10848	175.00	9807	245.00	6111	442.00	419712
110.00	135360	176.00	3189	246.00	7978	443.00	85360
111.00	20792	177.00	3727	247.00	704	444.00	7482
112.00	919	179.00	17984	249.00	1459		
116.00	4001	180.00	11984	255.00	224128		

INITIAL CALIBRATION DATA

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Calibration:	DH00073	Instrument:	NT11
Calibration Date:	08/27/2020	Column (1):	RXi-17Sil-MS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		**RRF**		**RRF**		**RRF**		**RRF**		**RRF**
Naphthalene	10	1.436211	50	1.140602	100	1.176612	250	1.108506	500	1.081749	1000	1.023801
2-Methylnaphthalene	10	1.118463	50	0.8860822	100	0.9369899	250	0.908896	500	0.8964616	1000	0.8699377
1-Methylnaphthalene	10	1.042292	50	0.8243846	100	0.8708223	250	0.8406331	500	0.8348889	1000	0.8082524
2-Chloronaphthalene	10	2.169147	50	1.709673	100	1.794016	250	1.62895	500	1.626173	1000	1.522603
Acenaphthylene	10	2.837807	50	2.223674	100	2.351087	250	2.207633	500	2.146163	1000	2.001012
Acenaphthene	10	1.863154	50	1.4703	100	1.553486	250	1.437326	500	1.429369	1000	1.351866
Dibenzofuran	10	2.498391	50	1.995771	100	2.100929	250	1.929448	500	1.889105	1000	1.741038
Fluorene	10	1.901351	50	1.480397	100	1.586904	250	1.504697	500	1.489606	1000	1.399744
Phenanthrene	10	1.593573	50	1.281601	100	1.375353	250	1.238113	500	1.234543	1000	1.126768
Anthracene	10	1.570432	50	1.309791	100	1.400254	250	1.214609	500	1.205156	1000	1.143193
Carbazole	10	1.661949	50	1.28917	100	1.397778	250	1.393815	500	1.351465	1000	1.26363
Fluoranthene	10	1.535263	50	1.266105	100	1.395483	250	1.234146	500	1.234924	1000	1.160363
Pyrene	10	1.64443	50	1.292746	100	1.417594	250	1.259735	500	1.244652	1000	1.169937
Benzo(a)anthracene	10	1.75386	50	1.294745	100	1.450329	250	1.442863	500	1.467704	1000	1.405416
Chrysene	10	2.056788	50	1.568253	100	1.72338	250	1.519434	500	1.583246	1000	1.474463
Benzo(b)fluoranthene	10	1.295128	50	0.8496249	100	0.9703341	250	1.117513	500	1.157442	1000	1.141683
Benzo(k)fluoranthene	10	1.69006	50	1.29795	100	1.48756	250	1.272792	500	1.455517	1000	1.378715
Benzo(j)fluoranthene	10	1.875606	50	1.639741	100	1.693121	250	1.346015	500	1.430246	1000	1.290254
Benzofluoranthenes, Total	30	1.620265	150	1.262439	300	1.383671	750	1.24544	1500	1.347735	3000	1.270217
Benzo(a)pyrene	10	1.322294	50	0.9846312	100	1.104004	250	1.0865	500	1.179849	1000	1.144591
Perylene	10	1.522625	50	1.25785	100	1.284251	250	1.197871	500	1.283412	1000	1.226211
Indeno(1,2,3-cd)pyrene	10	1.243012	50	0.8857491	100	0.9977913	250	1.101241	500	1.188138	1000	1.208773
Dibenzo(a,h)anthracene	10	0.900195	50	0.6652844	100	0.7786969	250	0.9218947	500	0.9833981	1000	1.01565
Benzo(g,h,i)perylene	10	1.320816	50	0.9583396	100	1.075226	250	1.049342	500	1.121641	1000	1.098418
2-Methylnaphthalene-d10	10	0.9029176	50	0.7864943	100	0.7919638	250	0.7913808	500	0.7899229	1000	0.7624283
Dibenzo[a,h]anthracene-d14	10	0.6264958	50	0.5491311	100	0.5924731	250	0.785253	500	0.8175077	1000	0.8503878
Fluoranthene-d10	10	1.155991	50	1.05095	100	1.079208	250	1.02859	500	1.010169	1000	0.9664667

INITIAL CALIBRATION DATA

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Calibration:	DH00073	Instrument:	NT11
Calibration Date:	08/27/2020	Column (1):	RXi-17Sil-MS

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Naphthalene	1.161247	12.4			RSD (15)	
2-Methylnaphthalene	0.9361384	9.8			RSD (15)	
1-Methylnaphthalene	0.8702122	10.0			RSD (15)	
2-Chloronaphthalene	1.74176	13.1			RSD (15)	
Acenaphthylene	2.294563	12.6			RSD (15)	
Acenaphthene	1.517583	12.0			RSD (15)	
Dibenzofuran	2.02578	12.9			RSD (15)	
Fluorene	1.56045	11.4			RSD (15)	
Phenanthrene	1.308325	12.3			RSD (15)	
Anthracene	1.307239	12.0			RSD (15)	
Carbazole	1.392968	10.2			RSD (15)	
Fluoranthene	1.304381	10.5			RSD (15)	
Pyrene	1.338182	12.7			RSD (15)	
Benzo(a)anthracene	1.469153	10.4			RSD (15)	
Chrysene	1.654261	13.0			RSD (15)	
Benzo(b)fluoranthene	1.088621	14.4			RSD (15)	
Benzo(k)fluoranthene	1.430432	10.7			RSD (15)	
Benzo(j)fluoranthene	1.54583	14.7			RSD (15)	
Benzofluoranthenes, Total	1.354961	10.4			RSD (15)	
Benzo(a)pyrene	1.136978	9.9			RSD (15)	
Perylene	1.29537	9.0			RSD (15)	
Indeno(1,2,3-cd)pyrene	1.104117	12.6			RSD (15)	
Dibenzo(a,h)anthracene	0.8775199	15.1		0.9992	QCOD (0.99)	
Benzo(g,h,i)perylene	1.103964	10.9			RSD (15)	
2-Methylnaphthalene-d10	0.8041846	6.2			RSD (15)	
Dibenzo[a,h]anthracene-d14	0.7035414	18.4		0.9989	QCOD (0.99)	
Fluoranthene-d10	1.048562	6.2			RSD (15)	

Printed: 8/28/2020 9:29:05AM

ANALYSIS SEQUENCE

SIH0304

Instrument: NT11 Element Column ID: I005862
Calibration ID: DH00073 Tune File: 190904.U
EM Voltage: 1247

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SIH0304-TUN1	DFTPP	QC		1	I007631		
SIH0304-CAL4	PAH 250	QC		2	I004578	I002616	
SIH0304-CAL6	PAH 1000	QC		3	I004580	I002616	
SIH0304-CAL1	PAH 10	QC		4	I004575	I002616	
SIH0304-CAL5	PAH 500	QC		5	I004579	I002616	
SIH0304-CAL2	PAH 50	QC		6	I004576	I002616	
SIH0304-CAL3	PAH 100	QC		7	I004577	I002616	
SIH0304-SCV1	PAH 250 SCV	QC		8	I004581	I002616	
SIH0304-ICB1	Initial Cal Blank	QC		9	I007632	I002616	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20200827.b

	Time	Filename	LabID	ClientId	DF									
1	1220	NT1120082701.D	SIH0304-TUN1		1	|NO ISTDS FOUND||								
2	1235	NT1120082702.D	SIH0304-CAL4		1	| 6.81	215332||	9.81	102217||	12.48	170387||	17.21	116138||	19.98	139038|
3	1307	NT1120082703.D	SIH0304-CAL6		1	| 6.81	211963||	9.81	104596||	12.48	173851||	17.21	118274||	19.98	139375|
4	1338	NT1120082704.D	SIH0304-CAL1		1	| 6.80	218979||	9.81	96342||	12.48	152977||	17.21	94808||	19.98	108221|
5	1408	NT1120082705.D	SIH0304-CAL5		1	| 6.80	205773||	9.81	98118||	12.48	160808||	17.21	104617||	19.98	121661|
6	1438	NT1120082706.D	SIH0304-CAL2		1	| 6.80	206491||	9.81	90319||	12.48	134229||	17.21	84619||	19.98	93566|
7	1508	NT1120082707.D	SIH0304-CAL3		1	| 6.80	198254||	9.81	88696||	12.48	133333||	17.21	84043||	19.98	92362|
8	1538	NT1120082708.D	SIH0304-SCV1		1	| 6.80	202035||	9.81	90189||	12.48	142829||	17.22	104063||	19.98	119273|
9	1609	NT1120082709.D	SIH0304-ICB1		1	| 6.80	216694||	9.81	94656||	12.48	145070||	17.22	97049||	19.98	107633|

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20200827.b

Instrument: nt11.i Date: 27-AUG-2020

Time	Filename	LabID	DF	Manually Integrated Compounds
1220	NT1120082701.D	SIH0304-TUN1	1	NO MANUAL INTEGRATION
1235	NT1120082702.D	SIH0304-CAL4	1	NO MANUAL INTEGRATION
1307	NT1120082703.D	SIH0304-CAL6	1	NO MANUAL INTEGRATION
1338	NT1120082704.D	SIH0304-CAL1	1	Dibenzo(a,h)anthracene-d14,
1408	NT1120082705.D	SIH0304-CAL5	1	NO MANUAL INTEGRATION
1438	NT1120082706.D	SIH0304-CAL2	1	NO MANUAL INTEGRATION
1508	NT1120082707.D	SIH0304-CAL3	1	NO MANUAL INTEGRATION
1538	NT1120082708.D	SIH0304-SCV1	1	NO MANUAL INTEGRATION
1609	NT1120082709.D	SIH0304-ICB1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 28-Aug-2020 09:31

NT1120082701.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082702.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082703.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082704.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082705.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082706.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082707.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082708.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082709.D	Data Locked	van, 28-Aug-2020 09:31

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-AUG-2020 12:35
End Cal Date : 27-AUG-2020 15:08
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Last Edit : 28-Aug-2020 06:57 van

Calibration File Names:
Level 1: \\target\share\chem3\nt11.i\20200827.b\NT1120082704.D
Level 2: \\target\share\chem3\nt11.i\20200827.b\NT1120082706.D
Level 3: \\target\share\chem3\nt11.i\20200827.b\NT1120082707.D
Level 4: \\target\share\chem3\nt11.i\20200827.b\NT1120082702.D
Level 5: \\target\share\chem3\nt11.i\20200827.b\NT1120082705.D
Level 6: \\target\share\chem3\nt11.i\20200827.b\NT1120082703.D

Compound	10.0000 Level 1	50.0000 Level 2	100.0000 Level 3	250.0000 Level 4	500.0000 Level 5	1000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
2 Naphthalene	1.43621	1.14060	1.17661	1.10851	1.08175	1.02380	AVRG		1.16125		12.43511
3 Benzo(b)thiophene	1.01982	0.89891	0.92051	0.90965	0.89317	0.85470	AVRG		0.91612		6.06011
5 2-Methylnaphthalene	1.11846	0.88608	0.93699	0.90890	0.89646	0.86994	AVRG		0.93614		9.84242
6 1-Methylnaphthalene	1.04229	0.82438	0.87082	0.84063	0.83489	0.80825	AVRG		0.87021		9.97489
7 2-Chloronaphthalene	2.16915	1.70967	1.79402	1.62895	1.62617	1.52260	AVRG		1.74176		13.10572
8 Biphenyl	2.71263	2.38098	2.39149	2.23582	2.20287	1.99081	AVRG		2.31910		10.42321
9 2,6-Dimethylnaphthalene	1.92979	1.70950	1.73631	1.69093	1.68439	1.57322	AVRG		1.72069		6.77971
10 Acenaphthylene	2.83781	2.22367	2.35109	2.20763	2.14616	2.00101	AVRG		2.29456		12.61731
12 Acenaphthene	1.86315	1.47030	1.55349	1.43733	1.42937	1.35187	AVRG		1.51758		11.95682
13 Dibenzofuran	2.49839	1.99577	2.10093	1.92945	1.88910	1.74104	AVRG		2.02578		12.85253
14 2,3,5-Trimethylnaphthalene	1.37053	1.18930	1.24903	1.25307	1.23113	1.18286	AVRG		1.24599		5.44230
16 Fluorene	1.90135	1.48040	1.58690	1.50470	1.48961	1.39974	AVRG		1.56045		11.36570
17 Dibenzothiophene	1.24764	1.12307	1.13522	1.07953	1.06202	0.99612	AVRG		1.10727		7.65313
19 Phenanthrene	1.59357	1.28160	1.37535	1.23811	1.23454	1.12677	AVRG		1.30833		12.32026

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-AUG-2020 12:35
End Cal Date : 27-AUG-2020 15:08
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Last Edit : 28-Aug-2020 06:57 van

Compound	10.0000 Level 1	50.0000 Level 2	100.0000 Level 3	250.0000 Level 4	500.0000 Level 5	1000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
21 Anthracene	1.57043	1.30979	1.40025	1.21461	1.20516	1.14319	AVRG		1.30724		12.03906
22 Carbazole	1.66195	1.28917	1.39778	1.39382	1.35147	1.26363	AVRG		1.39297		10.23339
23 1-Methylphenanthrene	1.25849	1.16163	1.19639	1.12489	1.12424	1.06849	AVRG		1.15569		5.71372
25 Fluoranthene	1.53526	1.26610	1.39548	1.23415	1.23492	1.16036	AVRG		1.30438		10.48767
26 Pyrene	1.64443	1.29275	1.41759	1.25973	1.24465	1.16994	AVRG		1.33818		12.74184
27 Benzo(a)anthracene	1.75386	1.29474	1.45033	1.44286	1.46770	1.40542	AVRG		1.46915		10.39375
29 Chrysene	2.05679	1.56825	1.72338	1.51943	1.58325	1.47446	AVRG		1.65426		12.95809
30 Benzo(b)fluoranthene	1.29513	0.84962	0.97033	1.11751	1.15744	1.14168	AVRG		1.08862		14.35727
31 Benzo(k)fluoranthene	1.69006	1.29795	1.48756	1.27279	1.45552	1.37871	AVRG		1.43043		10.66547
32 Benzo(j)fluoranthene	1.87561	1.63974	1.69312	1.34601	1.43025	1.29025	AVRG		1.54583		14.69110
34 Benzo(e)pyrene	1.41322	1.15563	1.20266	1.17341	1.25451	1.19724	AVRG		1.23278		7.66778
35 Benzo(a)pyrene	1.32229	0.98463	1.10400	1.08650	1.17985	1.14459	AVRG		1.13698		9.87912
37 Perylene	1.52262	1.25785	1.28425	1.19787	1.28341	1.22621	AVRG		1.29537		8.97678
39 Dibenzo(a,h)anthracene	4871	15562	35961	160223	299103	707781	QUAD	0.000e+000	1.08730	-0.02060	0.99951
40 Indeno(1,2,3-cd)pyrene	1.24301	0.88575	0.99779	1.10124	1.18814	1.20877	AVRG		1.10412		12.56950
41 Benzo(g,h,i)perylene	1.32082	0.95834	1.07523	1.04934	1.12164	1.09842	AVRG		1.10396		10.89886
4 2-Methylnaphthalene-d10	0.90292	0.78649	0.79196	0.79138	0.78992	0.76243	AVRG		0.80418		6.17291
15 Fluorene-d10	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
20 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000
24 Fluoranthene-d10	1.15599	1.05095	1.07921	1.02859	1.01017	0.96647	AVRG		1.04856		6.19505
33 Benzo(e)pyrene-d12	+++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-AUG-2020 12:35
End Cal Date : 27-AUG-2020 15:08
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Last Edit : 28-Aug-2020 06:57 van

Compound	10.0000 Level 1	50.0000 Level 2	100.0000 Level 3	250.0000 Level 4	500.0000 Level 5	1000.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
$ 38 Dibenzo(a,h)anthracene-d14	3390	12845	27361	136475	248647	592614	QUAD	0.000e+000	1.30503	-0.03082	0.99933

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-AUG-2020 12:35
End Cal Date : 27-AUG-2020 15:08
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Last Edit : 28-Aug-2020 06:57 van

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Batch File: \\target\share\chem3\nt11.i\20200827.b
Inst ID: nt11.i

ID:	RT01	RT02	RT03	RT04	RT05
FILENAME:	NT1120082702	NT1120082704	NT1120082705	NT1120082706	NT1120082707
INJ.DATE:	27-AUG-2020	27-AUG-2020	27-AUG-2020	27-AUG-2020	27-AUG-2020
INJ.TIME:	12:35	13:38	14:08	14:38	15:08

	Compound	RT01	RT02	RT03	RT04	RT05	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	1 Naphthalene-d8	6.813	6.804	6.804	6.804	6.804	6.804	6.604-7.004	6.806	0.004
	2 Naphthalene	6.840	6.840	6.840	6.840	6.840	6.840	6.640-7.040	6.840	0.000
	3 Benzo(b)thiophene	7.094	7.093	7.093	7.093	7.093	7.093	6.893-7.293	7.093	0.000
$	4 2-Methylnaphthalene-d1	7.781	7.781	7.781	7.781	7.781	7.781	7.581-7.981	7.781	0.000
	5 2-Methylnaphthalene	7.833	7.833	7.833	7.833	7.833	7.833	7.633-8.033	7.833	0.000
	6 1-Methylnaphthalene	8.086	8.085	8.085	8.085	8.085	8.085	7.885-8.285	8.085	0.000
	7 2-Chloronaphthalene	8.737	8.737	8.737	8.737	8.737	8.737	8.537-8.937	8.737	0.000
	8 Biphenyl	8.705	8.705	8.705	8.705	8.705	8.705	8.505-8.905	8.705	0.000
	9 2,6-Dimethylnaphthalen	8.758	8.758	8.758	8.758	8.758	8.758	8.558-8.958	8.758	0.000
	10 Acenaphthylene	9.654	9.654	9.654	9.654	9.654	9.654	9.454-9.854	9.654	0.000
*	11 Acenaphthene-d10	9.807	9.807	9.807	9.807	9.807	9.807	9.607-10.007	9.807	0.000
	12 Acenaphthene	9.871	9.871	9.871	9.871	9.871	9.871	9.671-10.071	9.871	0.000
	13 Dibenzofuran	10.075	10.075	10.075	10.075	10.075	10.075	9.875-10.275	10.075	0.000
	14 2,3,5-Trimethylnaphtha	10.176	10.176	10.176	10.176	10.163	10.176	9.976-10.376	10.173	0.006
	15 Fluorene-d10	+++++	+++++	+++++	+++++	+++++	16.449	16.249-16.649	+++++	+++++
	16 Fluorene	10.694	10.694	10.694	10.694	10.694	10.694	10.494-10.894	10.694	0.000
	17 Dibenzothiophene	12.314	12.304	12.304	12.304	12.303	12.304	12.104-12.504	12.306	0.005

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Batch File: \\target\share\chem3\nt11.i\20200827.b
Inst ID: nt11.i

	Compound	RT01	RT02	RT03	RT04	RT05	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	18 Phenanthrene-d10	12.482	12.482	12.482	12.482	12.482	12.482	12.282-12.682	12.482	0.000
	19 Phenanthrene	12.524	12.524	12.514	12.514	12.524	12.524	12.324-12.724	12.520	0.006
$	20 Anthracene-d10	+++++	+++++	+++++	+++++	+++++	14.341	14.141-14.541	+++++	+++++
	21 Anthracene	12.577	12.577	12.577	12.577	12.577	12.577	12.377-12.777	12.577	0.000
	22 Carbazole	13.253	13.253	13.253	13.253	13.253	13.253	13.053-13.453	13.253	0.000
	23 1-Methylphenanthrene	13.515	13.515	13.515	13.515	13.515	13.515	13.315-13.715	13.515	0.000
$	24 Fluoranthene-d10	14.579	14.579	14.579	14.579	14.579	14.579	14.379-14.779	14.579	0.000
	25 Fluoranthene	14.608	14.608	14.608	14.608	14.608	14.608	14.408-14.808	14.608	0.000
	26 Pyrene	15.107	15.107	15.107	15.107	15.107	15.107	14.907-15.307	15.107	0.000
	27 Benzo(a)anthracene	17.123	17.123	17.123	17.123	17.123	17.123	16.923-17.323	17.123	0.000
*	28 Chrysene-d12	17.214	17.214	17.214	17.214	17.214	17.214	17.014-17.414	17.214	0.000
	29 Chrysene	17.264	17.264	17.264	17.264	17.264	17.264	17.064-17.464	17.264	0.000
	30 Benzo(b)fluoranthene	18.963	18.963	18.963	18.963	18.963	18.963	18.763-19.163	18.963	0.000
	31 Benzo(k)fluoranthene	19.001	19.001	19.001	19.001	19.001	19.001	18.801-19.201	19.001	0.000
	32 Benzo(j)fluoranthene	19.059	19.059	19.059	19.059	19.059	19.059	18.859-19.259	19.059	0.000
$	33 Benzo(e)pyrene-d12	+++++	+++++	+++++	+++++	+++++	22.353	22.153-22.553	+++++	+++++
	34 Benzo(e)pyrene	19.674	19.674	19.674	19.674	19.674	19.674	19.474-19.874	19.674	0.000
	35 Benzo(a)pyrene	19.779	19.779	19.779	19.779	19.779	19.779	19.579-19.979	19.779	0.000
	36 Perylene-d12	19.981	19.981	19.981	19.981	19.981	19.981	19.781-20.181	19.981	0.000
	37 Perylene	20.049	20.048	20.048	20.048	20.048	20.048	19.848-20.248	20.048	0.000
	38 Dibenzo(a,h)anthracene	22.419	22.418	22.418	22.418	22.418	22.418	22.218-22.618	22.418	0.000
	39 Dibenzo(a,h)anthracene	22.529	22.540	22.540	22.529	22.540	22.540	22.340-22.740	22.536	0.006

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Batch File: \\target\share\chem3\nt11.i\20200827.b
Inst ID: nt11.i

Compound	RT01	RT02	RT03	RT04	RT05	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 Indeno(1,2,3-cd)pyrene	22.562	22.562	22.562	22.562	22.562	22.562	22.362-22.762	22.562	0.000
41 Benzo(g,h,i)perylene	23.725	23.725	23.725	23.725	23.725	23.725	23.525-23.925	23.725	0.000

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem3\nt11.i\20200827.b\LOWSIM.m
Batch File: \\target\share\chem3\nt11.i\20200827.b
Inst ID: nt11.i

ID: RT01
FILENAME: NT1120082703
INJ.DATE: 27-AUG-2020
INJ.TIME: 13:07

	Compound	RT01	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	1 Naphthalene-d8	6.813	6.804	6.604-7.004	6.813	0.000
	2 Naphthalene	6.840	6.840	6.640-7.040	6.840	0.000
	3 Benzo(b)thiophene	7.094	7.093	6.893-7.293	7.094	0.000
$	4 2-Methylnaphthalene-d1	7.781	7.781	7.581-7.981	7.781	0.000
	5 2-Methylnaphthalene	7.833	7.833	7.633-8.033	7.833	0.000
	6 1-Methylnaphthalene	8.086	8.085	7.885-8.285	8.086	0.000
	7 2-Chloronaphthalene	8.737	8.737	8.537-8.937	8.737	0.000
	8 Biphenyl	8.705	8.705	8.505-8.905	8.705	0.000
	9 2,6-Dimethylnaphthalen	8.758	8.758	8.558-8.958	8.758	0.000
	10 Acenaphthylene	9.654	9.654	9.454-9.854	9.654	0.000
*	11 Acenaphthene-d10	9.807	9.807	9.607-10.007	9.807	0.000
	12 Acenaphthene	9.871	9.871	9.671-10.071	9.871	0.000
	13 Dibenzofuran	10.075	10.075	9.875-10.275	10.075	0.000
	14 2,3,5-Trimethylnaphtha	10.176	10.176	9.976-10.376	10.176	0.000
	15 Fluorene-d10	+++++	16.449	16.249-16.649	+++++	+++++
	16 Fluorene	10.694	10.694	10.494-10.894	10.694	0.000
	17 Dibenzothiophene	12.314	12.304	12.104-12.504	12.314	0.000
	18 Phenanthrene-d10	12.482	12.482	12.282-12.682	12.482	0.000
	19 Phenanthrene	12.524	12.524	12.324-12.724	12.524	0.000
	20 Anthracene-d10	+++++	14.341	14.141-14.541	+++++	+++++

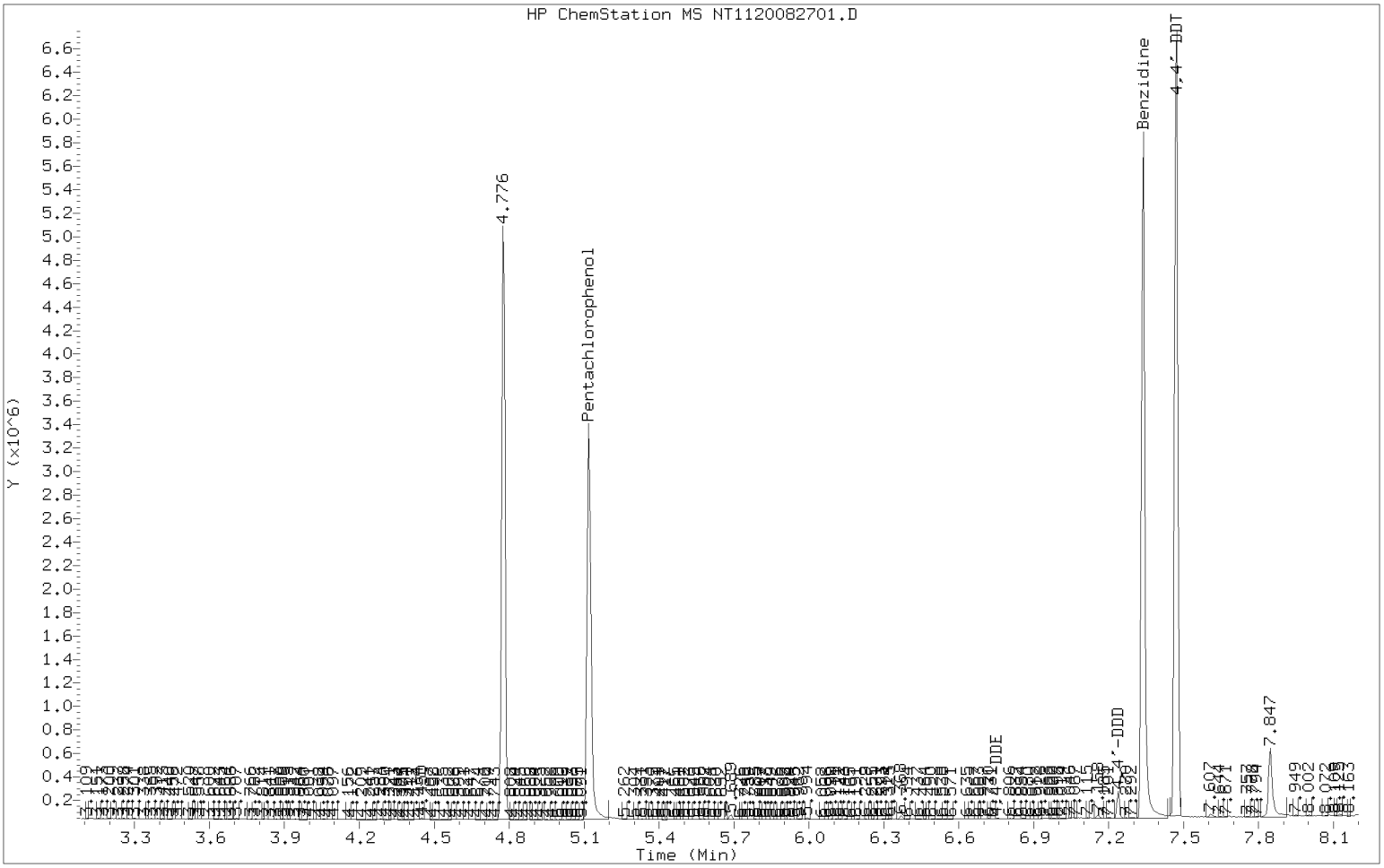
ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

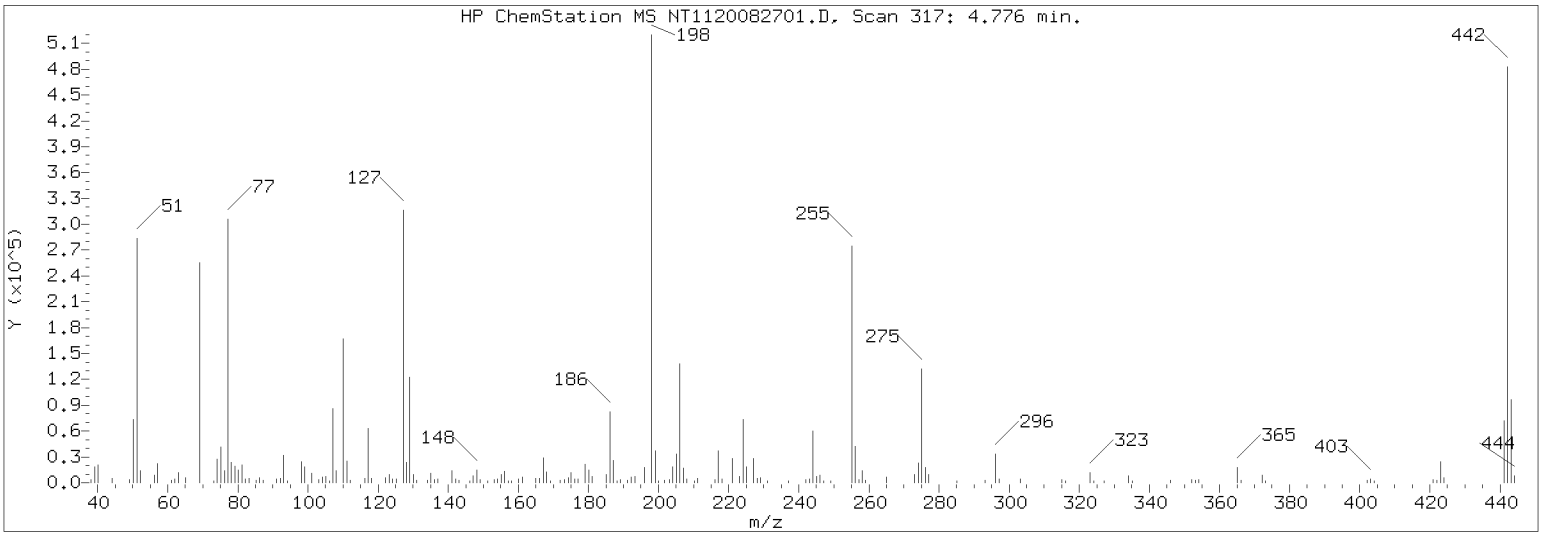
Method File: \\target\share\chem3\nt11.i\20200827.b\LOWSIM.m
Batch File: \\target\share\chem3\nt11.i\20200827.b
Inst ID: nt11.i

	Compound	RT01	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	21 Anthracene	12.577	12.577	12.377-12.777	12.577	0.000
	22 Carbazole	13.253	13.253	13.053-13.453	13.253	0.000
	23 1-Methylphenanthrene	13.524	13.515	13.315-13.715	13.524	0.000
$	24 Fluoranthene-d10	14.579	14.579	14.379-14.779	14.579	0.000
	25 Fluoranthene	14.608	14.608	14.408-14.808	14.608	0.000
	26 Pyrene	15.107	15.107	14.907-15.307	15.107	0.000
	27 Benzo(a)anthracene	17.123	17.123	16.923-17.323	17.123	0.000
*	28 Chrysene-d12	17.214	17.214	17.014-17.414	17.214	0.000
	29 Chrysene	17.264	17.264	17.064-17.464	17.264	0.000
	30 Benzo(b)fluoranthene	18.963	18.963	18.763-19.163	18.963	0.000
	31 Benzo(k)fluoranthene	19.001	19.001	18.801-19.201	19.001	0.000
	32 Benzo(j)fluoranthene	19.059	19.059	18.859-19.259	19.059	0.000
$	33 Benzo(e)pyrene-d12	+++++	22.353	22.153-22.553	+++++	+++++
	34 Benzo(e)pyrene	19.674	19.674	19.474-19.874	19.674	0.000
	35 Benzo(a)pyrene	19.779	19.779	19.579-19.979	19.779	0.000
*	36 Perylene-d12	19.981	19.981	19.781-20.181	19.981	0.000
	37 Perylene	20.049	20.048	19.848-20.248	20.049	0.000
	38 Dibenzo(a,h)anthracene	22.418	22.418	22.218-22.618	22.418	0.000
	39 Dibenzo(a,h)anthracene	22.540	22.540	22.340-22.740	22.540	0.000
	40 Indeno(1,2,3-cd)pyrene	22.562	22.562	22.362-22.762	22.562	0.000
	41 Benzo(g,h,i)perylene	23.725	23.725	23.525-23.925	23.725	0.000

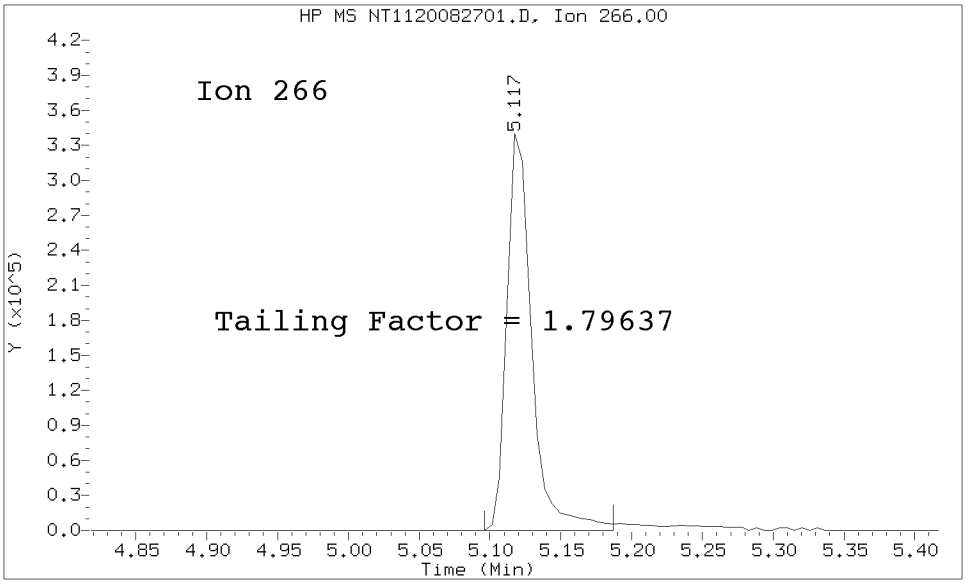
DFTPP TAILING FACTOR AND BREAKDOWN GRAPHIC REPORT

Datafile Analyzed: /20200827.b/NT1120082701.D/NT1120082701.D
Method Used: \20200827.b\DFTPP8270E.m Inst: nt11
Injection Date: 27-AUG-2020 12:20 Operator: VTS
Sample Info: SIH0304-TUN1 SIH0304-TUN1
Report Date: 08/28/2020 09:13



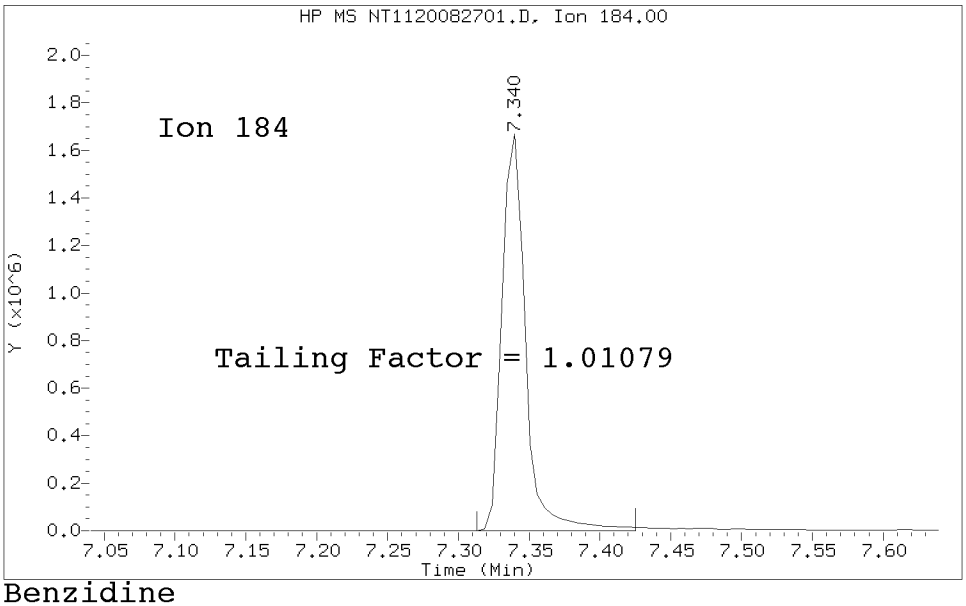


Datafile Analyzed: /20200827.b/NT1120082701.D/NT1120082701.D
Method Used: \20200827.b\DFTPP8270E.m\sw846ddt.m Inst: nt11
Injection Date: 27-AUG-2020 12:20 Operator: JZ
Sample Info: SIH0304-TUN1
Report Date: 08/28/2020 09:13



Pentachlorophenol
==========
Exp. RT = 5.123
Found RT = 5.117

Tail Factor = 1.796 Maximum Allowed = 2.0



Benzidine
==========
Exp. RT = 7.345
Found RT = 7.340

Tail Factor = 1.011 Maximum Allowed = 2.0

8270 TAILING FACTOR/BREAKDOWN SUMMARY RESULTS

TAILING ANALYSIS SUMMARY

Compound	Tail Factor	Max Allowed	Test
Pentachlorophenol	1.7963738	2.000	PASS
Benzidine	1.0107875	2.000	PASS

DDT DEGRADATION BREAKDOWN ANALYSIS SUMMARY

Compound	Response	%Breakdown	Max Allowed	Test
4,4-DDT	998892			N/A
4,4-DDE	1889	0.2	20.0	PASS
4,4-DDD	41313	4.0	20.0	PASS
4,4-DDD + DDE	43202	4.1	20.0	PASS

Tuning Sample, nt11.i/20200827.b/NT1120082701.D, *** PASSED ***

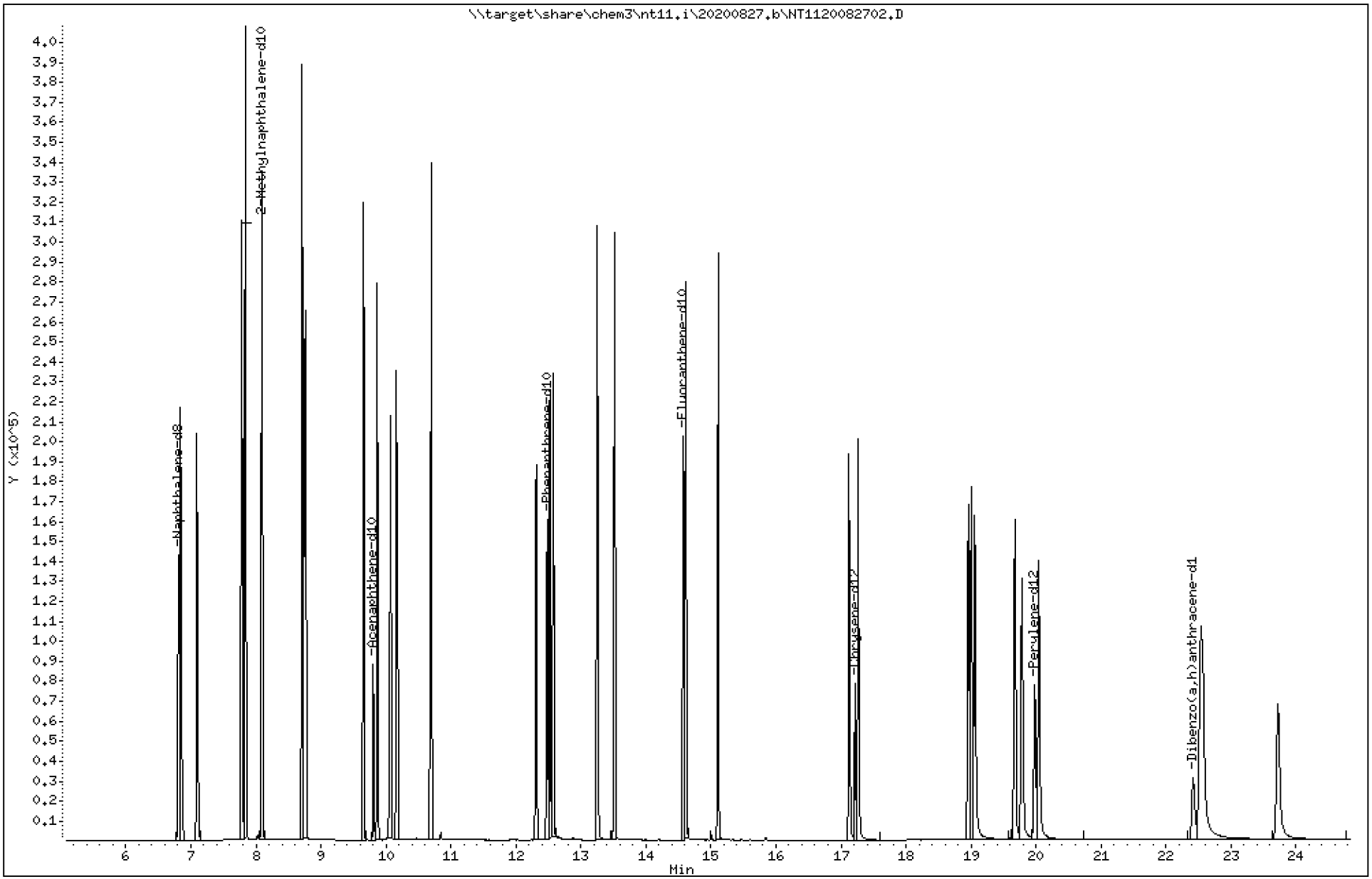
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	48.14
70	Less than 2.00% of mass 69	0.00 (0.00)
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.19
365	1.00 - 100.00% of mass 198	3.42
441	Less than 150.00% of mass 443	14.99 (75.09)
442	Less than 200.00% of mass 198	98.16
443	15.00 - 24.00% of mass 442	19.96 (20.34)

Data File: NT1120082701.D
Spectrum: Avg. Scans 316-318 (4.78), Background Scan 312
Location of Maximum: 198.00
Number of points: 174

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	1941	117.00	50320	181.00	6022	256.00	34600
39.00	15485	118.00	4195	185.00	8139	257.00	2333
49.00	2696	122.00	4235	186.00	66480	258.00	12282
50.00	58784	123.00	7120	187.00	19448	259.00	1560
51.00	232000	124.00	3163	188.00	863	265.00	5119
52.00	11752	125.00	3394	189.00	3482	273.00	7663
56.00	7248	127.00	261888	191.00	1743	274.00	19792
57.00	17960	128.00	19768	192.00	5434	275.00	108560
61.00	2132	129.00	98776	193.00	5882	276.00	14774
62.00	3434	130.00	8462	196.00	14144	277.00	8657
63.00	9639	131.00	1030	198.00	427584	285.00	827
65.00	4977	134.00	2918	199.00	30744	293.00	1754
69.00	205824	135.00	8793	200.00	1923	296.00	28640
73.00	741	136.00	2894	201.00	1926	297.00	3772
74.00	21400	137.00	4091	203.00	3001	303.00	3540
75.00	33352	141.00	11851	204.00	15126	315.00	2477
76.00	11950	142.00	4210	205.00	25776	316.00	1506
77.00	251584	143.00	2814	206.00	113792	323.00	10571
78.00	17936	146.00	1656	207.00	14203	324.00	1453
79.00	14518	147.00	6952	208.00	3651	327.00	1524
80.00	11761	148.00	12680	210.00	739	334.00	6431
81.00	17192	149.00	2872	211.00	4346	335.00	1429
82.00	3943	151.00	833	216.00	2822	346.00	2166
83.00	4206	153.00	3641	217.00	28896	352.00	3275
85.00	2620	154.00	3375	218.00	3980	353.00	1910
86.00	4622	155.00	7357	221.00	23072	354.00	2621
87.00	1664	156.00	10070	222.00	1872	365.00	14621
91.00	3958	157.00	1498	223.00	6518	366.00	2204
92.00	4127	158.00	1417	224.00	61440	372.00	6406
93.00	24808	160.00	3642	225.00	14926	373.00	1390
94.00	1588	161.00	5920	227.00	23088	383.00	671
98.00	18864	165.00	4518	228.00	3791	402.00	2025
99.00	16217	166.00	3866	229.00	4874	403.00	3639
101.00	9486	167.00	23472	231.00	1648	404.00	703
103.00	2079	168.00	11061	235.00	745	421.00	3401
104.00	5375	169.00	1468	237.00	1492	422.00	2551
105.00	5151	172.00	887	242.00	2576	423.00	23288
106.00	1478	173.00	2891	243.00	3821	424.00	4186
107.00	70976	174.00	5335	244.00	48984	441.00	64096
108.00	10848	175.00	9807	245.00	6111	442.00	419712
110.00	135360	176.00	3189	246.00	7978	443.00	85360
111.00	20792	177.00	3727	247.00	704	444.00	7482
112.00	919	179.00	17984	249.00	1459		
116.00	4001	180.00	11984	255.00	224128		

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082702.D
Date : 27-AUG-2020 12:35
Client ID:
Sample Info: SIH0304-CAL4

Instrument: nt11.i
Operator: VTS
Column phase: Rxi-17Sil MS
Column diameter: 0.25



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082702.D
Lab Smp Id: SIH0304-CAL4
Inj Date : 27-AUG-2020 12:35 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-CAL4
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 2 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
* 1	Naphthalene-d8	136	6.813	6.804	(1.000)	215332	200.000	
2	Naphthalene	128	6.840	6.840	(1.004)	298371	250.000	239
3	Benzo(b)thiophene	134	7.093	7.093	(1.041)	244845	250.000	248
$ 4	2-Methylnaphthalene-d10	152	7.780	7.780	(1.142)	213012	250.000	246
5	2-Methylnaphthalene	142	7.833	7.833	(1.150)	244643	250.000	243
6	1-Methylnaphthalene	142	8.085	8.085	(1.187)	226269	250.000	242
7	2-Chloronaphthalene	162	8.736	8.736	(0.891)	208133	250.000	234
8	Biphenyl	154	8.705	8.705	(0.888)	285674	250.000	241
9	2,6-Dimethylnaphthalene	156	8.757	8.757	(0.893)	216052	250.000	246
10	Acenaphthylene	152	9.653	9.653	(0.984)	282072	250.000	241
* 11	Acenaphthene-d10	164	9.807	9.807	(1.000)	102217	200.000	
12	Acenaphthene	153	9.870	9.870	(1.006)	183649	250.000	237
13	Dibenzofuran	168	10.074	10.074	(1.027)	246528	250.000	238
14	2,3,5-Trimethylnaphthalene	170	10.175	10.175	(1.038)	160106	250.000	251
16	Fluorene	166	10.694	10.694	(1.090)	192257	250.000	241
17	Dibenzothiophene	184	12.314	12.303	(0.987)	229922	250.000	244
* 18	Phenanthrene-d10	188	12.482	12.482	(1.000)	170387	200.000	
19	Phenanthrene	178	12.524	12.524	(1.003)	263698	250.000	237
21	Anthracene	178	12.576	12.576	(1.008)	258692	250.000	232
22	Carbazole	167	13.253	13.252	(1.062)	296860	250.000	250
23	1-Methylphenanthrene	192	13.515	13.514	(1.083)	239584	250.000	243
$ 24	Fluoranthene-d10	212	14.578	14.578	(1.168)	219073	250.000	245
25	Fluoranthene	202	14.607	14.607	(1.170)	262853	250.000	237
26	Pyrene	202	15.107	15.107	(1.210)	268303	250.000	235
27	Benzo(a)anthracene	228	17.123	17.122	(0.995)	209464	250.000	246
* 28	Chrysene-d12	240	17.214	17.214	(1.000)	116138	200.000	
29	Chrysene	228	17.264	17.264	(1.003)	220580	250.000	230
30	Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	194221	250.000	257
31	Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	221208	250.000	222
32	Benzo(j)fluoranthene	252	19.058	19.058	(0.954)	233934	250.000	218
34	Benzo(e)pyrene	252	19.673	19.673	(0.985)	203936	250.000	238
35	Benzo(a)pyrene	252	19.779	19.779	(0.990)	188831	250.000	239
* 36	Perylene-d12	264	19.981	19.981	(1.000)	139038	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	20.048	20.048	(1.003)	208187	250.000	231
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	136475	250.000	250
	39 Dibenzo(a,h)anthracene	278	22.529	22.540	(1.128)	160223	250.000	245
	40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	191393	250.000	249
	41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	182373	250.000	238

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082702.D
Lab Smp Id: SIH0304-CAL4
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	215332	0.00
11 Acenaphthene-d10	102217	51109	204434	102217	0.00
18 Phenanthrene-d10	170387	85194	340774	170387	0.00
28 Chrysene-d12	116138	58069	232276	116138	0.00
36 Perylene-d12	139038	69519	278076	139038	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.81	0.00
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	0.00
28 Chrysene-d12	17.21	16.71	17.71	17.21	0.00
36 Perylene-d12	19.98	19.48	20.48	19.98	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082702.D

Lab ID: SIH0304-CAL4
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 12:35

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

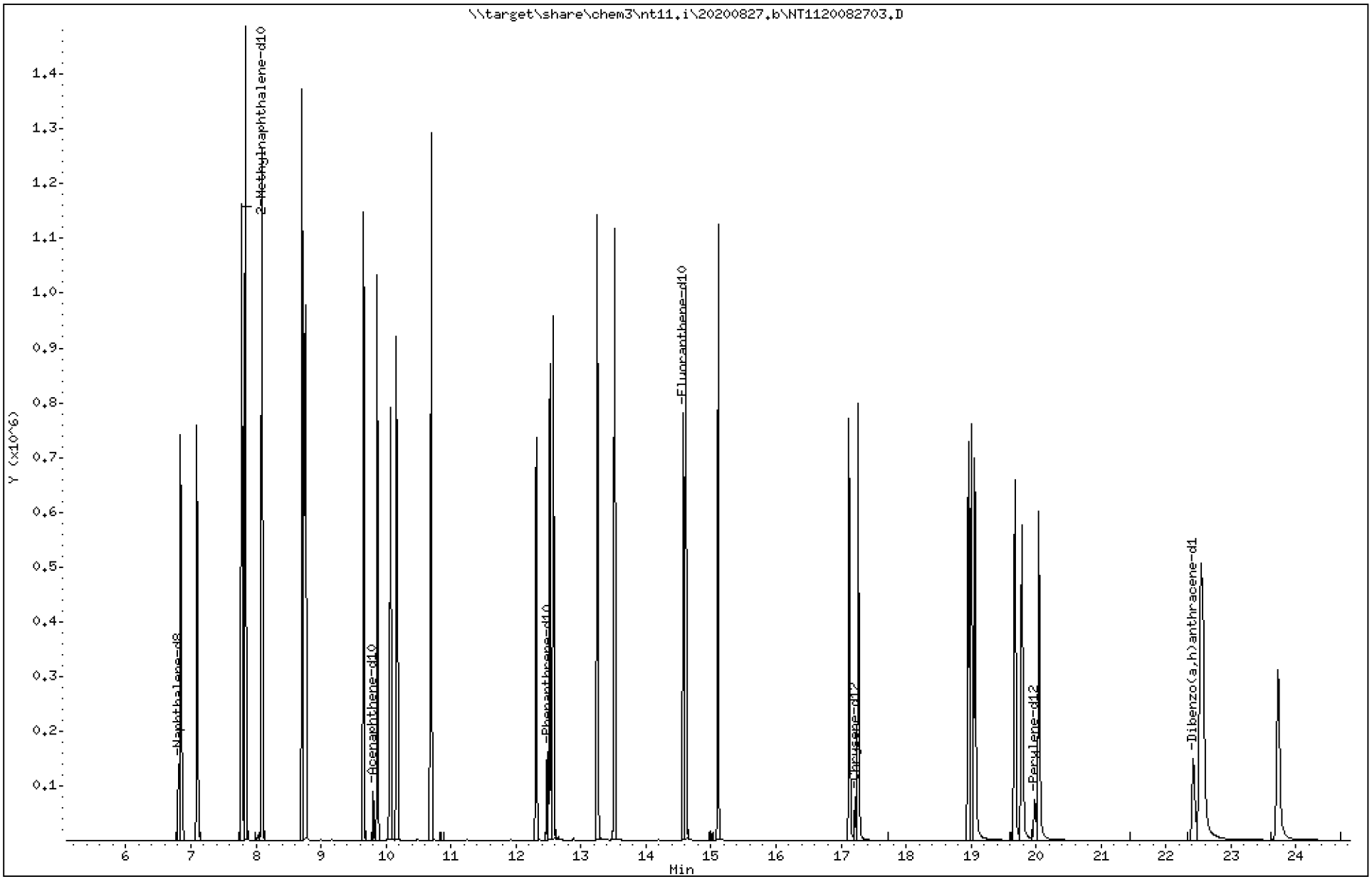
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082703.D
Date : 27-AUG-2020 13:07
Client ID:
Sample Info: SIH0304-CAL6

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082703.D
Lab Smp Id: SIH0304-CAL6
Inj Date : 27-AUG-2020 13:07 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-CAL6
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\LOWSIM.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
*	1 Naphthalene-d8	136	6.813	6.804	(1.000)	211963	200.000	
	2 Naphthalene	128	6.840	6.840	(1.004)	1085040	1000.00	882
	3 Benzo(b)thiophene	134	7.093	7.093	(1.041)	905823	1000.00	933
$	4 2-Methylnaphthalene-d10	152	7.780	7.780	(1.142)	808033	1000.00	948
	5 2-Methylnaphthalene	142	7.833	7.833	(1.150)	921973	1000.00	929
	6 1-Methylnaphthalene	142	8.085	8.085	(1.187)	856598	1000.00	929
	7 2-Chloronaphthalene	162	8.736	8.736	(0.891)	796291	1000.00	874
	8 Biphenyl	154	8.705	8.705	(0.888)	1041154	1000.00	858
	9 2,6-Dimethylnaphthalene	156	8.757	8.757	(0.893)	822760	1000.00	914
	10 Acenaphthylene	152	9.653	9.653	(0.984)	1046489	1000.00	872
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	104596	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	706999	1000.00	891
	13 Dibenzofuran	168	10.074	10.074	(1.027)	910528	1000.00	859
	14 2,3,5-Trimethylnaphthalene	170	10.175	10.175	(1.038)	618611	1000.00	949
	16 Fluorene	166	10.694	10.694	(1.090)	732038	1000.00	897
	17 Dibenzothiophene	184	12.314	12.303	(0.987)	865885	1000.00	900
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	173851	200.000	
	19 Phenanthrene	178	12.524	12.524	(1.003)	979449	1000.00	861
	21 Anthracene	178	12.576	12.576	(1.008)	993726	1000.00	875
	22 Carbazole	167	13.252	13.252	(1.062)	1098417	1000.00	907
	23 1-Methylphenanthrene	192	13.524	13.514	(1.083)	928787	1000.00	925
$	24 Fluoranthene-d10	212	14.578	14.578	(1.168)	840106	1000.00	922
	25 Fluoranthene	202	14.607	14.607	(1.170)	1008651	1000.00	890
	26 Pyrene	202	15.107	15.107	(1.210)	1016974	1000.00	874
	27 Benzo(a)anthracene	228	17.123	17.122	(0.995)	831121	1000.00	957
*	28 Chrysene-d12	240	17.214	17.214	(1.000)	118274	200.000	
	29 Chrysene	228	17.264	17.264	(1.003)	871953	1000.00	891
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	795610	1000.00	1050
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	960792	1000.00	964
	32 Benzo(j)fluoranthene	252	19.058	19.058	(0.954)	899146	1000.00	835
	34 Benzo(e)pyrene	252	19.673	19.673	(0.985)	834330	1000.00	971
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	797637	1000.00	1010(H)
*	36 Perylene-d12	264	19.981	19.981	(1.000)	139375	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	20.048	20.048	(1.003)	854516	1000.00	947
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	592614	1000.00	998
	39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	707781	1000.00	998
	40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	842364	1000.00	1090
	41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	765460	1000.00	995

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082703.D
Lab Smp Id: SIH0304-CAL6
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\LOWSIM.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	211963	-1.56
11 Acenaphthene-d10	102217	51109	204434	104596	2.33
18 Phenanthrene-d10	170387	85194	340774	173851	2.03
28 Chrysene-d12	116138	58069	232276	118274	1.84
36 Perylene-d12	139038	69519	278076	139375	0.24

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.81	-0.00
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.21	-0.00
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082703.D

Lab ID: SIH0304-CAL6
nt11.i, 20200827.b\LOWSIM.m,   27-AUG-2020 13:07

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\LOWSIM.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

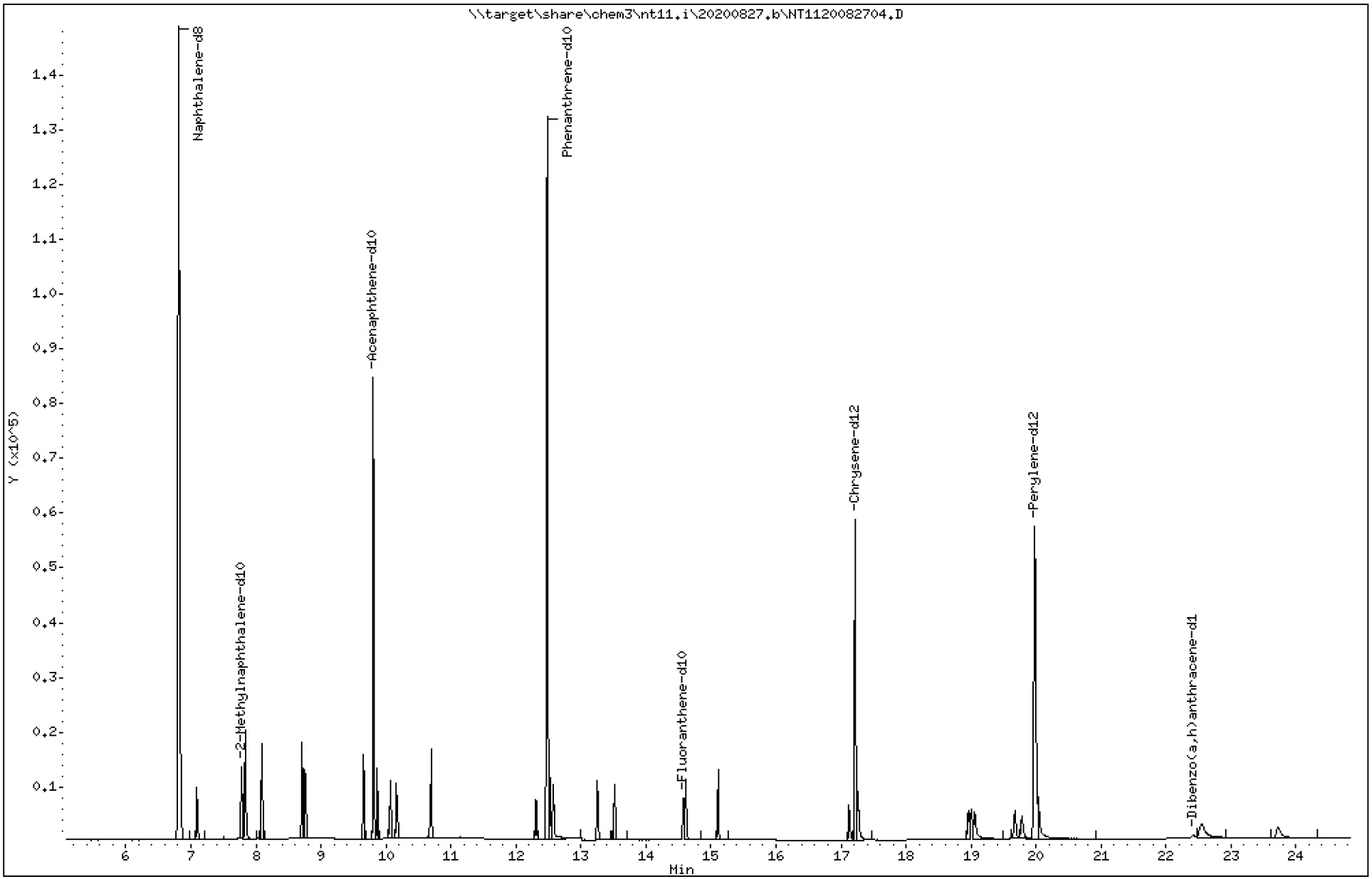
* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082704.D
Date : 27-AUG-2020 13:38
Client ID:
Sample Info: SIH0304-CAL1

Column phase: Rxi-17Sil MS

Instrument: nt11.i

Operator: VTS
Column diameter: 0.25



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082704.D
Lab Smp Id: SIH0304-CAL1
Inj Date : 27-AUG-2020 13:38 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-CAL1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	218979	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	15725	10.0000	12.4
	3 Benzo(b)thiophene	134	7.093	7.093	(1.043)	11166	10.0000	11.1
$	4 2-Methylnaphthalene-d10	152	7.780	7.780	(1.144)	9886	10.0000	11.2
	5 2-Methylnaphthalene	142	7.833	7.833	(1.151)	12246	10.0000	11.9
	6 1-Methylnaphthalene	142	8.085	8.085	(1.188)	11412	10.0000	12.0
	7 2-Chloronaphthalene	162	8.736	8.736	(0.891)	10449	10.0000	12.5
	8 Biphenyl	154	8.705	8.705	(0.888)	13067	10.0000	11.7
	9 2,6-Dimethylnaphthalene	156	8.757	8.757	(0.893)	9296	10.0000	11.2
	10 Acenaphthylene	152	9.653	9.653	(0.984)	13670	10.0000	12.4
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	96342	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	8975	10.0000	12.3
	13 Dibenzofuran	168	10.074	10.074	(1.027)	12035	10.0000	12.3
	14 2,3,5-Trimethylnaphthalene	170	10.175	10.175	(1.038)	6602	10.0000	11.0
	16 Fluorene	166	10.694	10.694	(1.090)	9159	10.0000	12.2
	17 Dibenzothiophene	184	12.303	12.303	(0.986)	9543	10.0000	11.3
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	152977	200.000	
	19 Phenanthrene	178	12.524	12.524	(1.003)	12189	10.0000	12.2
	21 Anthracene	178	12.576	12.576	(1.008)	12012	10.0000	12.0
	22 Carbazole	167	13.252	13.252	(1.062)	12712	10.0000	11.9
	23 1-Methylphenanthrene	192	13.514	13.514	(1.083)	9626	10.0000	10.9
$	24 Fluoranthene-d10	212	14.578	14.578	(1.168)	8842	10.0000	11.0
	25 Fluoranthene	202	14.607	14.607	(1.170)	11743	10.0000	11.8
	26 Pyrene	202	15.107	15.107	(1.210)	12578	10.0000	12.3
	27 Benzo(a)anthracene	228	17.122	17.122	(0.995)	8314	10.0000	11.9
*	28 Chrysene-d12	240	17.214	17.214	(1.000)	94808	200.000	
	29 Chrysene	228	17.264	17.264	(1.003)	9750	10.0000	12.4
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	7008	10.0000	11.9
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	9145	10.0000	11.8
	32 Benzo(j)fluoranthene	252	19.058	19.058	(0.954)	10149	10.0000	12.1
	34 Benzo(e)pyrene	252	19.673	19.673	(0.985)	7647	10.0000	11.5
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	7155	10.0000	11.6
*	36 Perylene-d12	264	19.981	19.981	(1.000)	108221	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	20.048	20.048	(1.003)	8239	10.0000	11.8
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	3390	10.0000	8.17(M)
	39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	4871	10.0000	9.78
	40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	6726	10.0000	11.3
	41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	7147	10.0000	12.0

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082704.D
Lab Smp Id: SIH0304-CAL1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	218979	1.69
11 Acenaphthene-d10	102217	51109	204434	96342	-5.75
18 Phenanthrene-d10	170387	85194	340774	152977	-10.22
28 Chrysene-d12	116138	58069	232276	94808	-18.37
36 Perylene-d12	139038	69519	278076	108221	-22.16

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.21	-0.00
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082704.D

Lab ID: SIH0304-CAL1
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 13:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

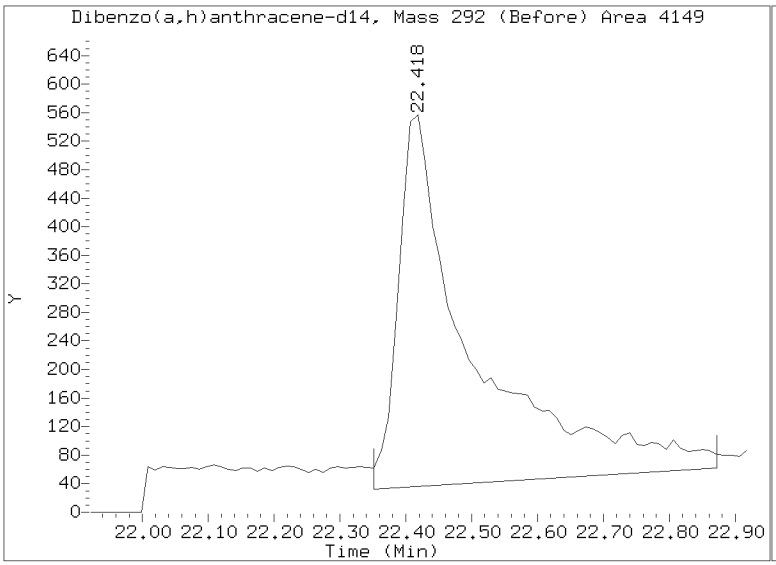
On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

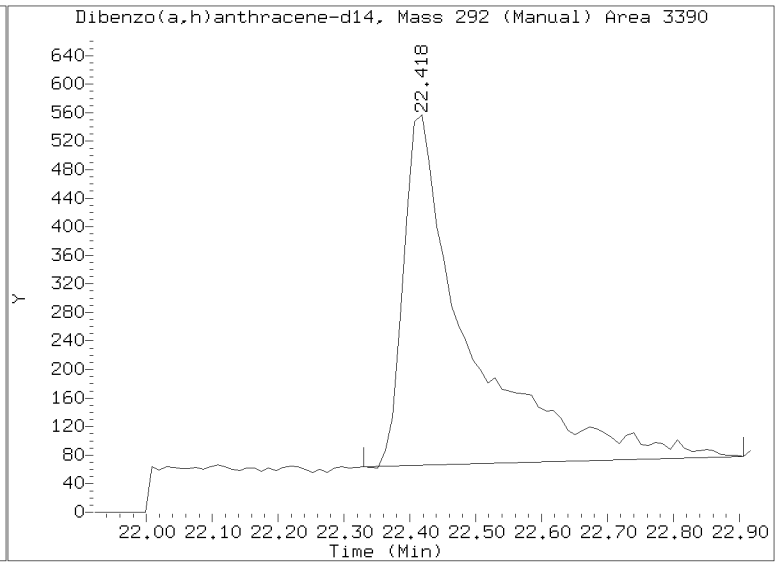
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem3/nt11.i/20200827.b/NT1120082704.D
Injection Date: 27-AUG-2020 13:38
Lab ID:SIH0304-CAL1 Client ID:
Report Date: 08/28/2020 09:10





Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082705.D

Date : 27-AUG-2020 14:08

Client ID:

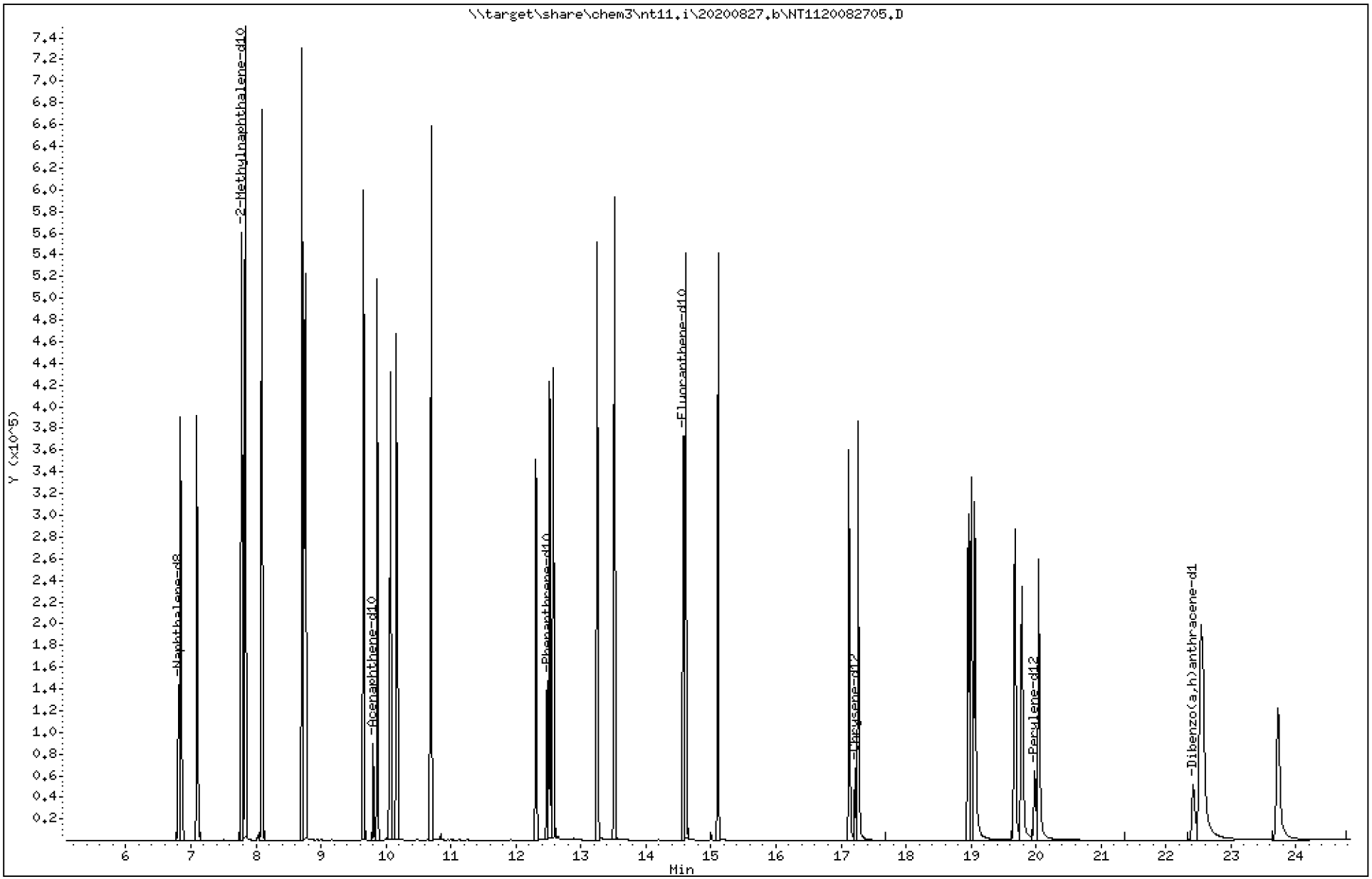
Instrument: nt11.i

Sample Info: SIH0304-CAL5

Operator: VTS

Column phase: Rxi-17Sil MS

Column diameter: 0.25



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082705.D
Lab Smp Id: SIH0304-CAL5
Inj Date : 27-AUG-2020 14:08 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-CAL5
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	205773	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	556487	500.000	466
	3 Benzo(b)thiophene	134	7.093	7.093	(1.043)	459474	500.000	487
$	4 2-Methylnaphthalene-d10	152	7.780	7.780	(1.144)	406362	500.000	491
	5 2-Methylnaphthalene	142	7.833	7.833	(1.151)	461169	500.000	479
	6 1-Methylnaphthalene	142	8.085	8.085	(1.188)	429494	500.000	480
	7 2-Chloronaphthalene	162	8.736	8.736	(0.891)	398892	500.000	467
	8 Biphenyl	154	8.705	8.705	(0.888)	540352	500.000	475
	9 2,6-Dimethylnaphthalene	156	8.757	8.757	(0.893)	413173	500.000	489
	10 Acenaphthylene	152	9.653	9.653	(0.984)	526443	500.000	468
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	98118	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	350617	500.000	471
	13 Dibenzofuran	168	10.074	10.074	(1.027)	463388	500.000	466
	14 2,3,5-Trimethylnaphthalene	170	10.175	10.175	(1.038)	301991	500.000	494
	16 Fluorene	166	10.694	10.694	(1.090)	365393	500.000	477
	17 Dibenzothiophene	184	12.303	12.303	(0.986)	426953	500.000	480
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	160808	200.000	
	19 Phenanthrene	178	12.513	12.524	(1.003)	496311	500.000	472
	21 Anthracene	178	12.576	12.576	(1.008)	484497	500.000	461
	22 Carbazole	167	13.252	13.252	(1.062)	543316	500.000	485
	23 1-Methylphenanthrene	192	13.515	13.514	(1.083)	451966	500.000	486
$	24 Fluoranthene-d10	212	14.578	14.578	(1.168)	406108	500.000	482
	25 Fluoranthene	202	14.607	14.607	(1.170)	496464	500.000	473
	26 Pyrene	202	15.107	15.107	(1.210)	500375	500.000	465
	27 Benzo(a)anthracene	228	17.123	17.122	(0.995)	383867	500.000	500
*	28 Chrysene-d12	240	17.214	17.214	(1.000)	104617	200.000	
	29 Chrysene	228	17.264	17.264	(1.003)	414086	500.000	479
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	352039	500.000	532
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	442699	500.000	509
	32 Benzo(j)fluoranthene	252	19.058	19.058	(0.954)	435013	500.000	463
	34 Benzo(e)pyrene	252	19.673	19.673	(0.985)	381561	500.000	509
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	358854	500.000	519
*	36 Perylene-d12	264	19.981	19.981	(1.000)	121661	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	20.048	20.048	(1.003)	390353	500.000	495
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	248647	500.000	508
	39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	299103	500.000	510
	40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	361375	500.000	538
	41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	341150	500.000	508

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082705.D
Lab Smp Id: SIH0304-CAL5
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	205773	-4.44
11 Acenaphthene-d10	102217	51109	204434	98118	-4.01
18 Phenanthrene-d10	170387	85194	340774	160808	-5.62
28 Chrysene-d12	116138	58069	232276	104617	-9.92
36 Perylene-d12	139038	69519	278076	121661	-12.50

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.21	-0.00
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082705.D

Lab ID: SIH0304-CAL5
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 14:08

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

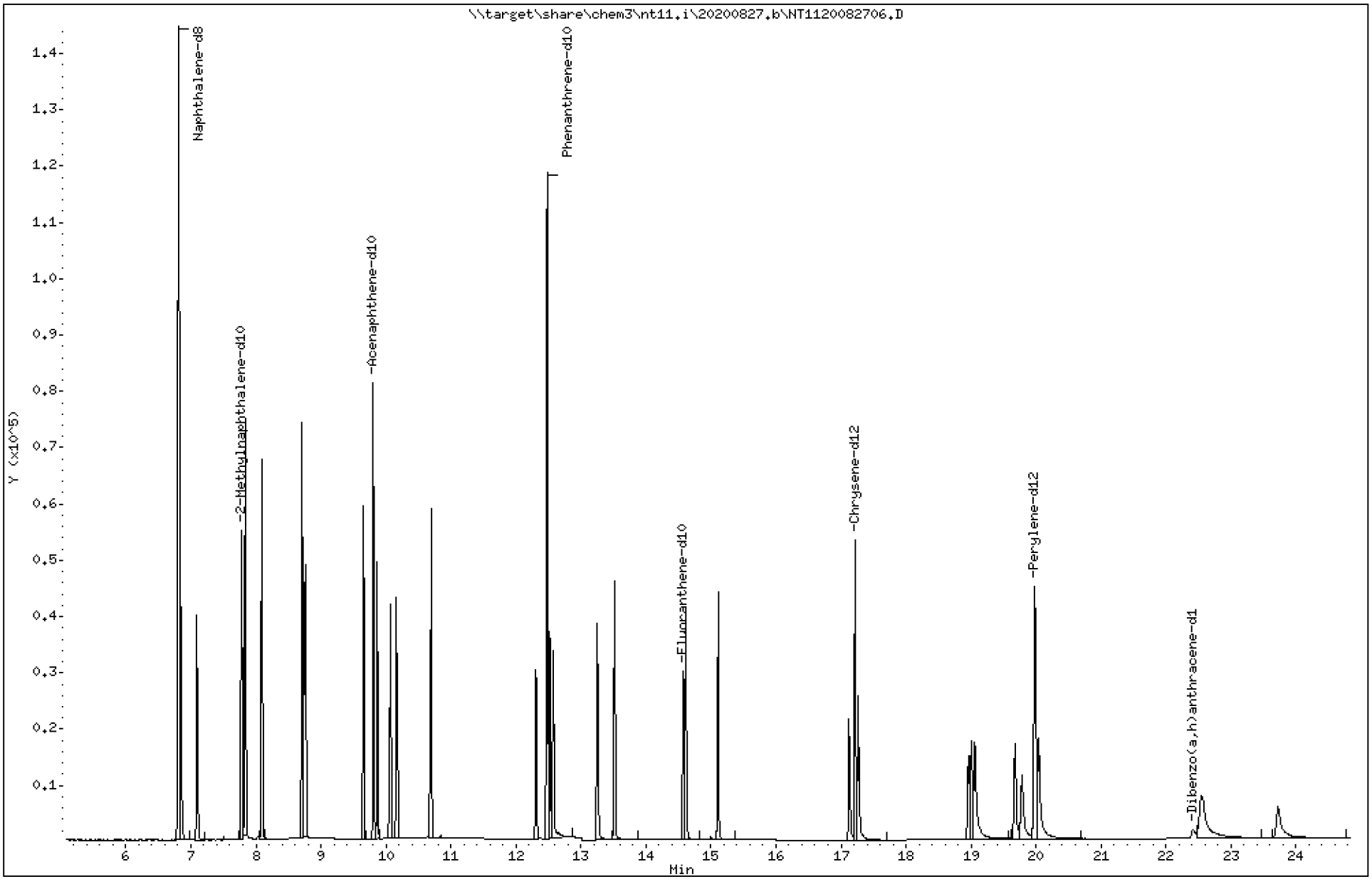
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082706.D
Date : 27-AUG-2020 14:38
Client ID:
Sample Info: SIH0304-CAL2

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082706.D
Lab Smp Id: SIH0304-CAL2
Inj Date : 27-AUG-2020 14:38 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-CAL2
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 6 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	206491	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	58881	50.0000	49.1
	3 Benzo(b)thiophene	134	7.093	7.093	(1.043)	46404	50.0000	49.1
$	4 2-Methylnaphthalene-d10	152	7.780	7.780	(1.144)	40601	50.0000	48.9
	5 2-Methylnaphthalene	142	7.833	7.833	(1.151)	45742	50.0000	47.3
	6 1-Methylnaphthalene	142	8.085	8.085	(1.188)	42557	50.0000	47.4
	7 2-Chloronaphthalene	162	8.736	8.736	(0.891)	38604	50.0000	49.1
	8 Biphenyl	154	8.705	8.705	(0.888)	53762	50.0000	51.3
	9 2,6-Dimethylnaphthalene	156	8.757	8.757	(0.893)	38600	50.0000	49.7
	10 Acenaphthylene	152	9.653	9.653	(0.984)	50210	50.0000	48.5
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	90319	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	33199	50.0000	48.4
	13 Dibenzofuran	168	10.074	10.074	(1.027)	45064	50.0000	49.3
	14 2,3,5-Trimethylnaphthalene	170	10.175	10.175	(1.038)	26854	50.0000	47.7
	16 Fluorene	166	10.694	10.694	(1.090)	33427	50.0000	47.4
	17 Dibenzothiophene	184	12.303	12.303	(0.986)	37687	50.0000	50.7
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	134229	200.000	
	19 Phenanthrene	178	12.513	12.524	(1.003)	43007	50.0000	49.0
	21 Anthracene	178	12.576	12.576	(1.008)	43953	50.0000	50.1
	22 Carbazole	167	13.252	13.252	(1.062)	43261	50.0000	46.3
	23 1-Methylphenanthrene	192	13.514	13.514	(1.083)	38981	50.0000	50.3
$	24 Fluoranthene-d10	212	14.578	14.578	(1.168)	35267	50.0000	50.1
	25 Fluoranthene	202	14.607	14.607	(1.170)	42487	50.0000	48.5
	26 Pyrene	202	15.107	15.107	(1.210)	43381	50.0000	48.3
	27 Benzo(a)anthracene	228	17.123	17.122	(0.995)	27390	50.0000	44.1
*	28 Chrysene-d12	240	17.214	17.214	(1.000)	84619	200.000	
	29 Chrysene	228	17.264	17.264	(1.003)	33176	50.0000	47.4
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	19874	50.0000	39.0
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	30361	50.0000	45.4
	32 Benzo(j)fluoranthene	252	19.058	19.058	(0.954)	38356	50.0000	53.0
	34 Benzo(e)pyrene	252	19.673	19.673	(0.985)	27032	50.0000	46.9
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	23032	50.0000	43.3
*	36 Perylene-d12	264	19.981	19.981	(1.000)	93566	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	20.048	20.048	(1.003)	29423	50.0000	48.6
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	12845	50.0000	35.7
	39 Dibenzo(a,h)anthracene	278	22.529	22.540	(1.128)	15562	50.0000	36.1
	40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	20719	50.0000	40.1
	41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	22417	50.0000	43.4

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082706.D
Lab Smp Id: SIH0304-CAL2
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	206491	-4.11
11 Acenaphthene-d10	102217	51109	204434	90319	-11.64
18 Phenanthrene-d10	170387	85194	340774	134229	-21.22
28 Chrysene-d12	116138	58069	232276	84619	-27.14
36 Perylene-d12	139038	69519	278076	93566	-32.70

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.21	-0.00
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082706.D

Lab ID: SIH0304-CAL2
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 14:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

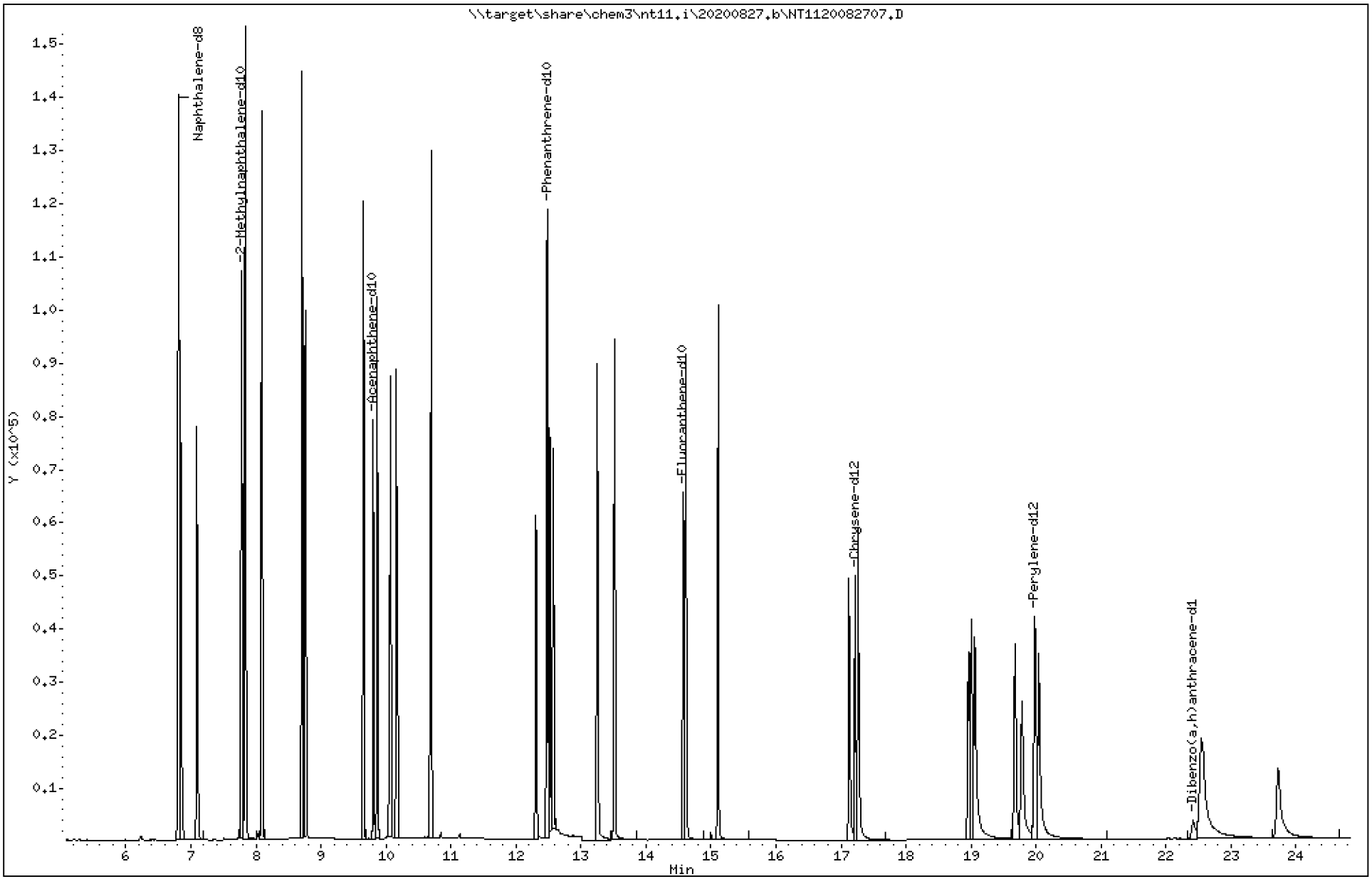
Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082707.D
Date : 27-AUG-2020 15:08
Client ID:
Sample Info: SIH0304-CAL3

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082707.D
Lab Smp Id: SIH0304-CAL3
Inj Date : 27-AUG-2020 15:08 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-CAL3
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 7 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	198254	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	116634	100.000	101
	3 Benzo(b)thiophene	134	7.093	7.093	(1.043)	91247	100.000	100
$	4 2-Methylnaphthalene-d10	152	7.780	7.780	(1.144)	78505	100.000	98.5
	5 2-Methylnaphthalene	142	7.833	7.833	(1.151)	92881	100.000	100
	6 1-Methylnaphthalene	142	8.085	8.085	(1.188)	86322	100.000	100
	7 2-Chloronaphthalene	162	8.736	8.736	(0.891)	79561	100.000	103
	8 Biphenyl	154	8.705	8.705	(0.888)	106058	100.000	103
	9 2,6-Dimethylnaphthalene	156	8.757	8.757	(0.893)	77002	100.000	101
	10 Acenaphthylene	152	9.653	9.653	(0.984)	104266	100.000	102
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	88696	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	68894	100.000	102
	13 Dibenzofuran	168	10.074	10.074	(1.027)	93172	100.000	104
	14 2,3,5-Trimethylnaphthalene	170	10.163	10.175	(1.036)	55392	100.000	100
	16 Fluorene	166	10.693	10.694	(1.090)	70376	100.000	102
	17 Dibenzothiophene	184	12.303	12.303	(0.986)	75681	100.000	103
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	133333	200.000	
	19 Phenanthrene	178	12.524	12.524	(1.003)	91690	100.000	105
	21 Anthracene	178	12.576	12.576	(1.008)	93350	100.000	107
	22 Carbazole	167	13.252	13.252	(1.062)	93185	100.000	100
	23 1-Methylphenanthrene	192	13.514	13.514	(1.083)	79759	100.000	104
$	24 Fluoranthene-d10	212	14.578	14.578	(1.168)	71947	100.000	103
	25 Fluoranthene	202	14.607	14.607	(1.170)	93032	100.000	107
	26 Pyrene	202	15.107	15.107	(1.210)	94506	100.000	106
	27 Benzo(a)anthracene	228	17.122	17.122	(0.995)	60945	100.000	98.7
*	28 Chrysene-d12	240	17.214	17.214	(1.000)	84043	200.000	
	29 Chrysene	228	17.264	17.264	(1.003)	72419	100.000	104
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	44811	100.000	89.1
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	68697	100.000	104
	32 Benzo(j)fluoranthene	252	19.058	19.058	(0.954)	78190	100.000	110
	34 Benzo(e)pyrene	252	19.673	19.673	(0.985)	55540	100.000	97.6
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	50984	100.000	97.1
*	36 Perylene-d12	264	19.981	19.981	(1.000)	92362	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	20.048	20.048	(1.003)	59308	100.000	99.1
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	27361	100.000	76.8
	39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	35961	100.000	84.0
	40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	46079	100.000	90.4
	41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	49655	100.000	97.4

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082707.D
Lab Smp Id: SIH0304-CAL3
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	198254	-7.93
11 Acenaphthene-d10	102217	51109	204434	88696	-13.23
18 Phenanthrene-d10	170387	85194	340774	133333	-21.75
28 Chrysene-d12	116138	58069	232276	84043	-27.64
36 Perylene-d12	139038	69519	278076	92362	-33.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.21	-0.00
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082707.D

Lab ID: SIH0304-CAL3
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 15:08

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

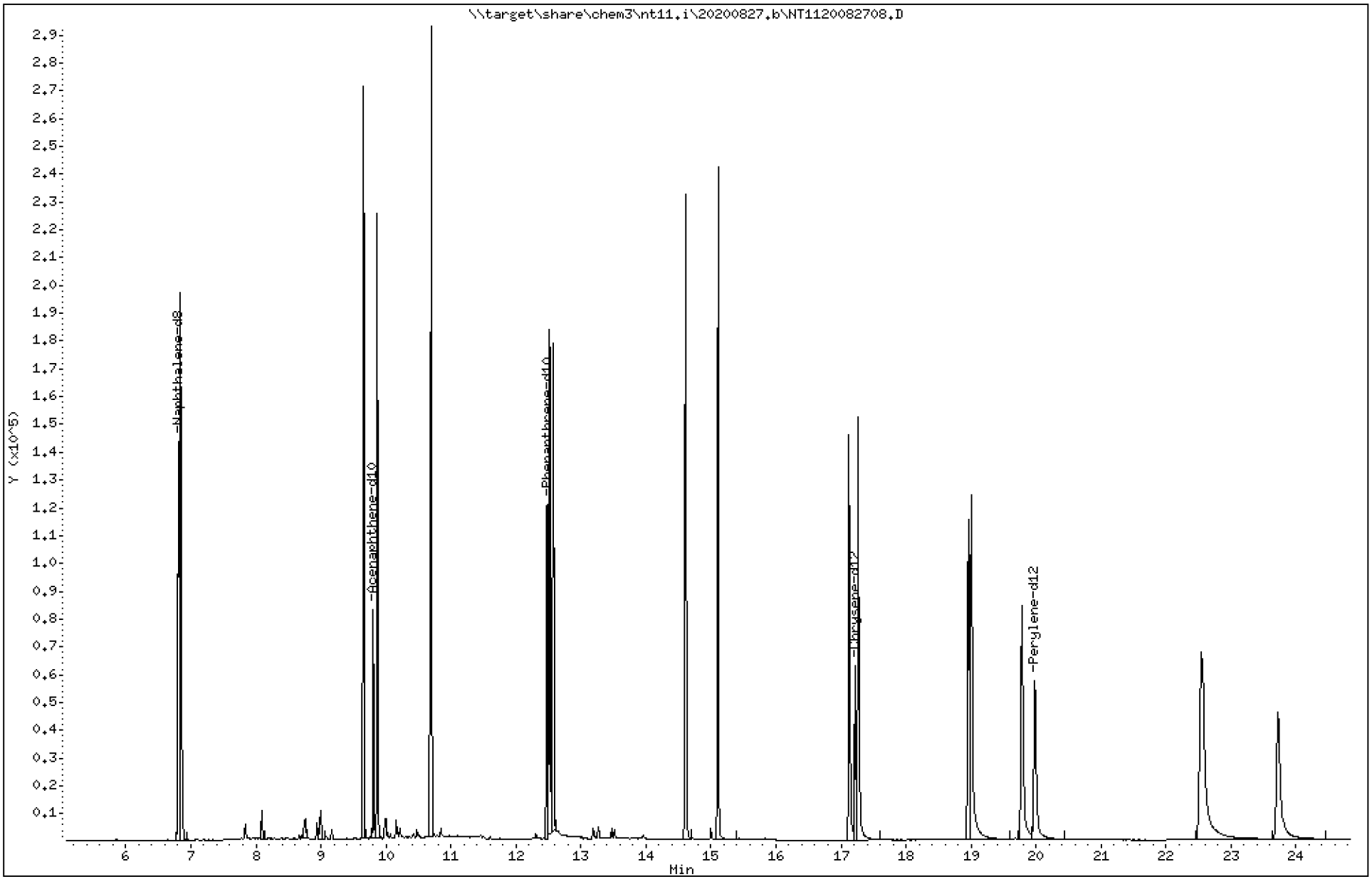
Sample Info: SIH0304-SCV1

Column phase: Rxi-17Sil MS

Instrument: nt11.i

Operator: VTS

Column diameter: 0.25



Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

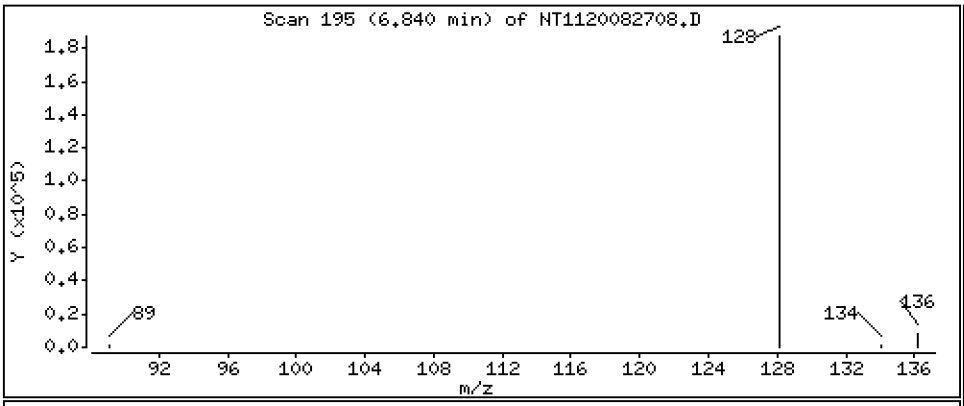
Operator: VTS

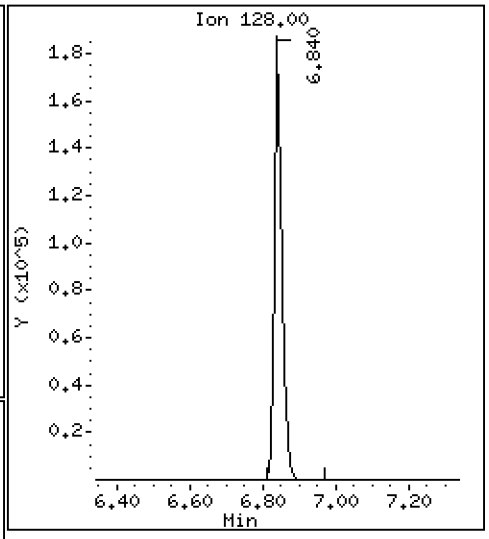
Column phase: Rxi-17Sil MS

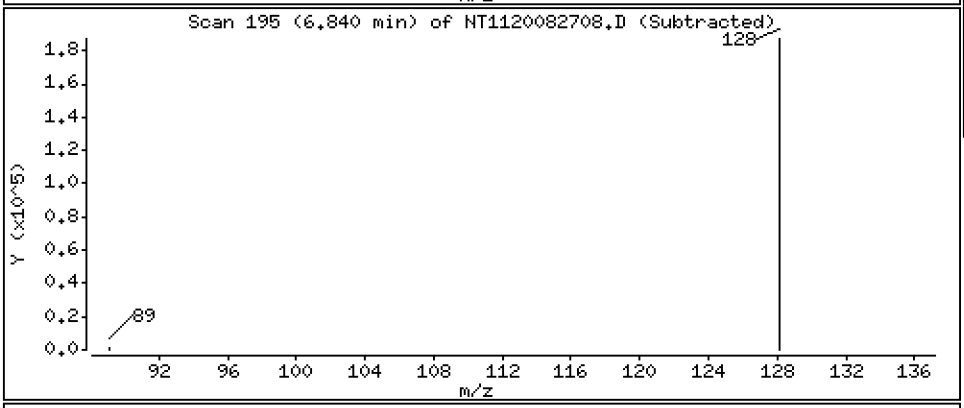
Column diameter: 0.25

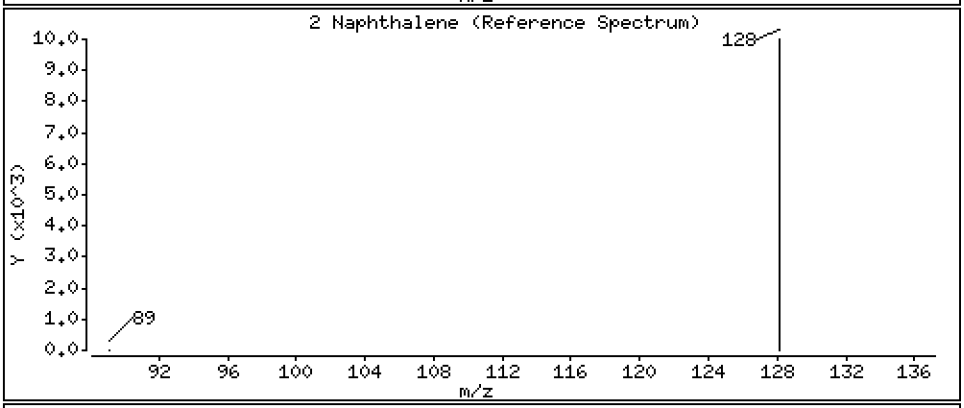
2 Naphthalene

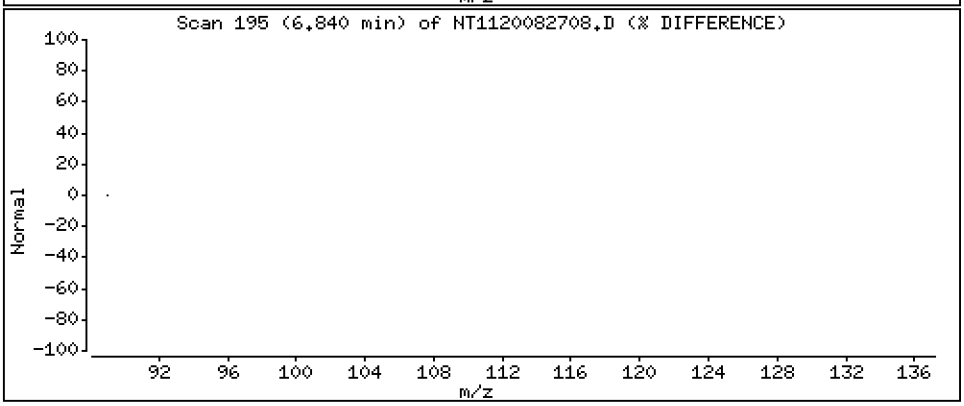
Concentration: 224 ng/mL











Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

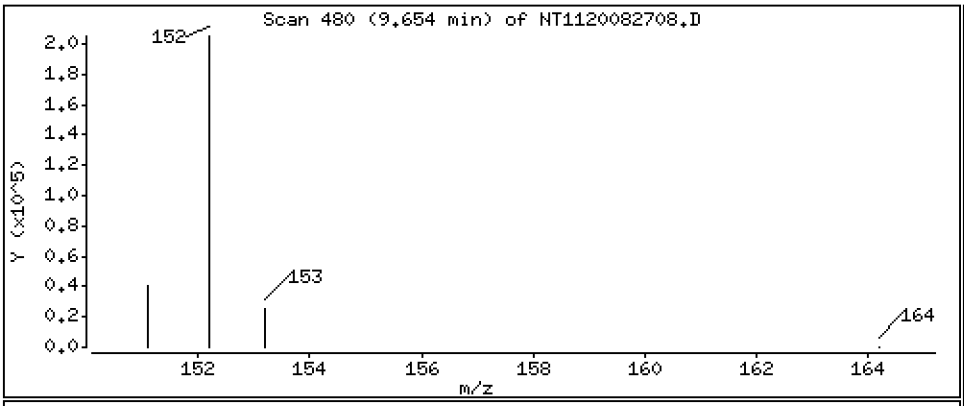
Operator: VTS

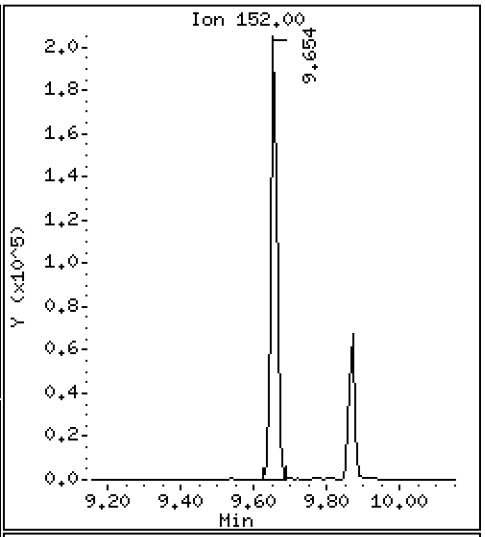
Column phase: Rxi-17Sil MS

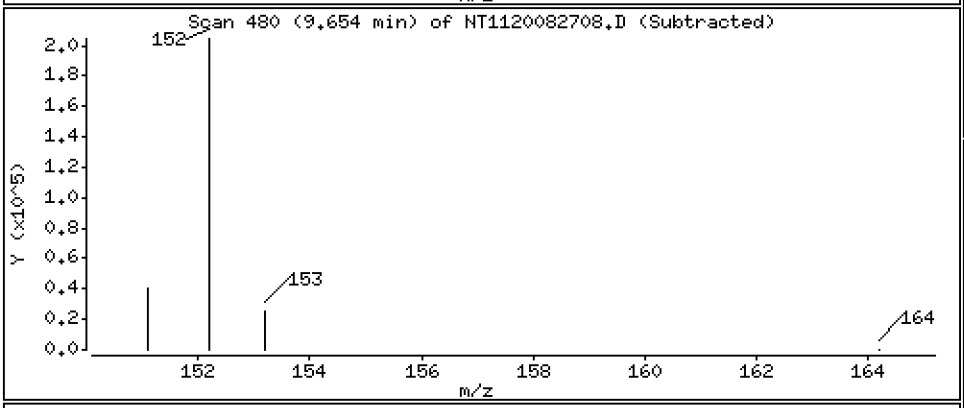
Column diameter: 0.25

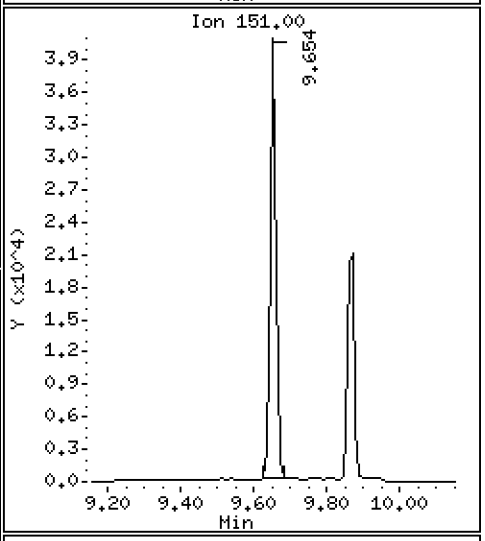
10 Acenaphthylene

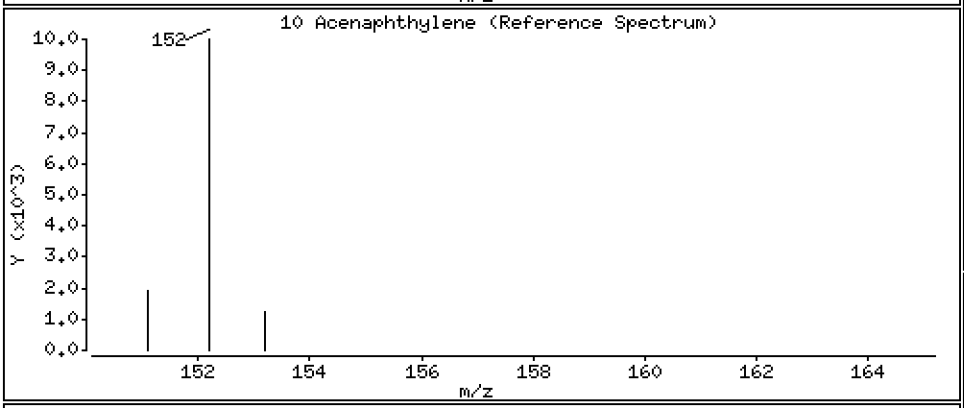
Concentration: 233 ng/mL

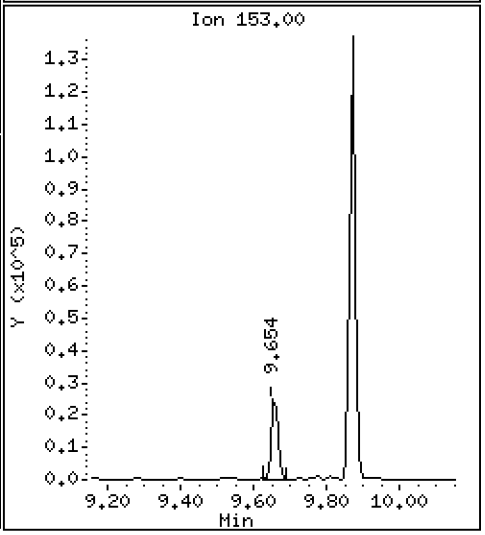


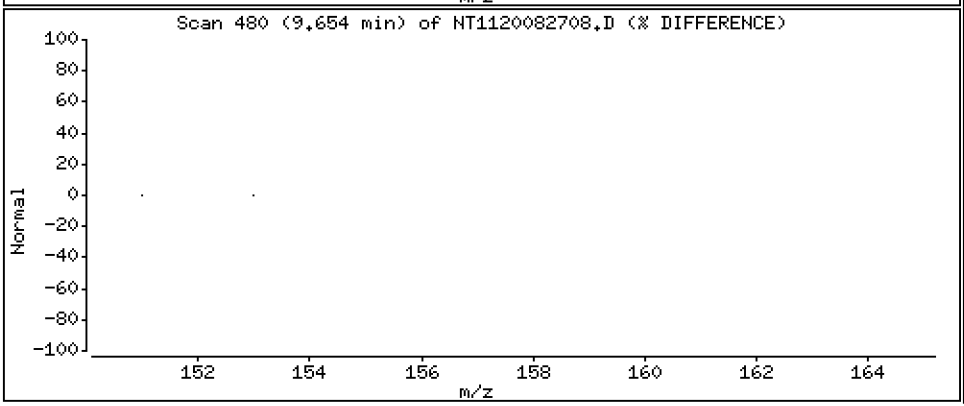












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

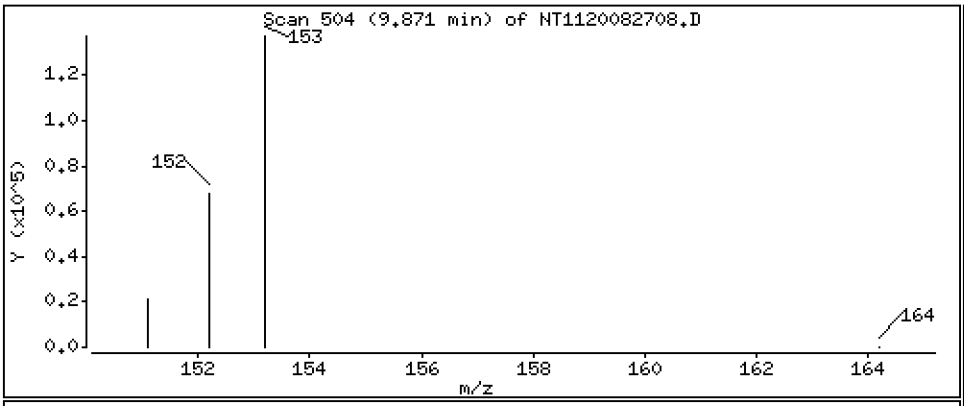
Operator: VTS

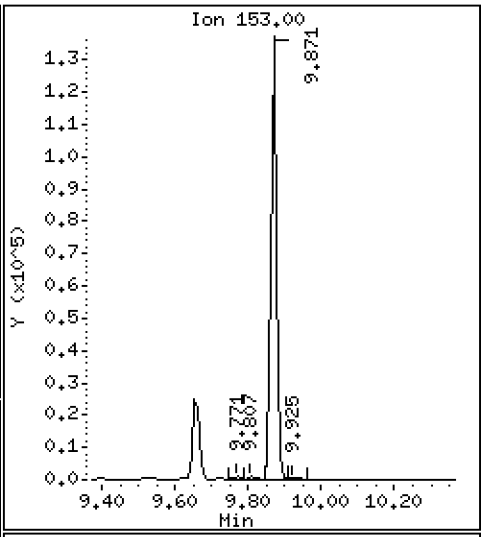
Column phase: Rxi-17Sil MS

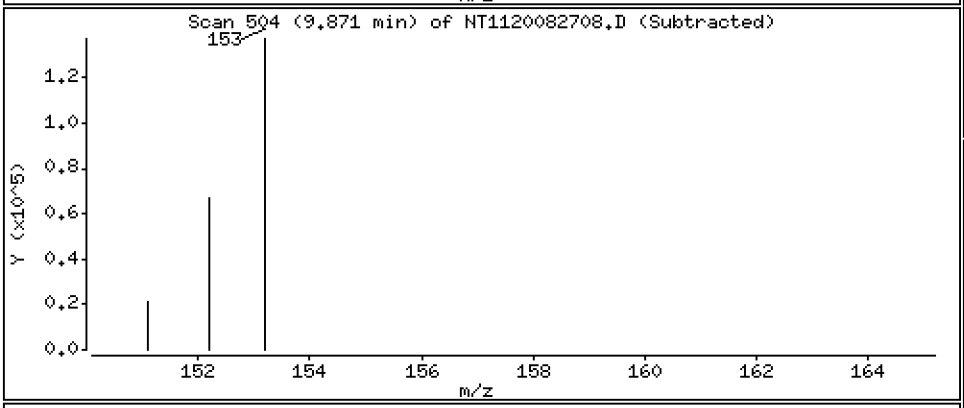
Column diameter: 0.25

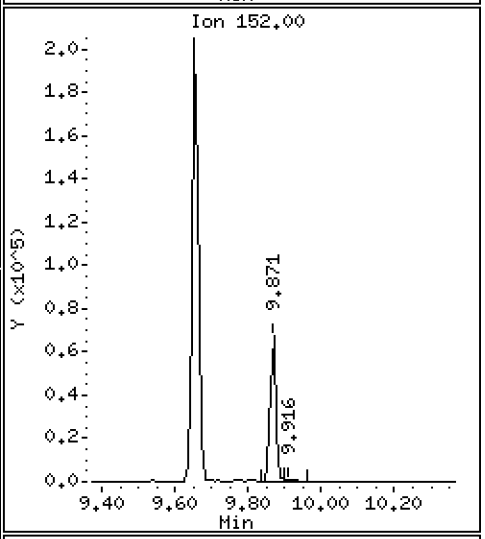
12 Acenaphthene

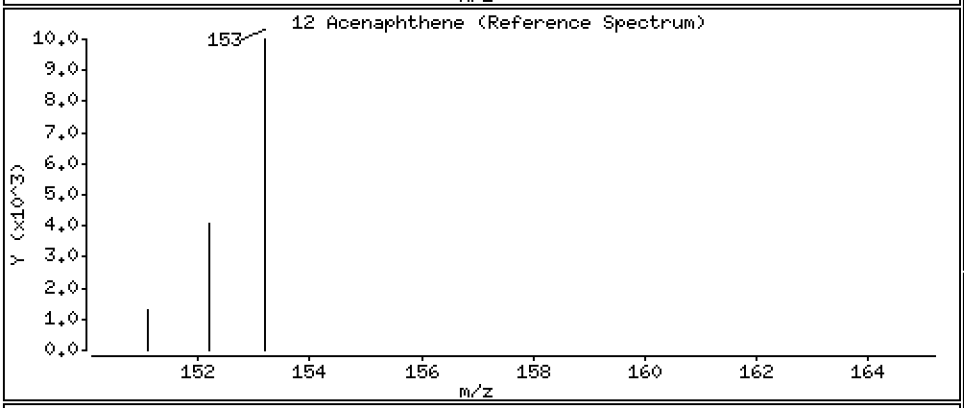
Concentration: 222 ng/mL

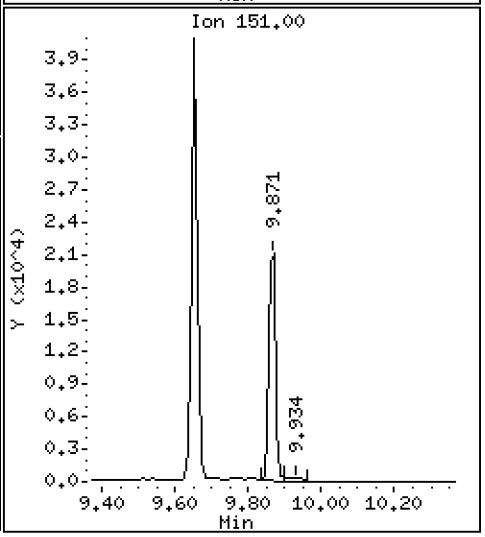


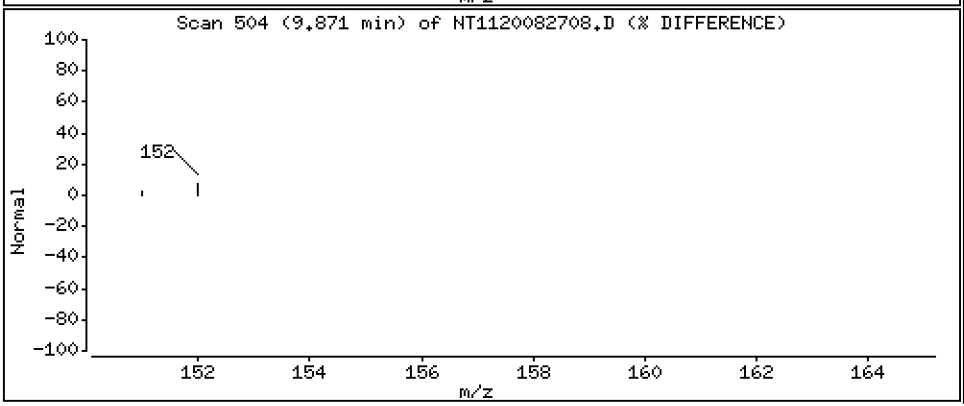












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

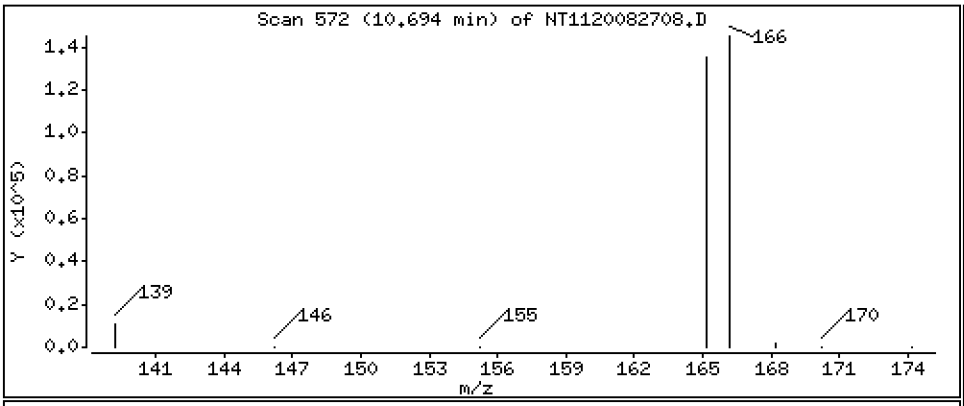
Operator: VTS

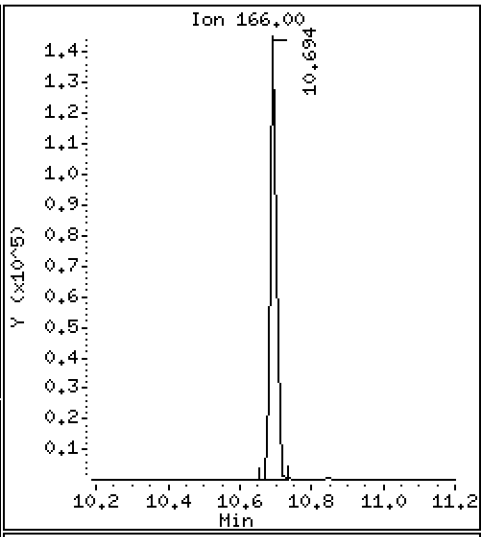
Column phase: Rxi-17Sil MS

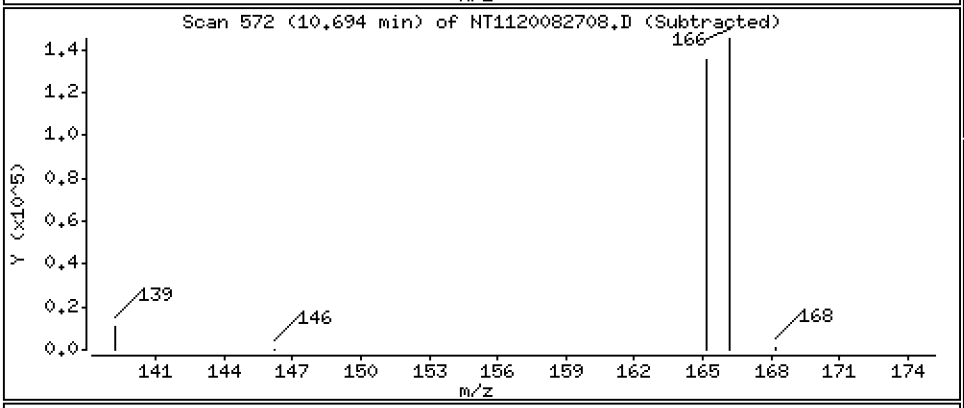
Column diameter: 0.25

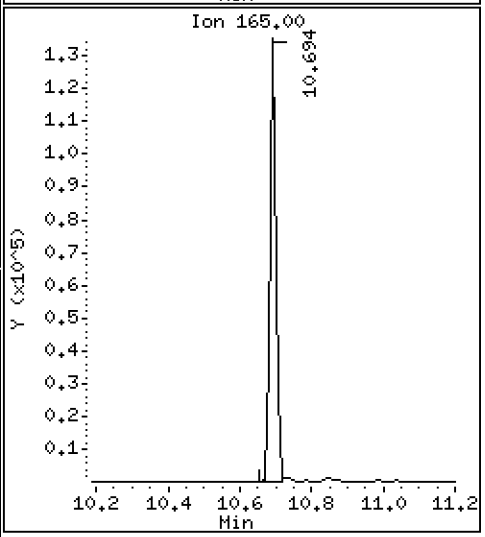
16 Fluorene

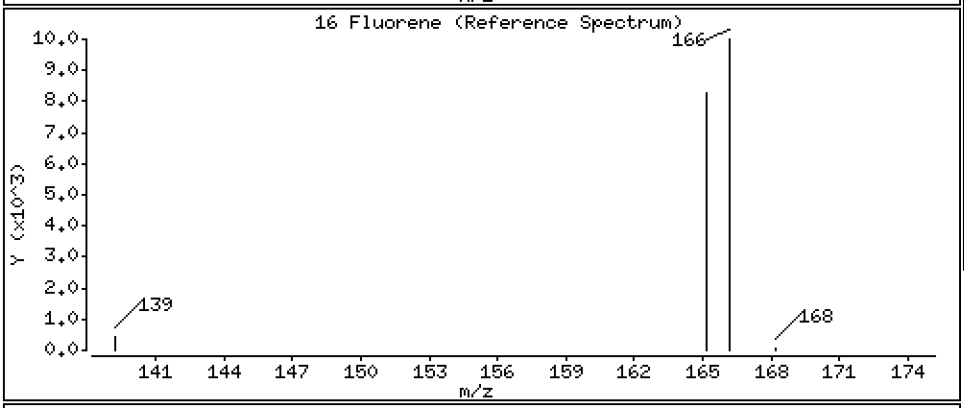
Concentration: 233 ng/mL

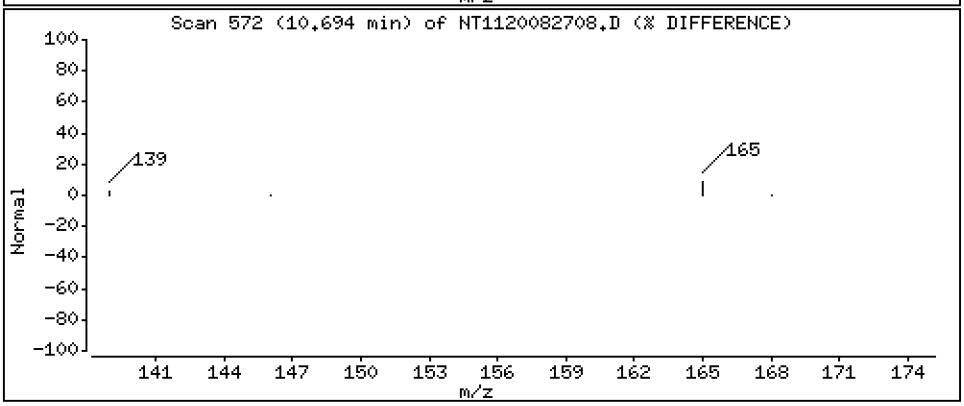












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

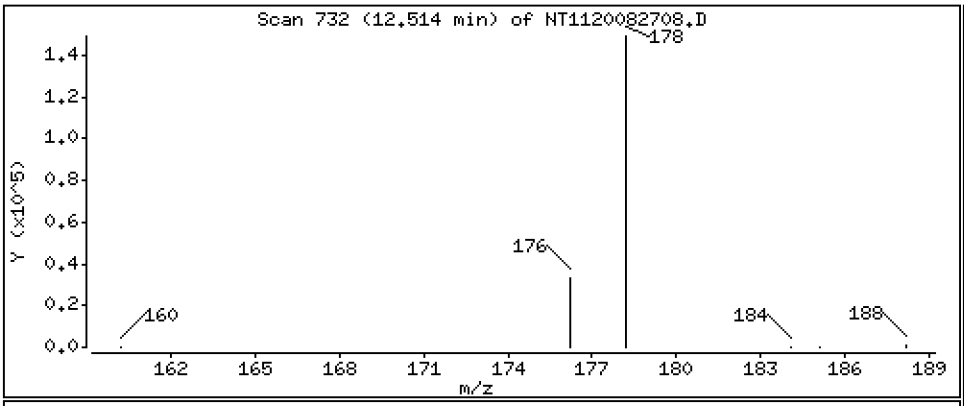
Operator: VTS

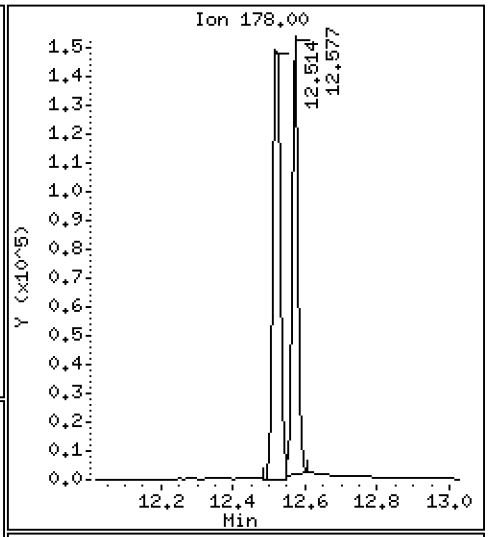
Column phase: Rxi-17Sil MS

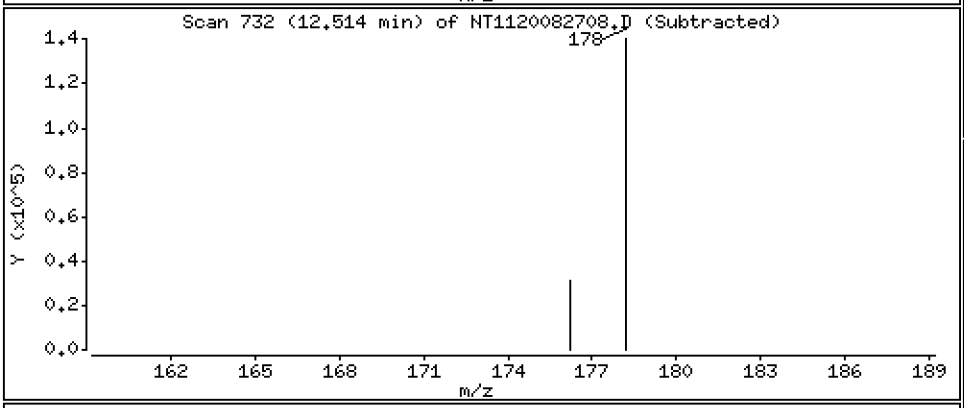
Column diameter: 0.25

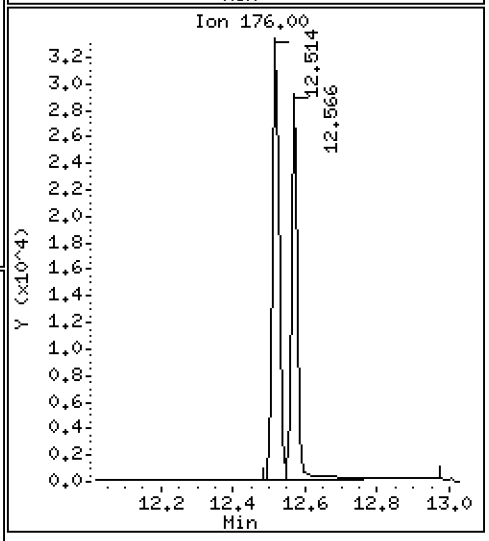
19 Phenanthrene

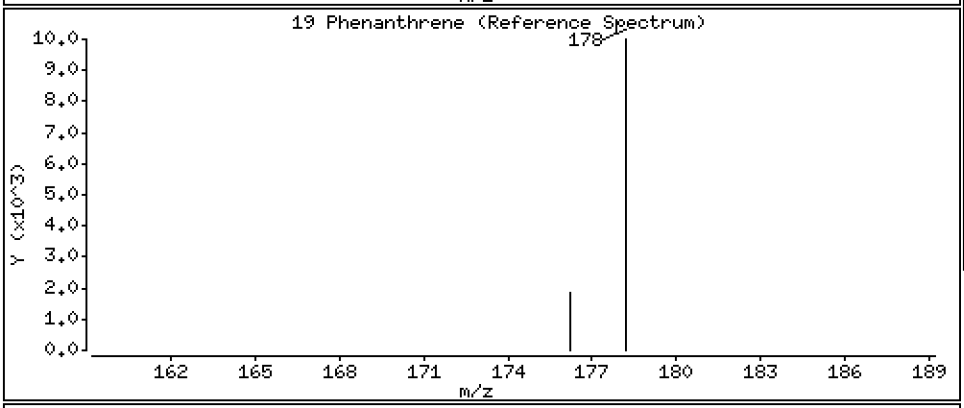
Concentration: 233 ng/mL

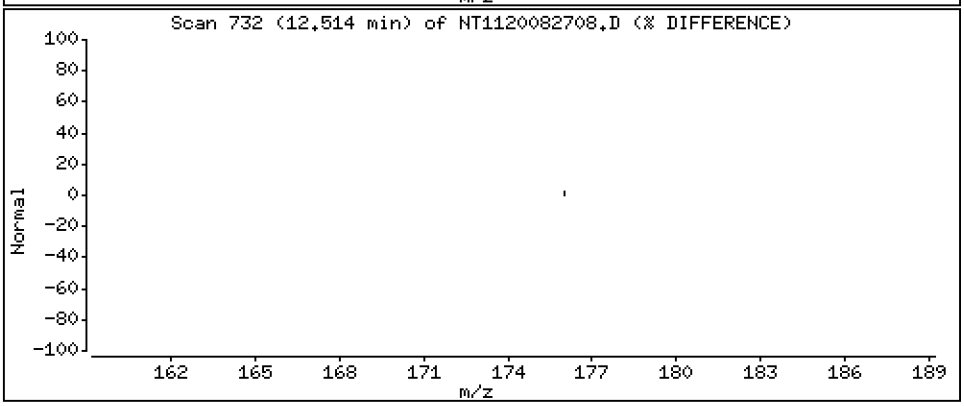












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

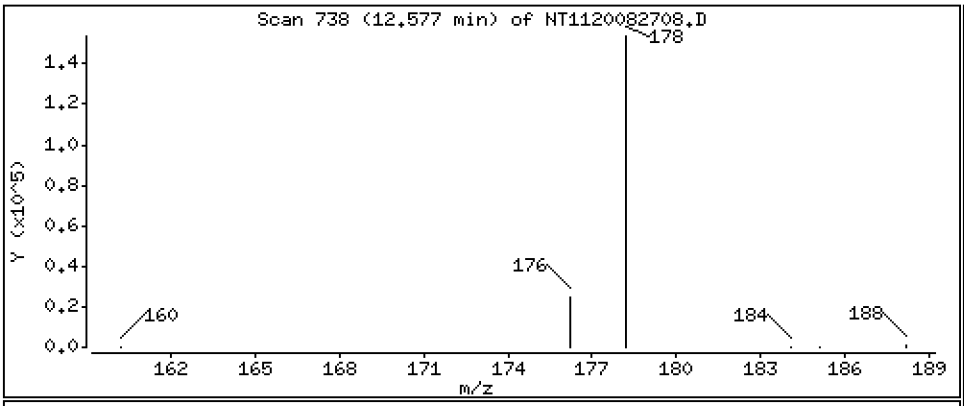
Operator: VTS

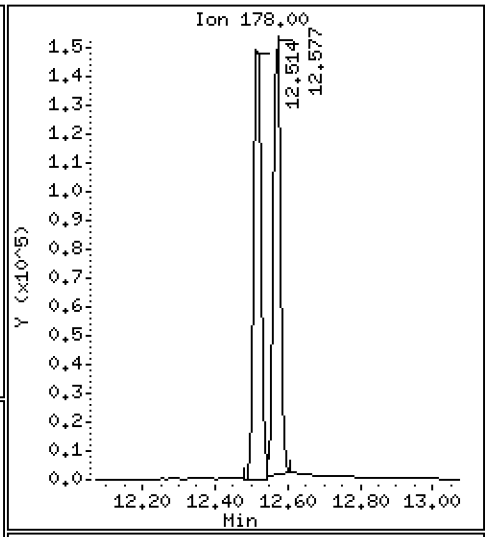
Column phase: Rxi-17Sil MS

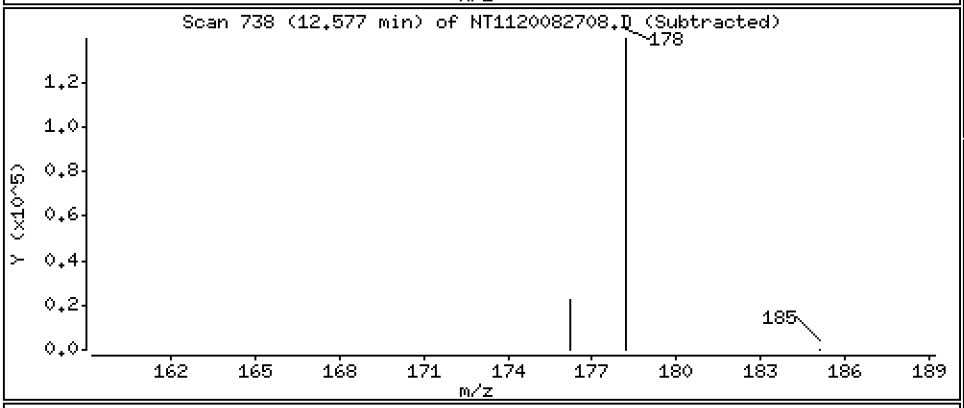
Column diameter: 0.25

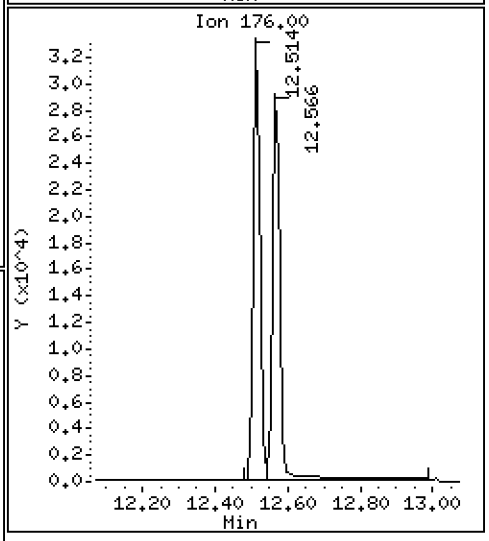
21 Anthracene

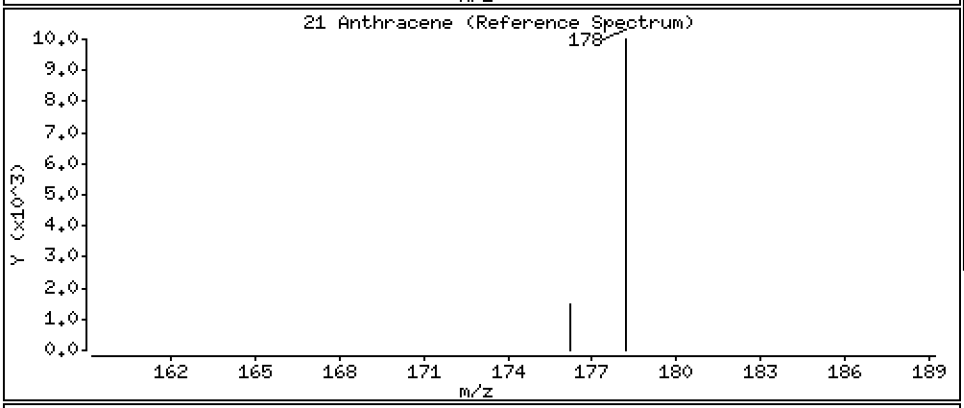
Concentration: 223 ng/mL

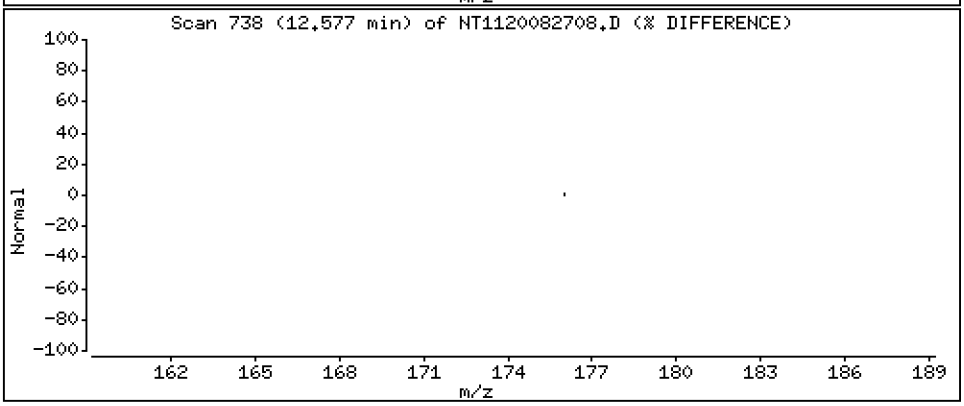












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

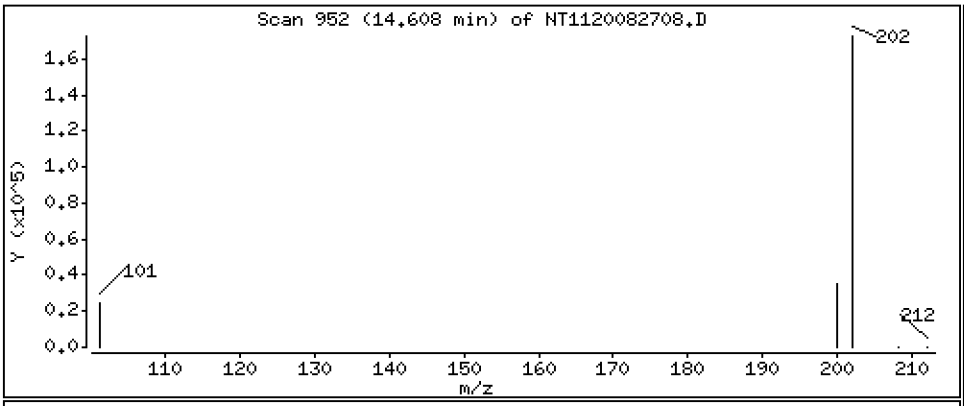
Operator: VTS

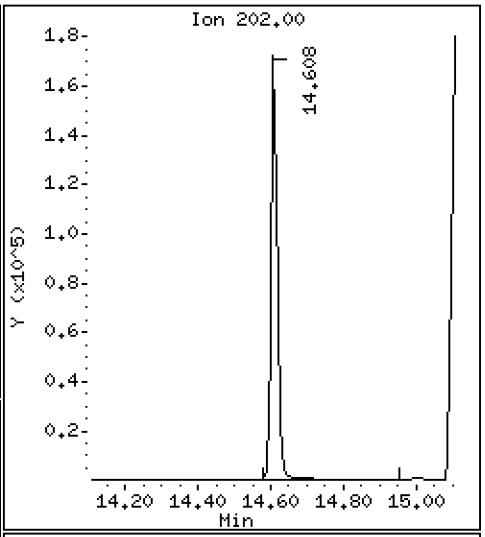
Column phase: Rxi-17Sil MS

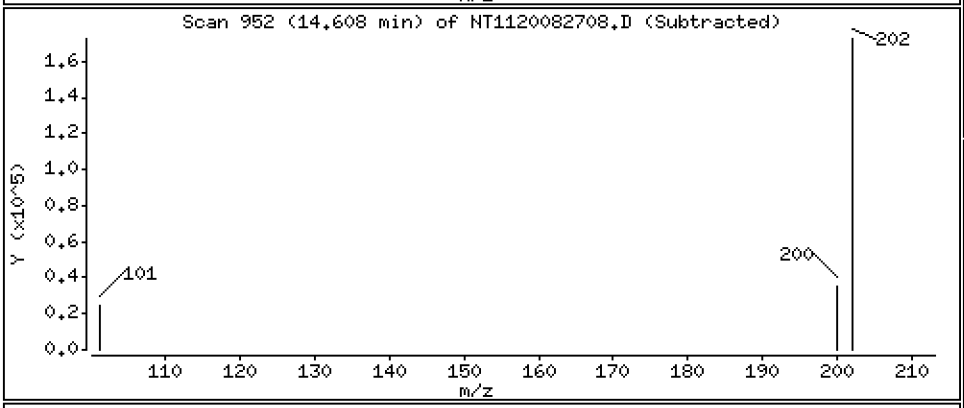
Column diameter: 0.25

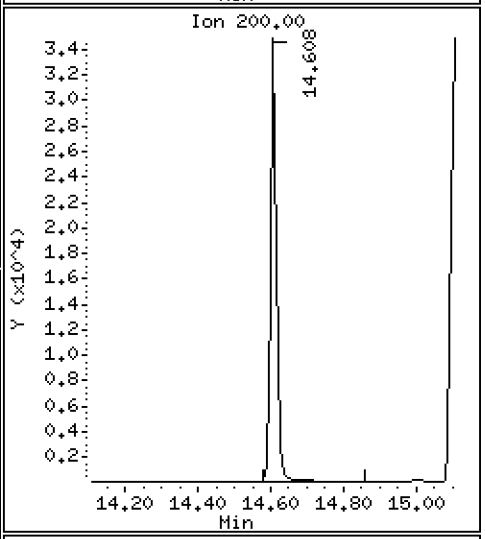
25 Fluoranthene

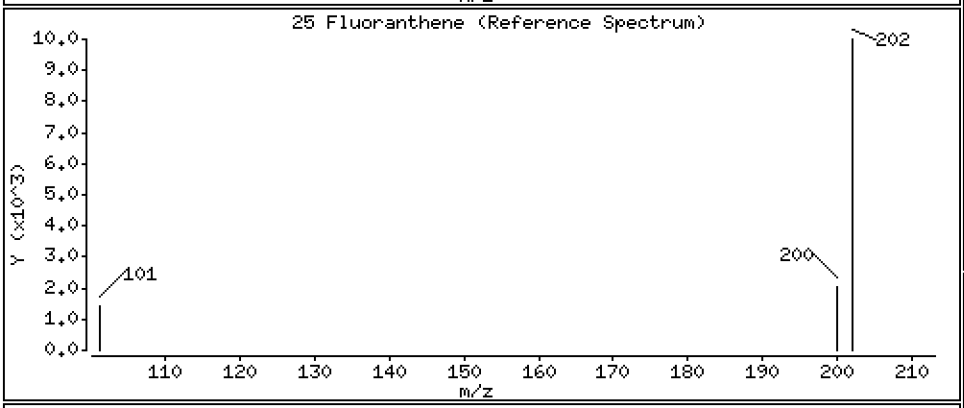
Concentration: 236 ng/mL

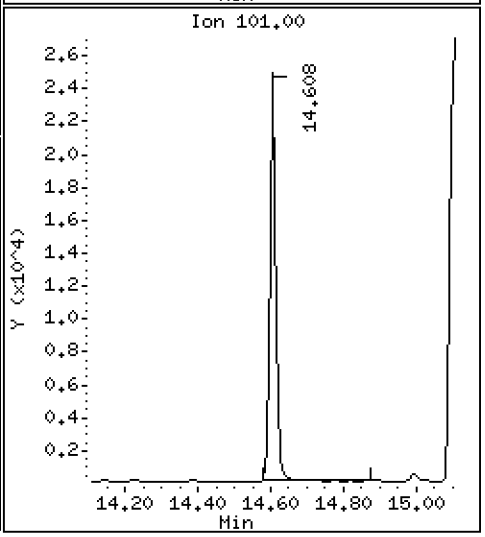


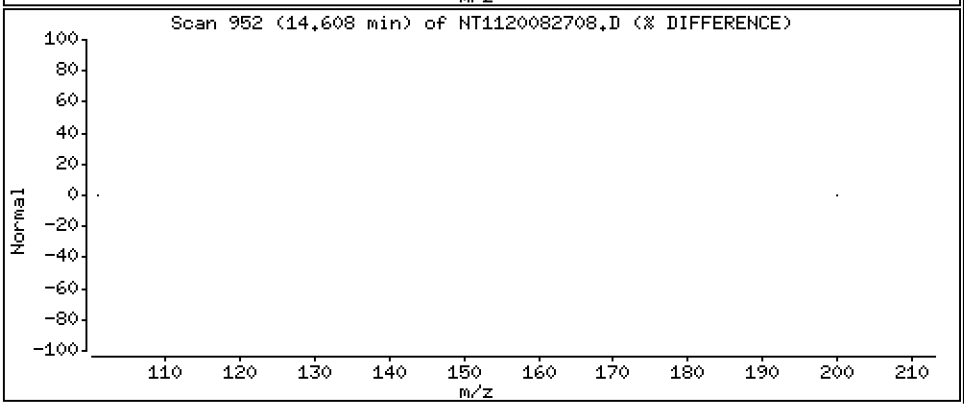












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

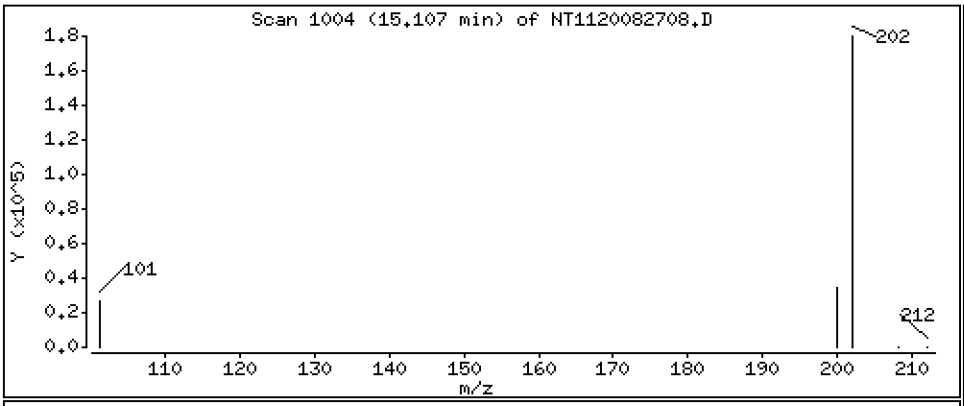
Operator: VTS

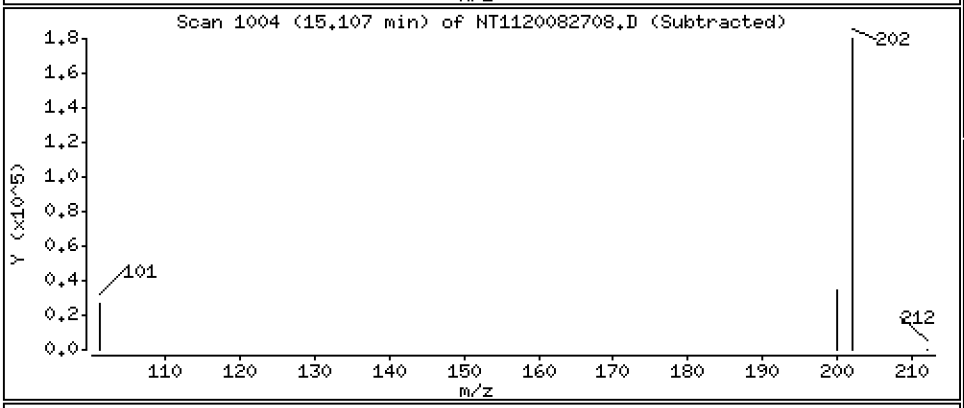
Column phase: Rxi-17Sil MS

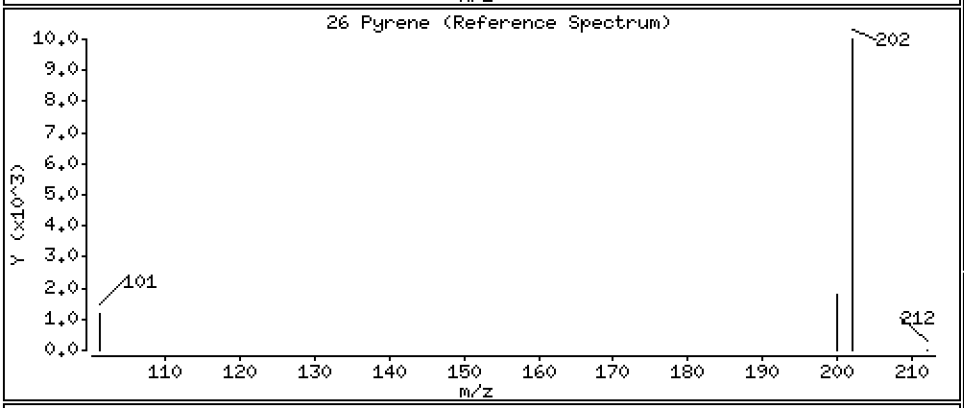
Column diameter: 0.25

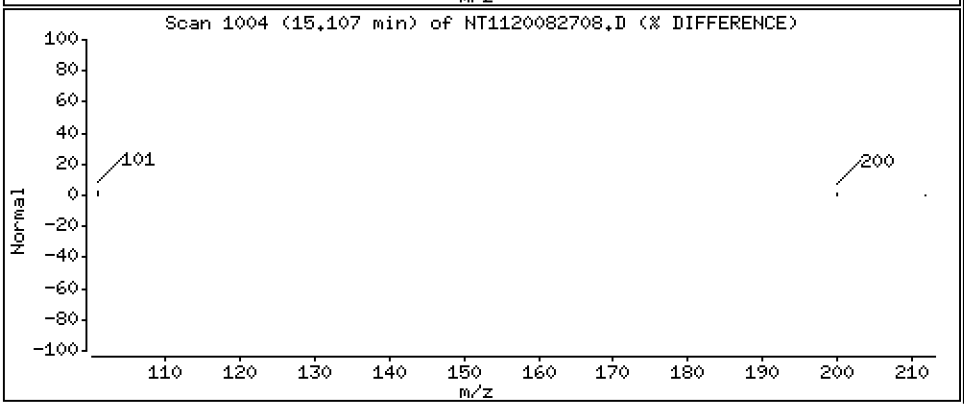
26 Pyrene

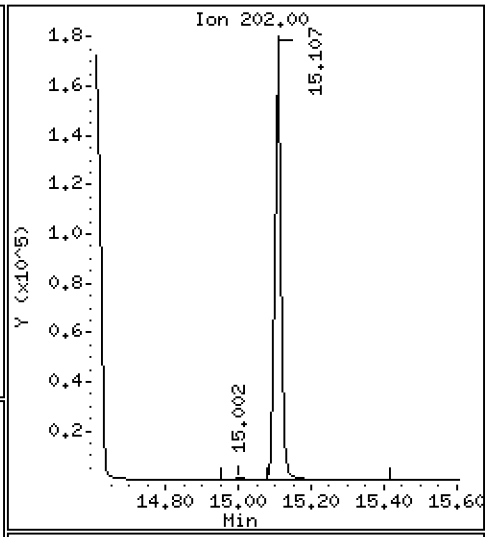
Concentration: 235 ng/mL

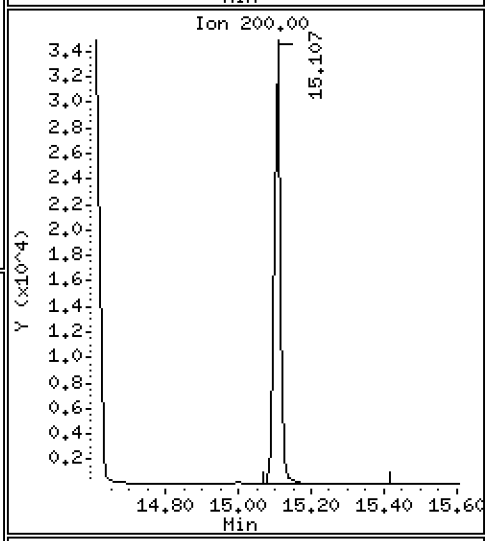


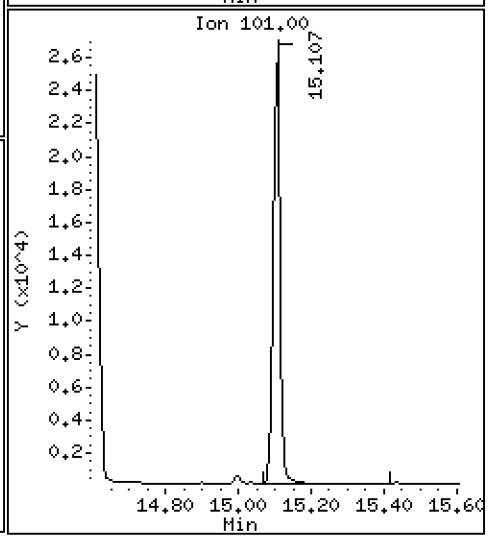












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

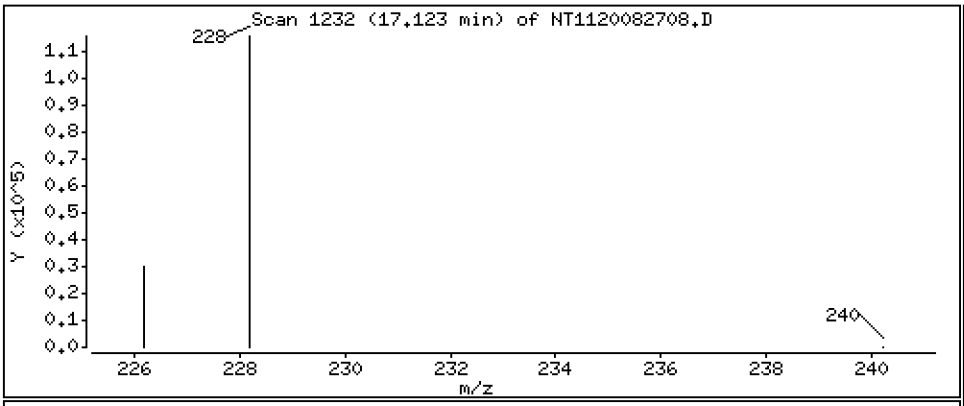
Operator: VTS

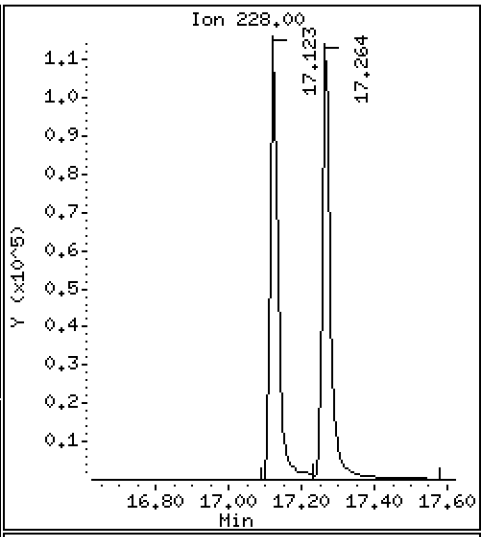
Column phase: Rxi-17Sil MS

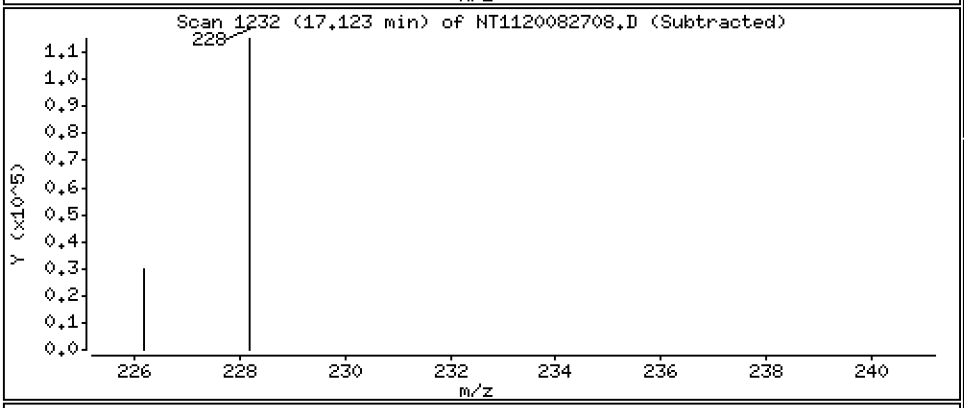
Column diameter: 0.25

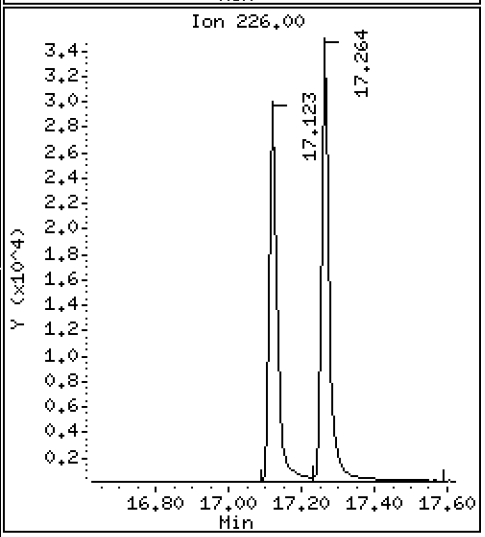
27 Benzo(a)anthracene

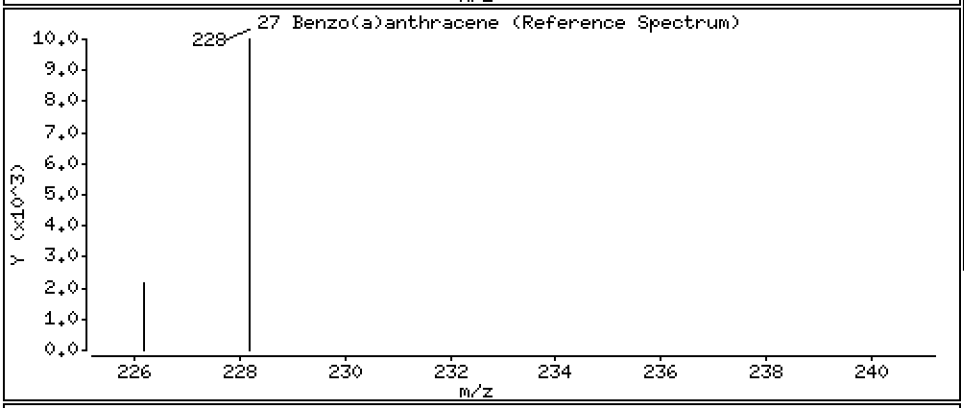
Concentration: 223 ng/mL

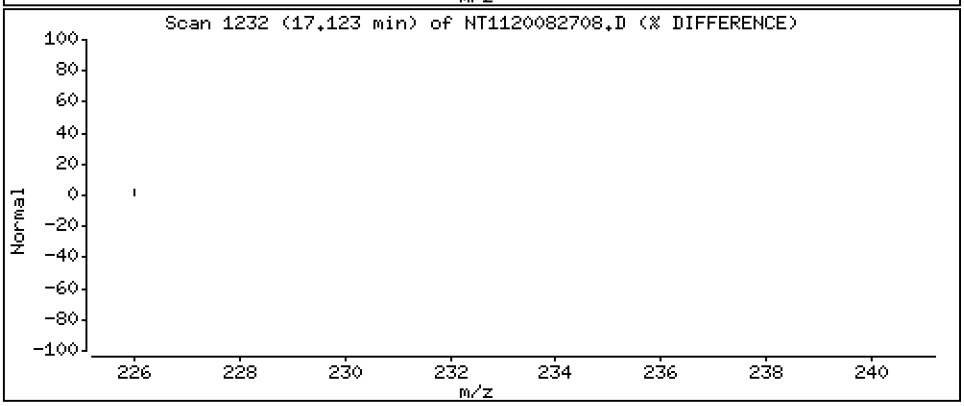












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

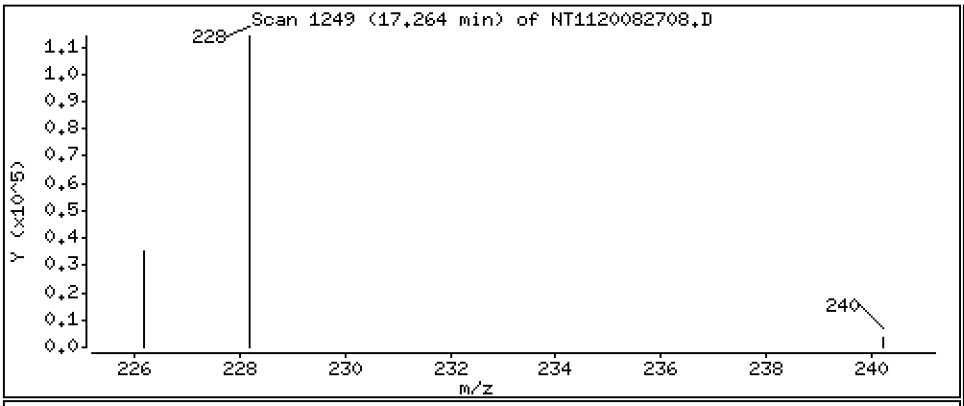
Operator: VTS

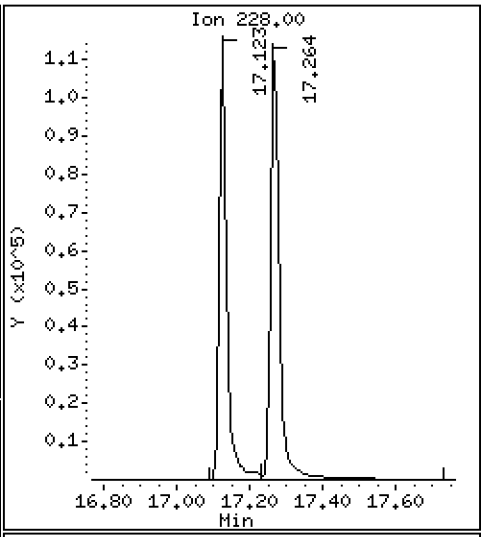
Column phase: Rxi-17Sil MS

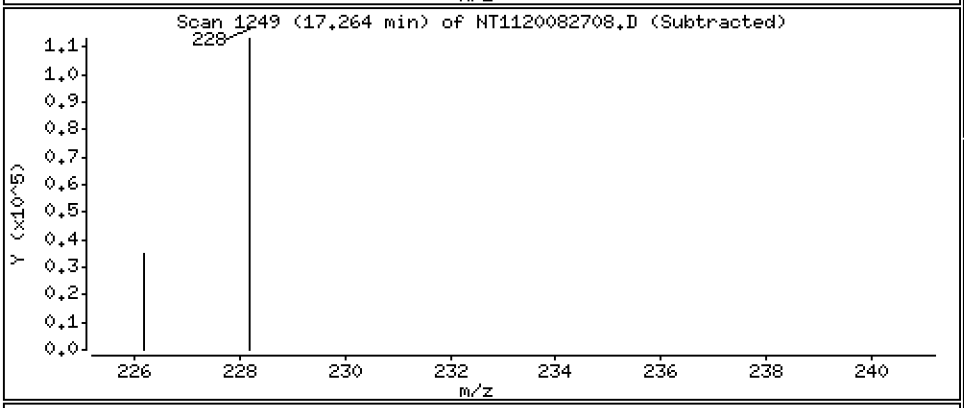
Column diameter: 0.25

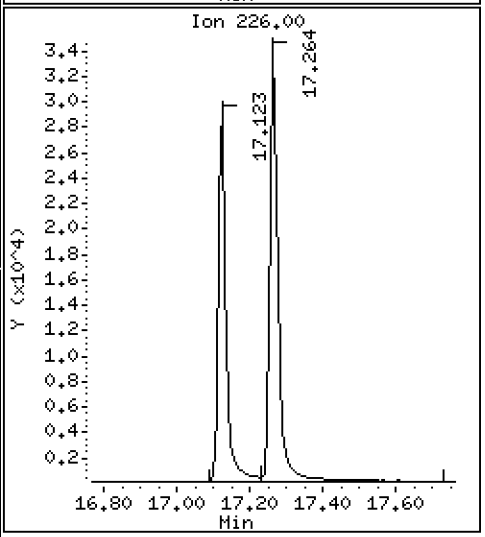
29 Chrysene

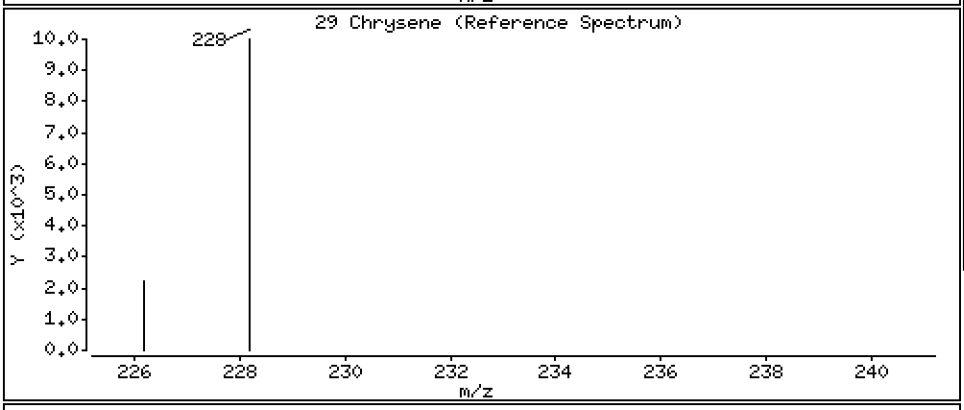
Concentration: 215 ng/mL

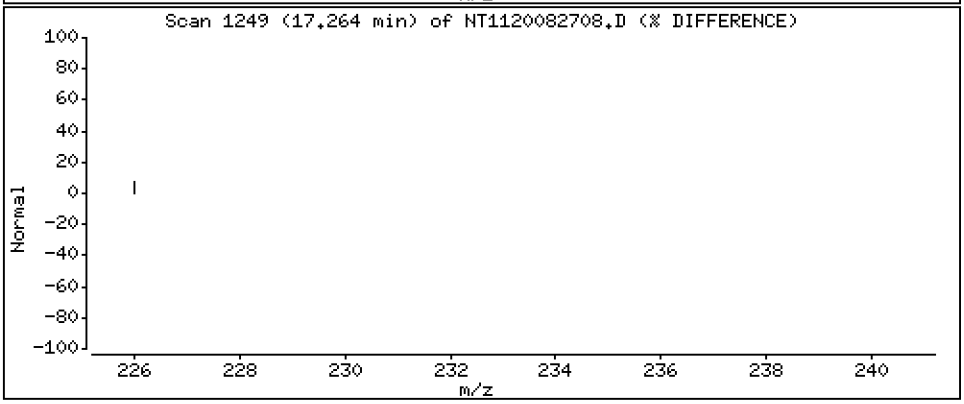












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

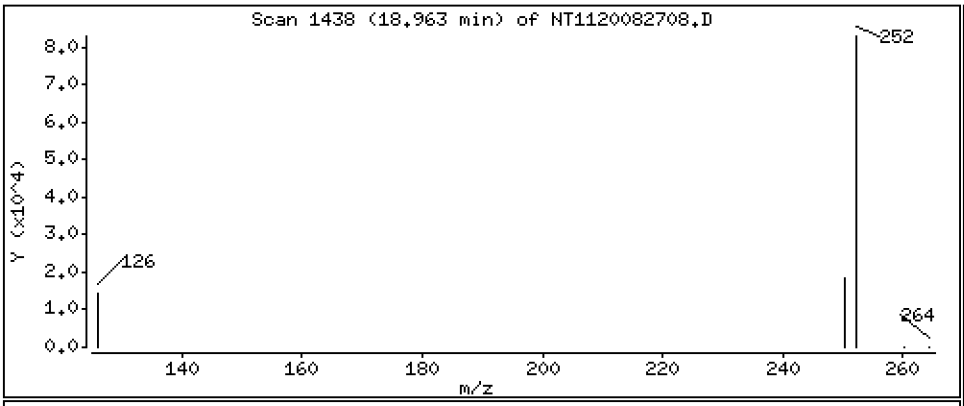
Operator: VTS

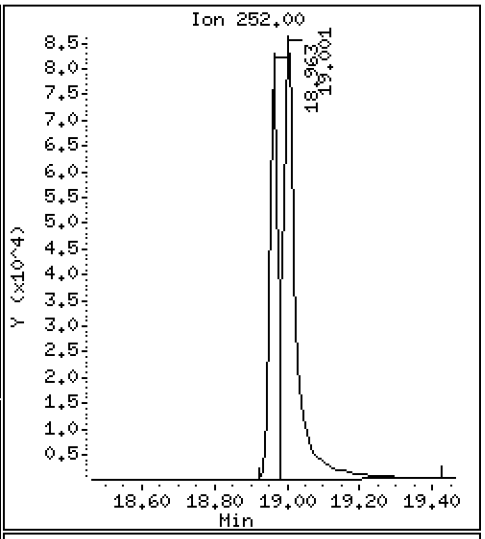
Column phase: Rxi-17Sil MS

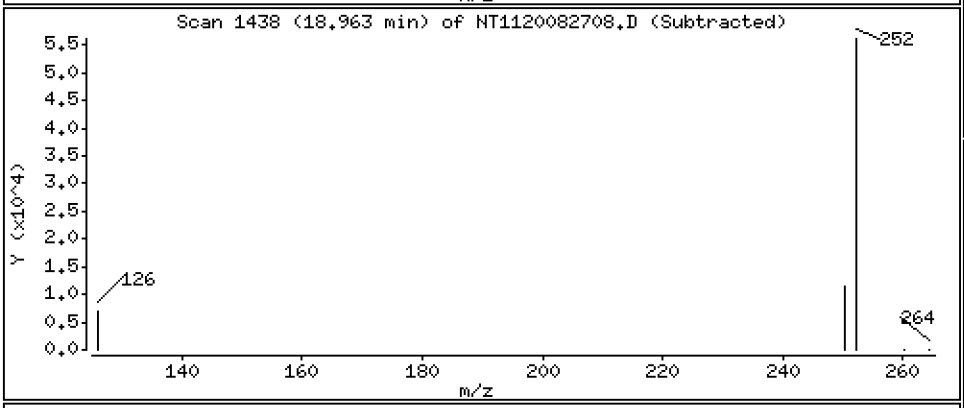
Column diameter: 0.25

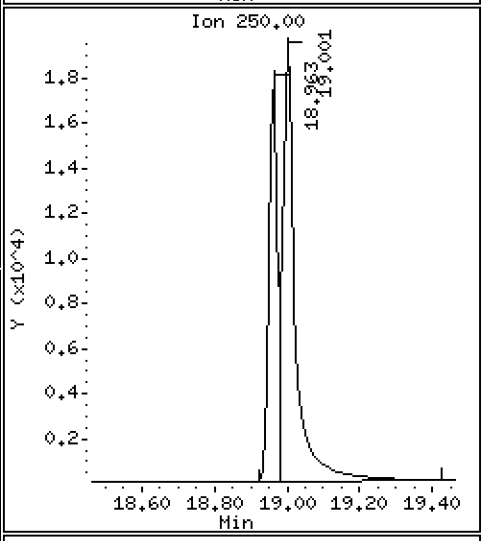
30 Benzo(b)fluoranthene

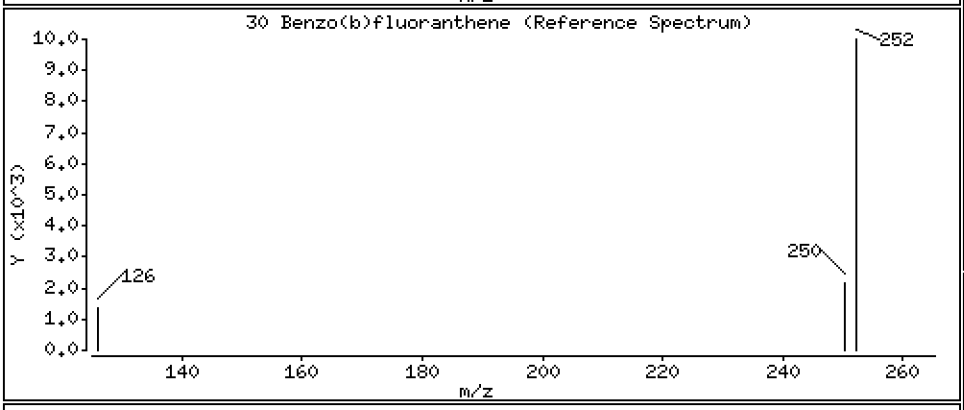
Concentration: 212 ng/mL

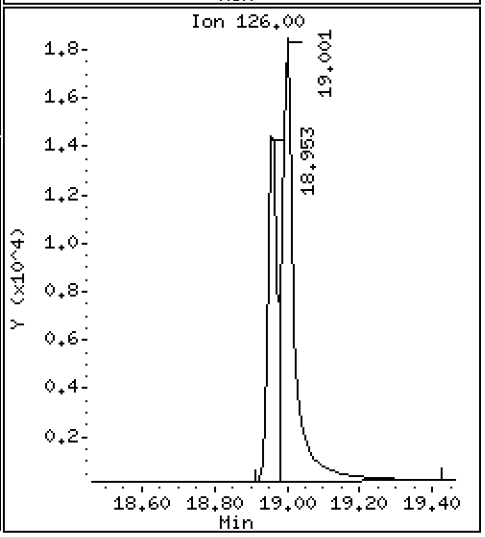


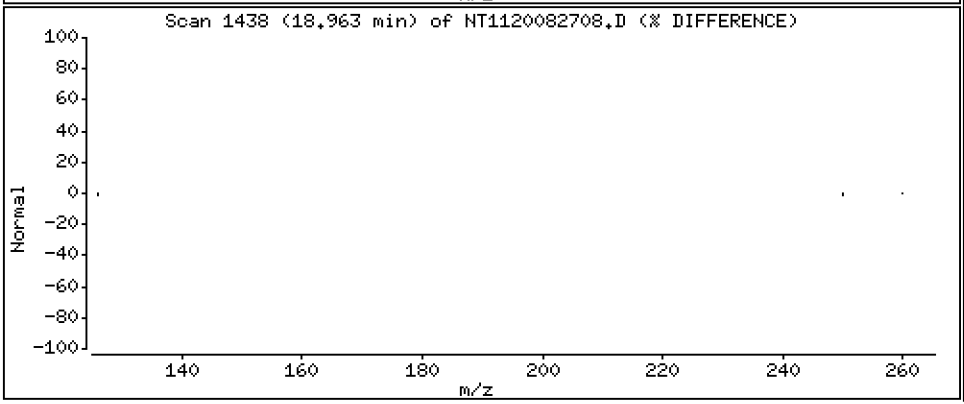












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

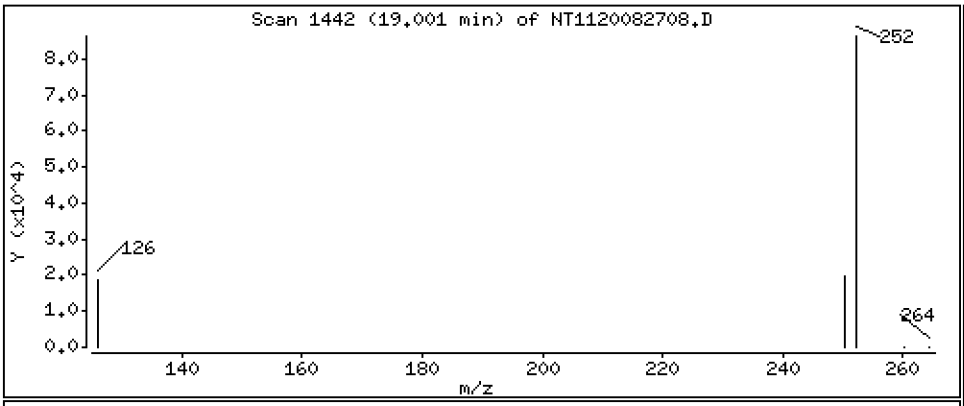
Operator: VTS

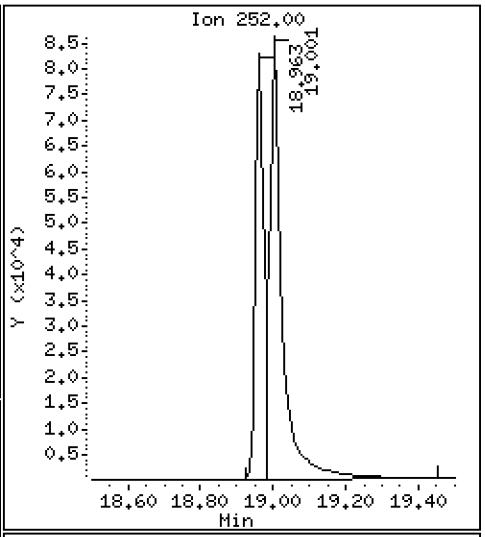
Column phase: Rxi-17Sil MS

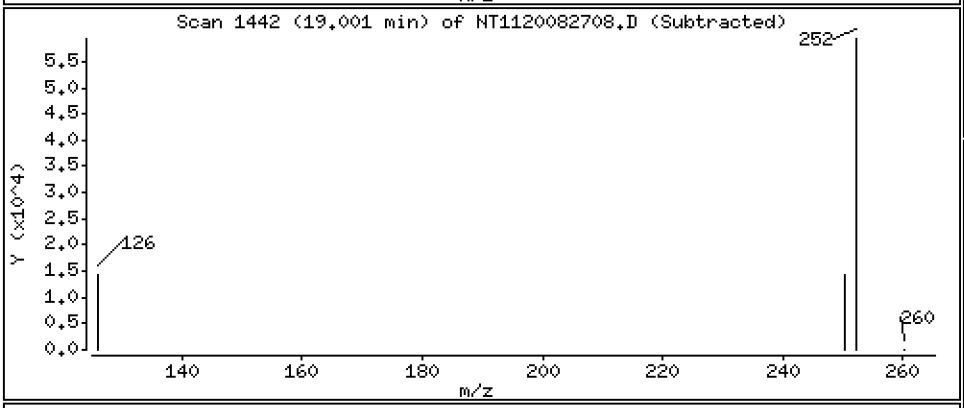
Column diameter: 0.25

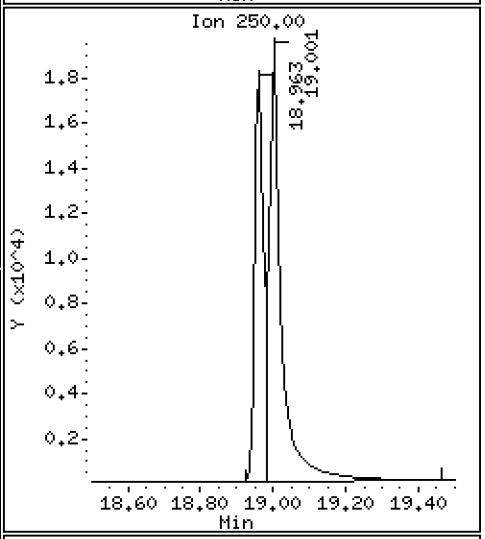
31 Benzo(k)fluoranthene

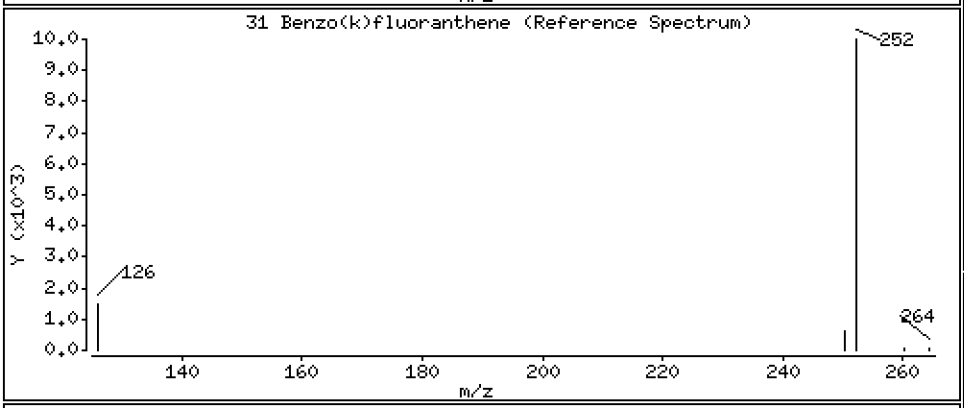
Concentration: 260 ng/mL

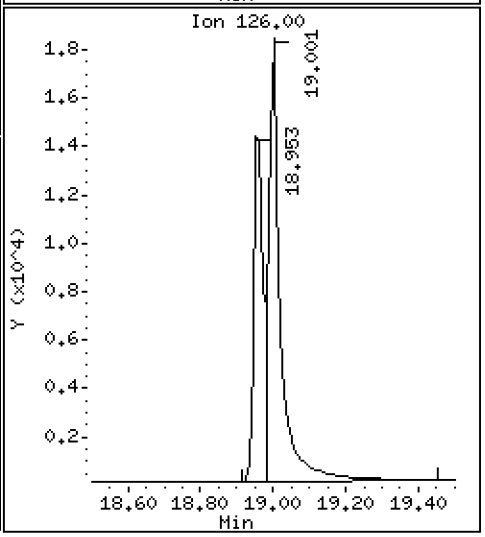


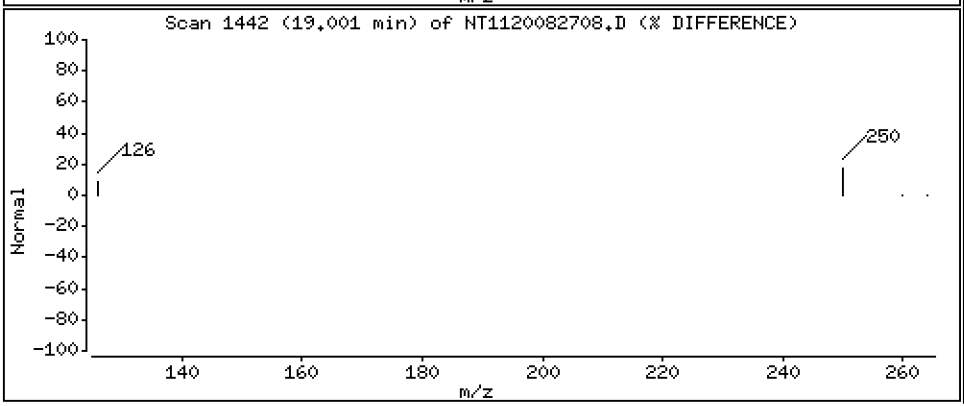












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

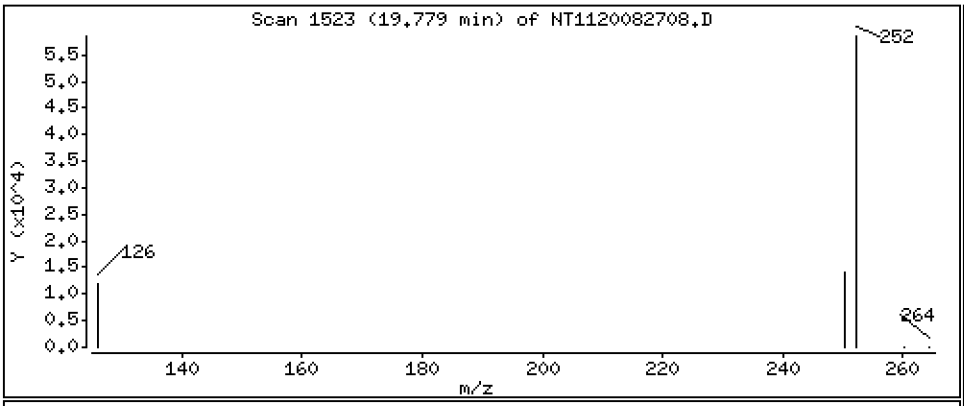
Operator: VTS

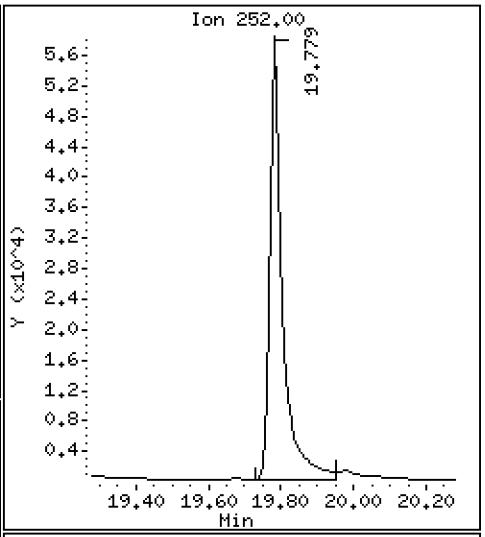
Column phase: Rxi-17Sil MS

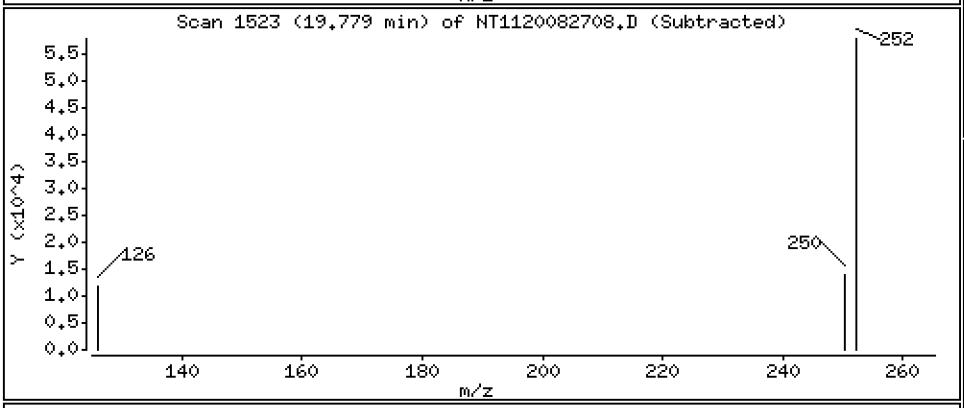
Column diameter: 0.25

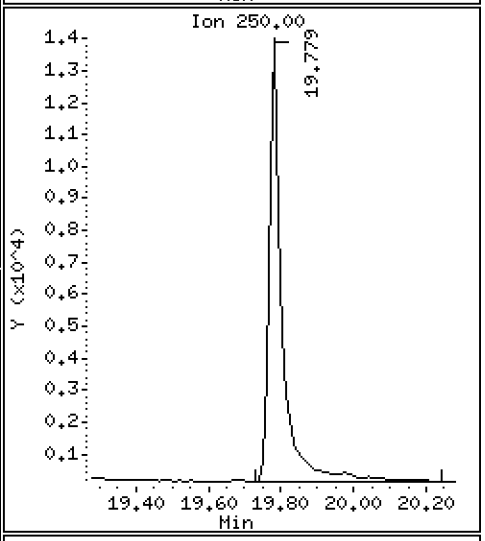
35 Benzo(a)pyrene

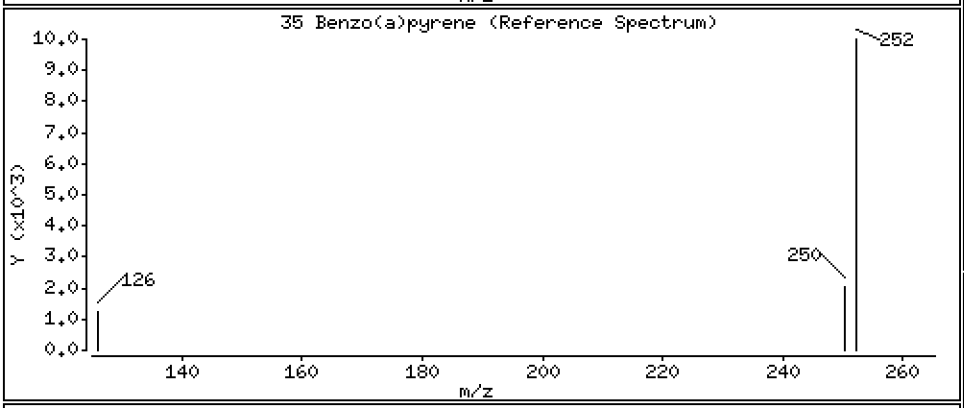
Concentration: 213 ng/mL

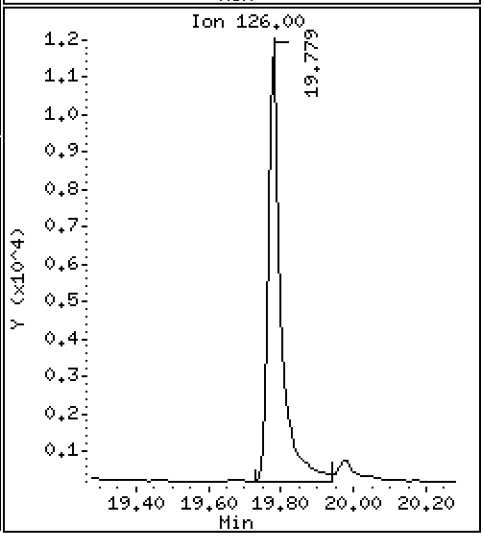


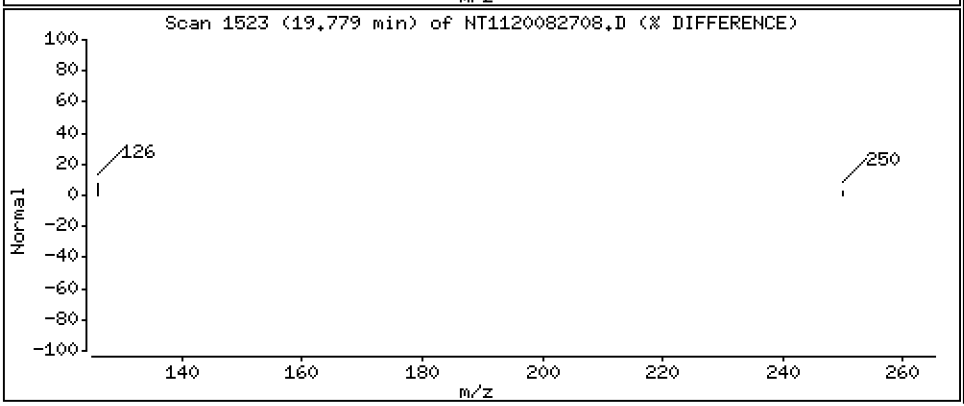












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

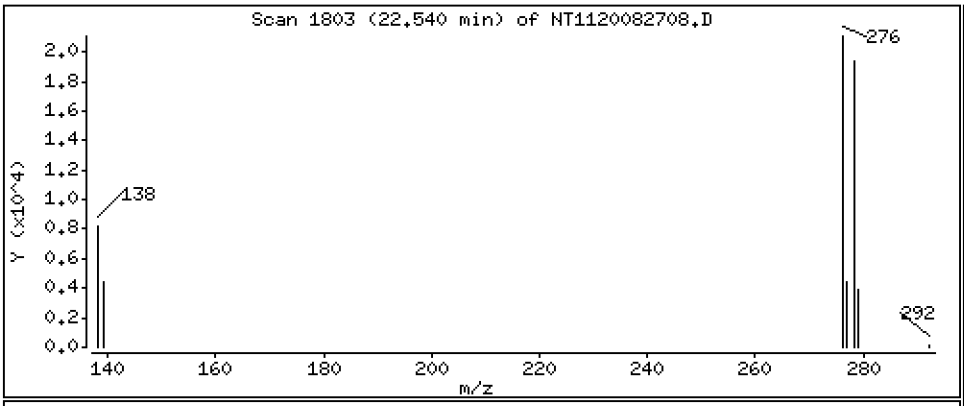
Operator: VTS

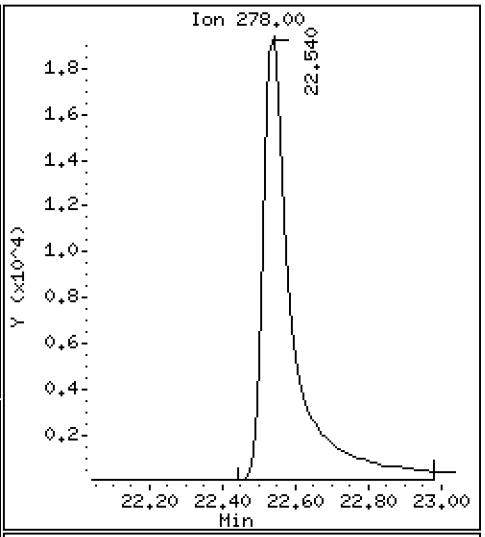
Column phase: Rxi-17Sil MS

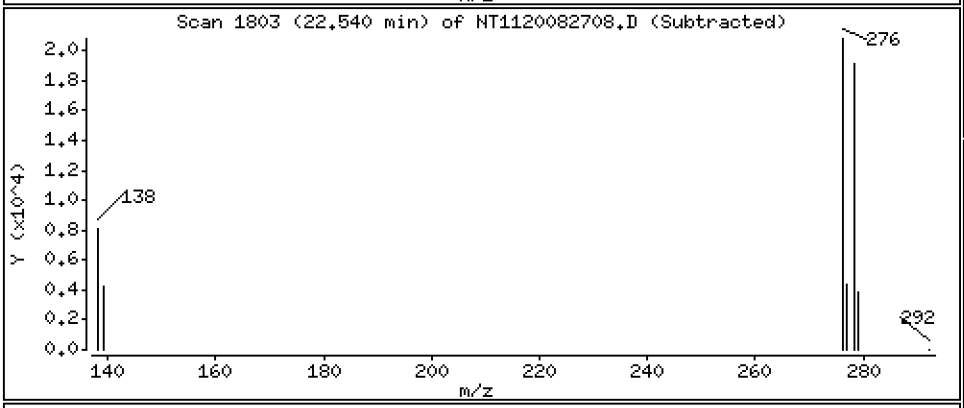
Column diameter: 0.25

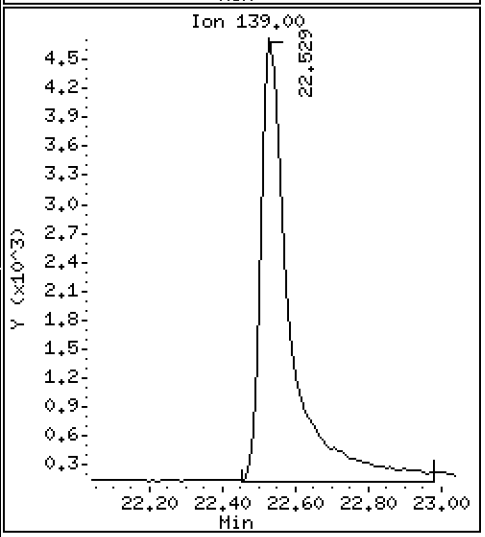
39 Dibenzo(a,h)anthracene

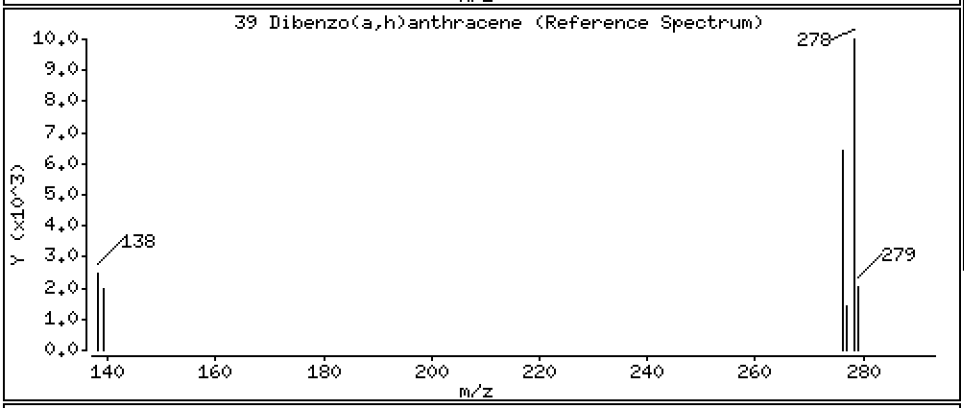
Concentration: 192 ng/mL

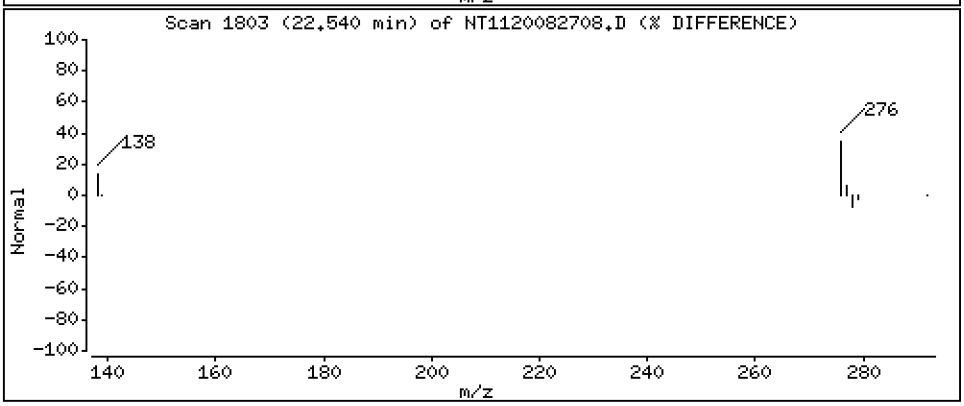












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

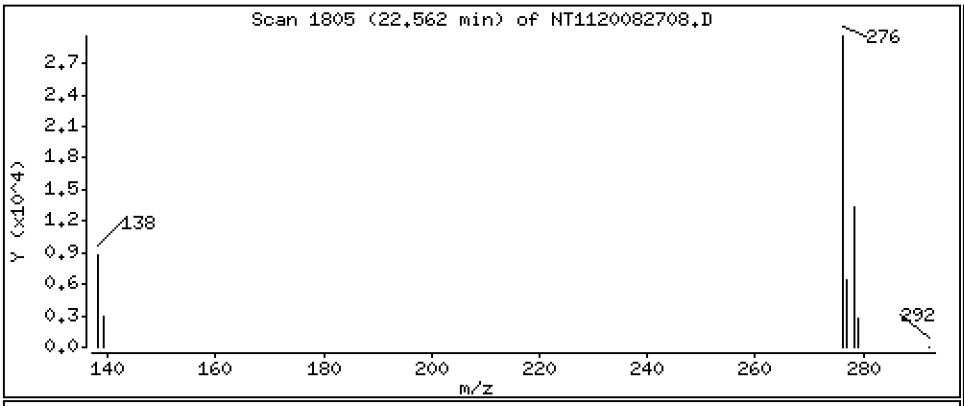
Operator: VTS

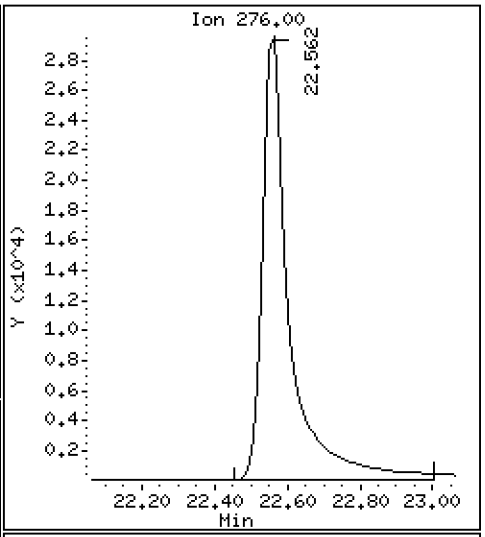
Column phase: Rxi-17Sil MS

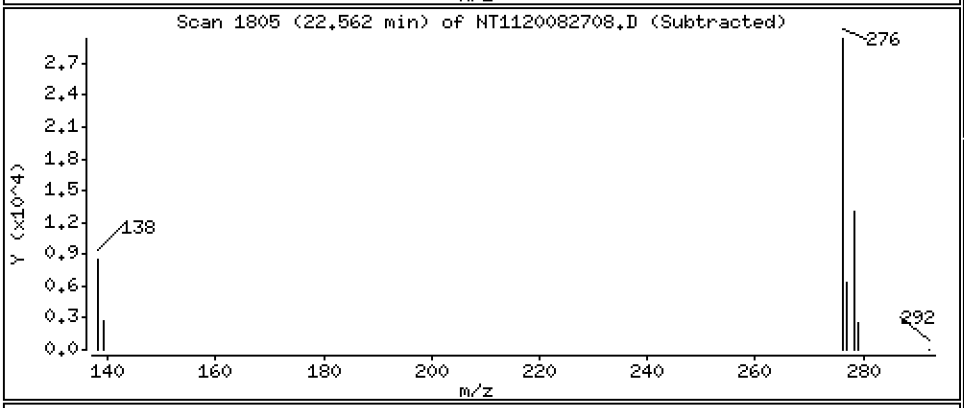
Column diameter: 0.25

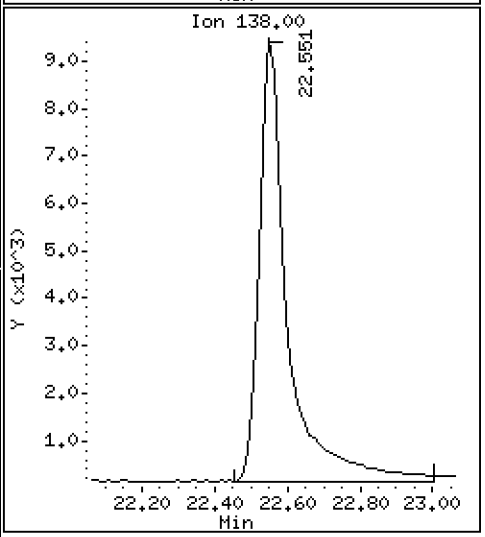
40 Indeno(1,2,3-cd)pyrene

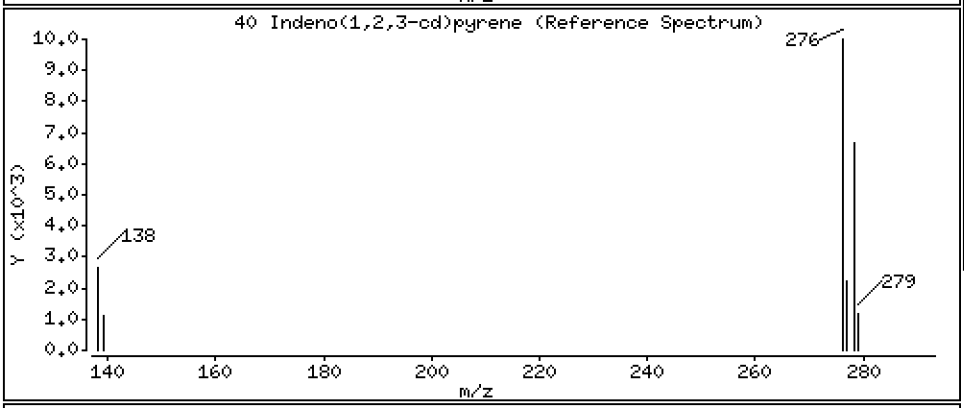
Concentration: 227 ng/mL

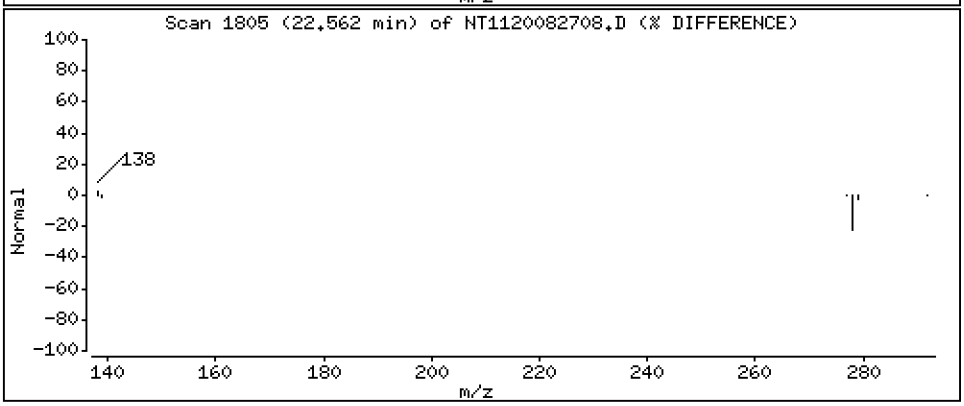












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

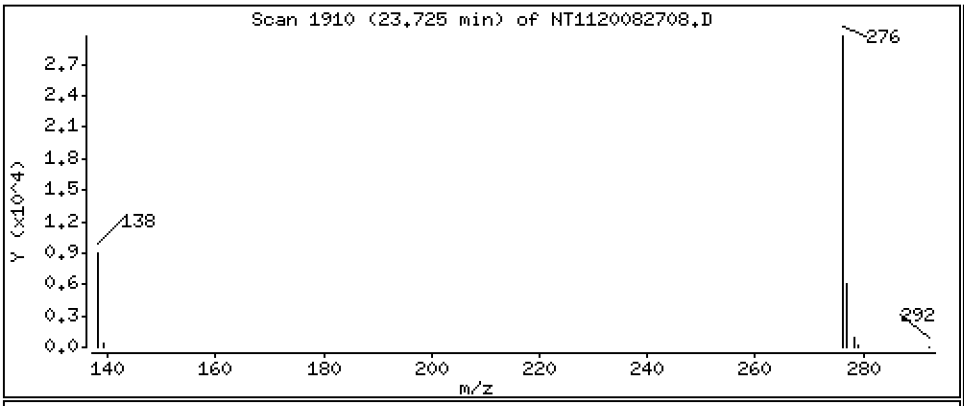
Operator: VTS

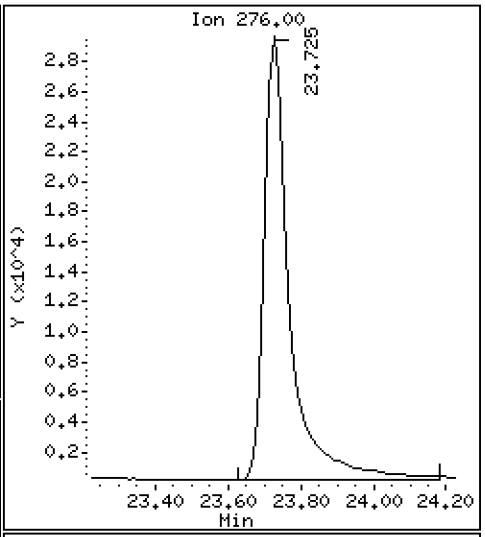
Column phase: Rxi-17Sil MS

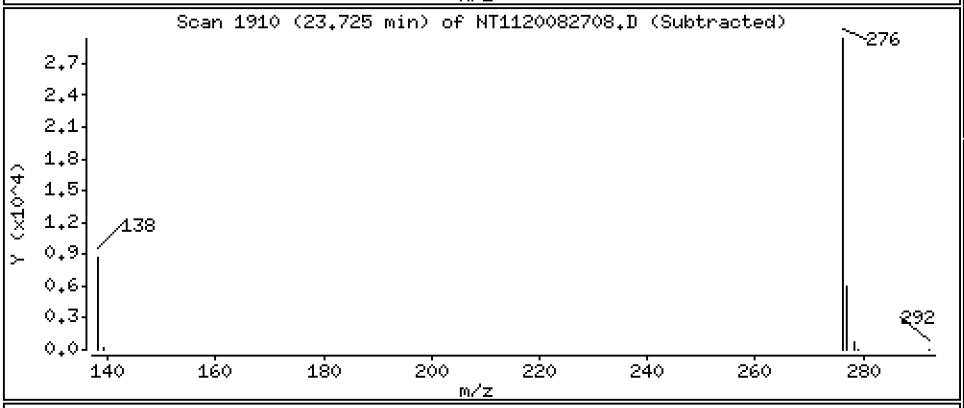
Column diameter: 0.25

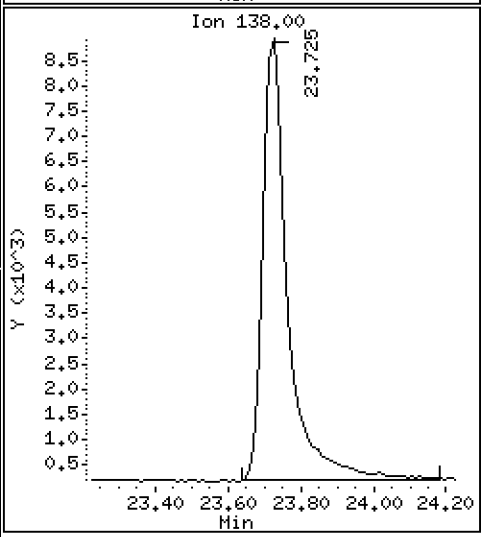
41 Benzo(g,h,i)perylene

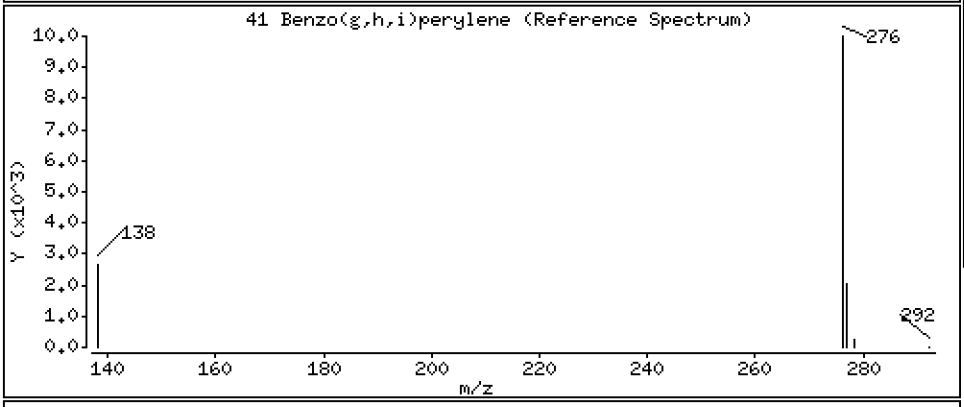
Concentration: 214 ng/mL

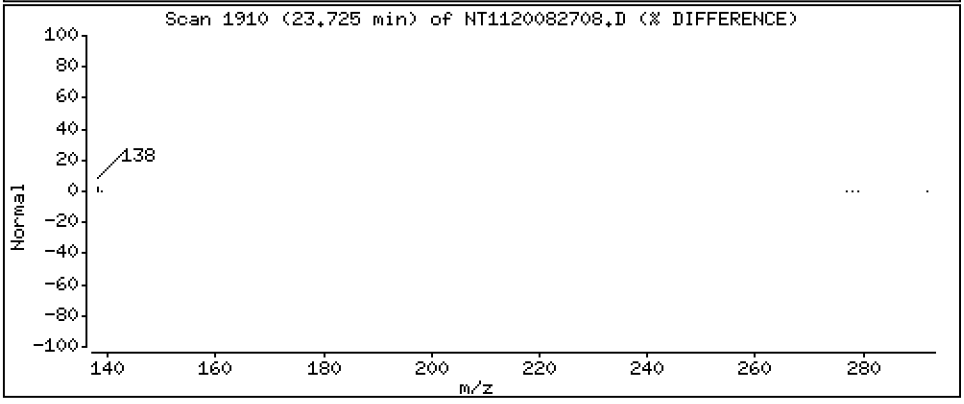












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Inj Date : 27-AUG-2020 15:38 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-SCV1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	202035	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	263329	224.480	224
	3 Benzo(b)thiophene	134	Compound Not Detected.					
$	4 2-Methylnaphthalene-d10	152	Compound Not Detected.					
	5 2-Methylnaphthalene	142	Compound Not Detected.					
	6 1-Methylnaphthalene	142	Compound Not Detected.					
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	Compound Not Detected.					
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	9.653	9.653	(0.984)	241360	233.261	233
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	90189	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	151880	221.934	222
	13 Dibenzofuran	168	Compound Not Detected.					
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	10.694	10.694	(1.090)	164299	233.486	233
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	142829	200.000	
	19 Phenanthrene	178	12.513	12.524	(1.003)	217246	232.514	233
	21 Anthracene	178	12.576	12.576	(1.008)	207807	222.597	223
	22 Carbazole	167	Compound Not Detected.					
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	Compound Not Detected.					
	25 Fluoranthene	202	14.607	14.607	(1.170)	220035	236.211	236
	26 Pyrene	202	15.107	15.107	(1.210)	224689	235.115	235
	27 Benzo(a)anthracene	228	17.123	17.122	(0.994)	170476	223.013	223
*	28 Chrysene-d12	240	17.222	17.214	(1.000)	104063	200.000	
	29 Chrysene	228	17.264	17.264	(1.002)	185336	215.323	215
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	137886	212.389	212
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	222044	260.291	260
	32 Benzo(j)fluoranthene	252	Compound Not Detected.					
	34 Benzo(e)pyrene	252	Compound Not Detected.					
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	144487	213.091	213
*	36 Perylene-d12	264	19.981	19.981	(1.000)	119273	200.000	
	37 Perylene	252	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
$ 38 Dibenzo(a,h)anthracene-d14	292	Compound Not Detected.					
39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	107076	191.902	192
40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	149356	226.827	227
41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	141191	214.457	214

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	202035	-6.18
11 Acenaphthene-d10	102217	51109	204434	90189	-11.77
18 Phenanthrene-d10	170387	85194	340774	142829	-16.17
28 Chrysene-d12	116138	58069	232276	104063	-10.40
36 Perylene-d12	139038	69519	278076	119273	-14.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.22	0.05
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082708.D

Lab ID: SIH0304-SCV1
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 15:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

** FIRST SURROGATE NOT FOUND. ICAL Check not performed **

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

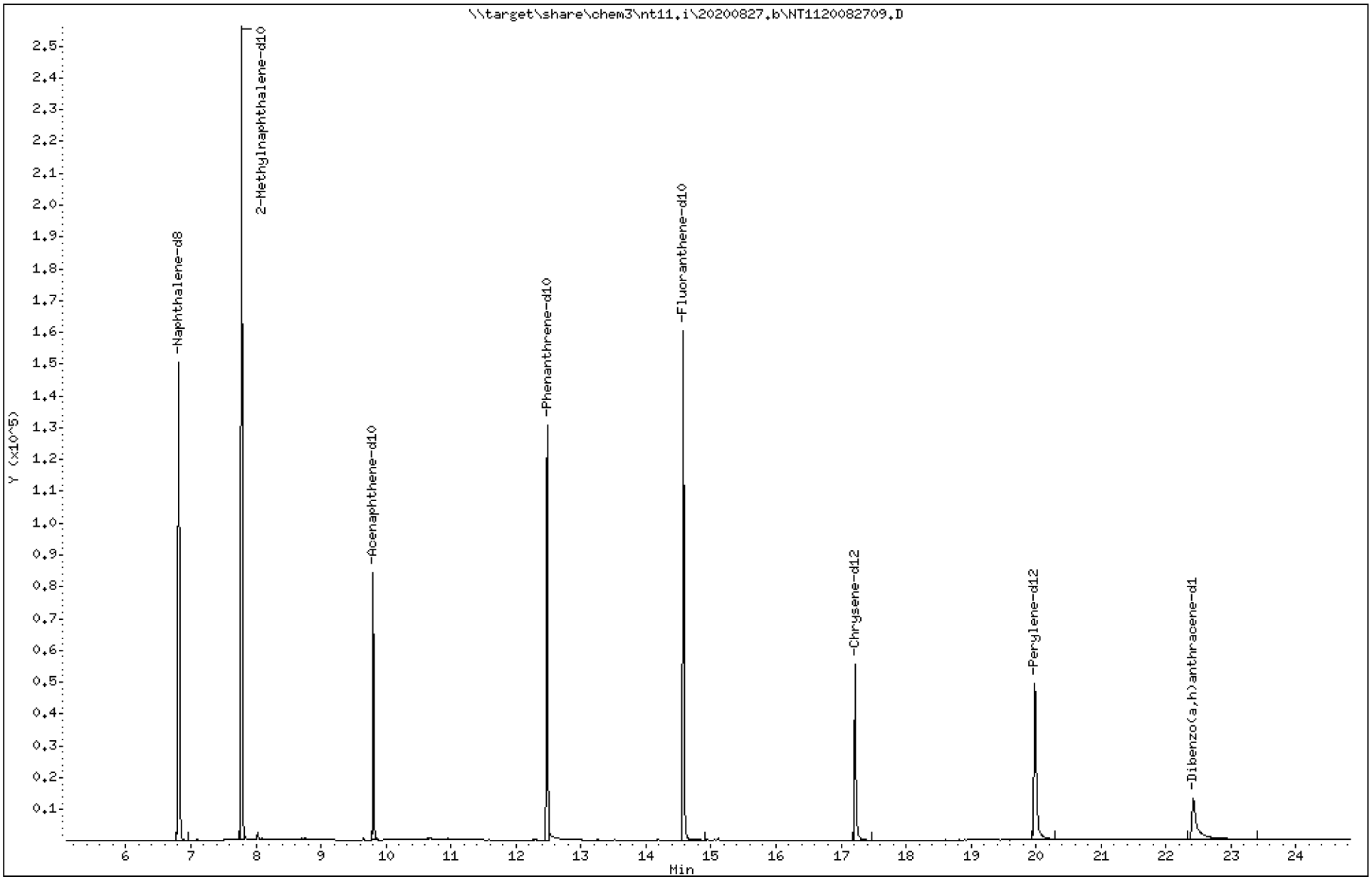
On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082709.D
Date : 27-AUG-2020 16:09
Client ID:
Sample Info: SIH0304-ICB1

Instrument: nt11.i
Operator: VTS
Column phase: Rxi-17Sil MS
Column diameter: 0.25



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082709.D
Lab Smp Id: SIH0304-ICB1
Inj Date : 27-AUG-2020 16:09 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-ICB1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1	Naphthalene-d8	136	6.804	6.804	(1.000)	216694	200.000	
	2	Naphthalene	128	Compound Not Detected.					
	3	Benzo(b)thiophene	134	Compound Not Detected.					
$	4	2-Methylnaphthalene-d10	152	7.780	7.780	(1.144)	189652	217.663	218
	5	2-Methylnaphthalene	142	Compound Not Detected.					
	6	1-Methylnaphthalene	142	Compound Not Detected.					
	7	2-Chloronaphthalene	162	Compound Not Detected.					
	8	Biphenyl	154	Compound Not Detected.					
	9	2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10	Acenaphthylene	152	Compound Not Detected.					
*	11	Acenaphthene-d10	164	9.807	9.807	(1.000)	94656	200.000	
	12	Acenaphthene	153	Compound Not Detected.					
	13	Dibenzofuran	168	Compound Not Detected.					
	14	2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16	Fluorene	166	Compound Not Detected.					
	17	Dibenzothiophene	184	Compound Not Detected.					
*	18	Phenanthrene-d10	188	12.482	12.482	(1.000)	145070	200.000	
	19	Phenanthrene	178	Compound Not Detected.					
	21	Anthracene	178	Compound Not Detected.					
	22	Carbazole	167	Compound Not Detected.					
	23	1-Methylphenanthrene	192	Compound Not Detected.					
$	24	Fluoranthene-d10	212	14.578	14.578	(1.168)	176038	231.454	231
	25	Fluoranthene	202	Compound Not Detected.					
	26	Pyrene	202	Compound Not Detected.					
	27	Benzo(a)anthracene	228	Compound Not Detected.					
*	28	Chrysene-d12	240	17.222	17.214	(1.000)	97049	200.000	
	29	Chrysene	228	Compound Not Detected.					
	30	Benzo(b)fluoranthene	252	Compound Not Detected.					
	31	Benzo(k)fluoranthene	252	Compound Not Detected.					
	32	Benzo(j)fluoranthene	252	Compound Not Detected.					
	34	Benzo(e)pyrene	252	Compound Not Detected.					
	35	Benzo(a)pyrene	252	Compound Not Detected.					
*	36	Perylene-d12	264	19.981	19.981	(1.000)	107633	200.000	
	37	Perylene	252	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
$	38 Dibenzo(a,h)anthracene-d14	292	22.418	22.418	(1.122)	74753	178.300	178
	39 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	40 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
	41 Benzo(g,h,i)perylene	276	Compound Not Detected.					

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082709.D
Lab Smp Id: SIH0304-ICB1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	216694	0.63
11 Acenaphthene-d10	102217	51109	204434	94656	-7.40
18 Phenanthrene-d10	170387	85194	340774	145070	-14.86
28 Chrysene-d12	116138	58069	232276	97049	-16.44
36 Perylene-d12	139038	69519	278076	107633	-22.59

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.22	0.05
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082709.D

Lab ID: SIH0304-ICB1
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 16:09

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: DH00073
Laboratory ID: SIH0304-SCV1
Sequence: SIH0304
Sequence Name: PAH 250 SCV
Standard ID: I004581

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Naphthalene	250.00	224	-10.2	20.00
Acenaphthylene	250.00	233	-6.7	20.00
Acenaphthene	250.00	222	-11.2	20.00
Fluorene	250.00	233	-6.6	20.00
Phenanthrene	250.00	233	-7.0	20.00
Anthracene	250.00	223	-11.0	20.00
Fluoranthene	250.00	236	-5.5	20.00
Pyrene	250.00	235	-6.0	20.00
Benzo(a)anthracene	250.00	223	-10.8	20.00
Chrysene	250.00	215	-13.9	20.00
Benzo(b)fluoranthene	250.00	212	-15.0	20.00
Benzo(k)fluoranthene	250.00	260	4.1	20.00
Benzofluoranthenes, Total	500.00	473	-5.5	
Benzo(a)pyrene	250.00	213	-14.8	20.00
Indeno(1,2,3-cd)pyrene	250.00	227	-9.3	20.00
Dibenzo(a,h)anthracene	250.00	192	-23.2 *	20.00
Benzo(g,h,i)perylene	250.00	214	-14.2	20.00

* Indicates values outside of QC limits

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

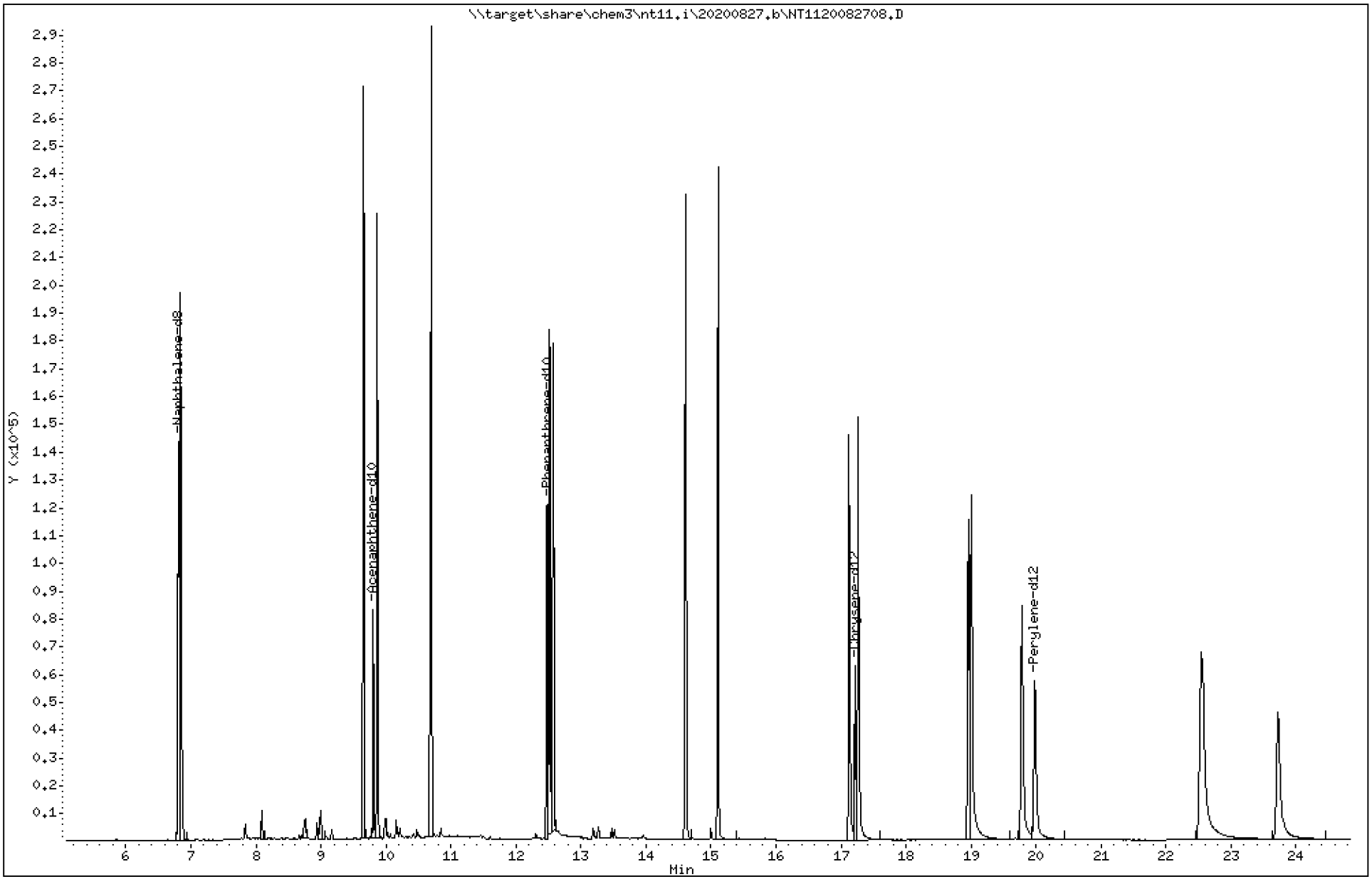
Sample Info: SIH0304-SCV1

Column phase: Rxi-17Sil MS

Instrument: nt11.i

Operator: VTS

Column diameter: 0.25



Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

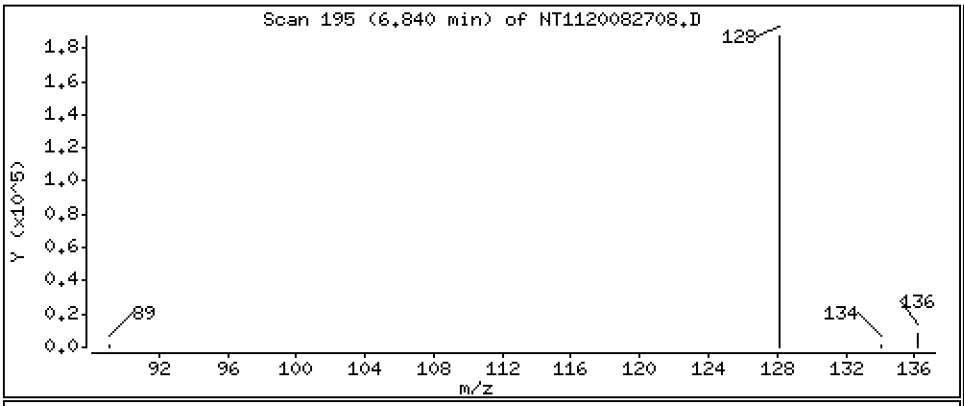
Operator: VTS

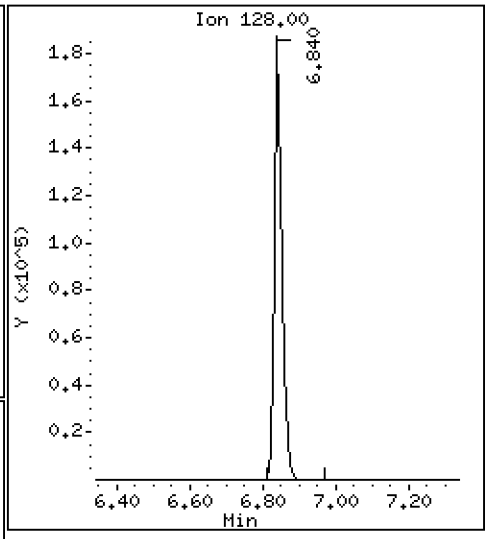
Column phase: Rxi-17Sil MS

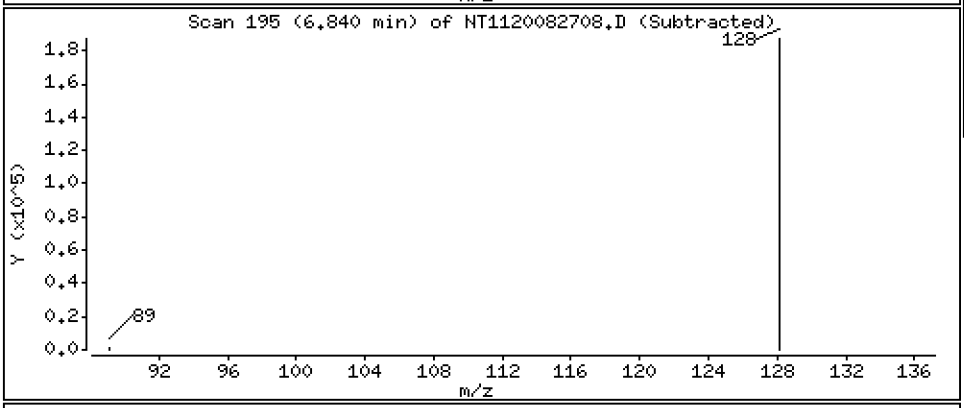
Column diameter: 0.25

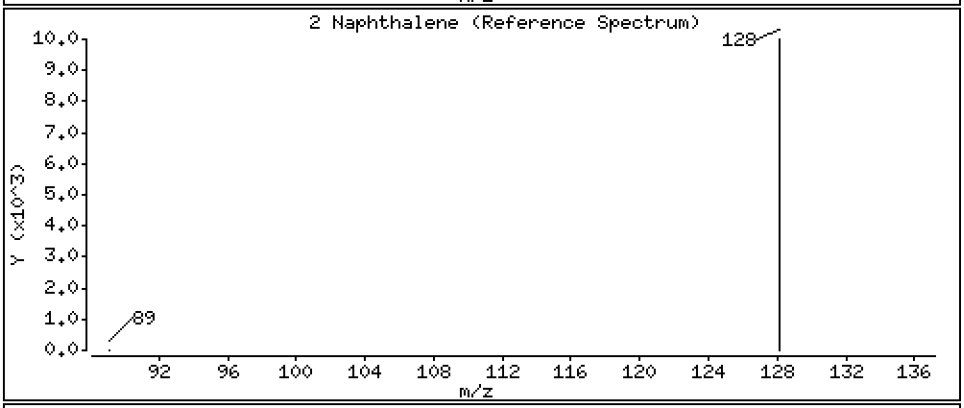
2 Naphthalene

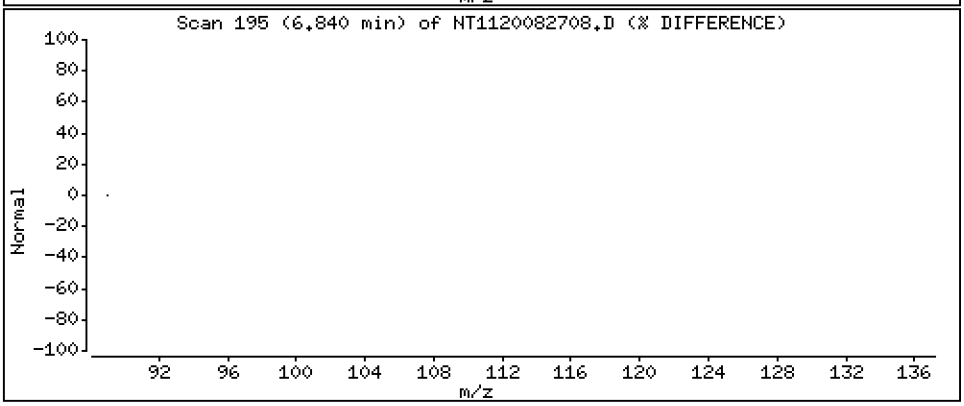
Concentration: 224 ng/mL











Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

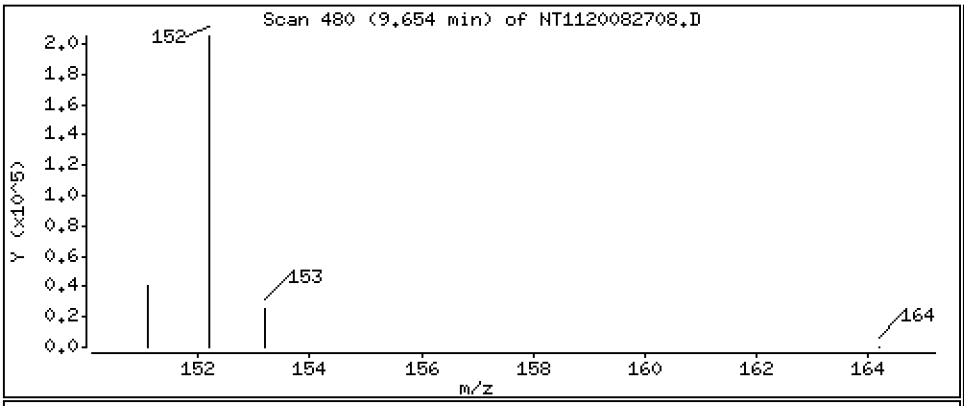
Operator: VTS

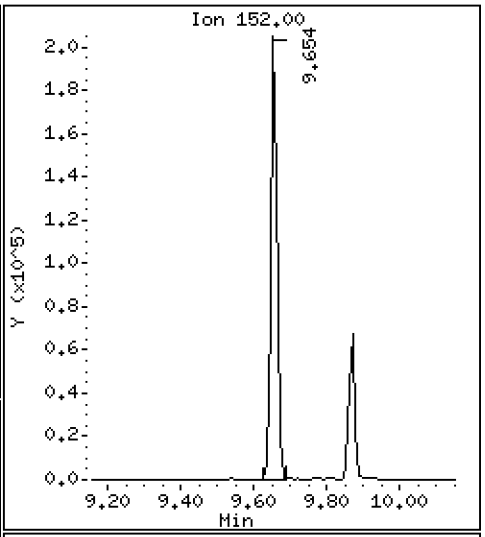
Column phase: Rxi-17Sil MS

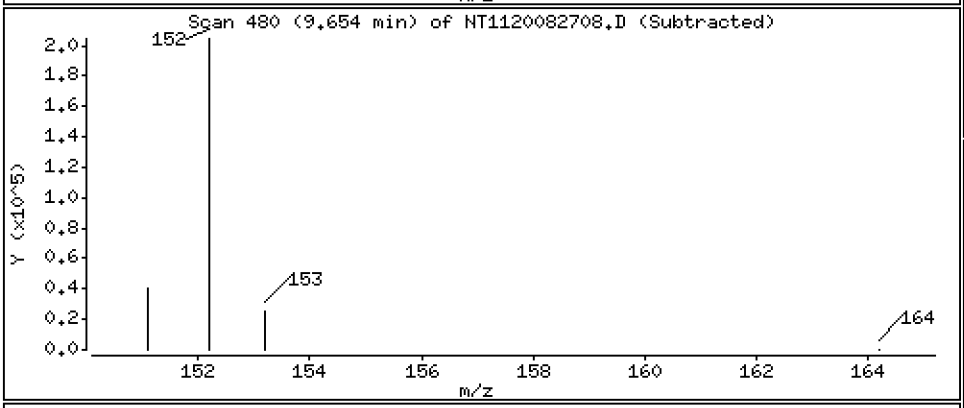
Column diameter: 0.25

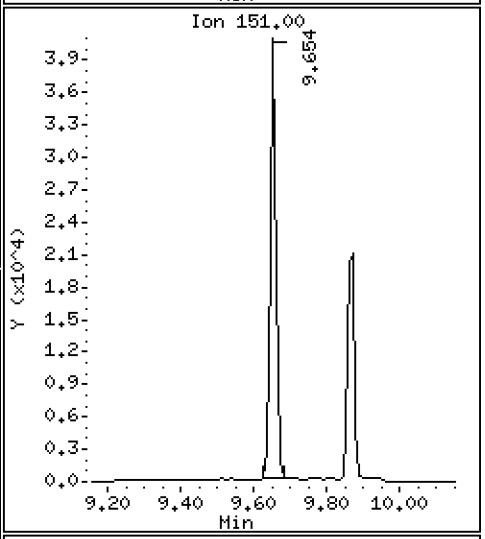
10 Acenaphthylene

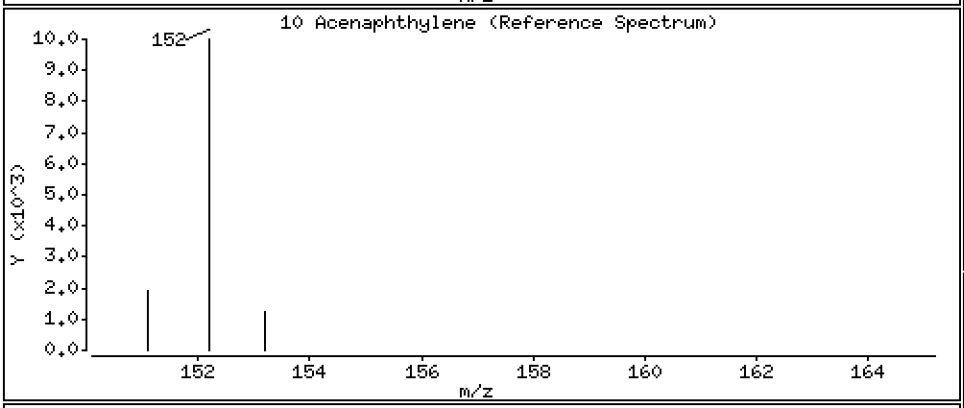
Concentration: 233 ng/mL

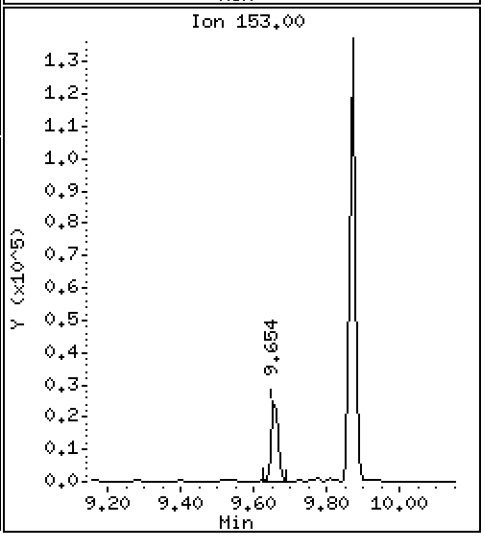


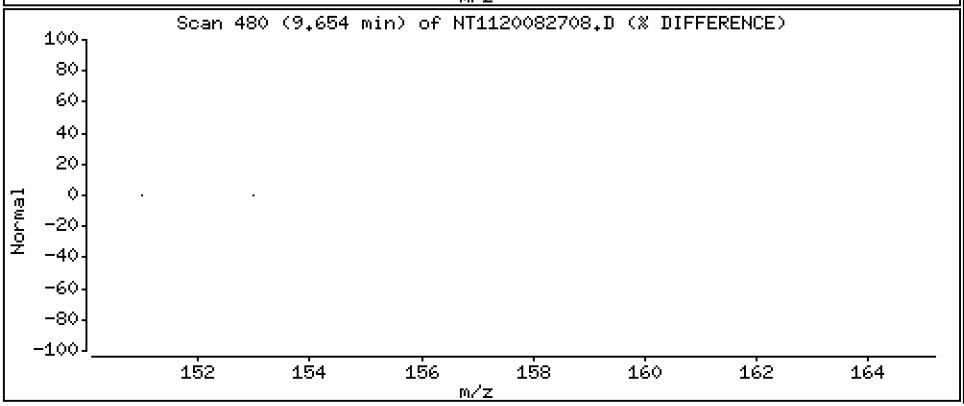












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

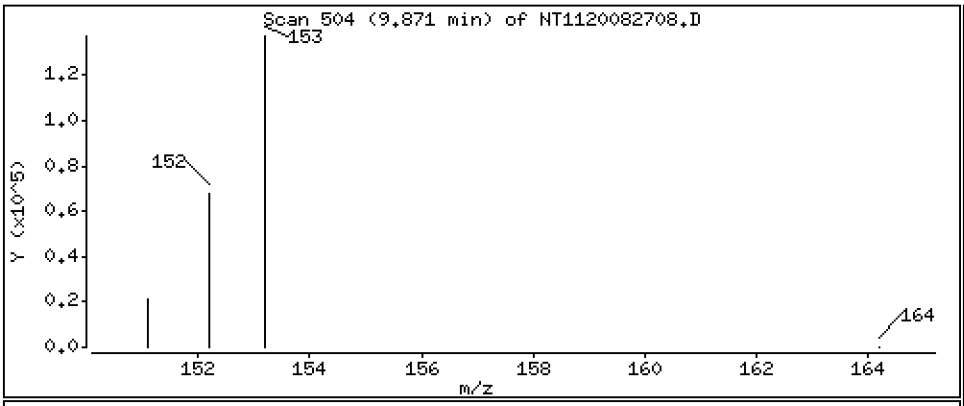
Operator: VTS

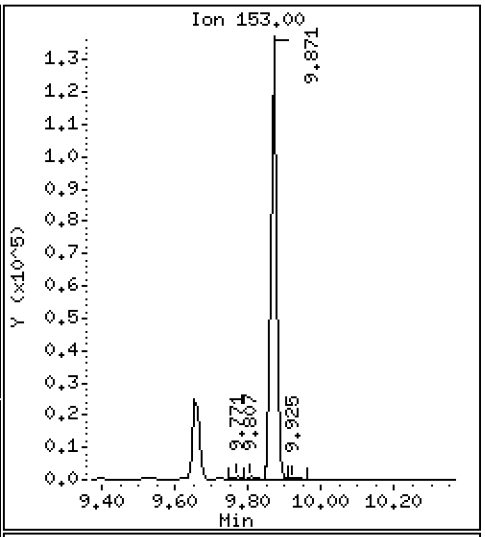
Column phase: Rxi-17Sil MS

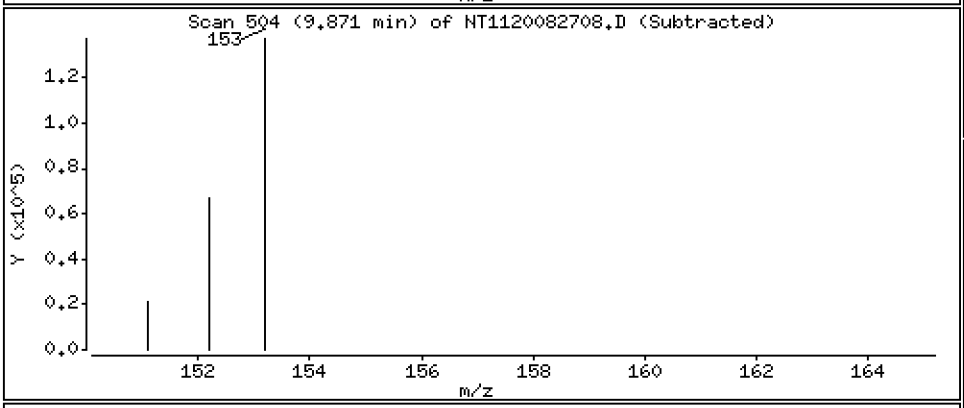
Column diameter: 0.25

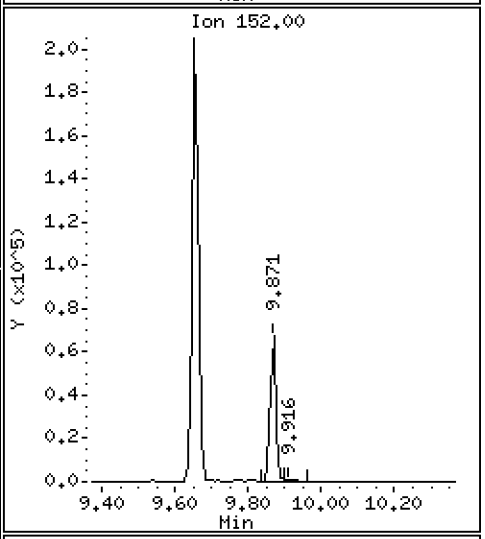
12 Acenaphthene

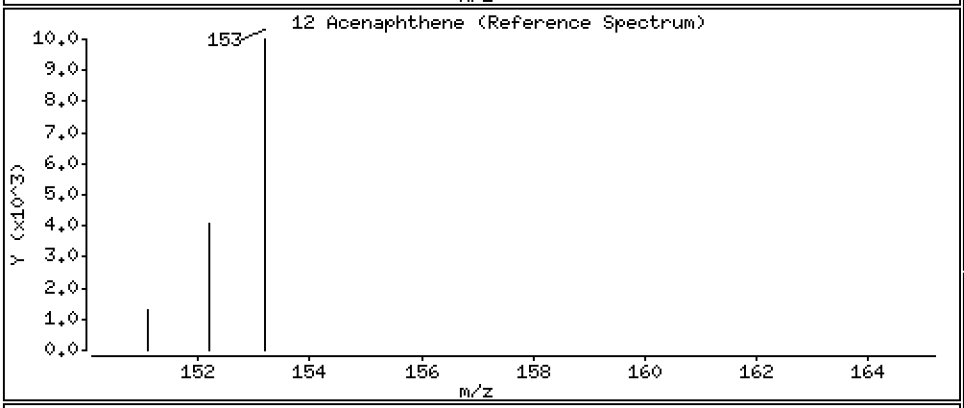
Concentration: 222 ng/mL

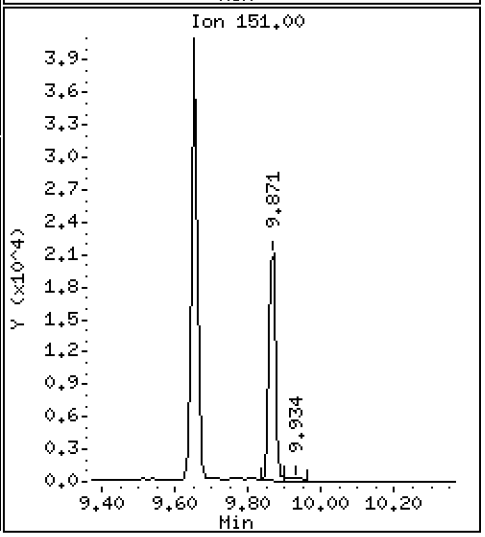


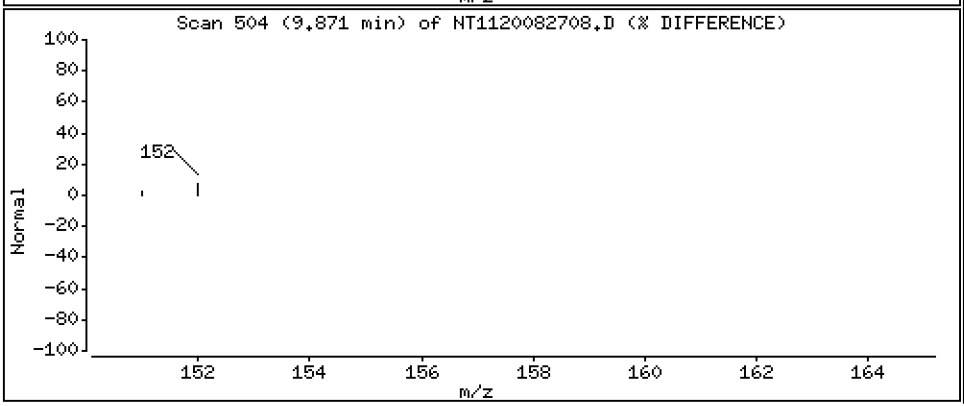












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

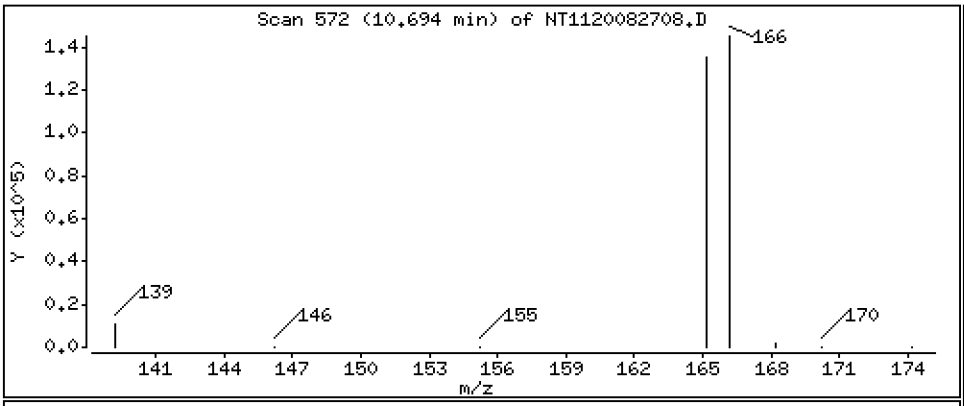
Operator: VTS

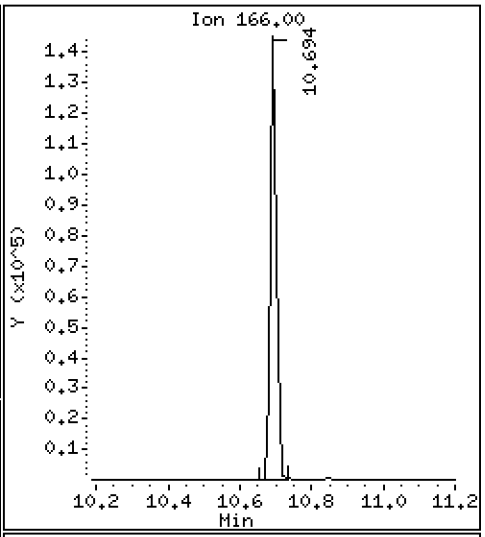
Column phase: Rxi-17Sil MS

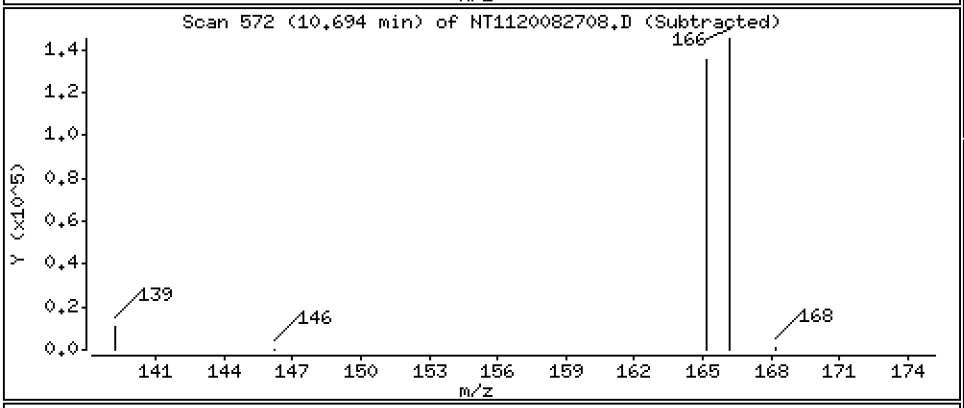
Column diameter: 0.25

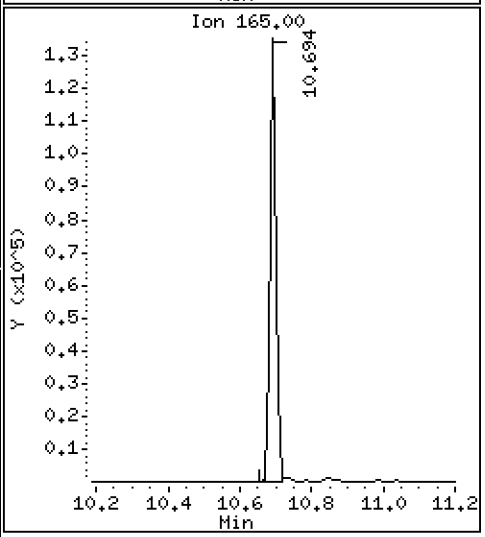
16 Fluorene

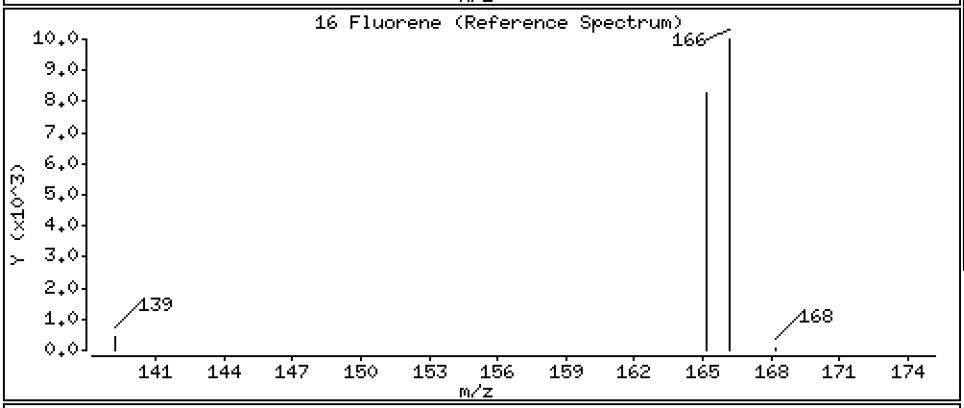
Concentration: 233 ng/mL

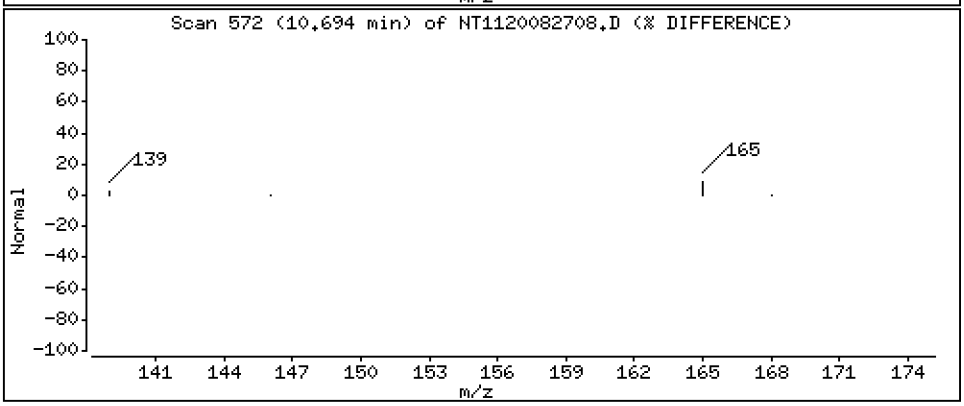












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

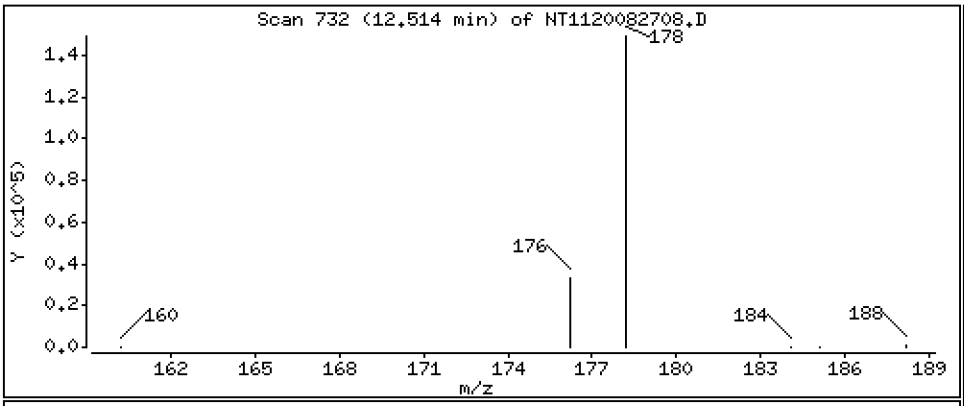
Operator: VTS

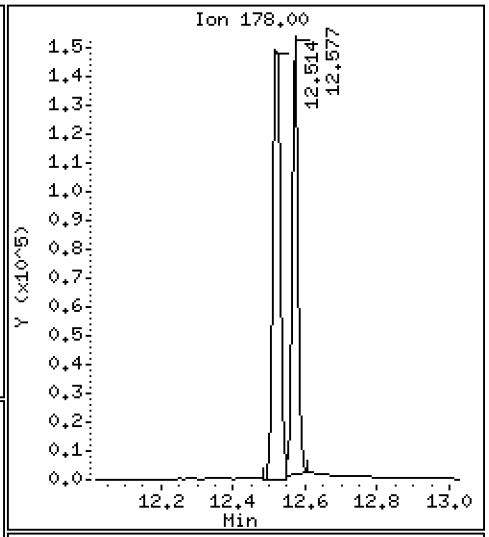
Column phase: Rxi-17Sil MS

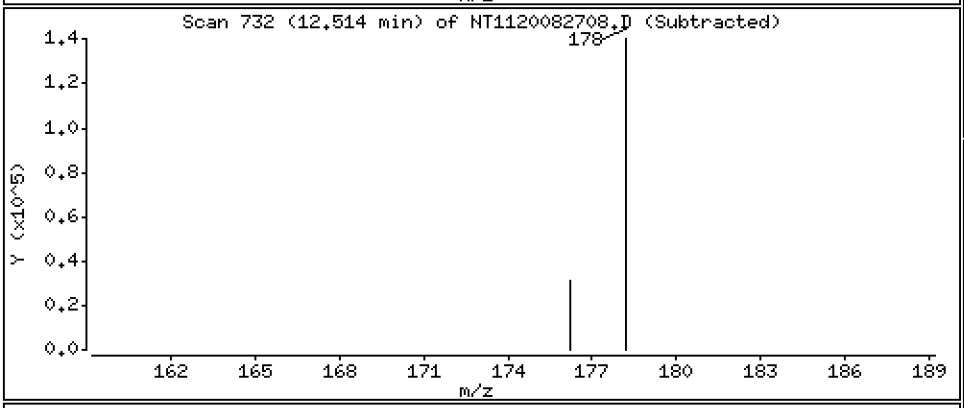
Column diameter: 0.25

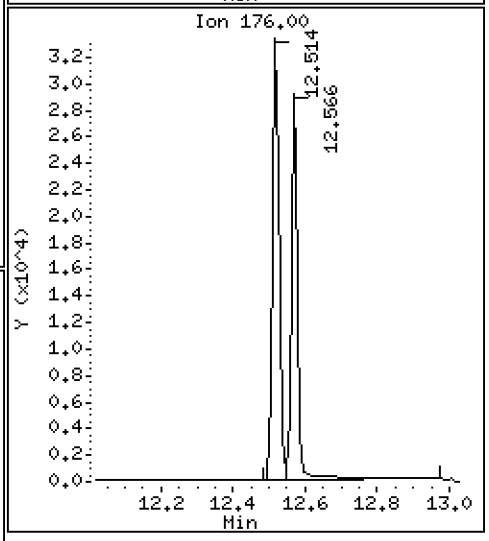
19 Phenanthrene

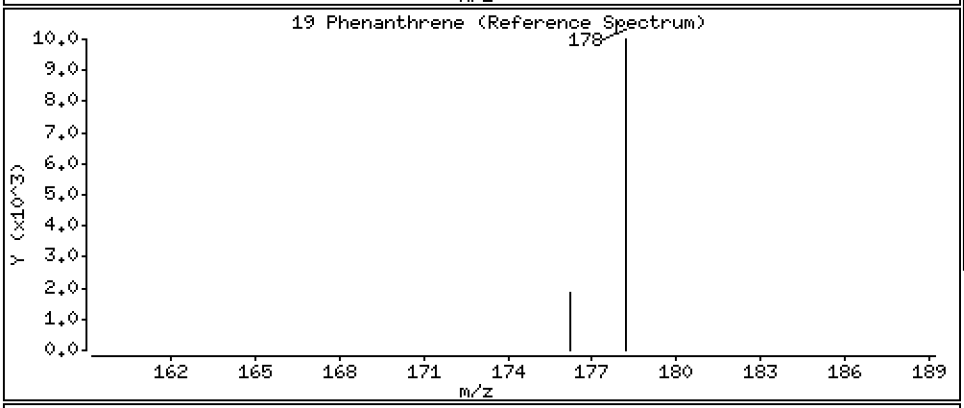
Concentration: 233 ng/mL

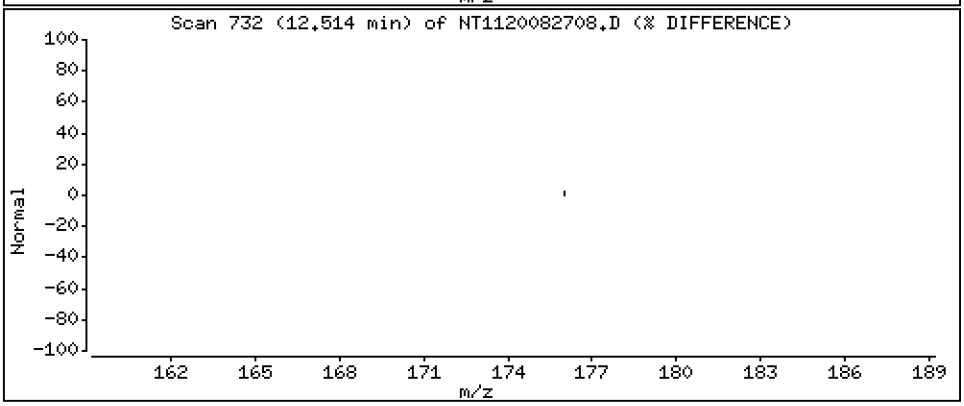












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

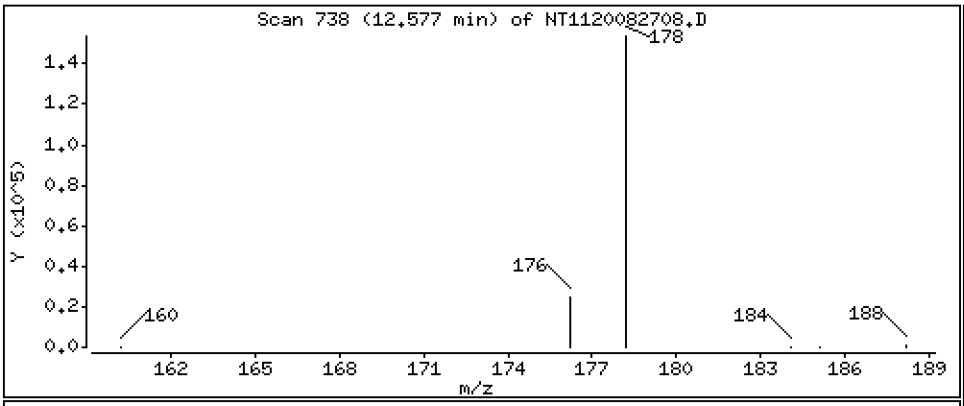
Operator: VTS

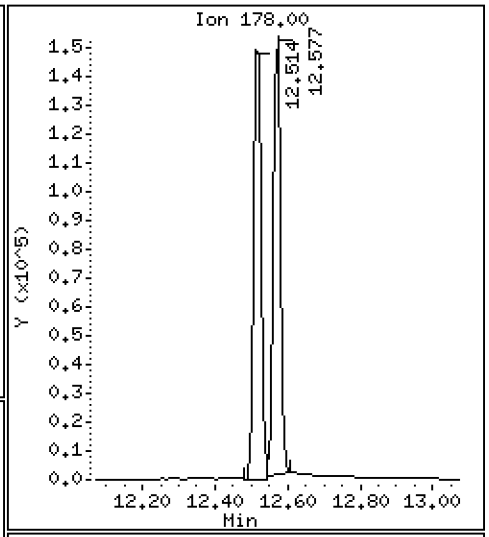
Column phase: Rxi-17Sil MS

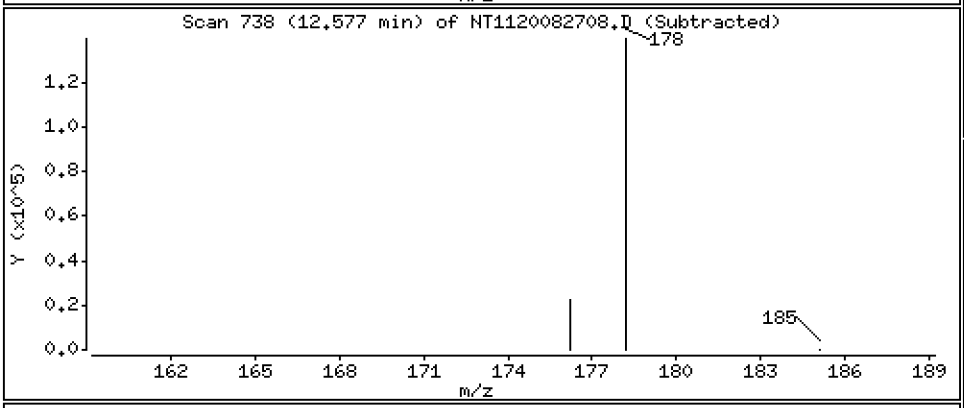
Column diameter: 0.25

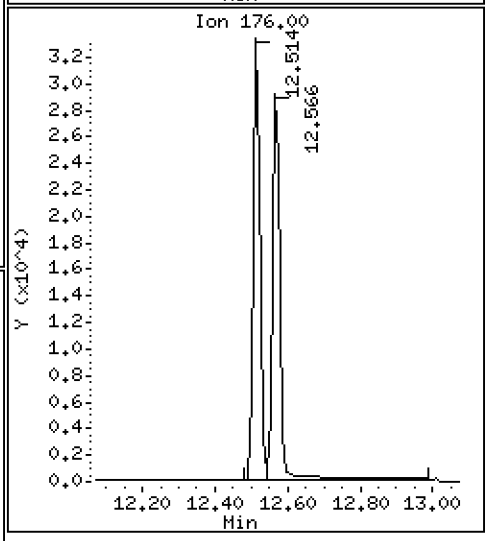
21 Anthracene

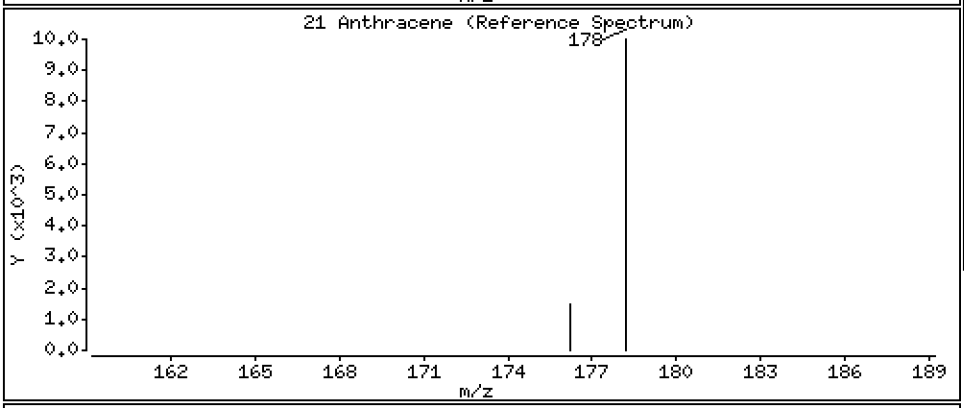
Concentration: 223 ng/mL

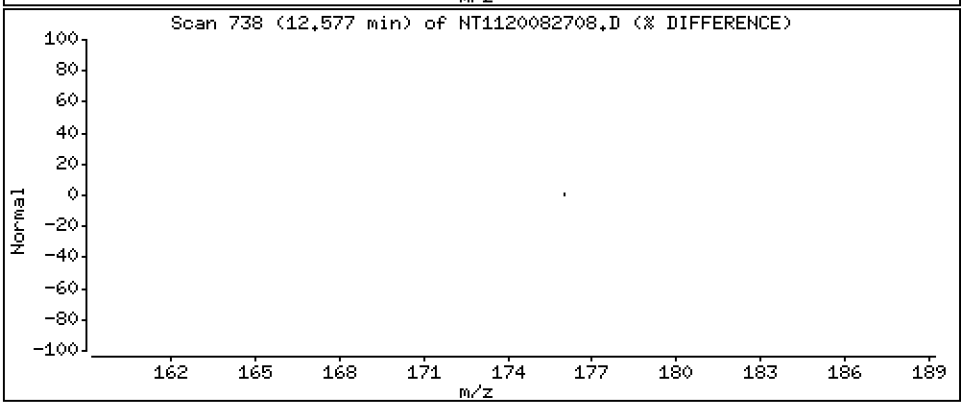












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

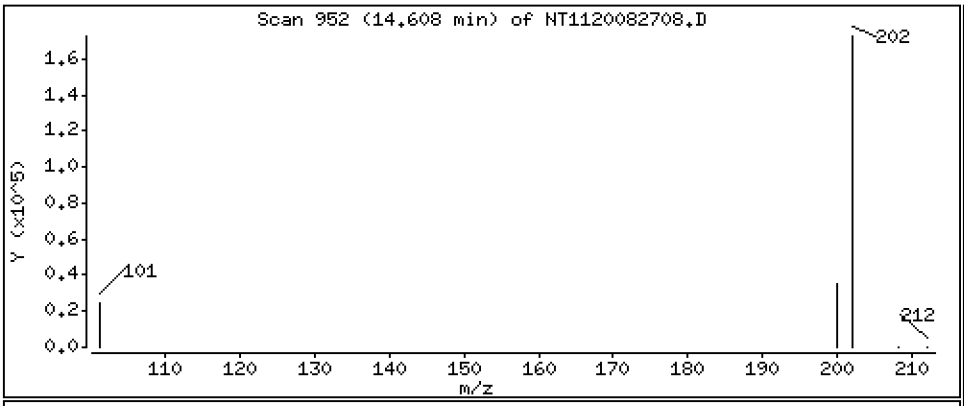
Operator: VTS

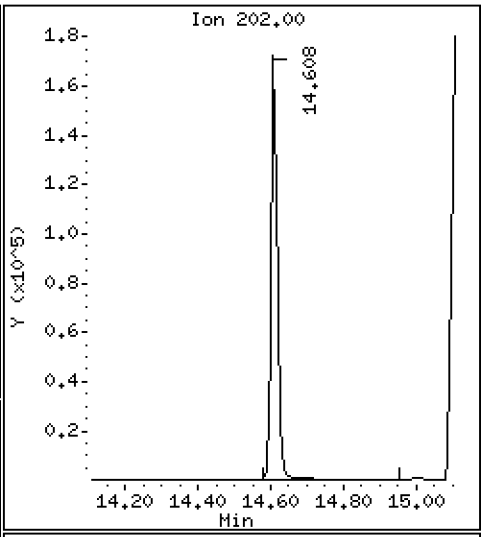
Column phase: Rxi-17Sil MS

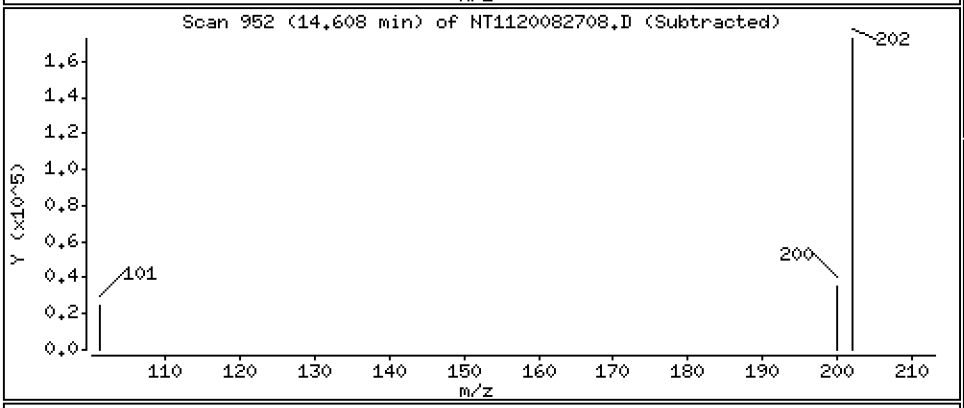
Column diameter: 0.25

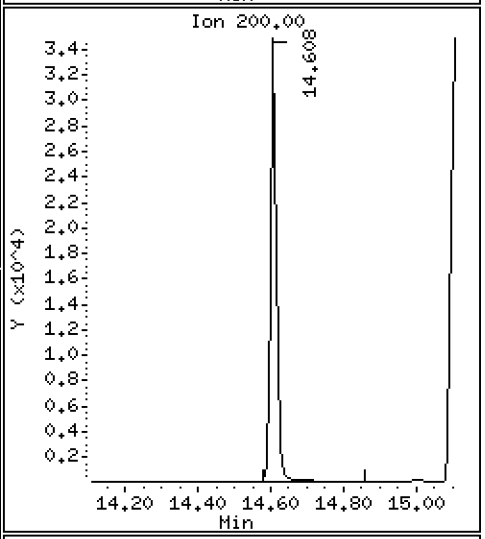
25 Fluoranthene

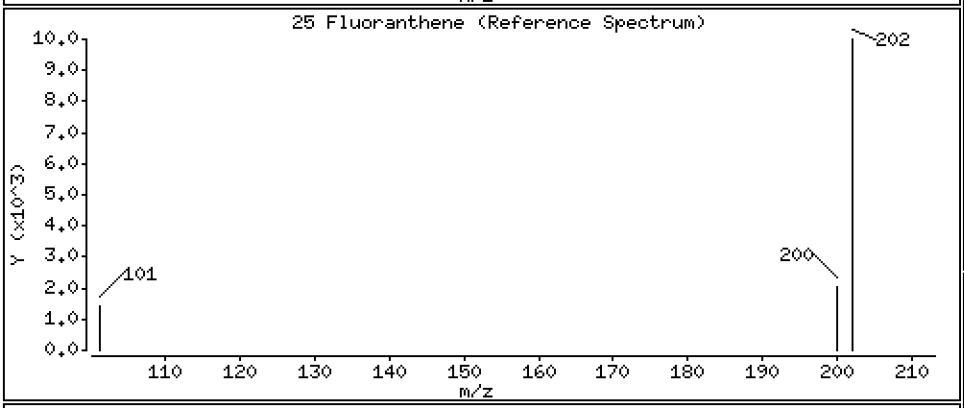
Concentration: 236 ng/mL

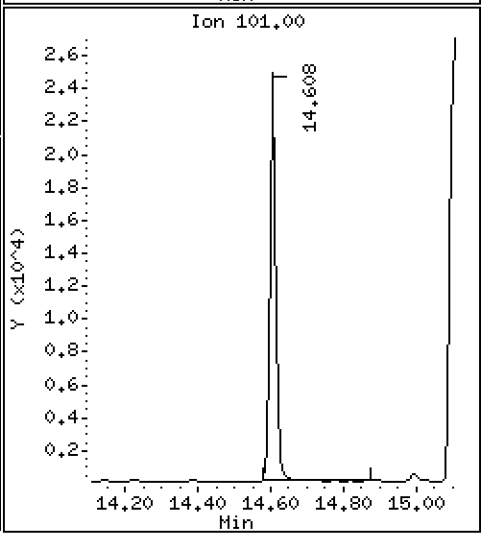


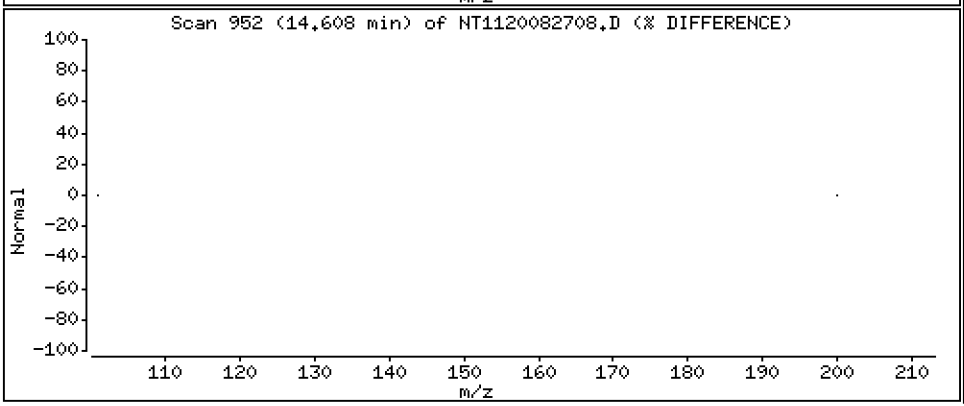












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

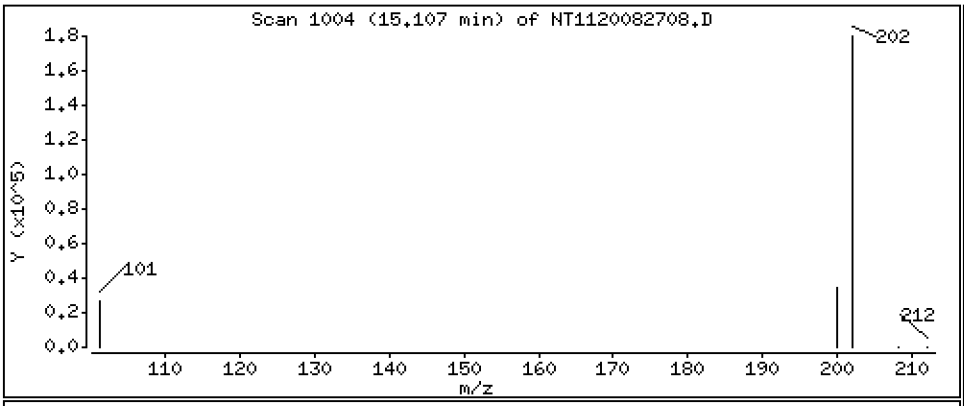
Operator: VTS

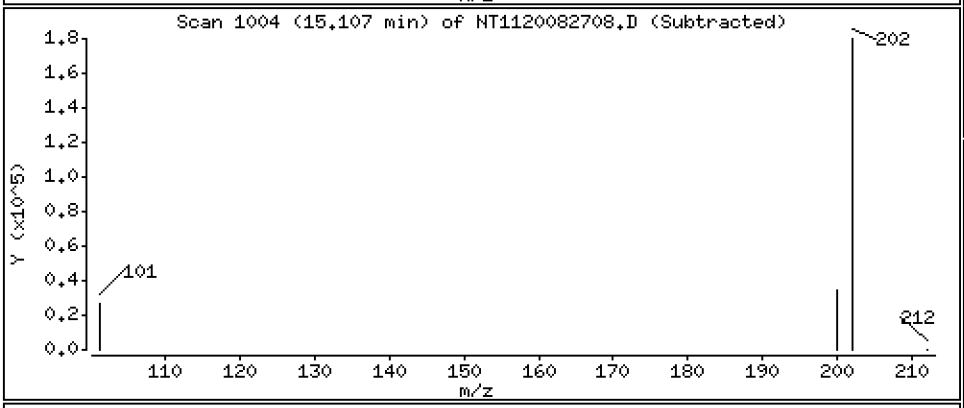
Column phase: Rxi-17Sil MS

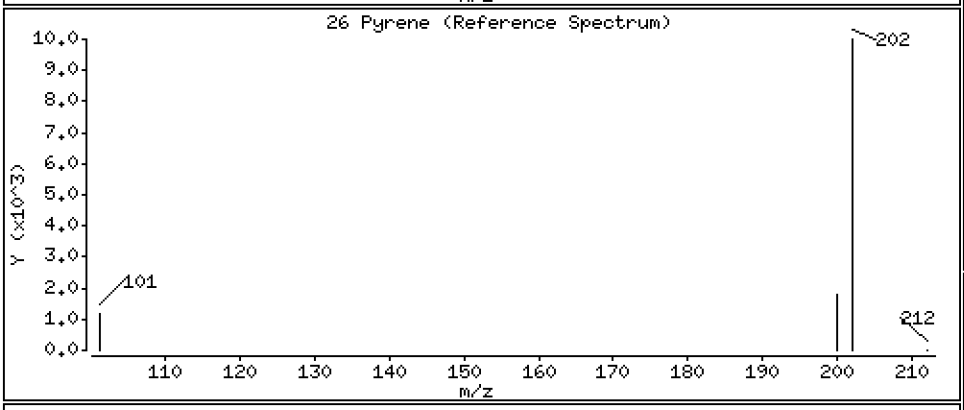
Column diameter: 0.25

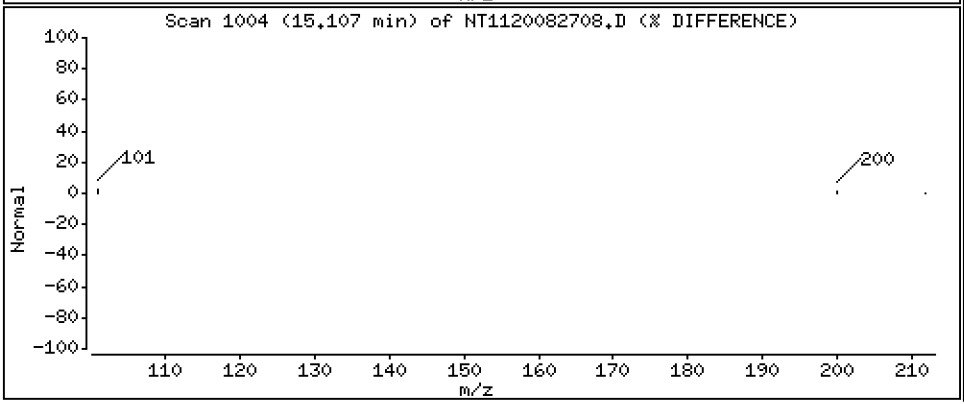
26 Pyrene

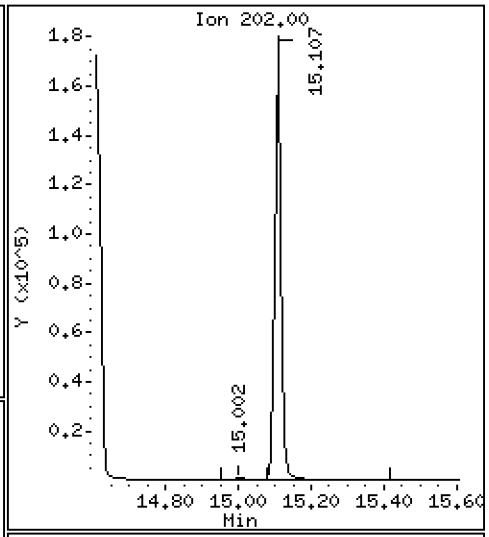
Concentration: 235 ng/mL

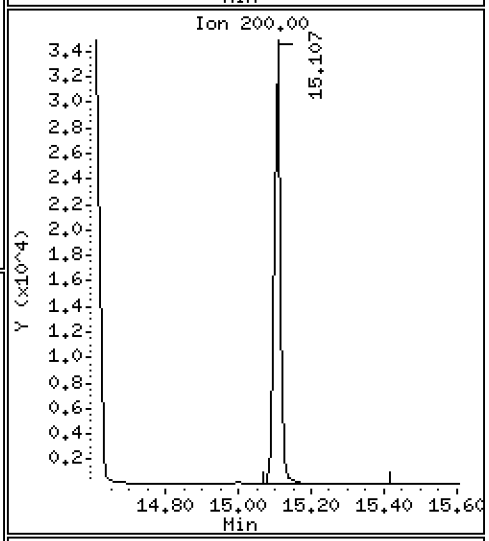


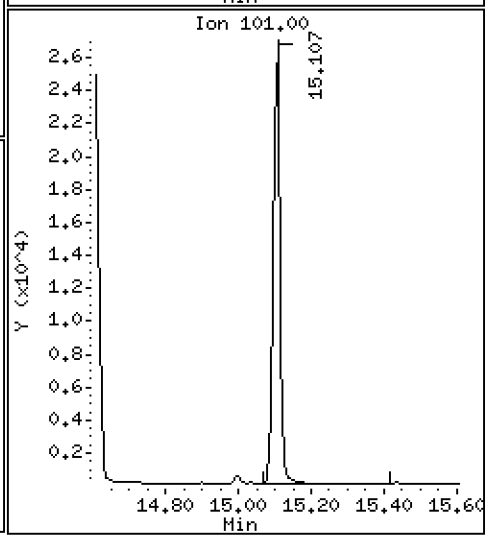












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

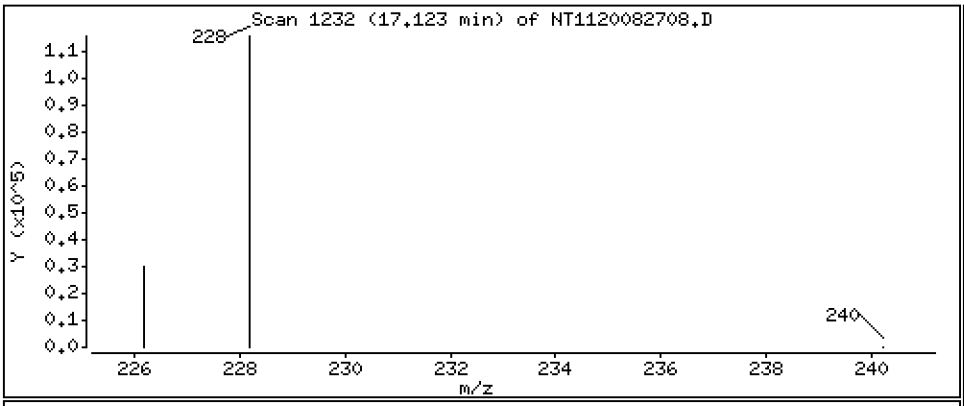
Operator: VTS

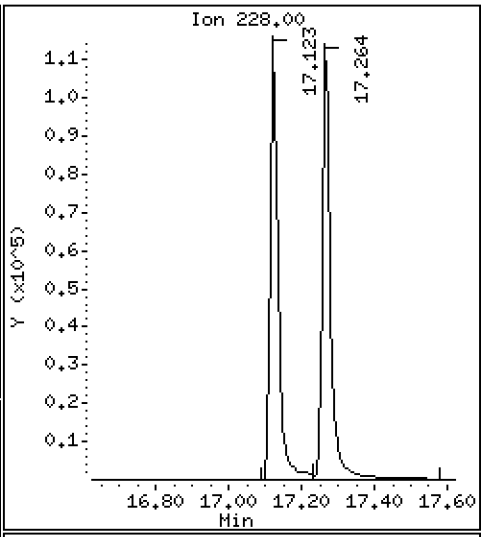
Column phase: Rxi-17Sil MS

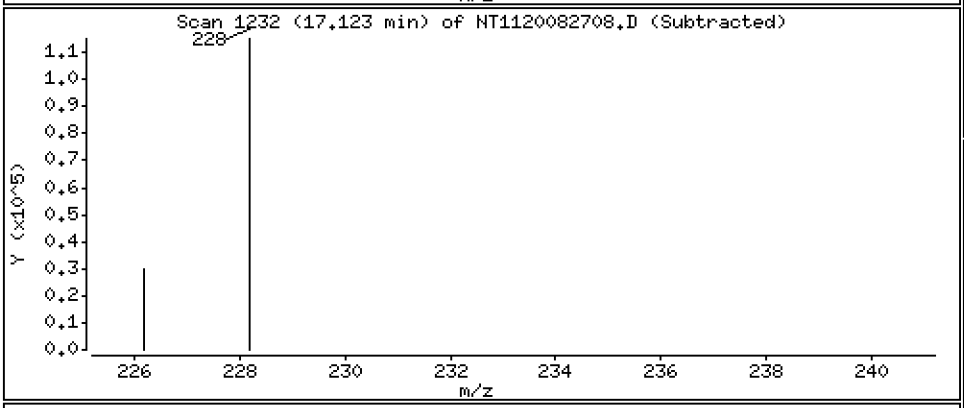
Column diameter: 0.25

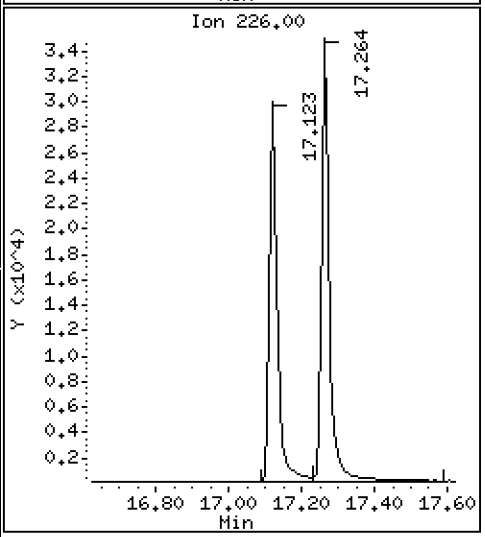
27 Benzo(a)anthracene

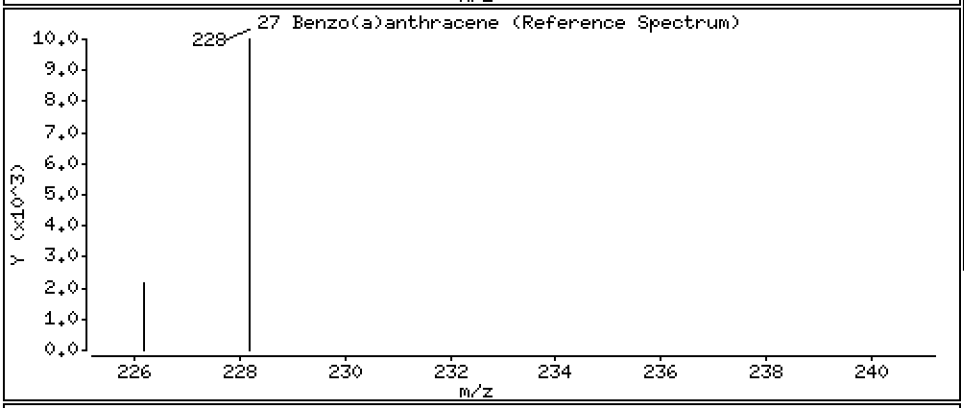
Concentration: 223 ng/mL

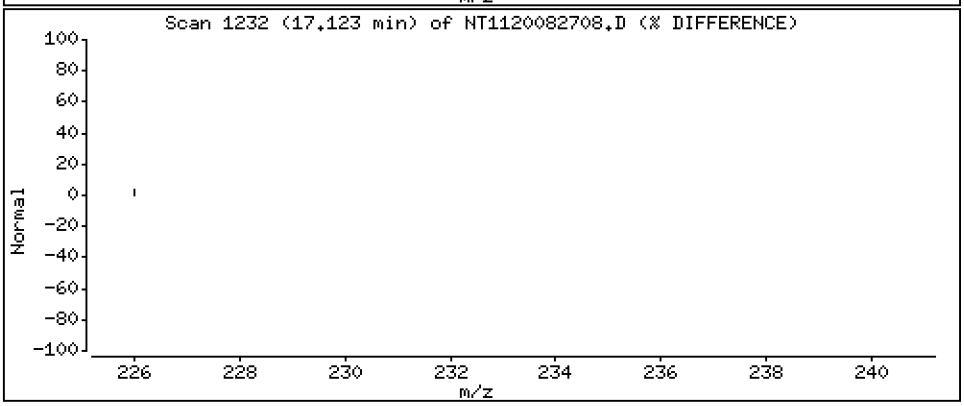












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

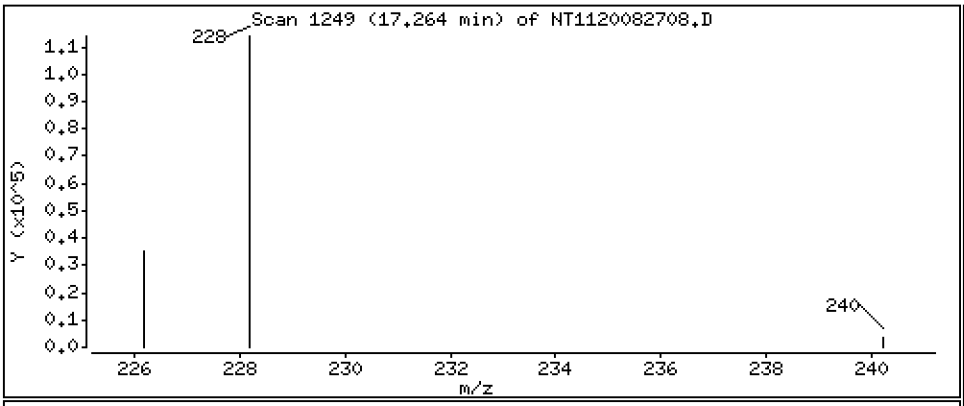
Operator: VTS

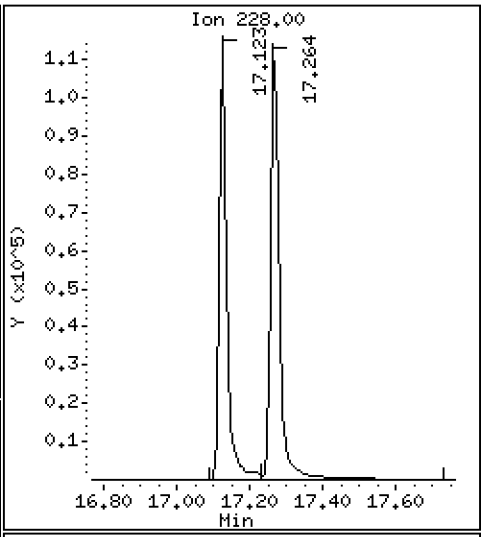
Column phase: Rxi-17Sil MS

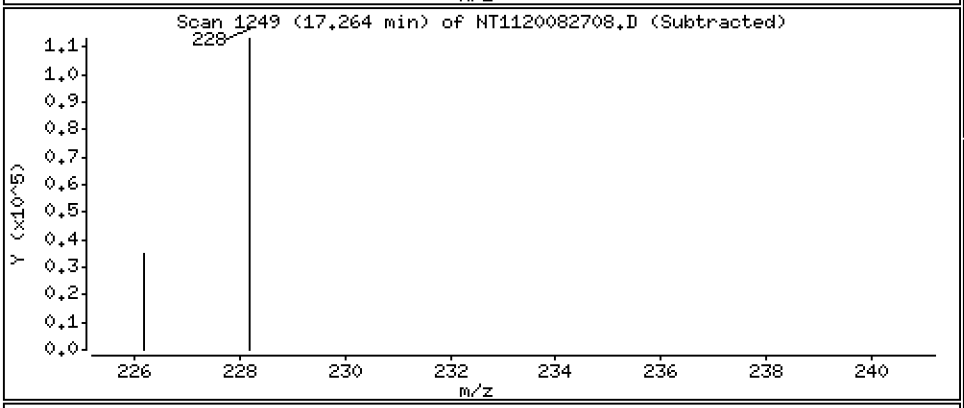
Column diameter: 0.25

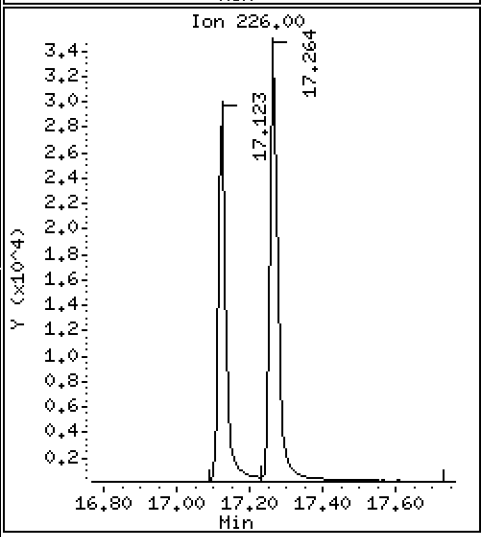
29 Chrysene

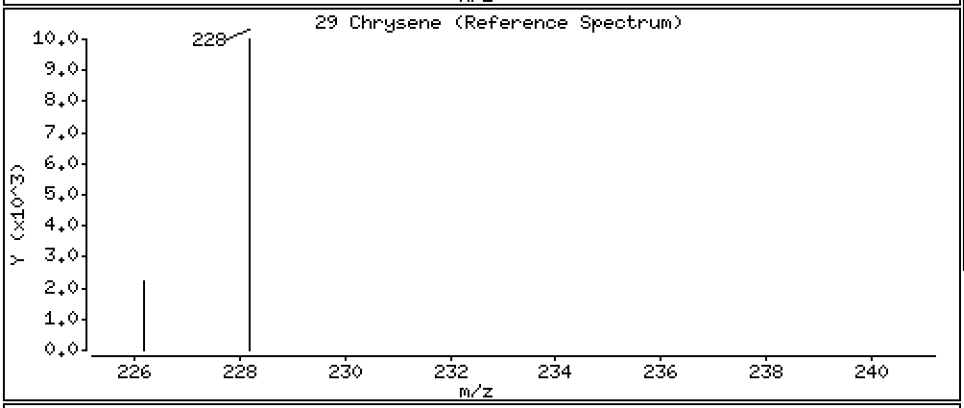
Concentration: 215 ng/mL

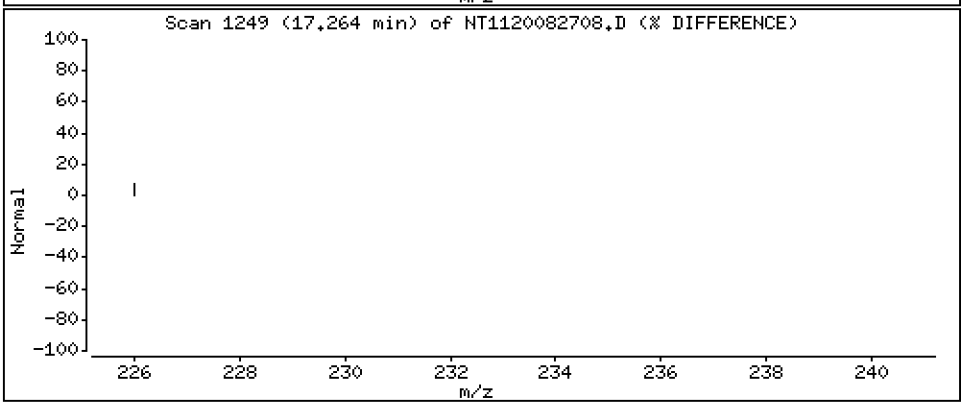












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

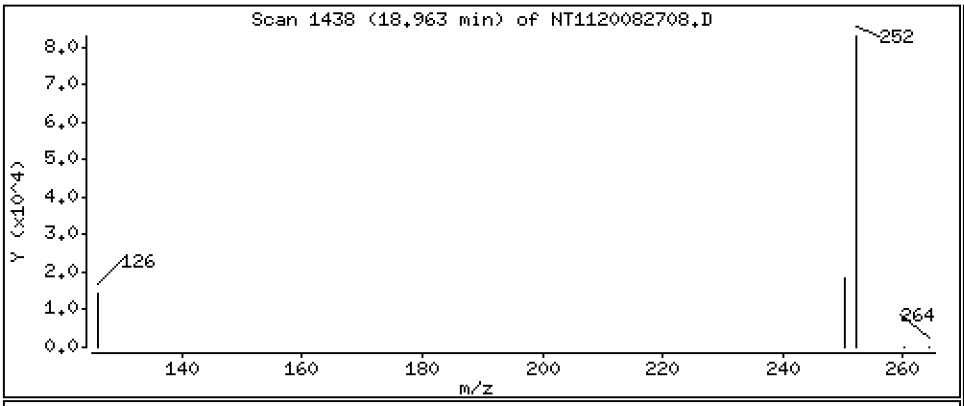
Operator: VTS

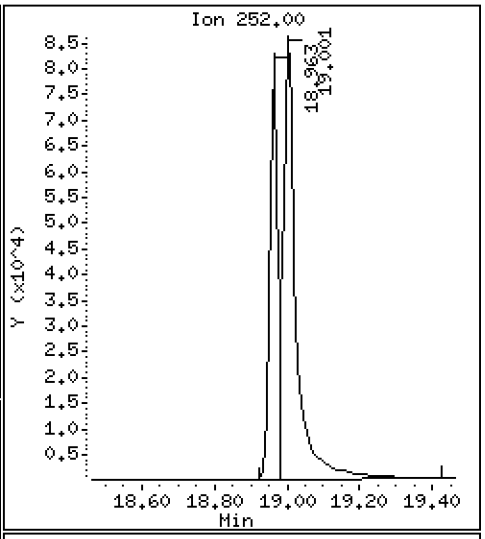
Column phase: Rxi-17Sil MS

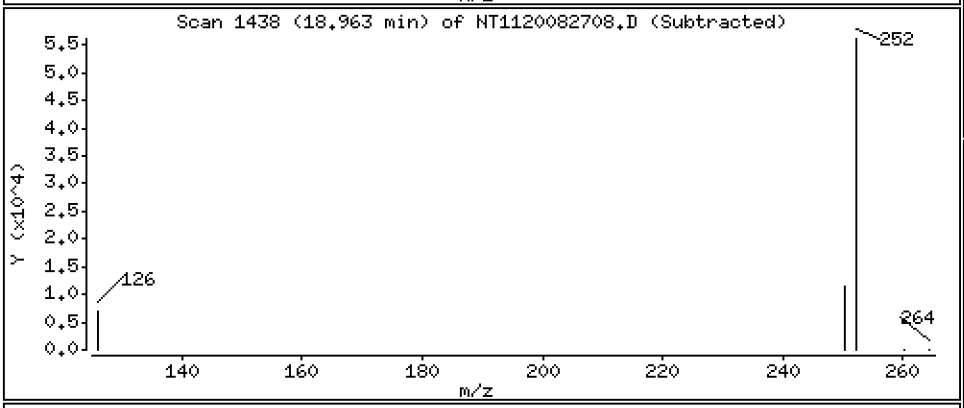
Column diameter: 0.25

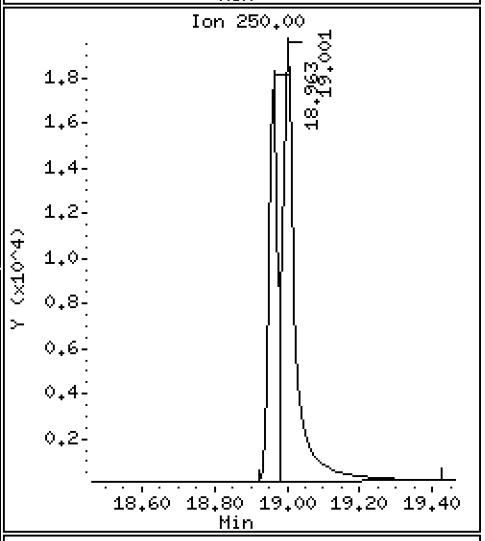
30 Benzo(b)fluoranthene

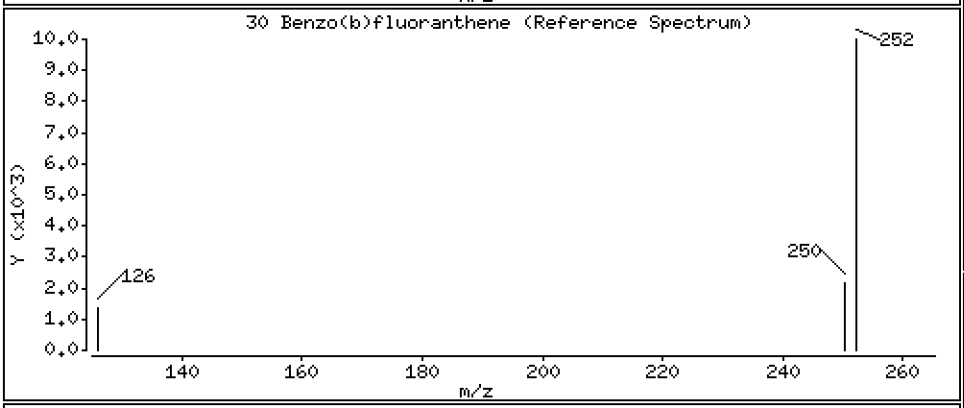
Concentration: 212 ng/mL

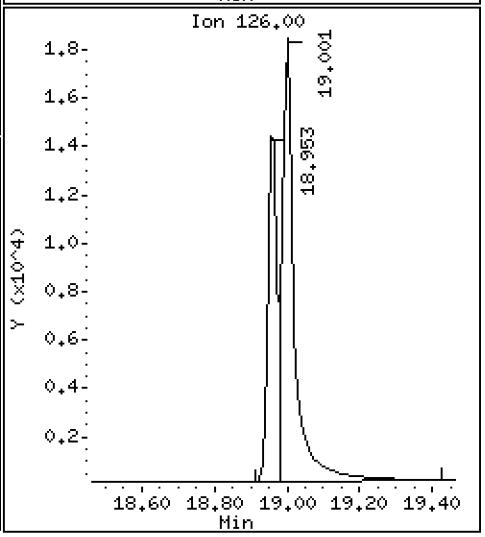


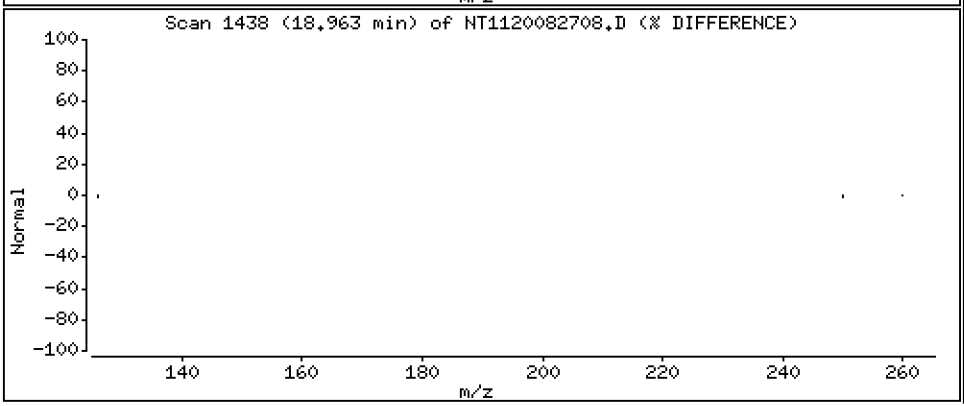












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

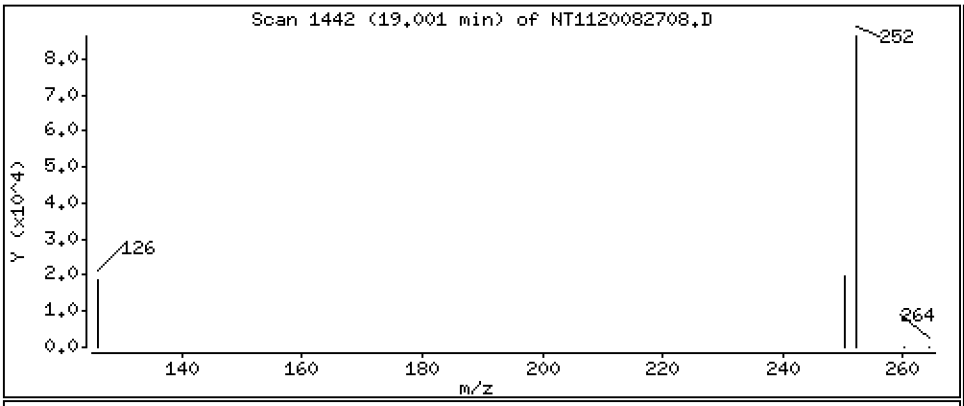
Operator: VTS

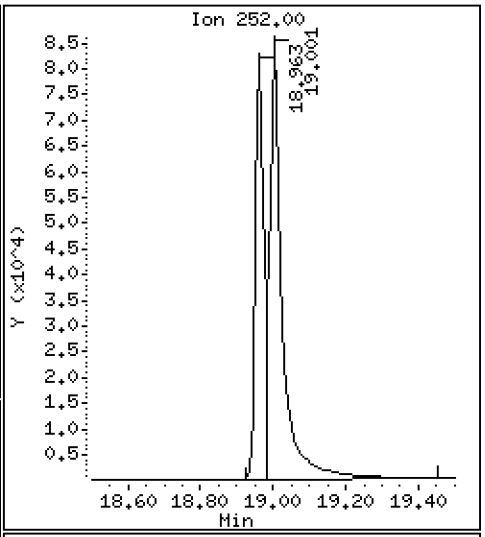
Column phase: Rxi-17Sil MS

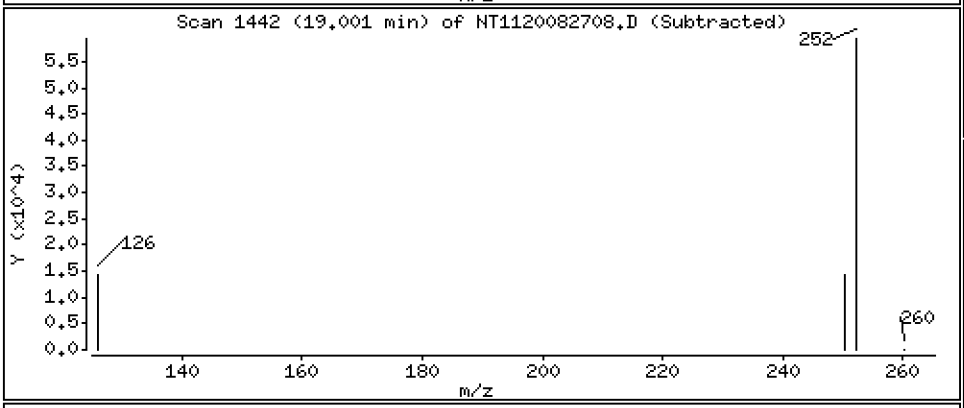
Column diameter: 0.25

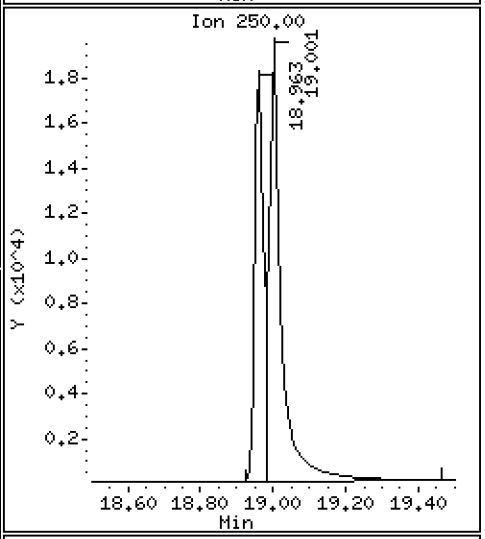
31 Benzo(k)fluoranthene

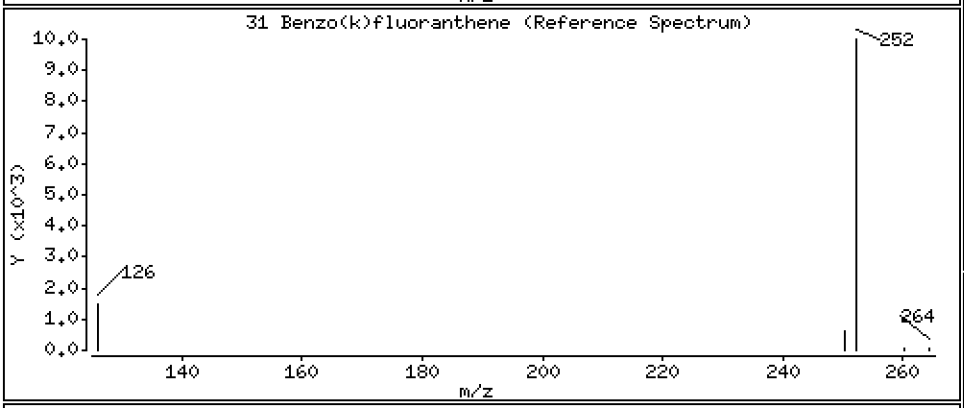
Concentration: 260 ng/mL

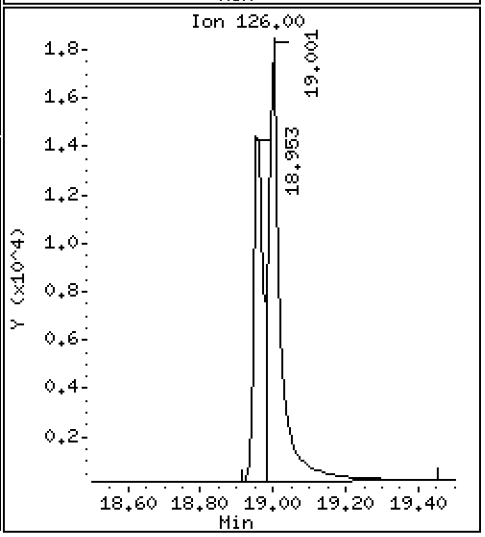


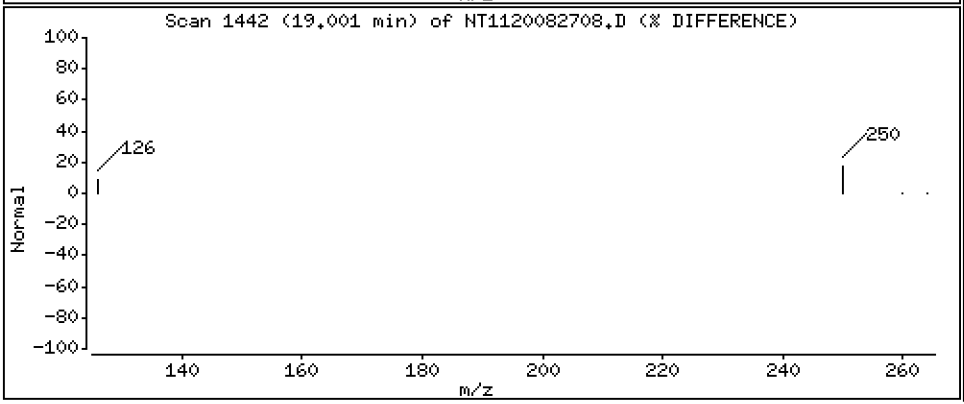












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

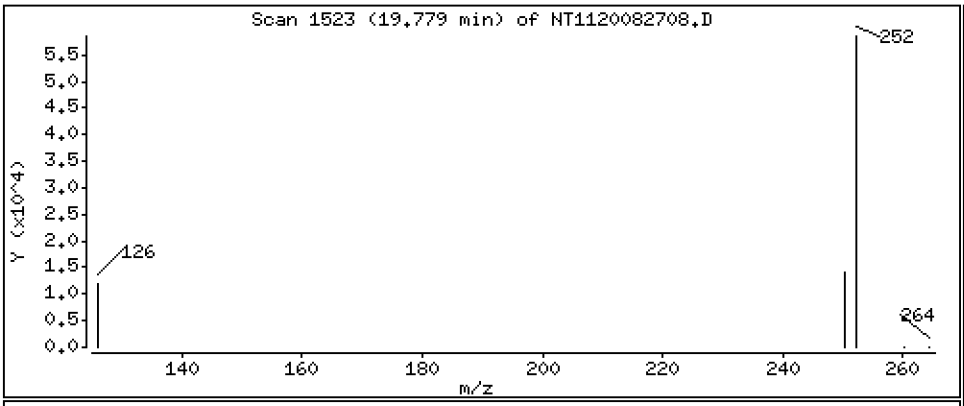
Operator: VTS

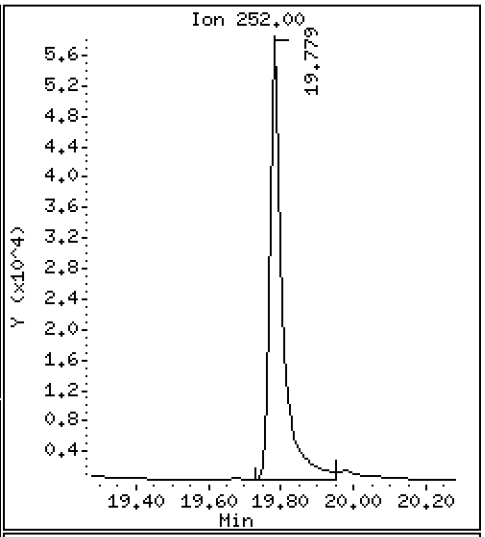
Column phase: Rxi-17Sil MS

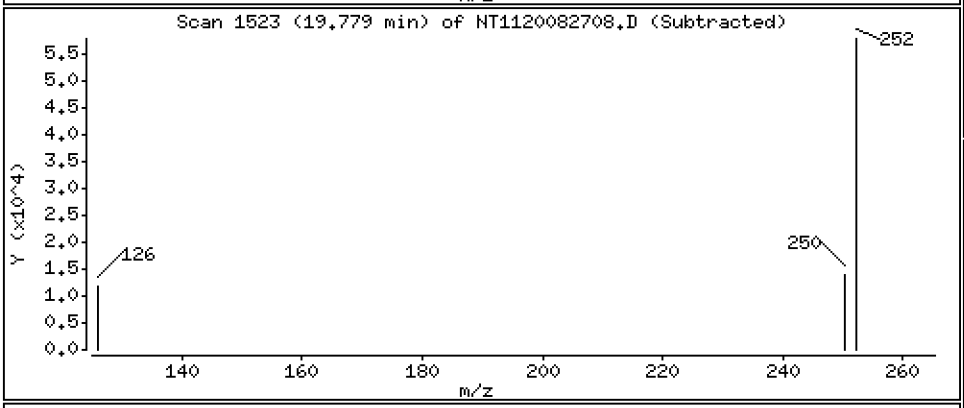
Column diameter: 0.25

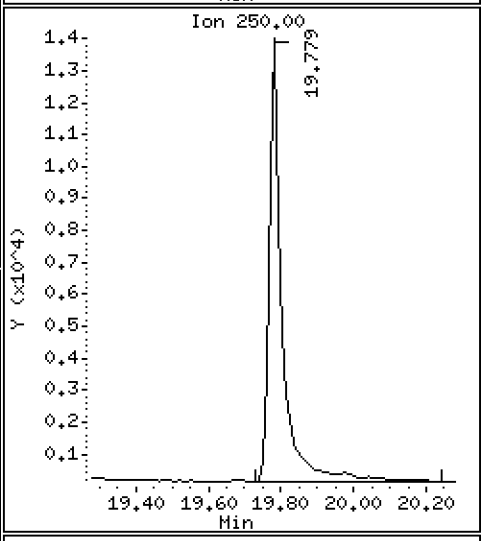
35 Benzo(a)pyrene

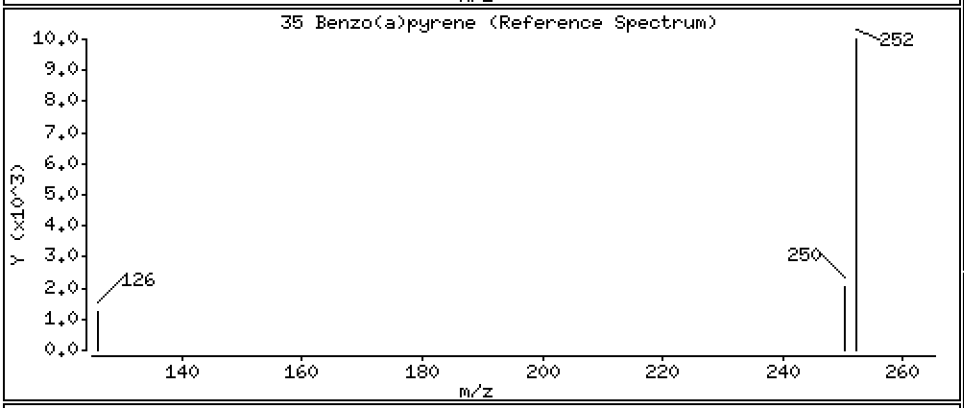
Concentration: 213 ng/mL

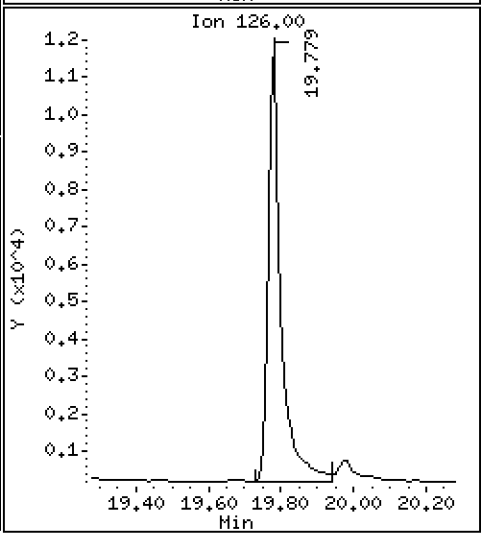


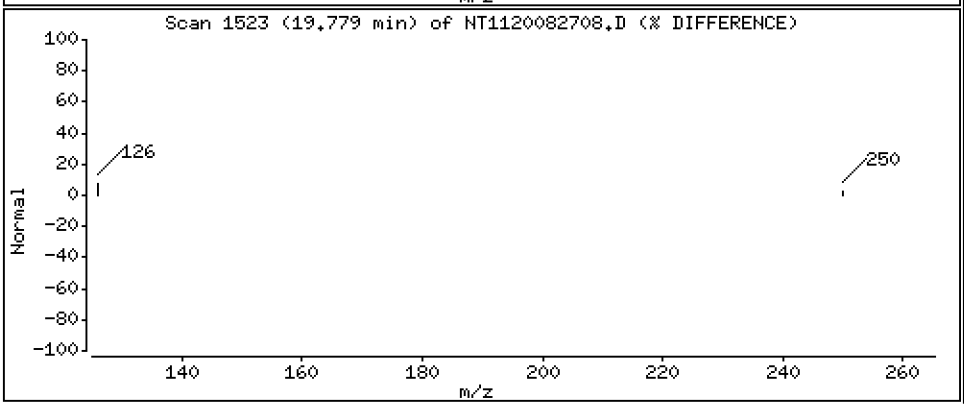












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

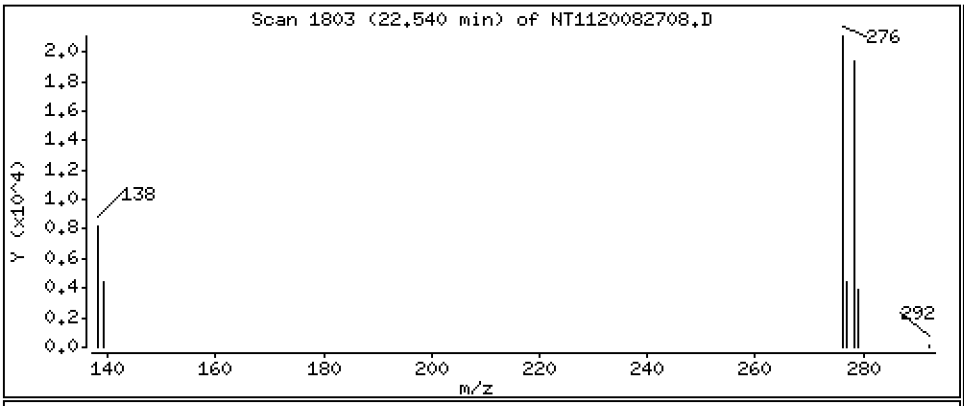
Operator: VTS

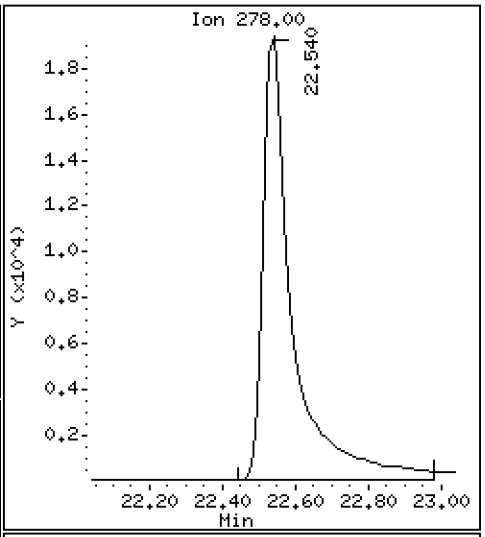
Column phase: Rxi-17Sil MS

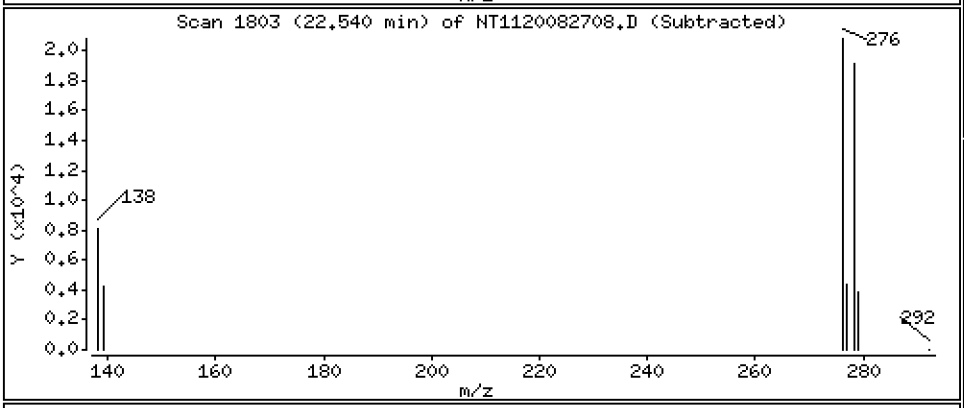
Column diameter: 0.25

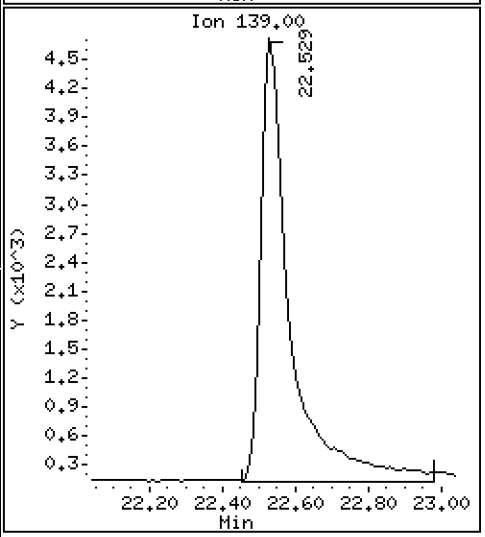
39 Dibenzo(a,h)anthracene

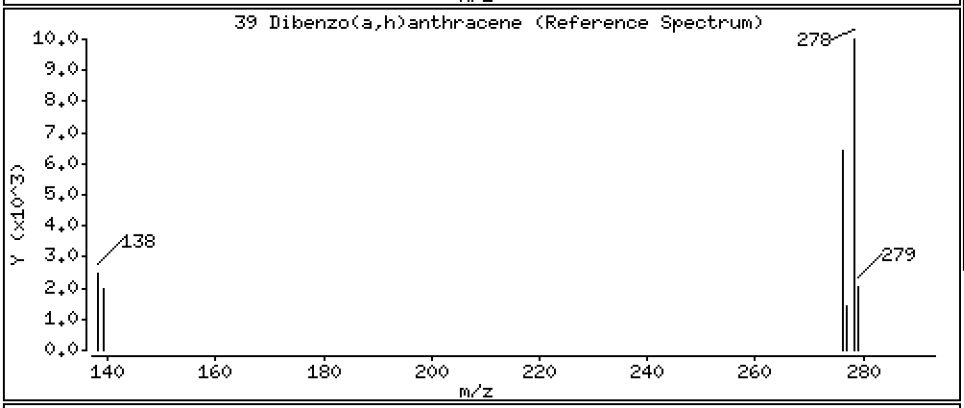
Concentration: 192 ng/mL

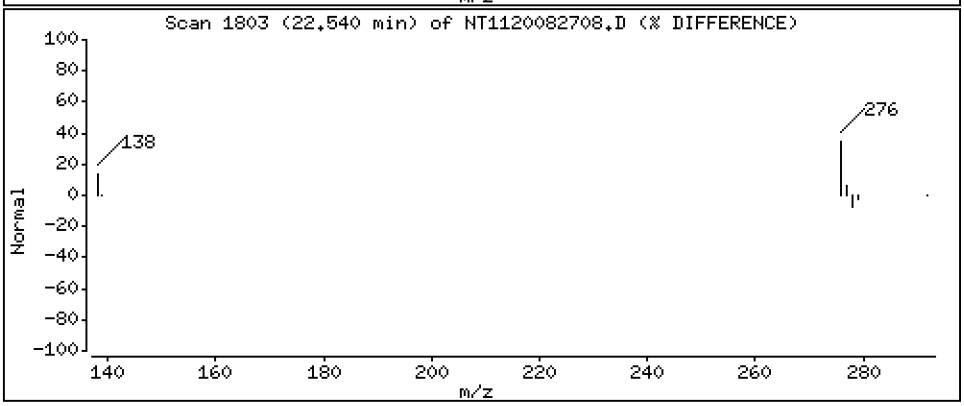












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

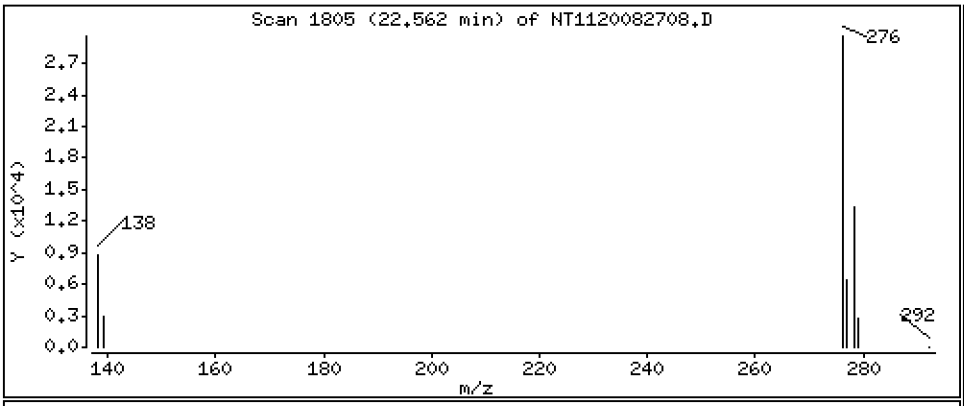
Operator: VTS

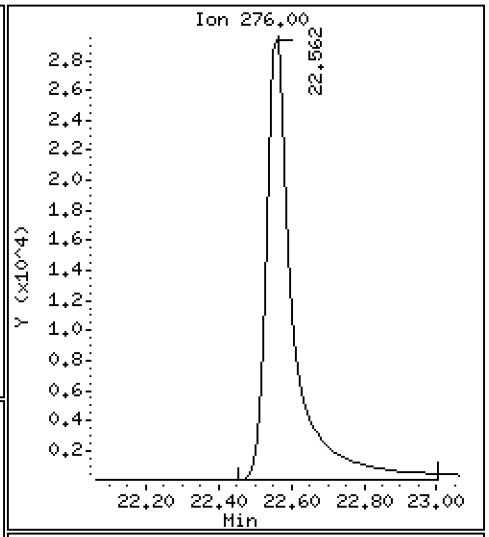
Column phase: Rxi-17Sil MS

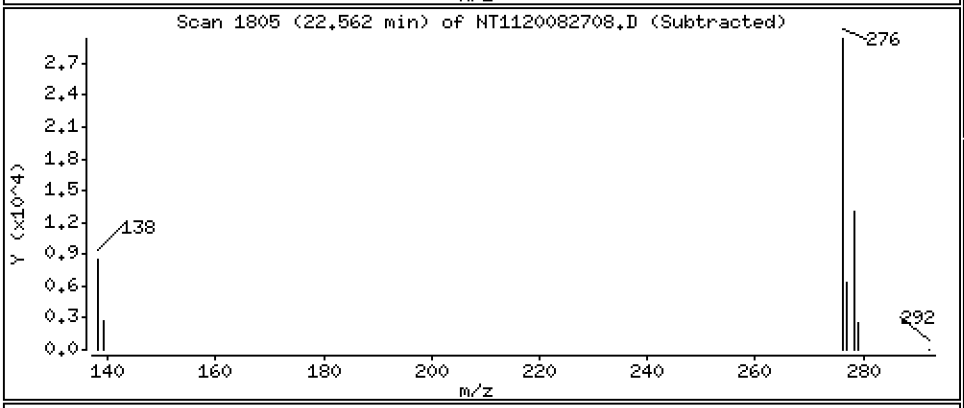
Column diameter: 0.25

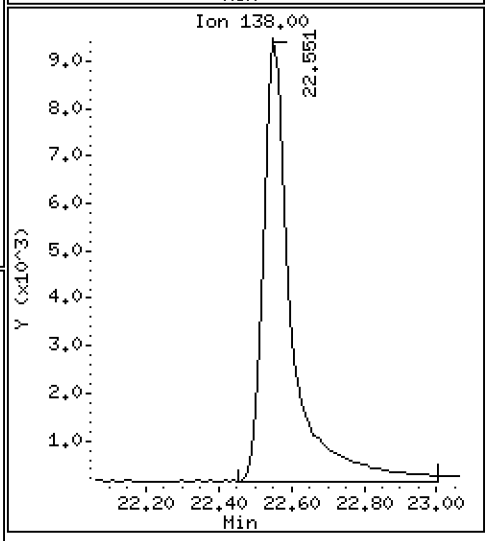
40 Indeno(1,2,3-cd)pyrene

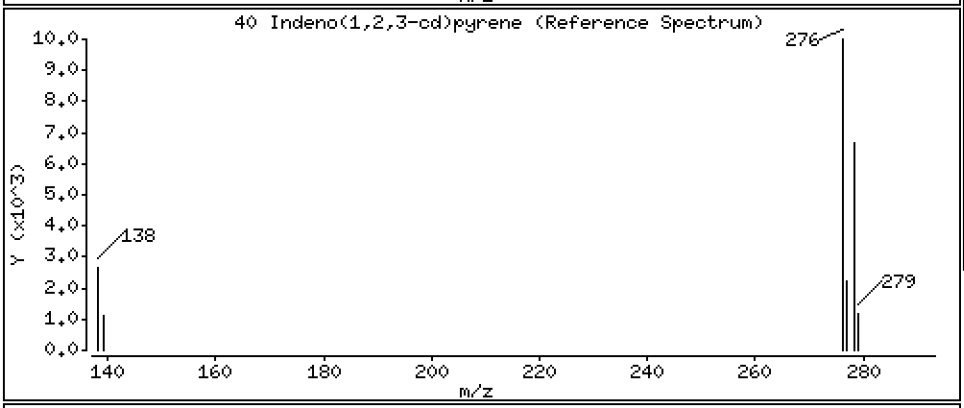
Concentration: 227 ng/mL

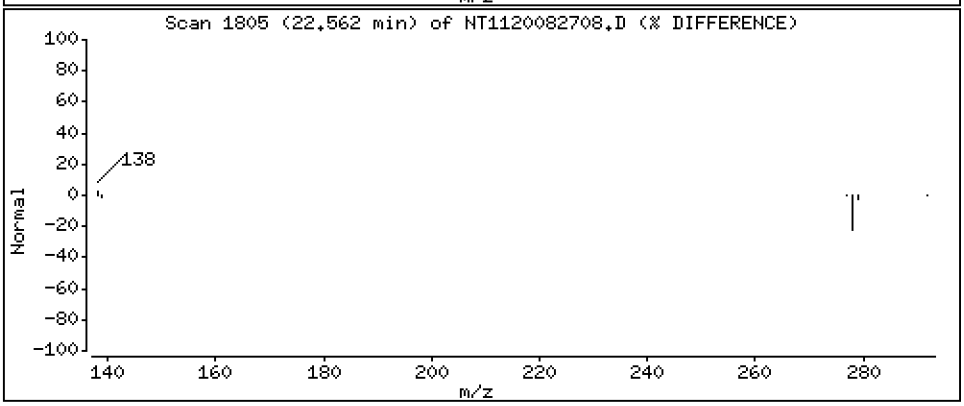












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

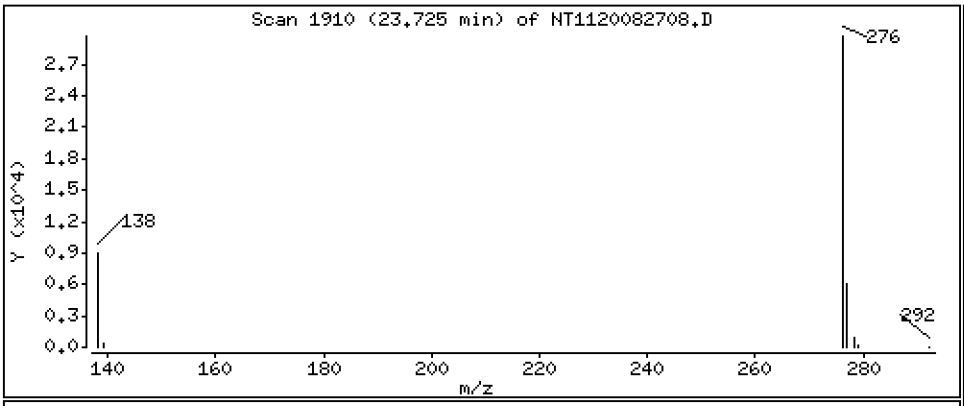
Operator: VTS

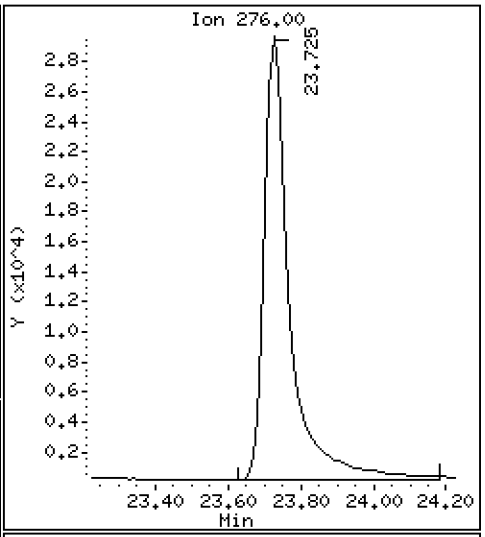
Column phase: Rxi-17Sil MS

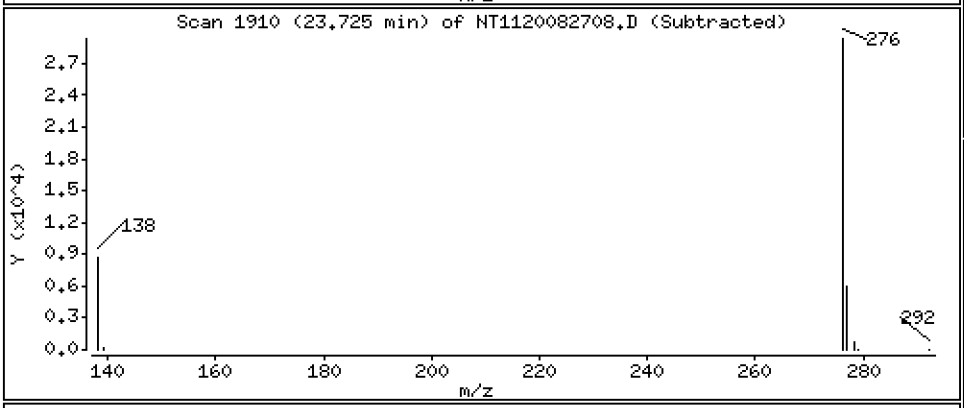
Column diameter: 0.25

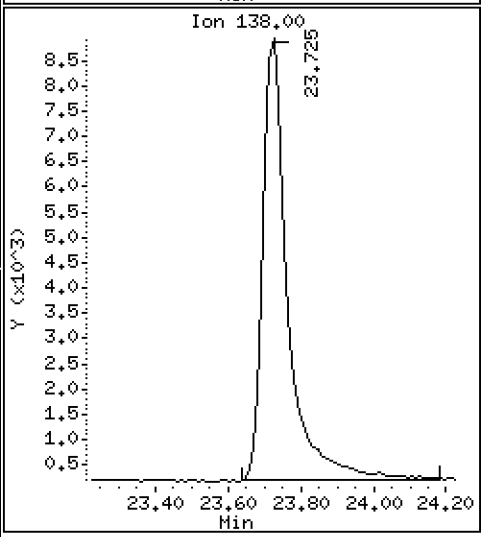
41 Benzo(g,h,i)perylene

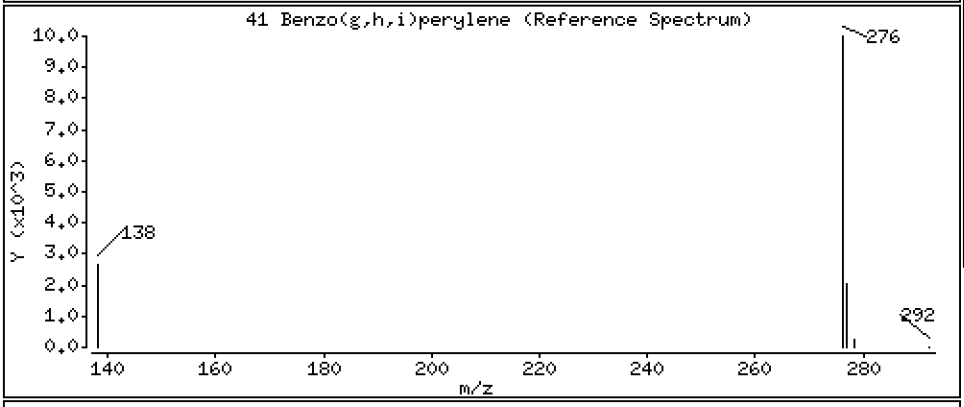
Concentration: 214 ng/mL

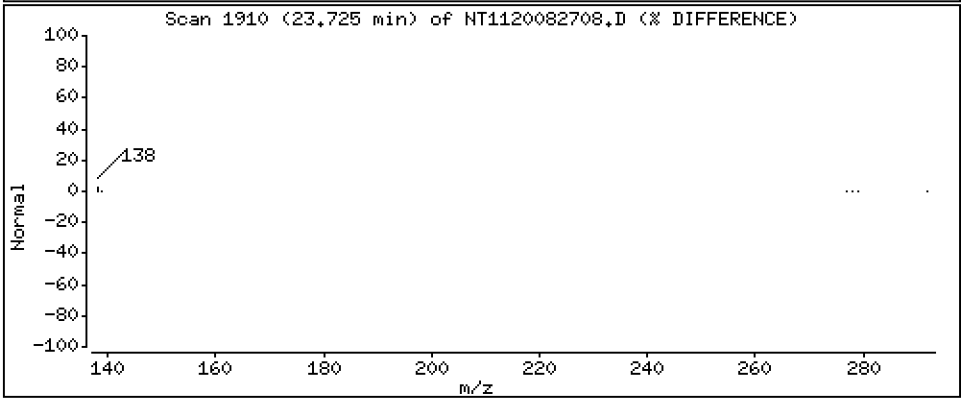












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Inj Date : 27-AUG-2020 15:38 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-SCV1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	202035	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	263329	224.480	224
	3 Benzo(b)thiophene	134	Compound Not Detected.					
$	4 2-Methylnaphthalene-d10	152	Compound Not Detected.					
	5 2-Methylnaphthalene	142	Compound Not Detected.					
	6 1-Methylnaphthalene	142	Compound Not Detected.					
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	Compound Not Detected.					
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	9.653	9.653	(0.984)	241360	233.261	233
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	90189	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	151880	221.934	222
	13 Dibenzofuran	168	Compound Not Detected.					
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	10.694	10.694	(1.090)	164299	233.486	233
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	142829	200.000	
	19 Phenanthrene	178	12.513	12.524	(1.003)	217246	232.514	233
	21 Anthracene	178	12.576	12.576	(1.008)	207807	222.597	223
	22 Carbazole	167	Compound Not Detected.					
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	Compound Not Detected.					
	25 Fluoranthene	202	14.607	14.607	(1.170)	220035	236.211	236
	26 Pyrene	202	15.107	15.107	(1.210)	224689	235.115	235
	27 Benzo(a)anthracene	228	17.123	17.122	(0.994)	170476	223.013	223
*	28 Chrysene-d12	240	17.222	17.214	(1.000)	104063	200.000	
	29 Chrysene	228	17.264	17.264	(1.002)	185336	215.323	215
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	137886	212.389	212
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	222044	260.291	260
	32 Benzo(j)fluoranthene	252	Compound Not Detected.					
	34 Benzo(e)pyrene	252	Compound Not Detected.					
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	144487	213.091	213
*	36 Perylene-d12	264	19.981	19.981	(1.000)	119273	200.000	
	37 Perylene	252	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
$ 38 Dibenzo(a,h)anthracene-d14	292	Compound Not Detected.					
39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	107076	191.902	192
40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	149356	226.827	227
41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	141191	214.457	214

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	202035	-6.18
11 Acenaphthene-d10	102217	51109	204434	90189	-11.77
18 Phenanthrene-d10	170387	85194	340774	142829	-16.17
28 Chrysene-d12	116138	58069	232276	104063	-10.40
36 Perylene-d12	139038	69519	278076	119273	-14.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.22	0.05
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082708.D

Lab ID: SIH0304-SCV1
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 15:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

** FIRST SURROGATE NOT FOUND. ICAL Check not performed **

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: DH00073
Laboratory ID: SIH0304-SCV1
Sequence: SIH0304
Standard ID: I004581

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
Naphthalene	250.00	224	-10.2	20.00
Acenaphthylene	250.00	233	-6.7	20.00
Acenaphthene	250.00	222	-11.2	20.00
Fluorene	250.00	233	-6.6	20.00
Phenanthrene	250.00	233	-7.0	20.00
Anthracene	250.00	223	-11.0	20.00
Fluoranthene	250.00	236	-5.5	20.00
Pyrene	250.00	235	-6.0	20.00
Benzo(a)anthracene	250.00	223	-10.8	20.00
Chrysene	250.00	215	-13.9	20.00
Benzo(b)fluoranthene	250.00	212	-15.0	20.00
Benzo(k)fluoranthene	250.00	260	4.1	20.00
Benzofluoranthenes, Total	500.00	473	-5.5	
Benzo(a)pyrene	250.00	213	-14.8	20.00
Indeno(1,2,3-cd)pyrene	250.00	227	-9.3	20.00
Dibenzo(a,h)anthracene	250.00	192	-23.2 *	20.00
Benzo(g,h,i)perylene	250.00	214	-14.2	20.00

* Values outside of QC limits

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Page 1

Date : 27-AUG-2020 15:38

Client ID:

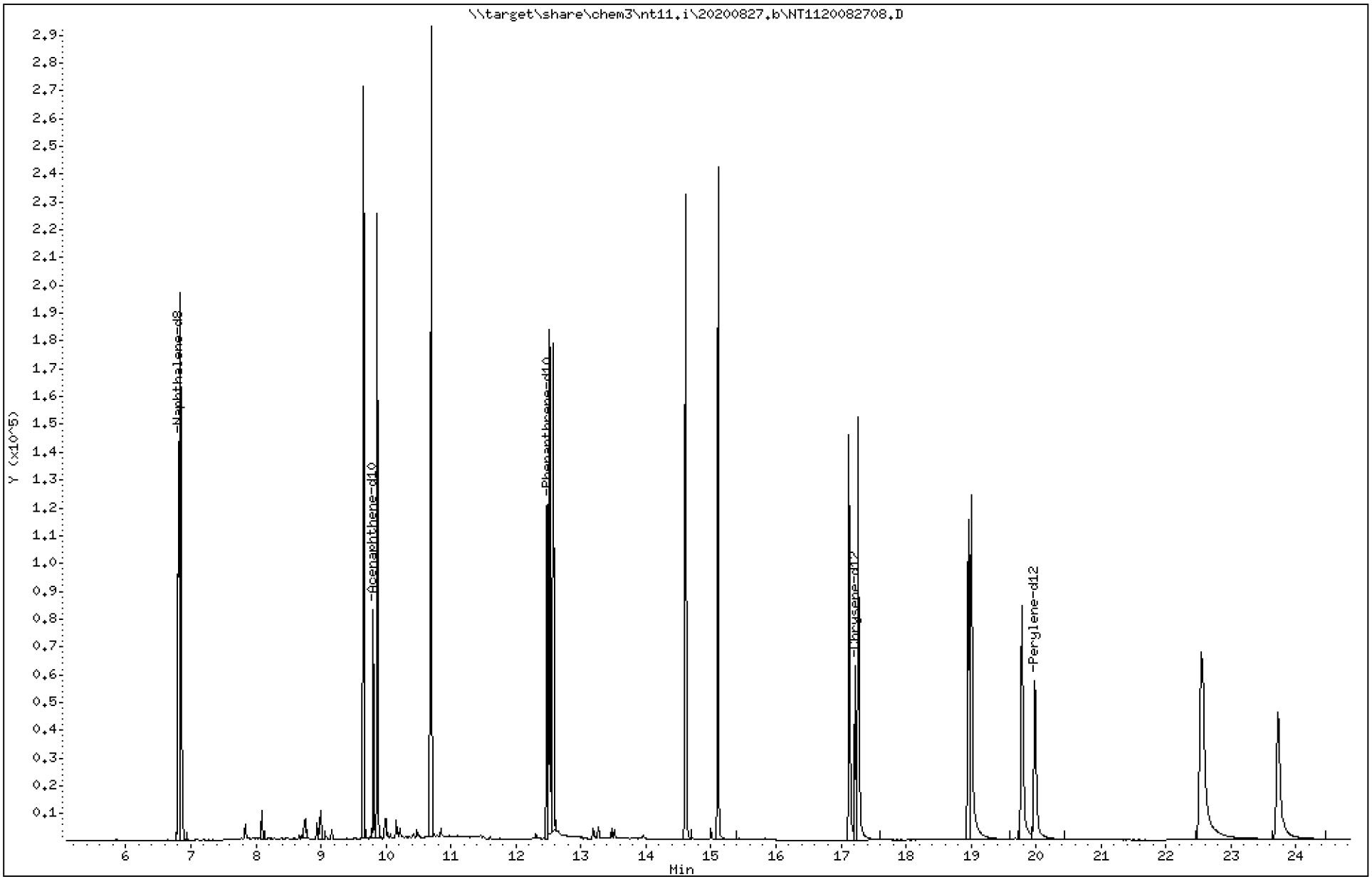
Instrument: nt11.i

Sample Info: SIH0304-SCV1

Operator: VTS

Column phase: Rxi-17Sil MS

Column diameter: 0.25



Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

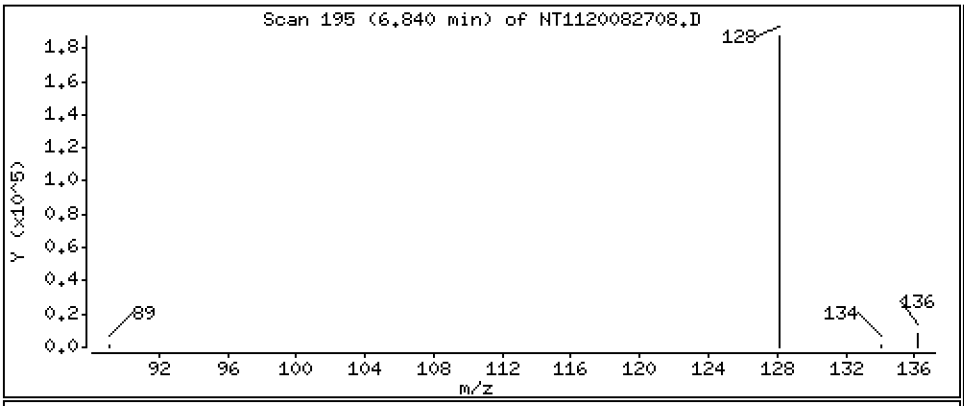
Operator: VTS

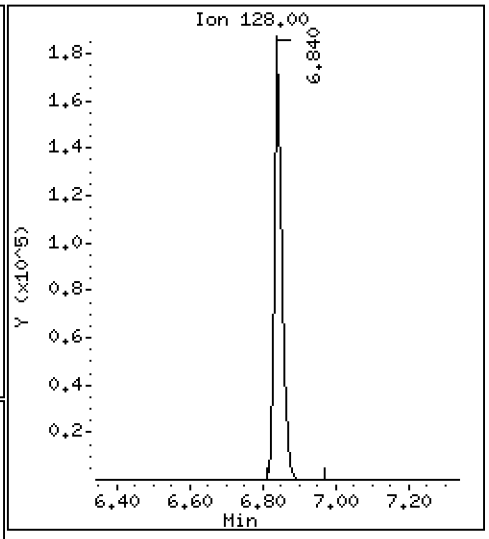
Column phase: Rxi-17Sil MS

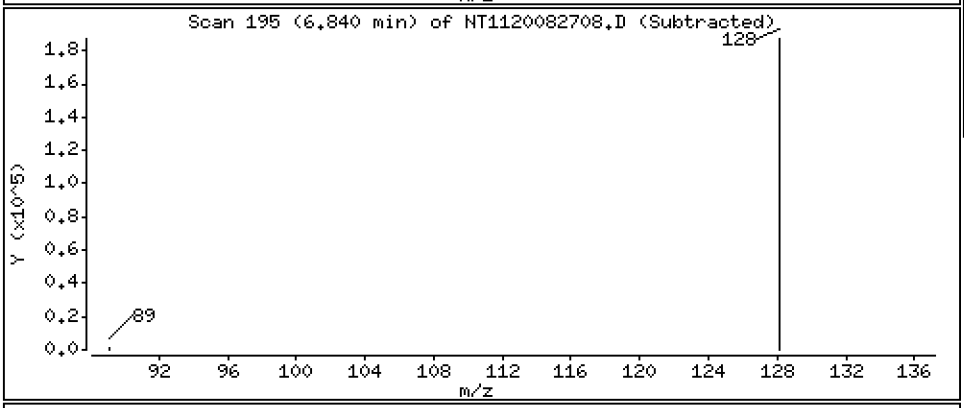
Column diameter: 0.25

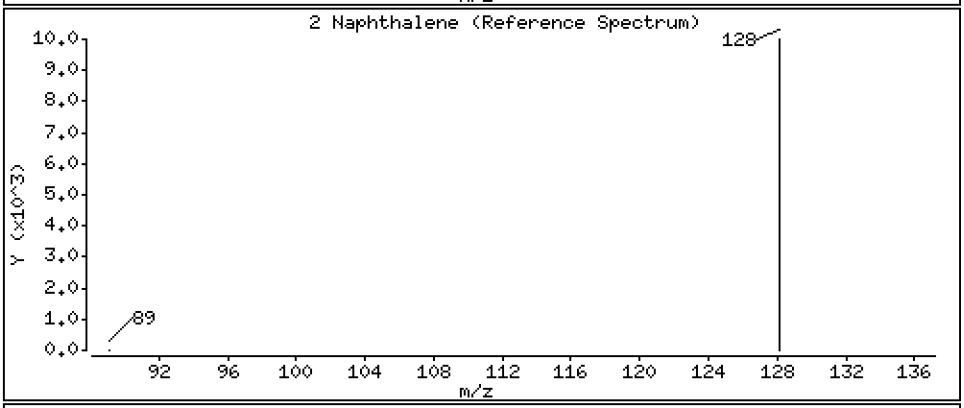
2 Naphthalene

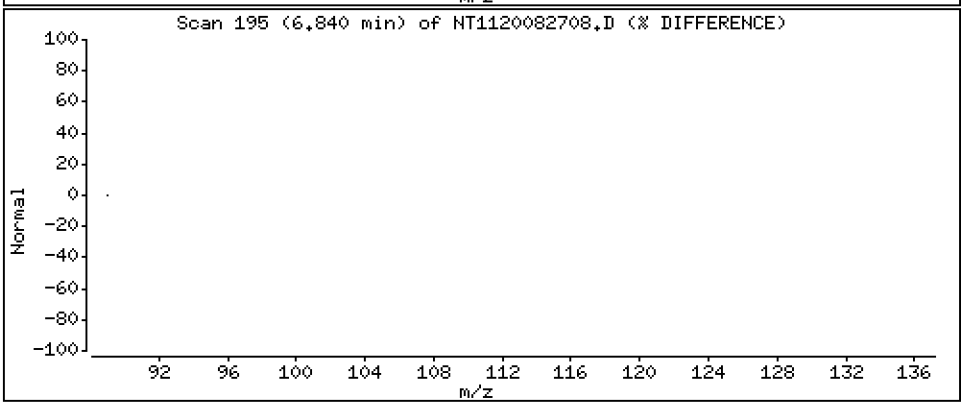
Concentration: 224 ng/mL











Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

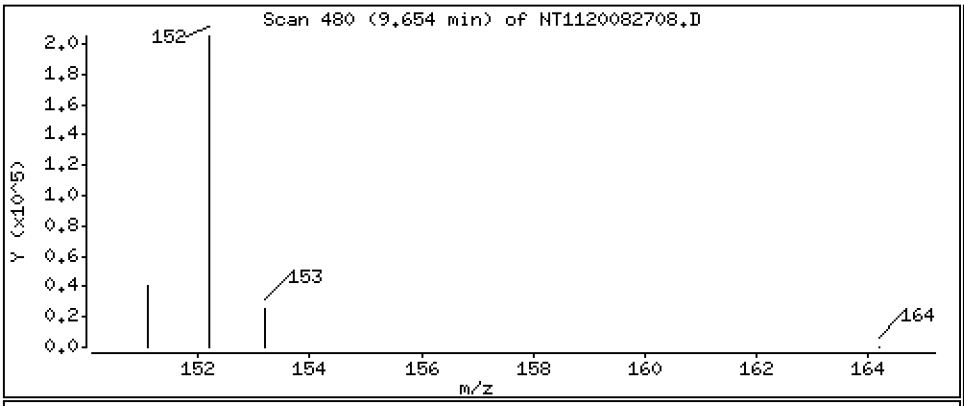
Operator: VTS

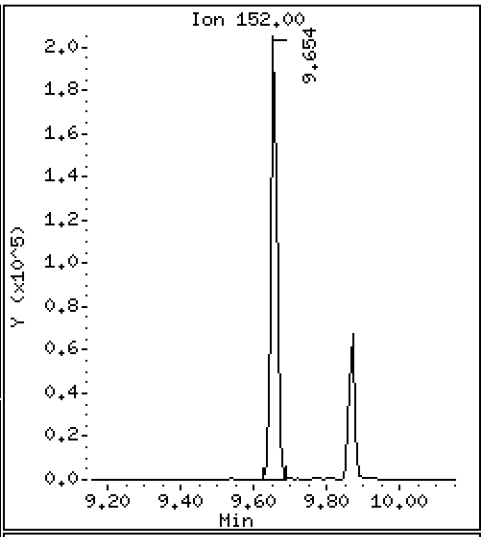
Column phase: Rxi-17Sil MS

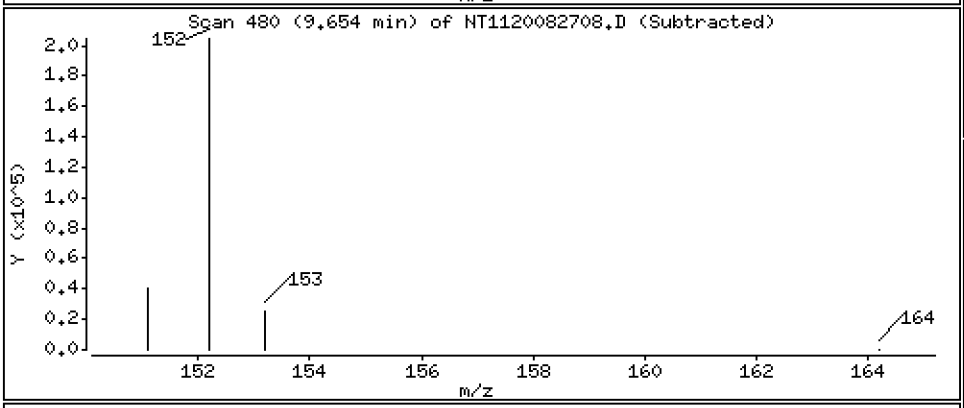
Column diameter: 0.25

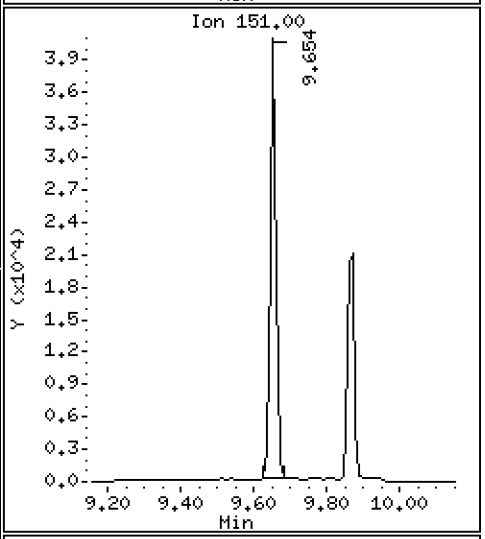
10 Acenaphthylene

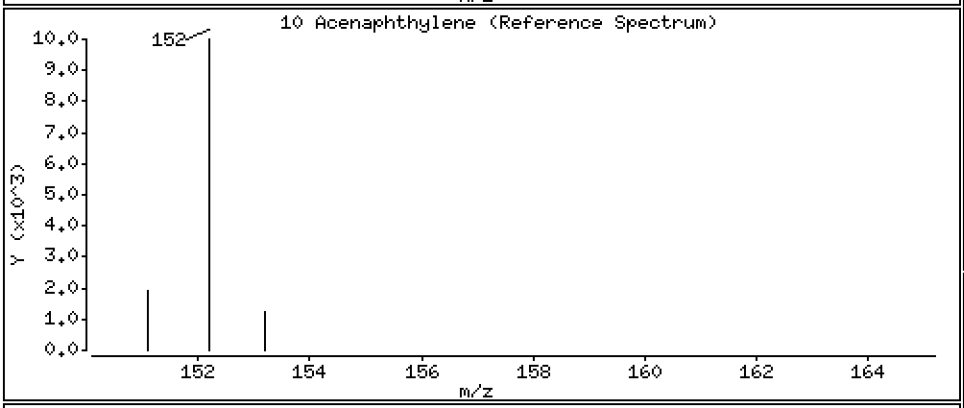
Concentration: 233 ng/mL

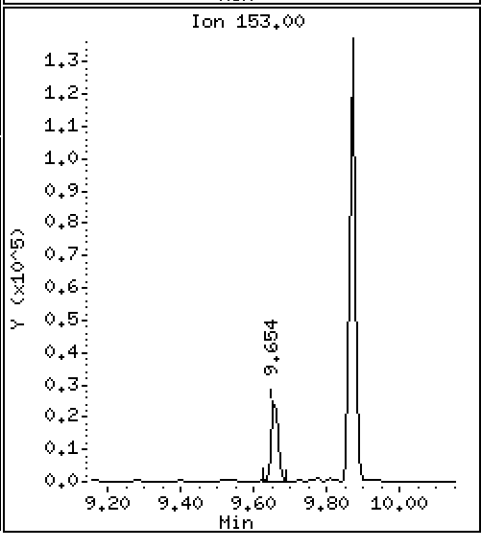


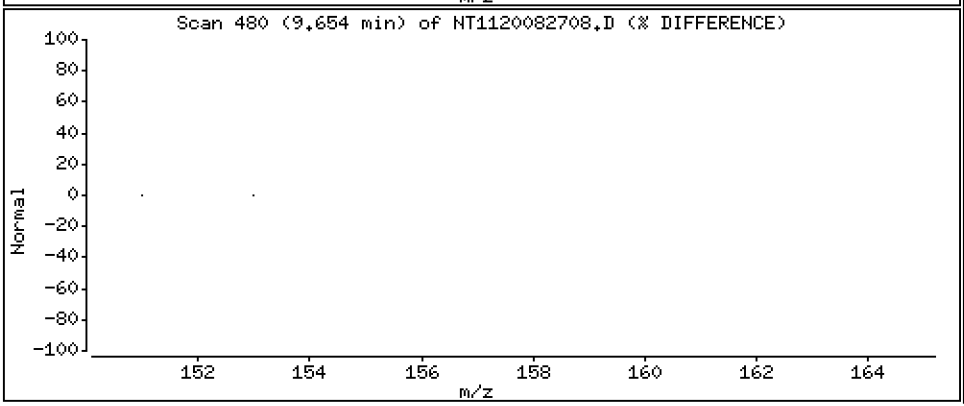












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

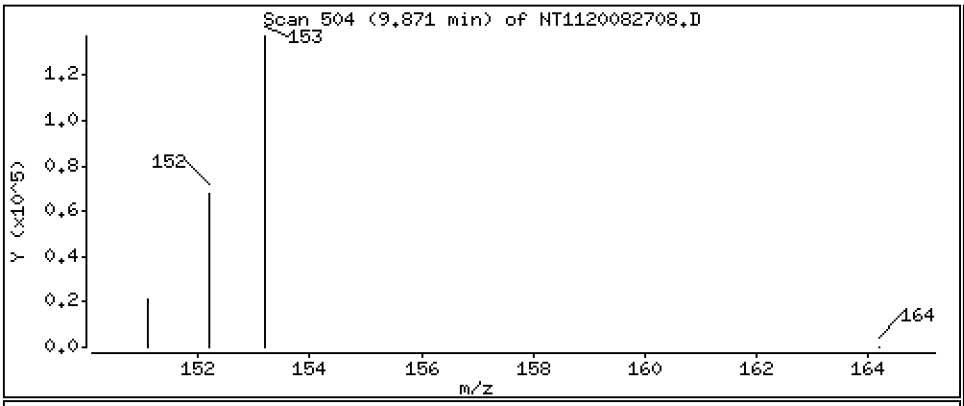
Operator: VTS

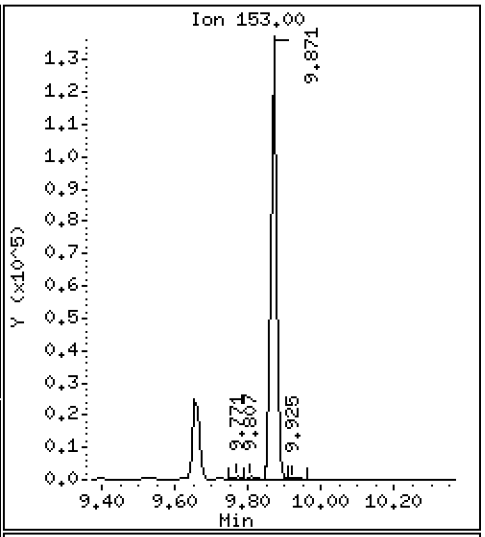
Column phase: Rxi-17Sil MS

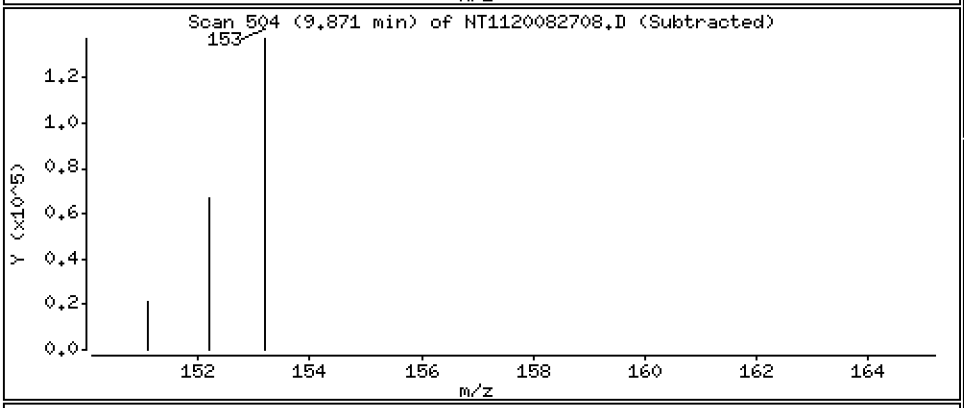
Column diameter: 0.25

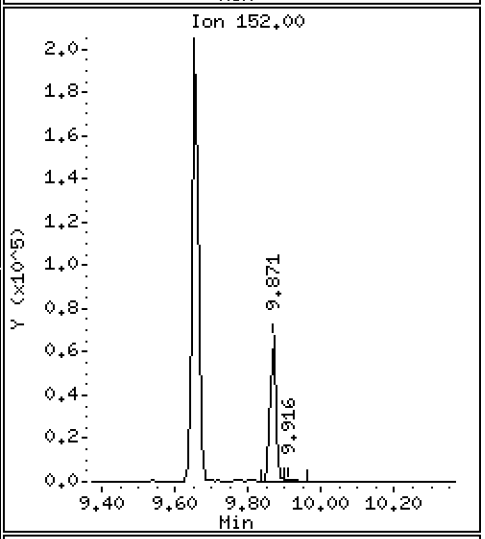
12 Acenaphthene

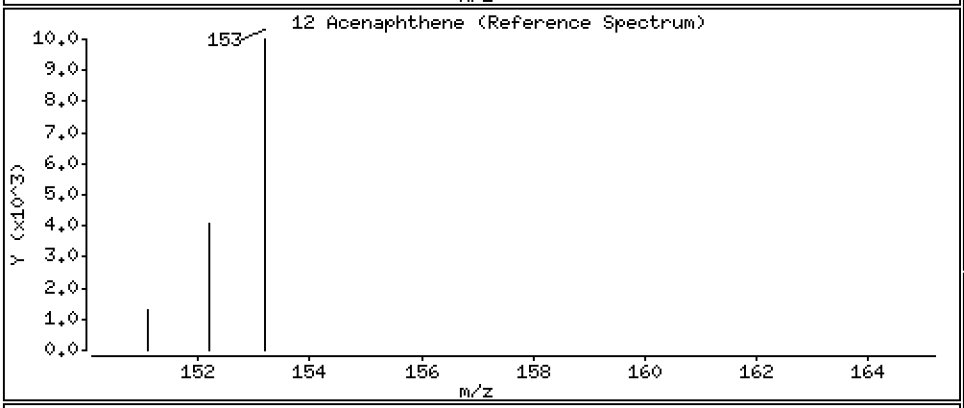
Concentration: 222 ng/mL

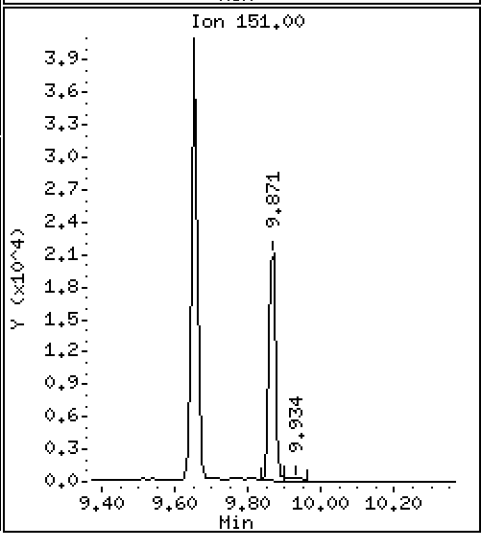


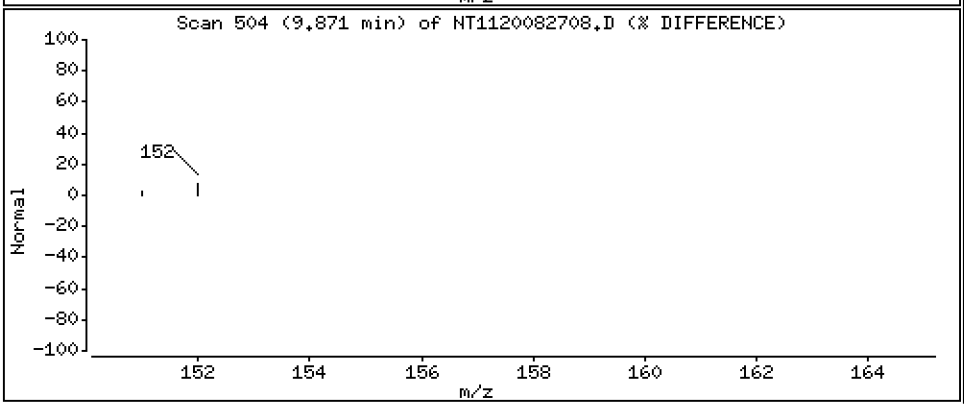












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

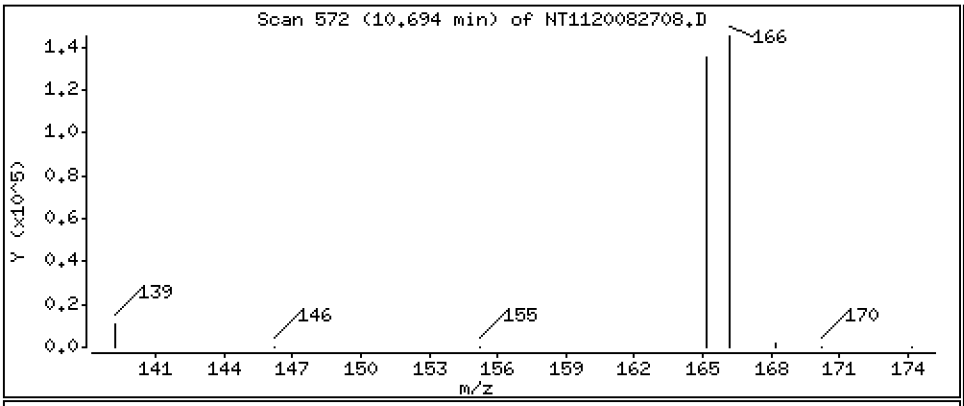
Operator: VTS

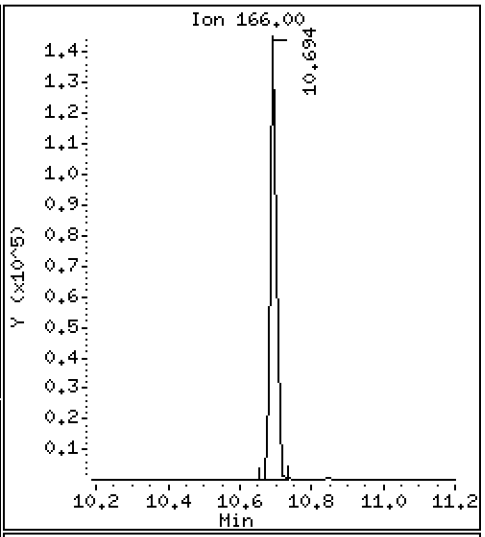
Column phase: Rxi-17Sil MS

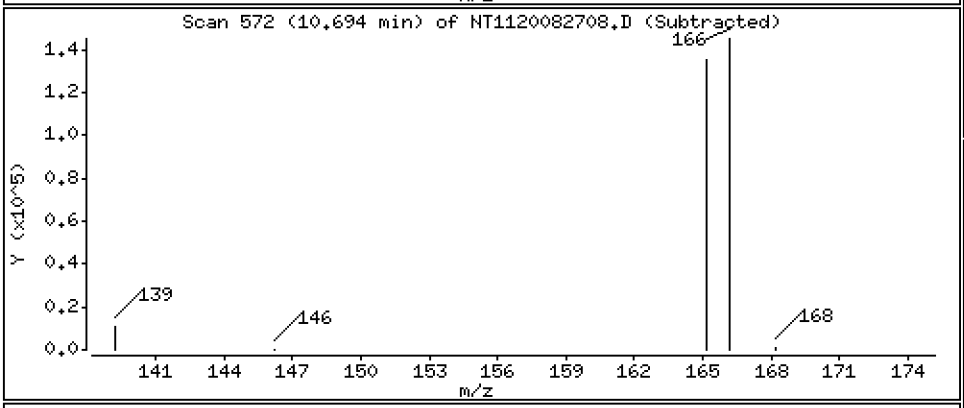
Column diameter: 0.25

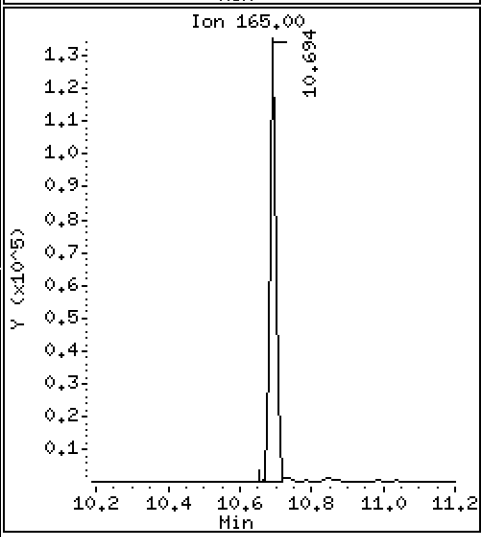
16 Fluorene

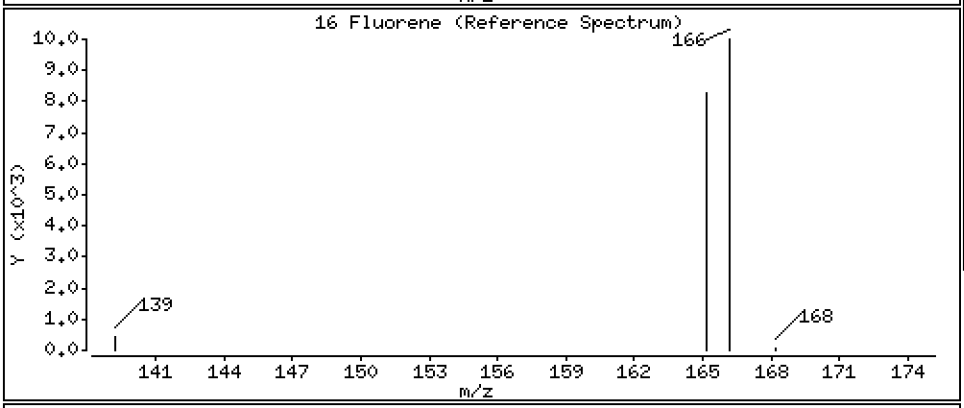
Concentration: 233 ng/mL

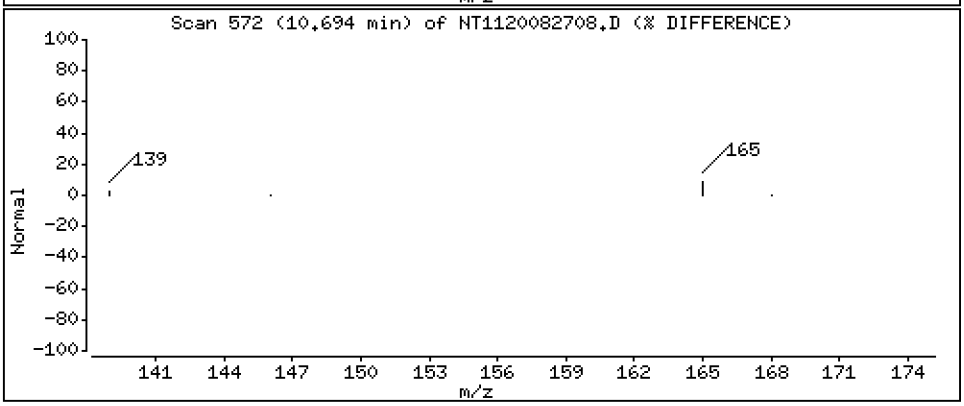












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

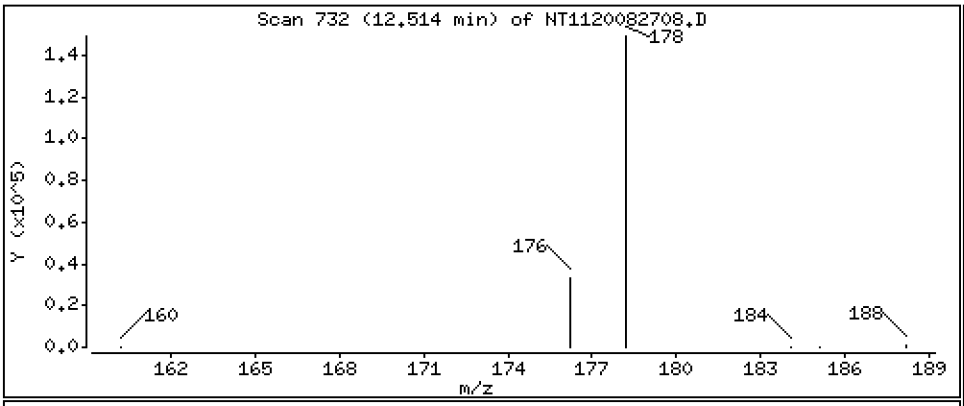
Operator: VTS

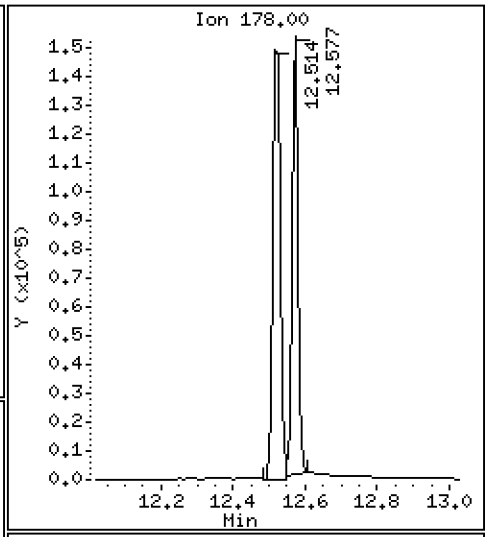
Column phase: Rxi-17Sil MS

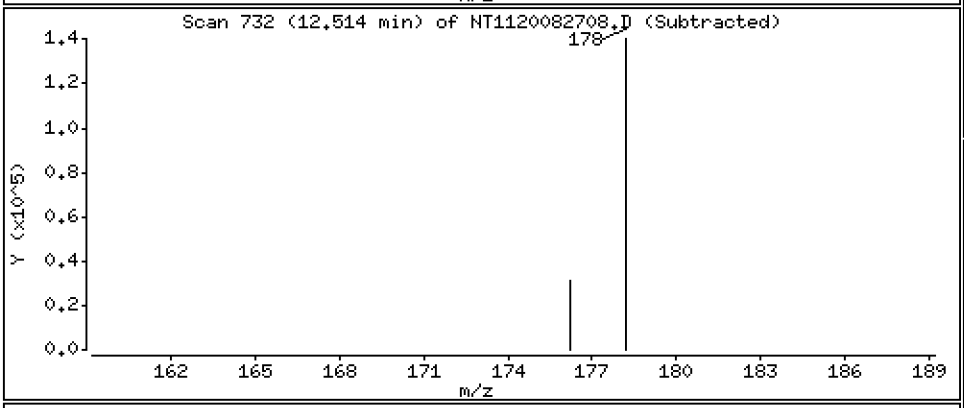
Column diameter: 0.25

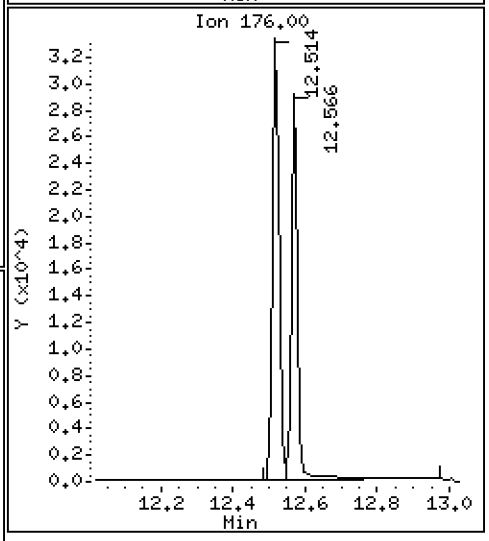
19 Phenanthrene

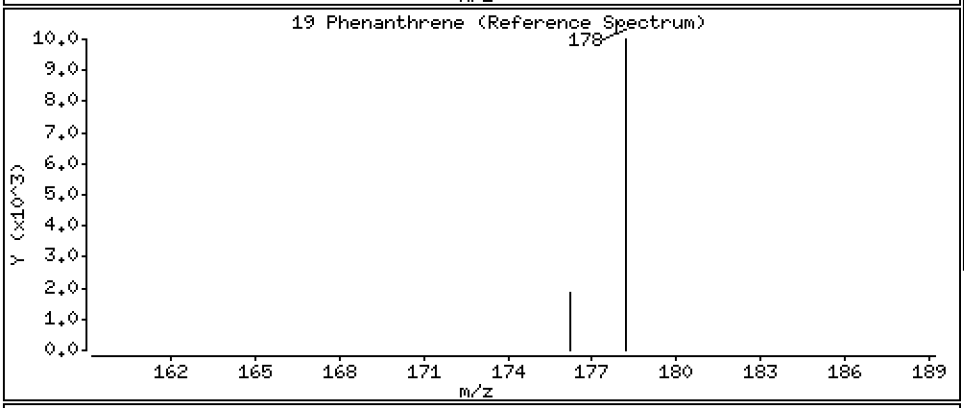
Concentration: 233 ng/mL

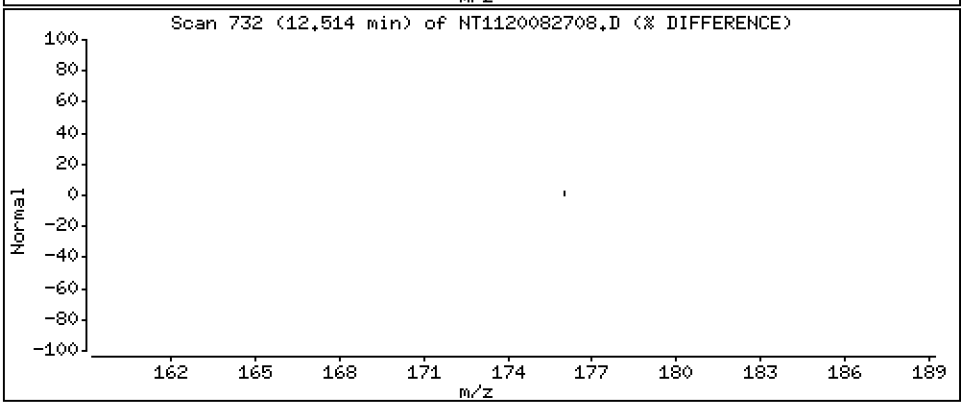












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

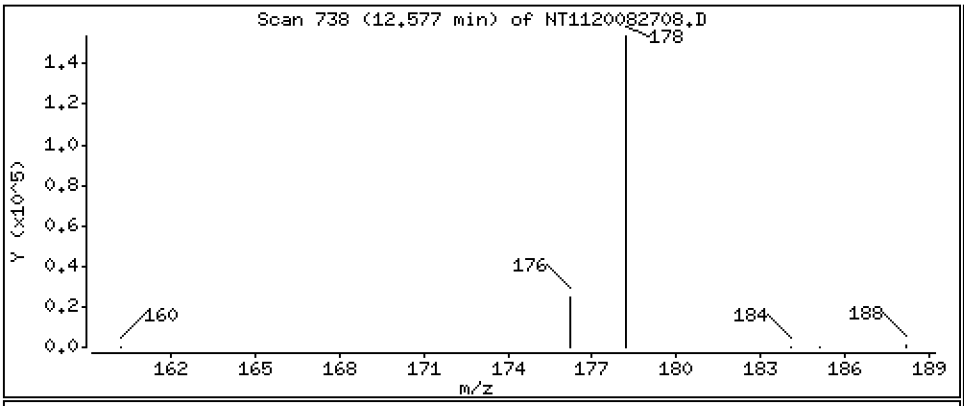
Operator: VTS

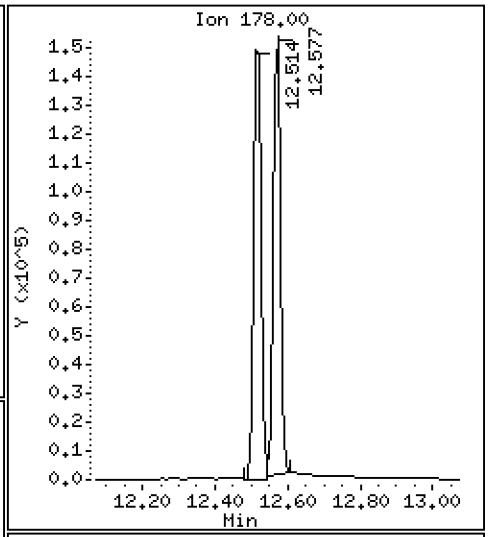
Column phase: Rxi-17Sil MS

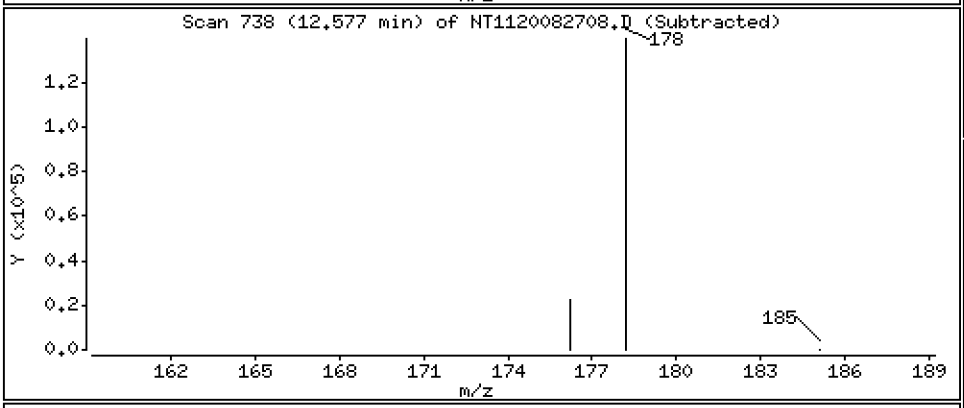
Column diameter: 0.25

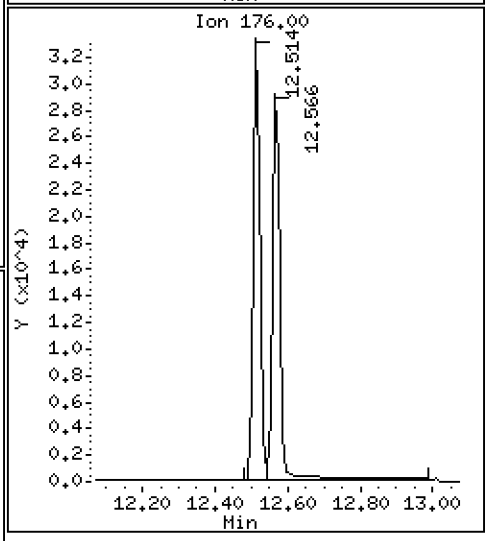
21 Anthracene

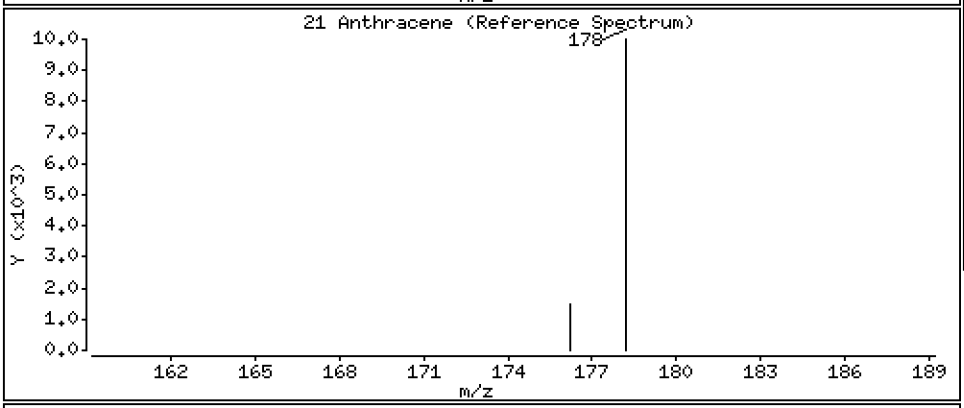
Concentration: 223 ng/mL

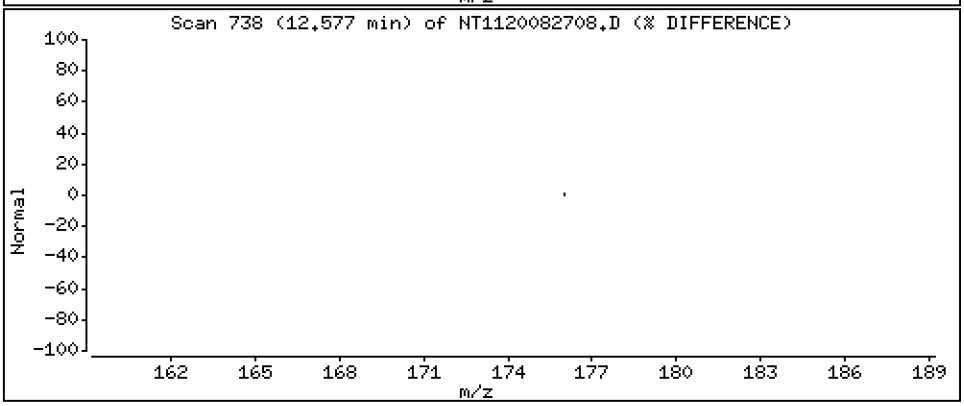












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

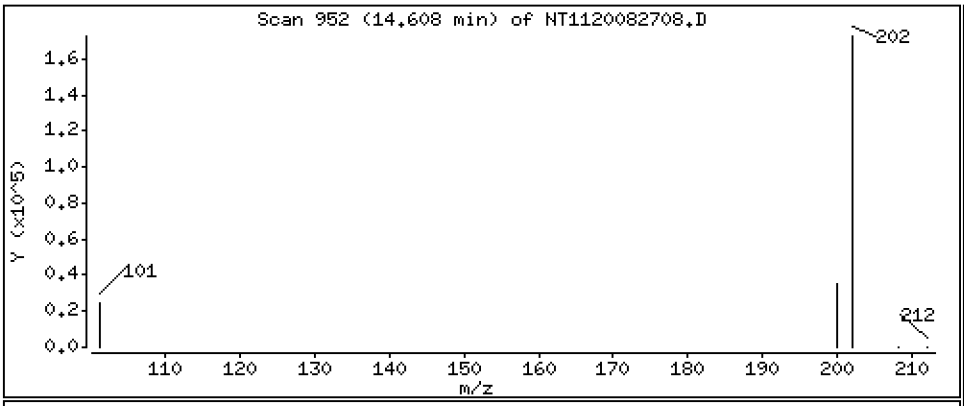
Operator: VTS

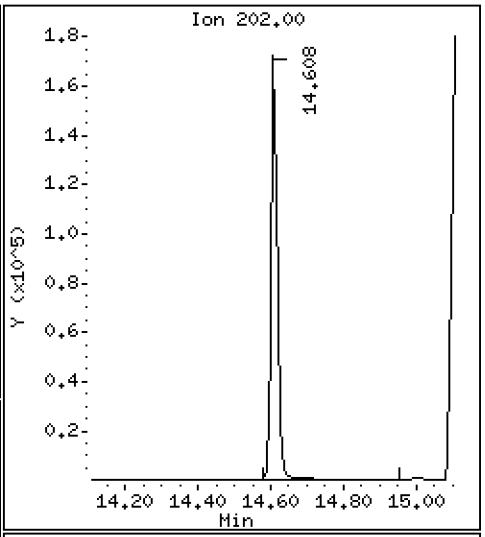
Column phase: Rxi-17Sil MS

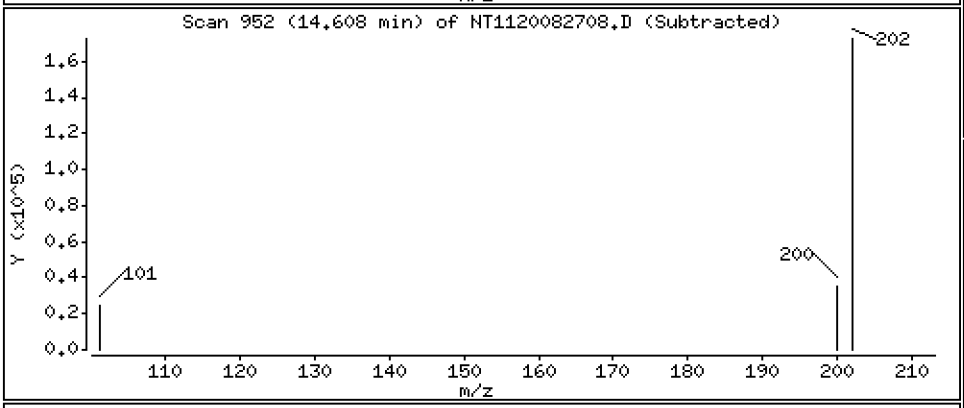
Column diameter: 0.25

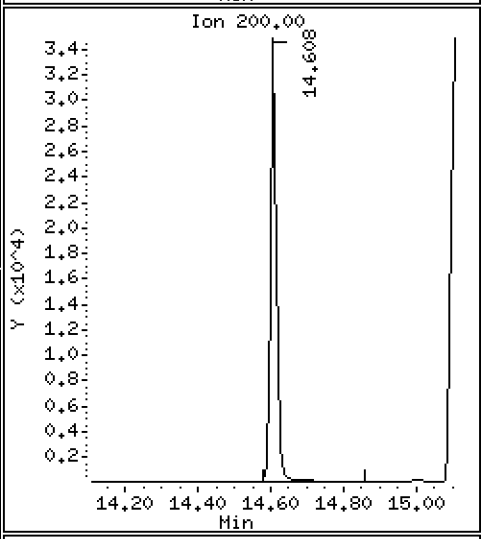
25 Fluoranthene

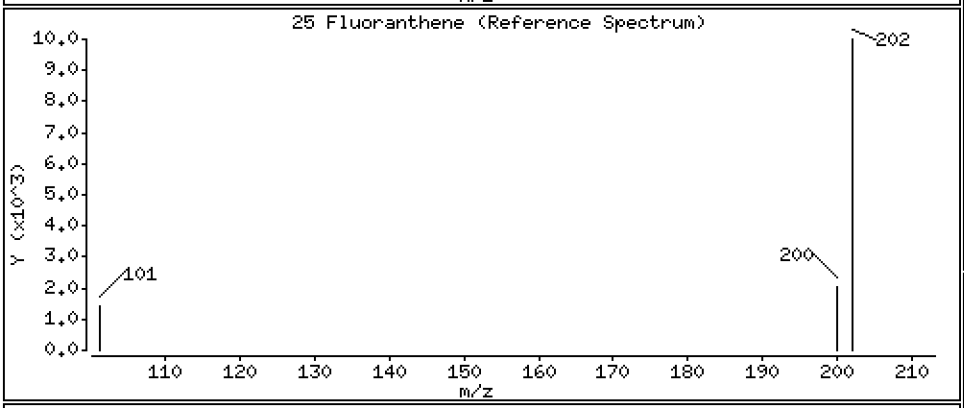
Concentration: 236 ng/mL

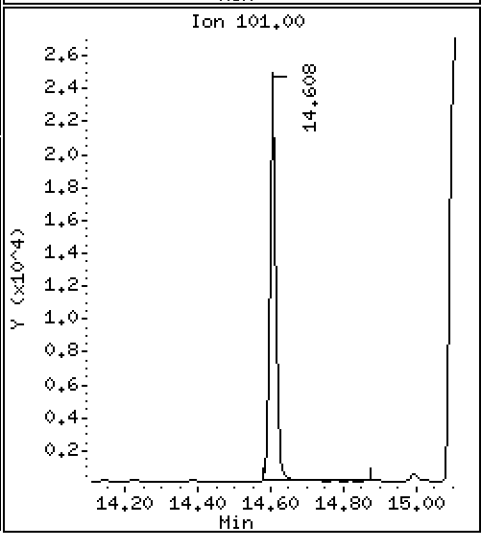


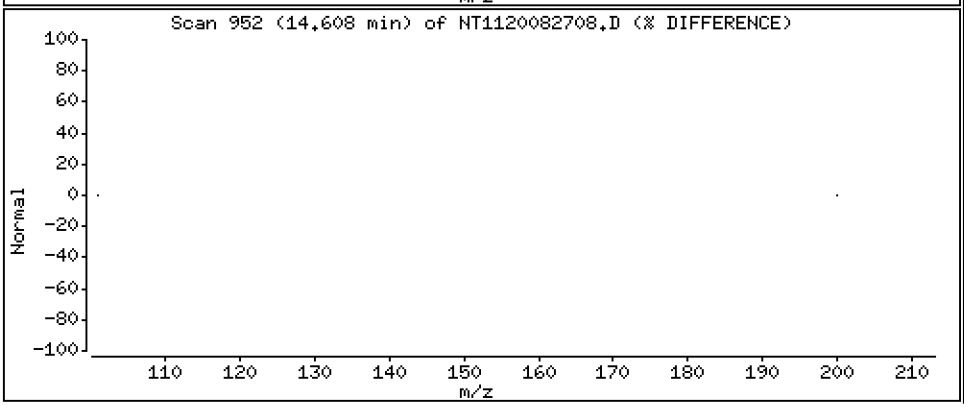












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

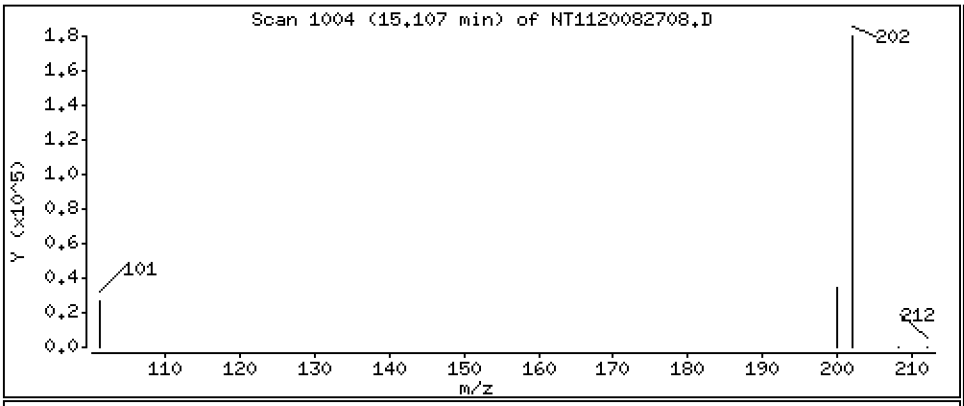
Operator: VTS

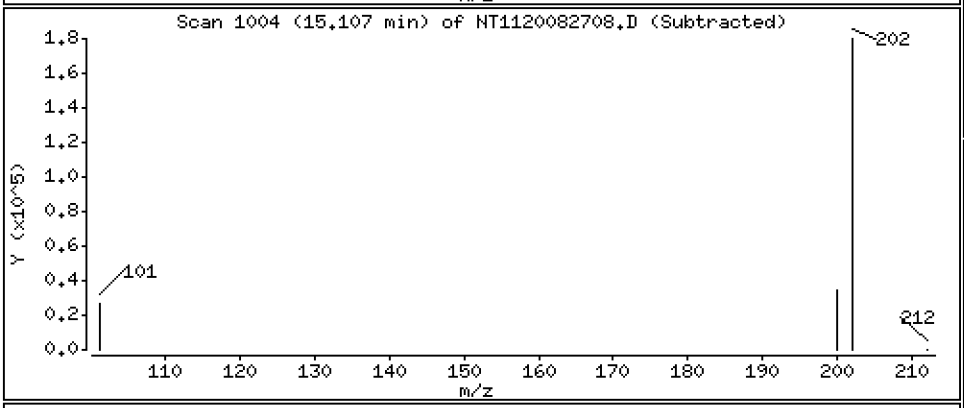
Column phase: Rxi-17Sil MS

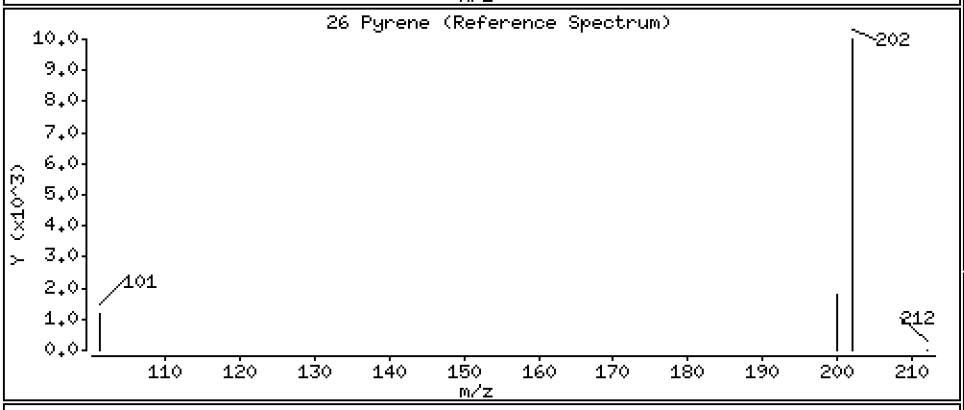
Column diameter: 0.25

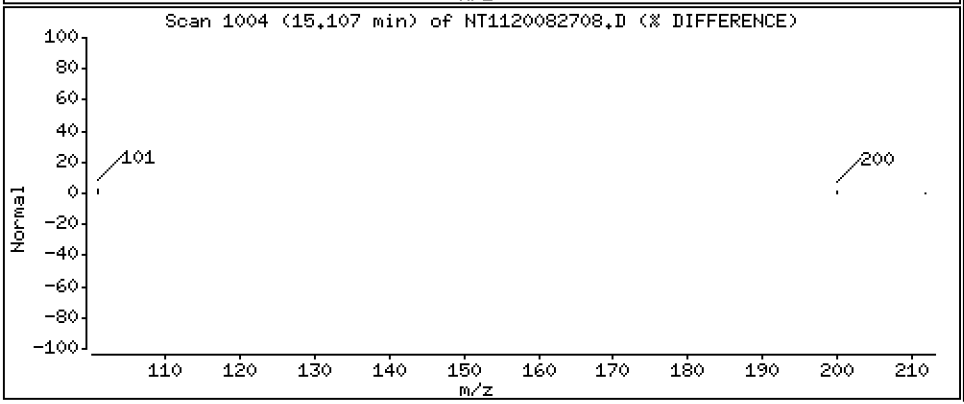
26 Pyrene

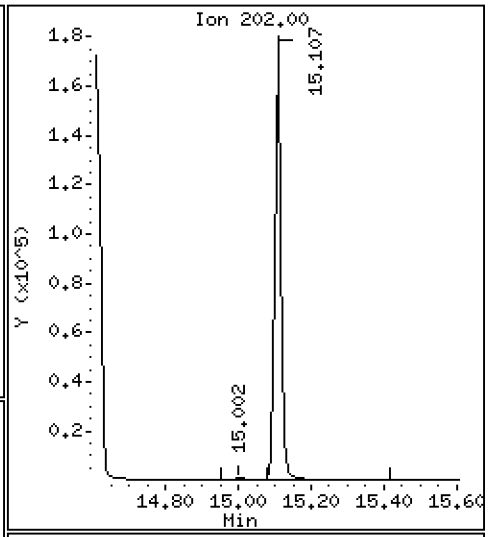
Concentration: 235 ng/mL

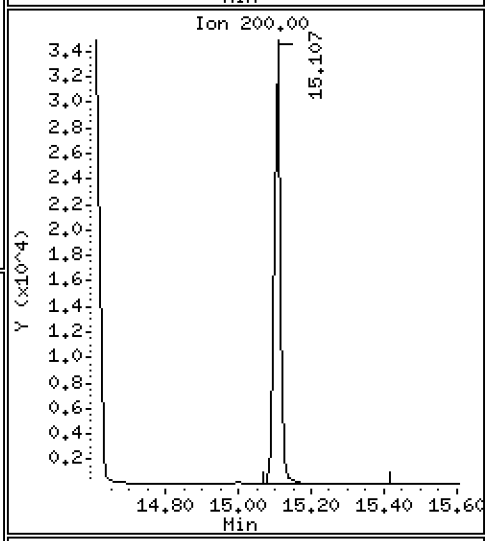


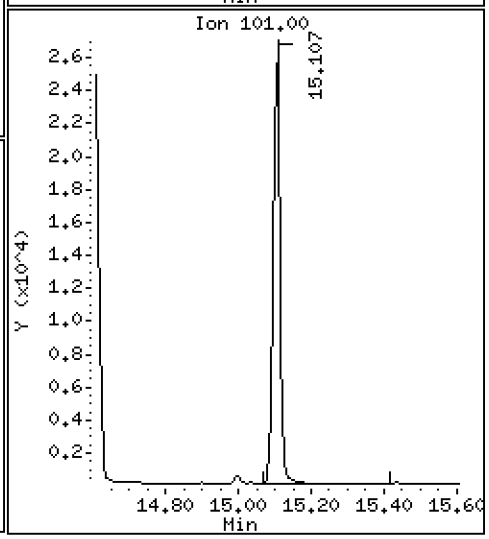












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

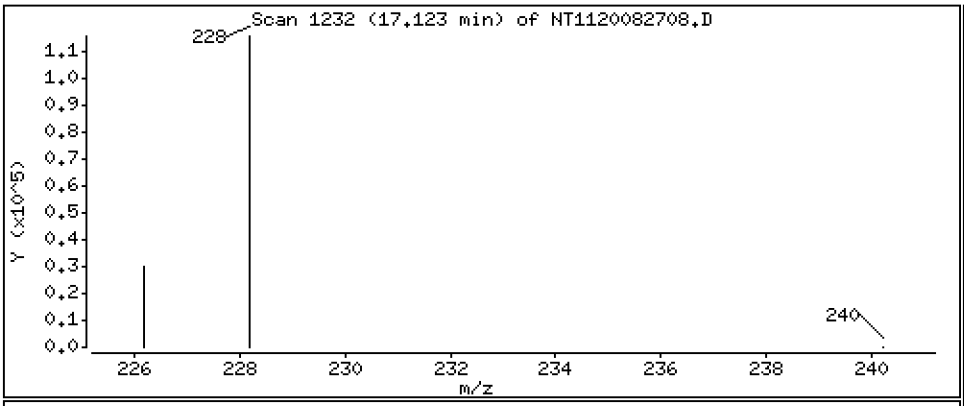
Operator: VTS

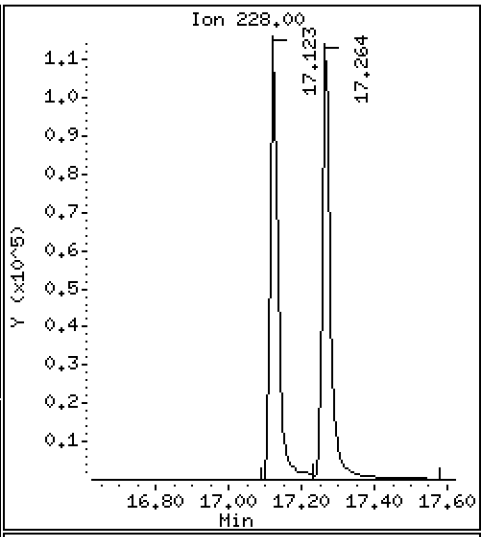
Column phase: Rxi-17Sil MS

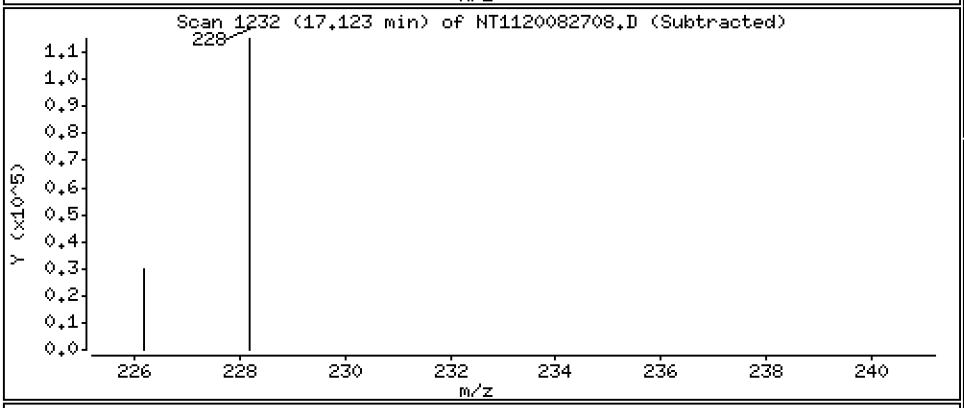
Column diameter: 0.25

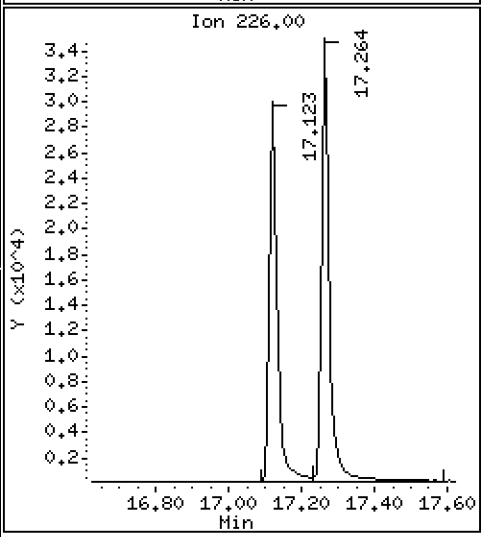
27 Benzo(a)anthracene

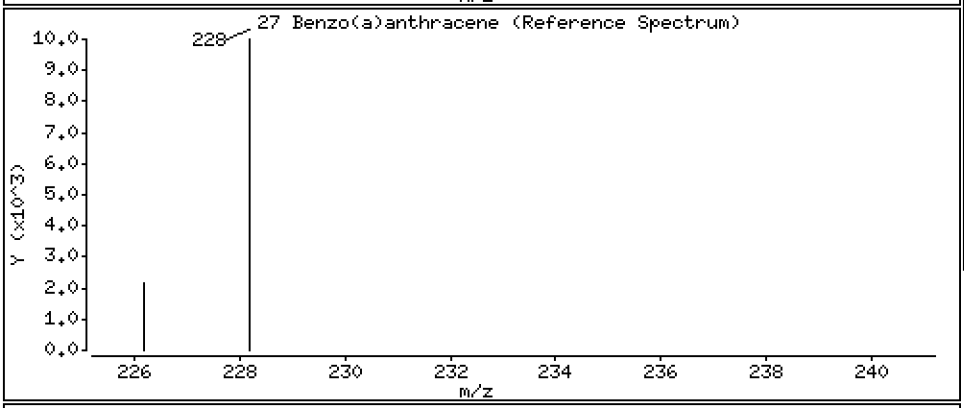
Concentration: 223 ng/mL

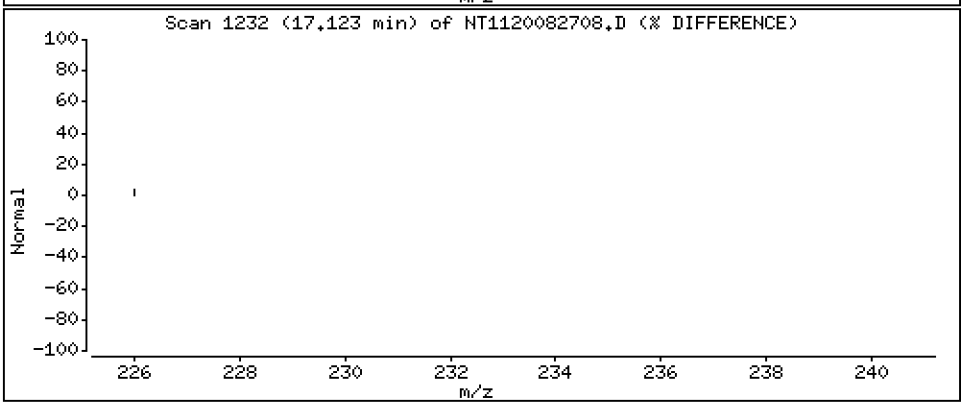












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

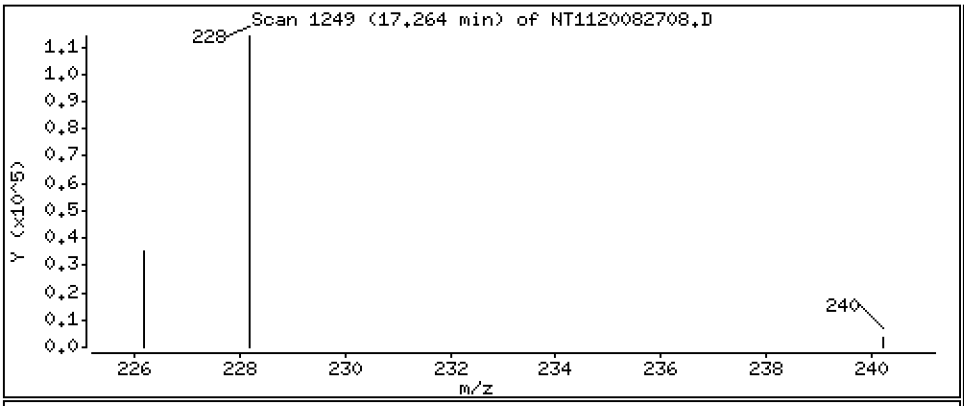
Operator: VTS

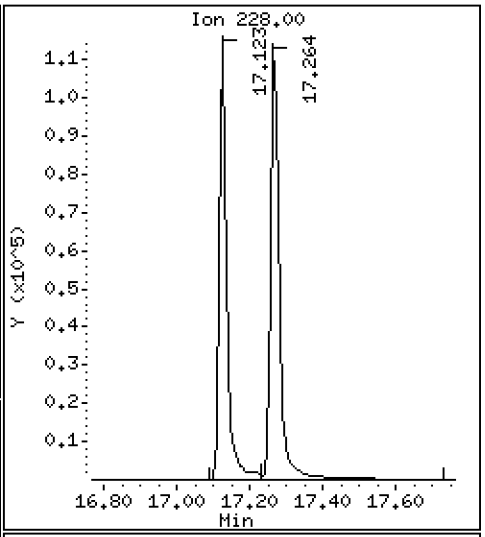
Column phase: Rxi-17Sil MS

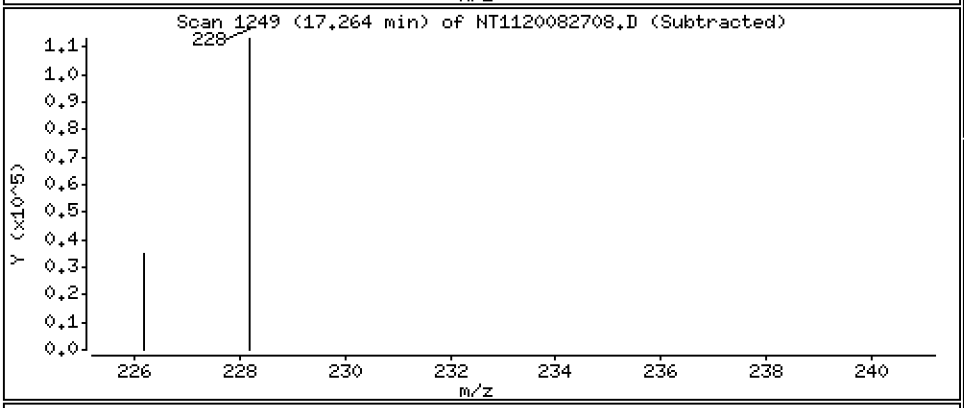
Column diameter: 0.25

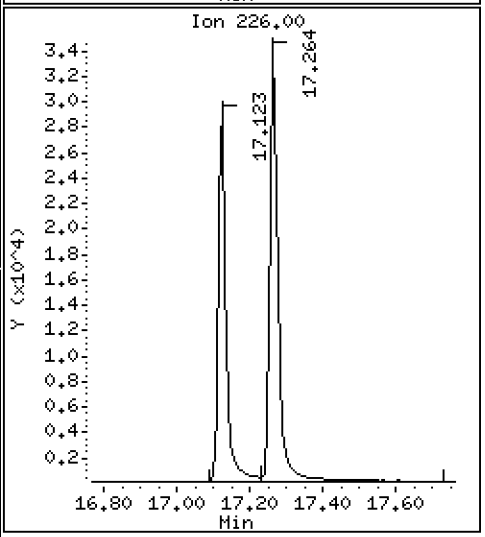
29 Chrysene

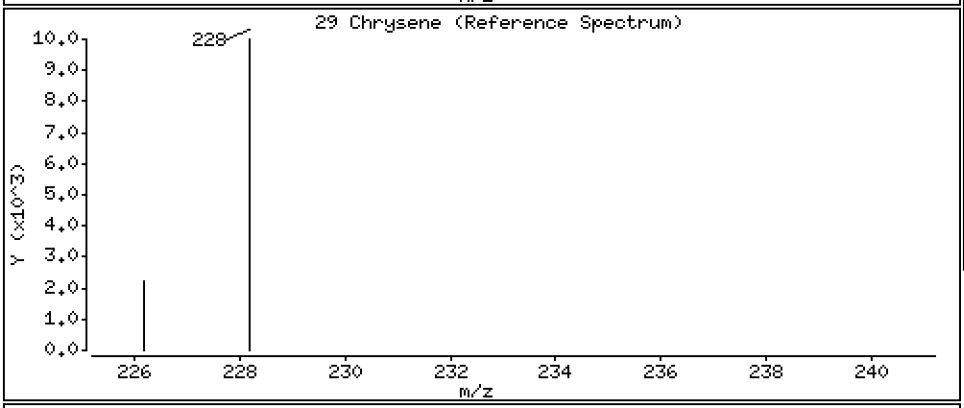
Concentration: 215 ng/mL

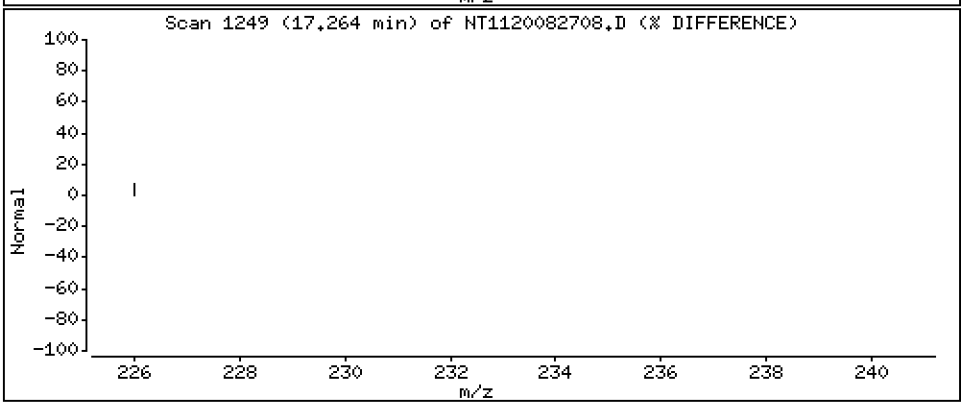












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

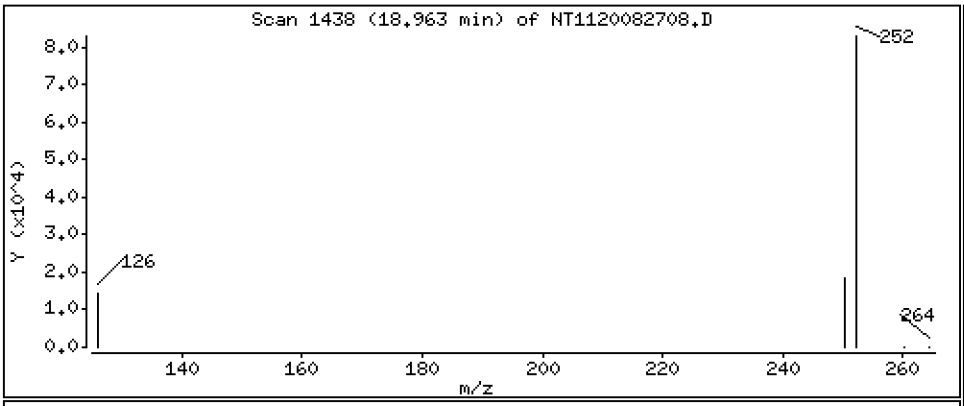
Operator: VTS

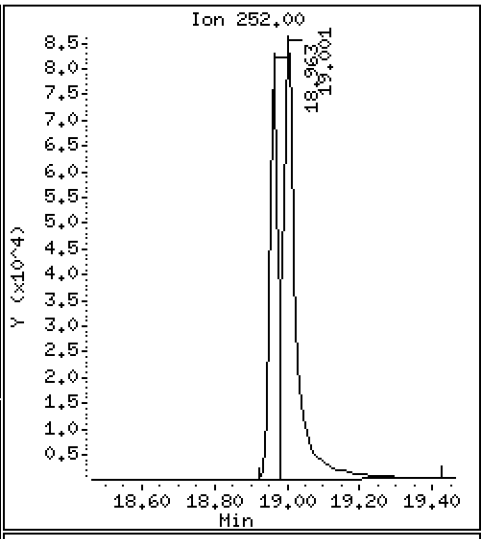
Column phase: Rxi-17Sil MS

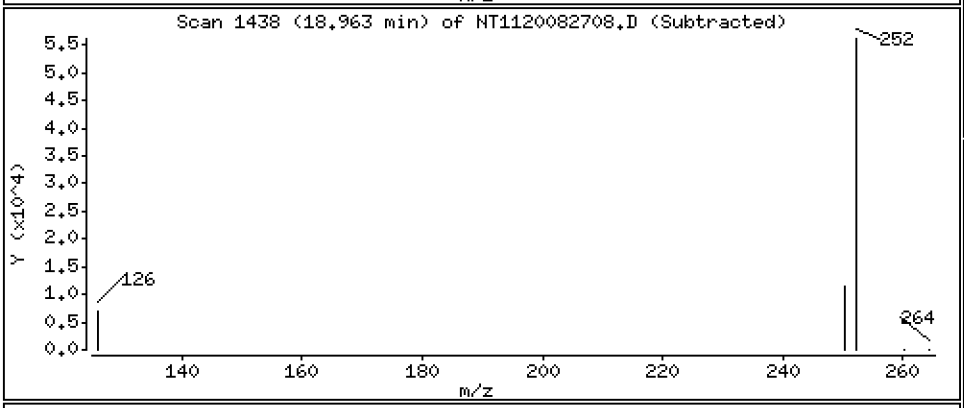
Column diameter: 0.25

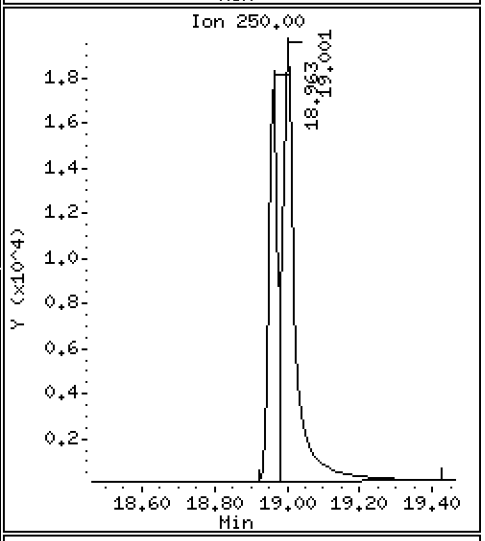
30 Benzo(b)fluoranthene

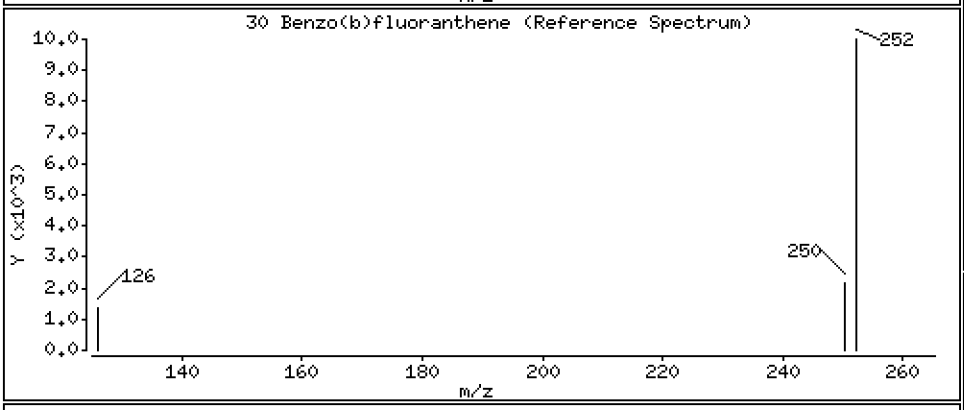
Concentration: 212 ng/mL

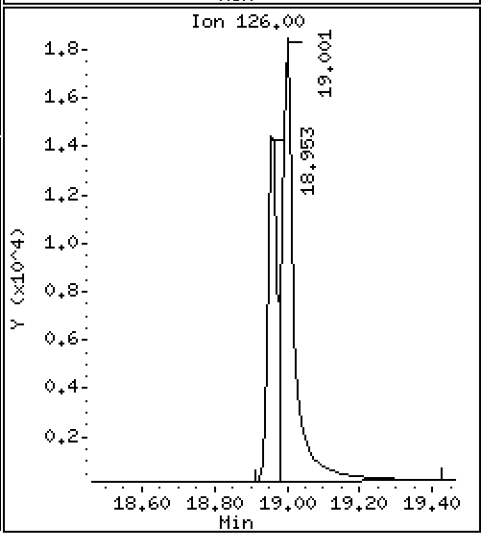


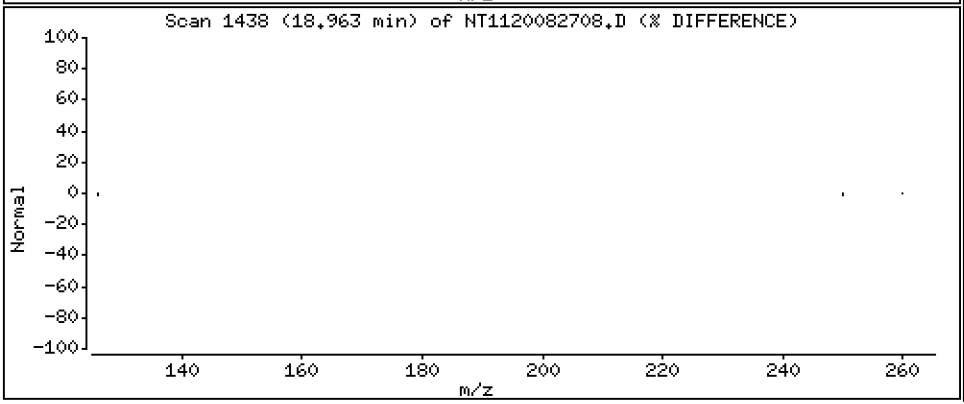












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

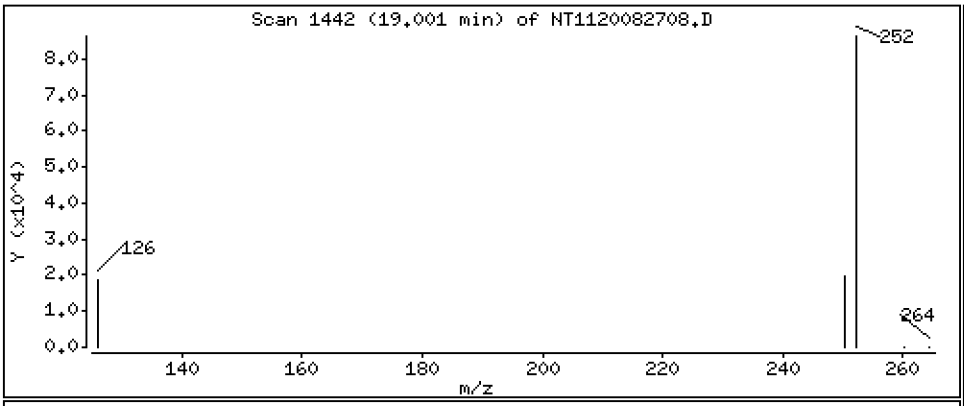
Operator: VTS

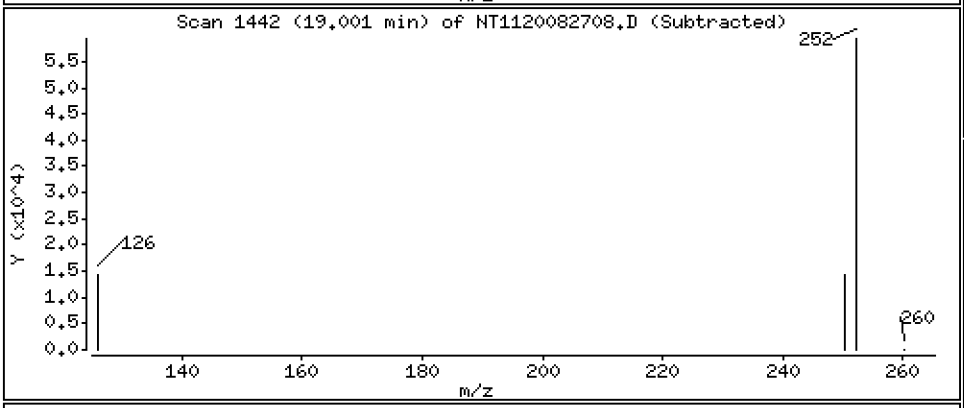
Column phase: Rxi-17Sil MS

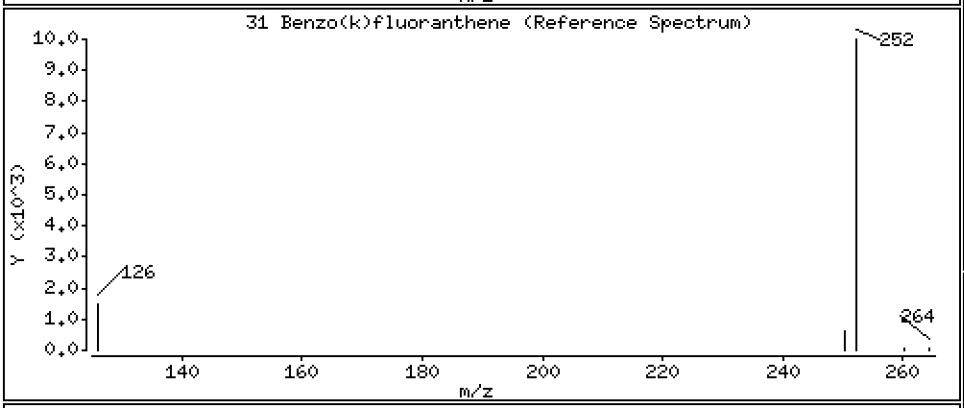
Column diameter: 0.25

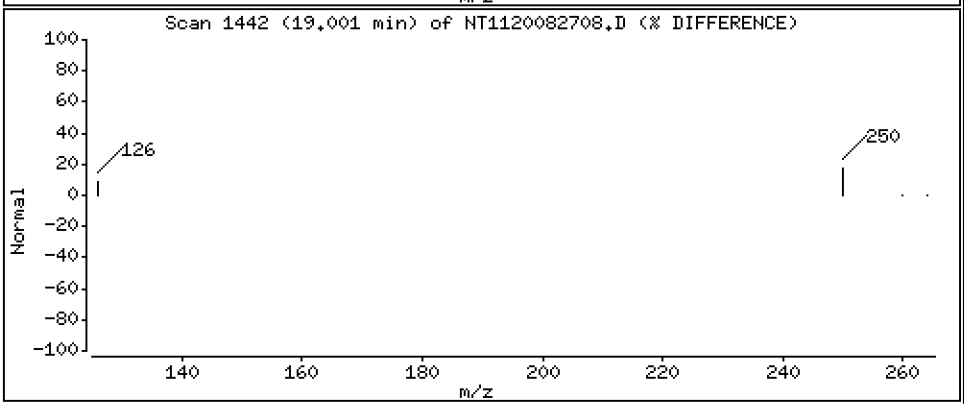
31 Benzo(k)fluoranthene

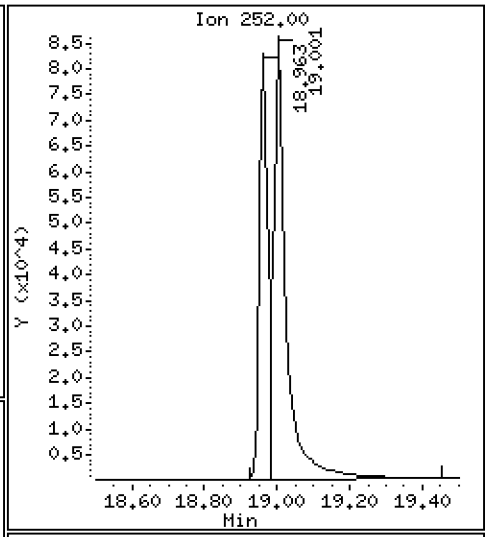
Concentration: 260 ng/mL

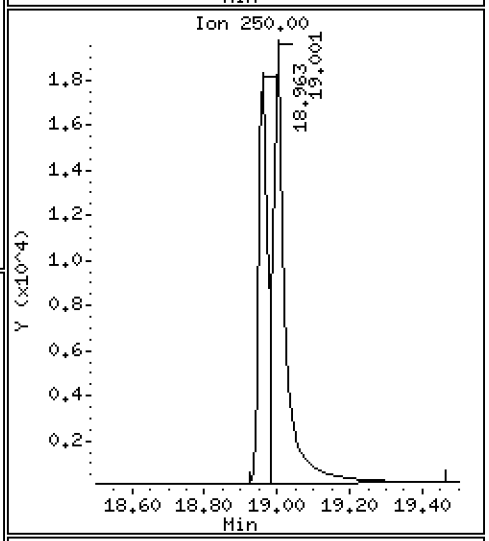


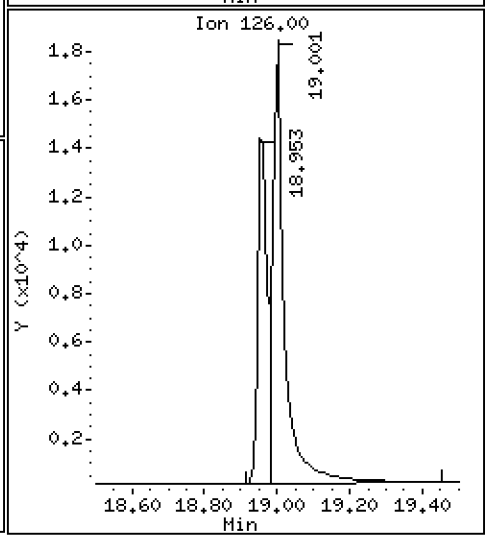












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

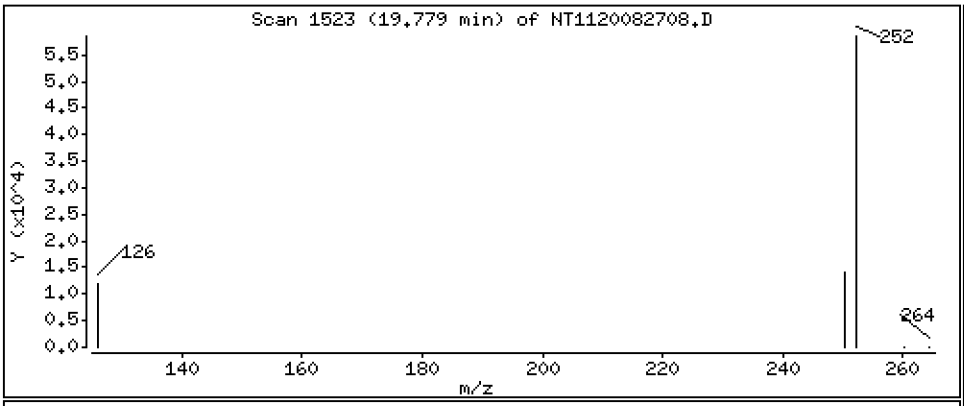
Operator: VTS

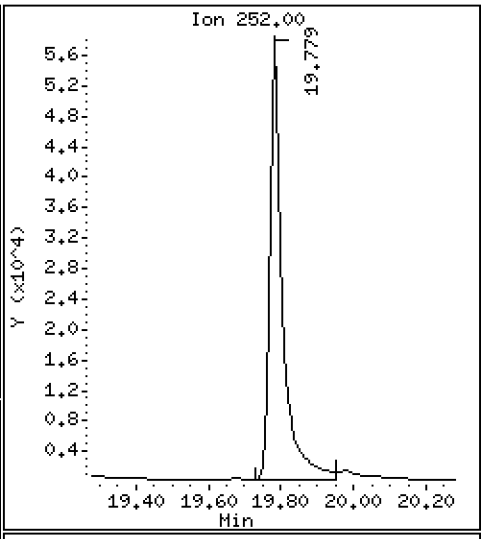
Column phase: Rxi-17Sil MS

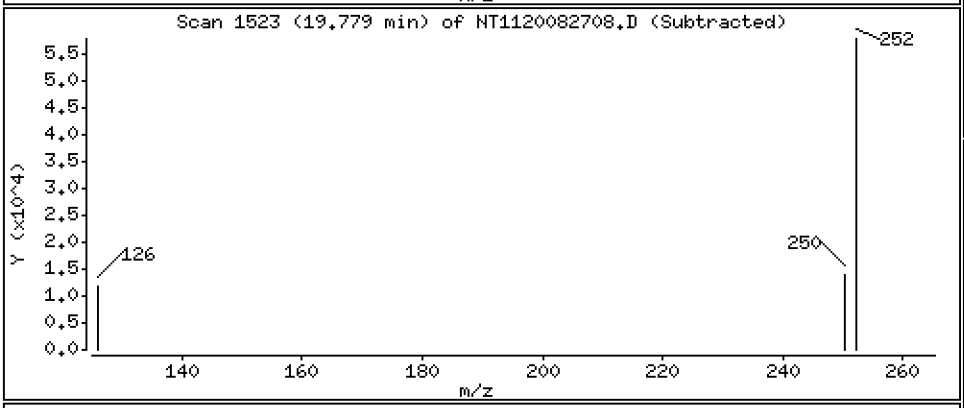
Column diameter: 0.25

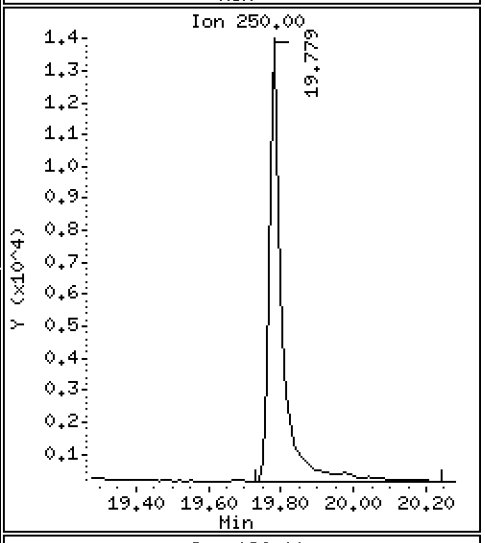
35 Benzo(a)pyrene

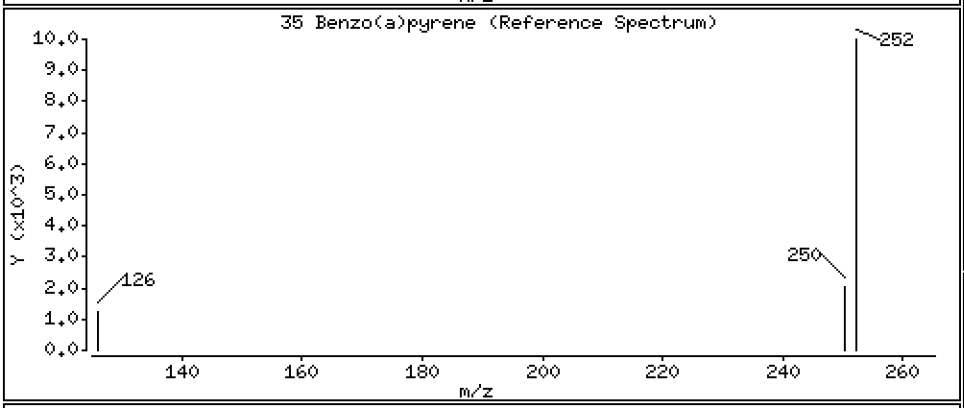
Concentration: 213 ng/mL

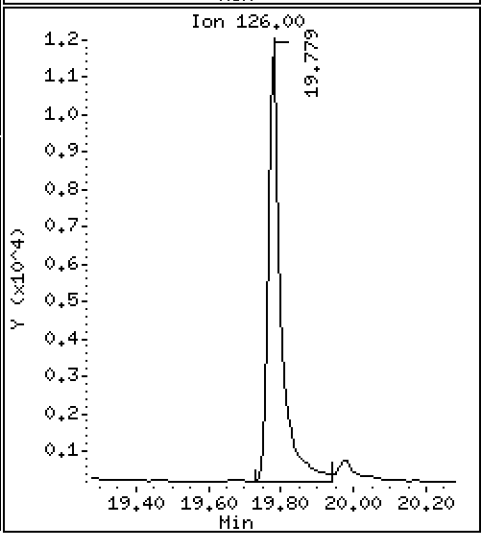


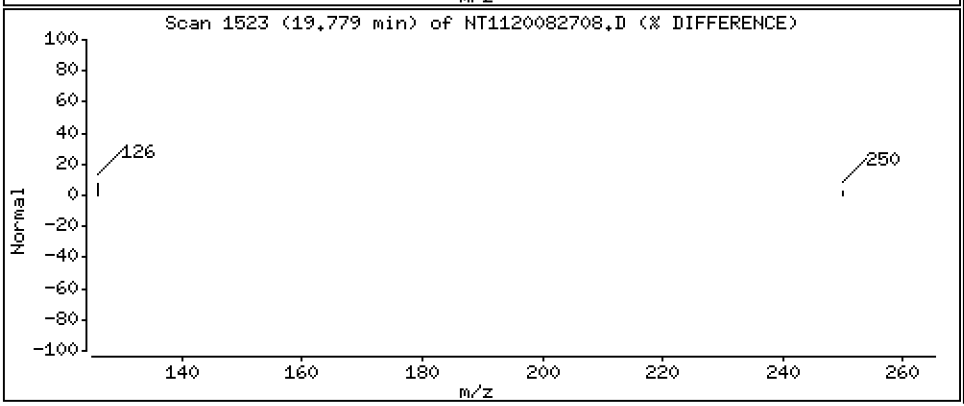












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

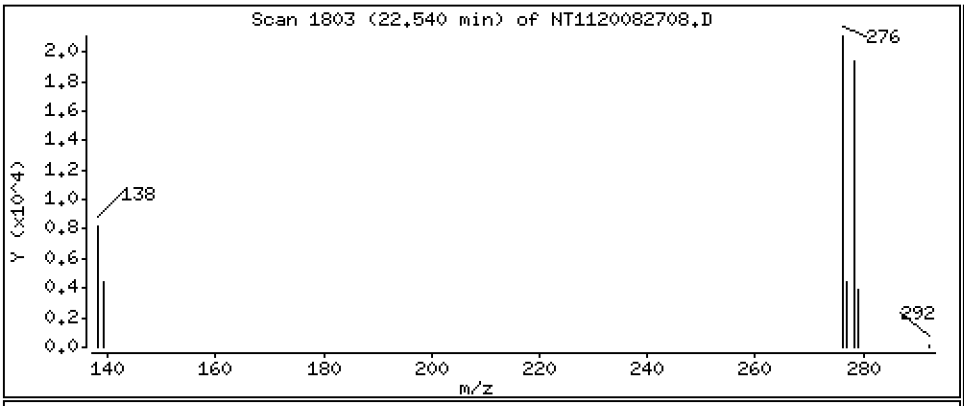
Operator: VTS

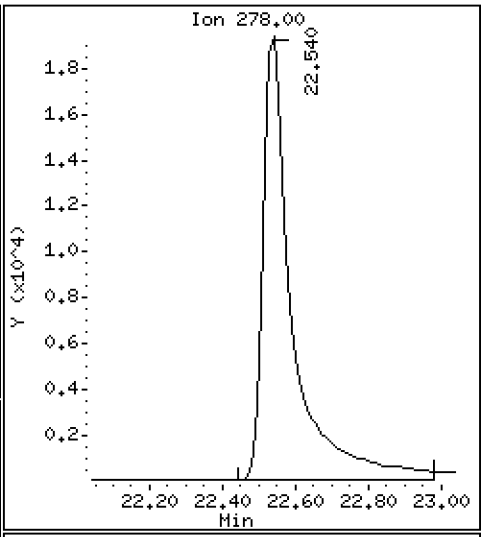
Column phase: Rxi-17Sil MS

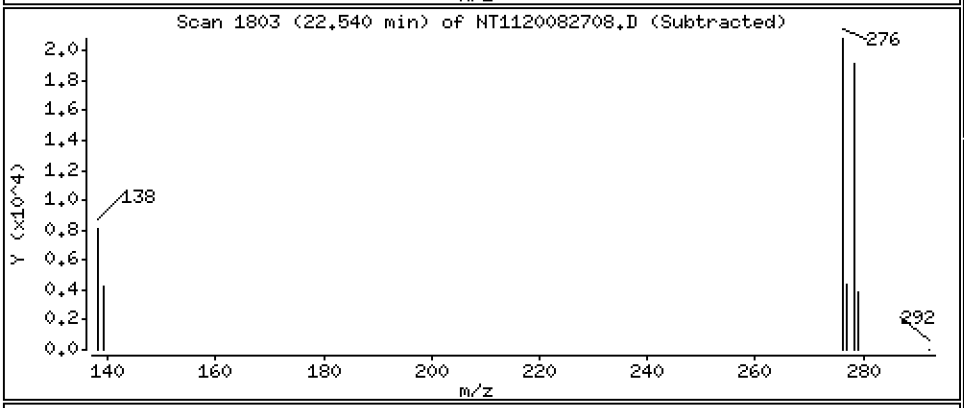
Column diameter: 0.25

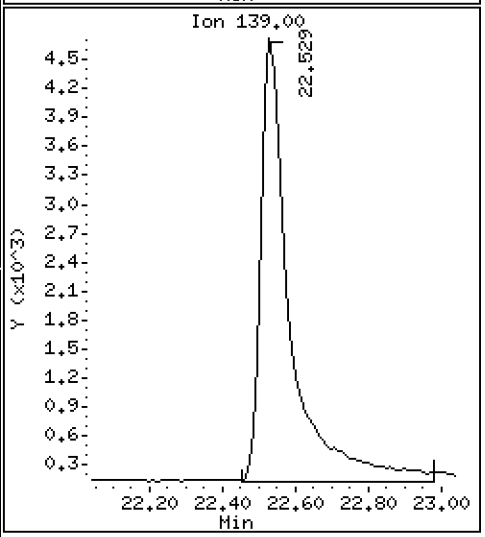
39 Dibenzo(a,h)anthracene

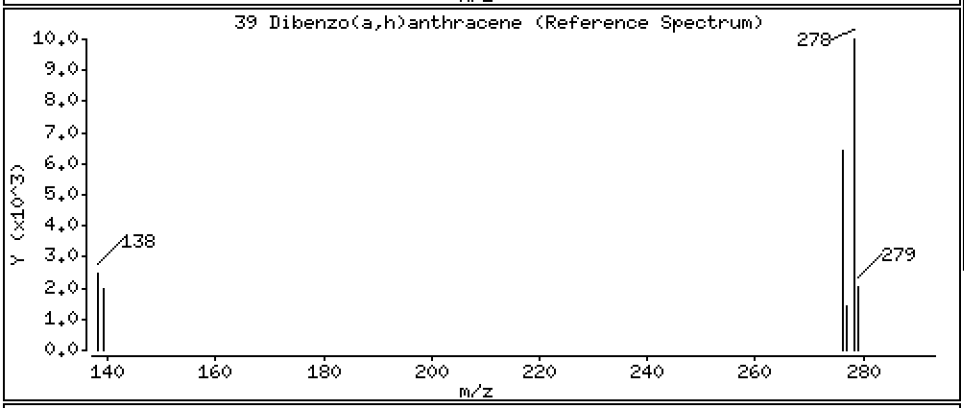
Concentration: 192 ng/mL

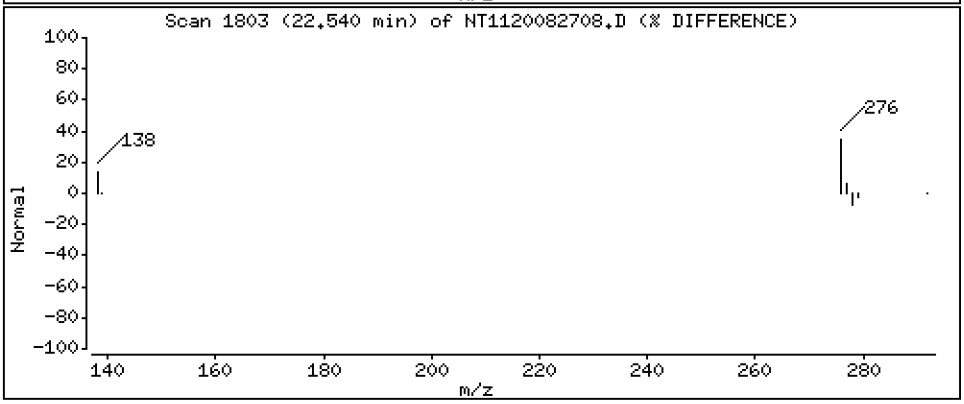












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

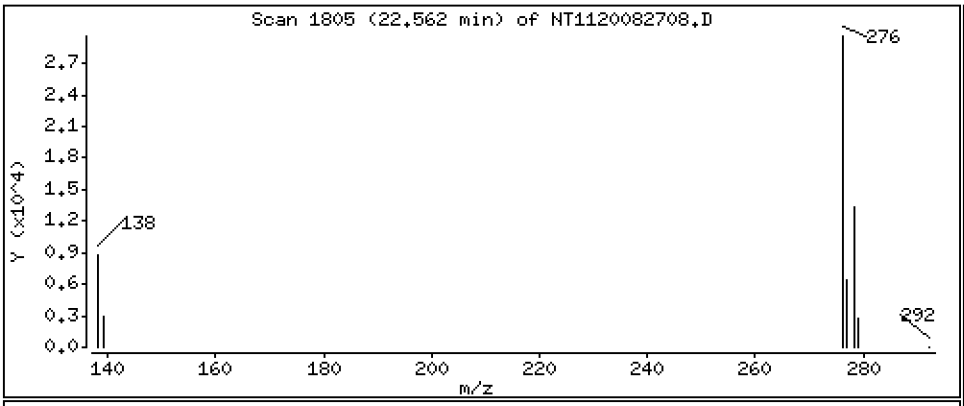
Operator: VTS

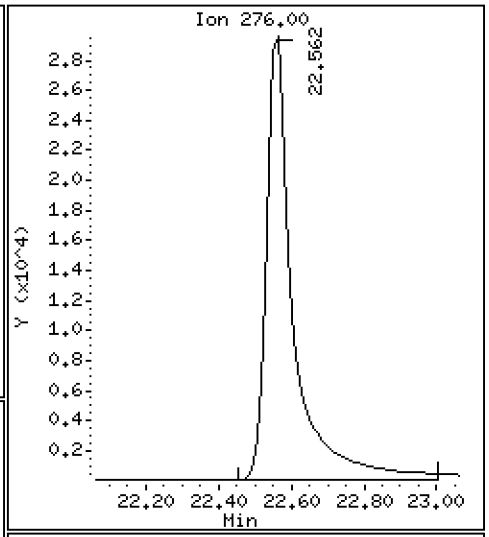
Column phase: Rxi-17Sil MS

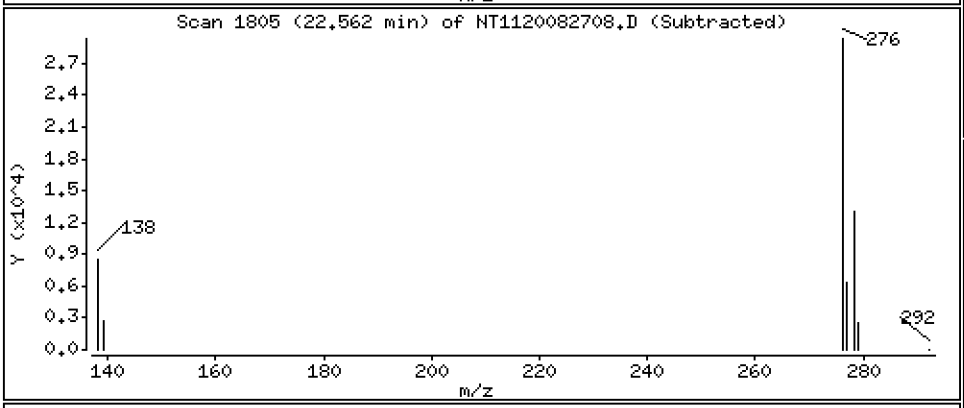
Column diameter: 0.25

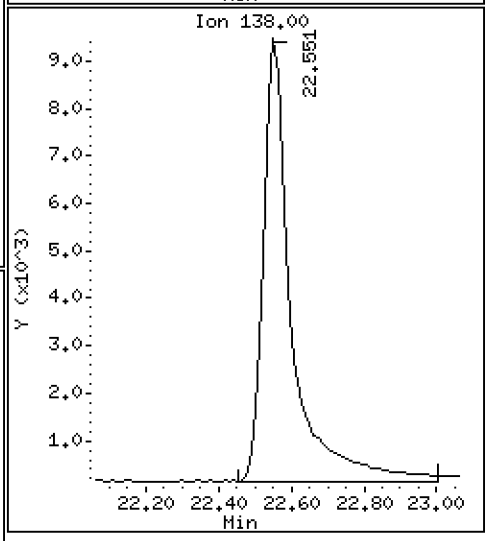
40 Indeno(1,2,3-cd)pyrene

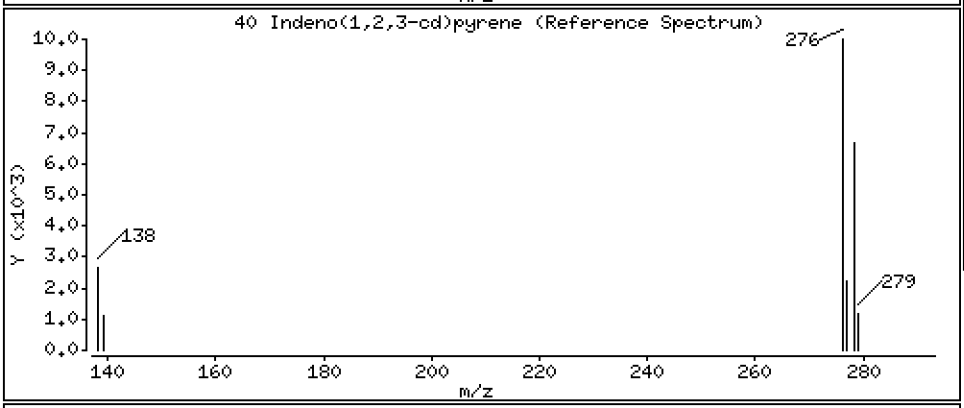
Concentration: 227 ng/mL

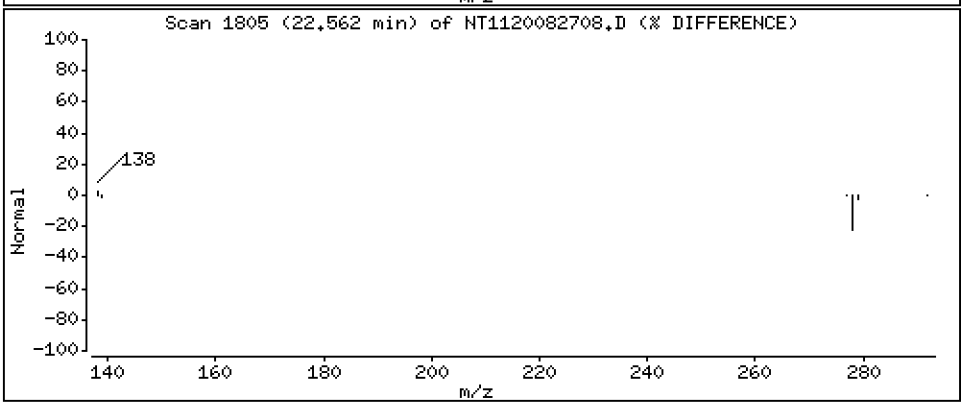












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

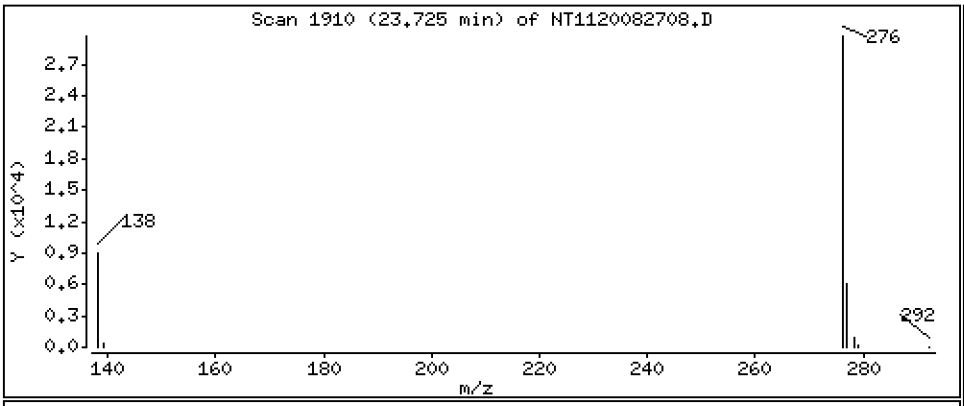
Operator: VTS

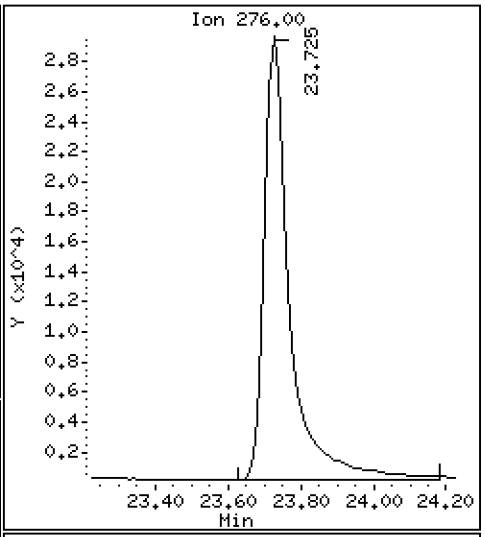
Column phase: Rxi-17Sil MS

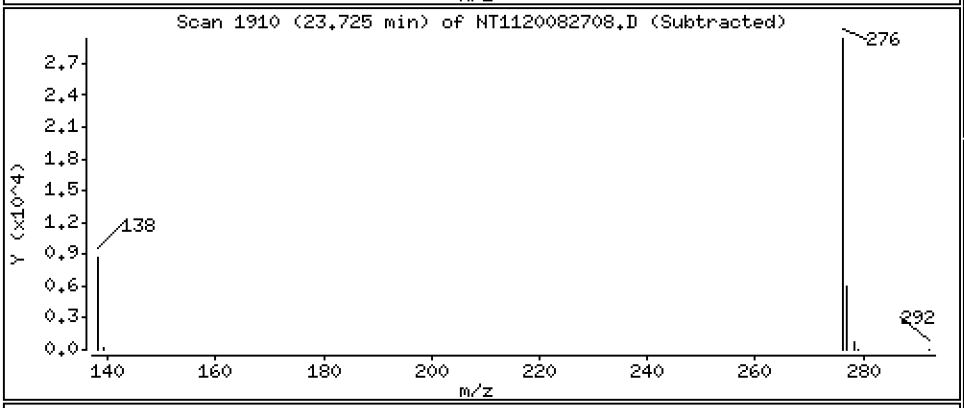
Column diameter: 0.25

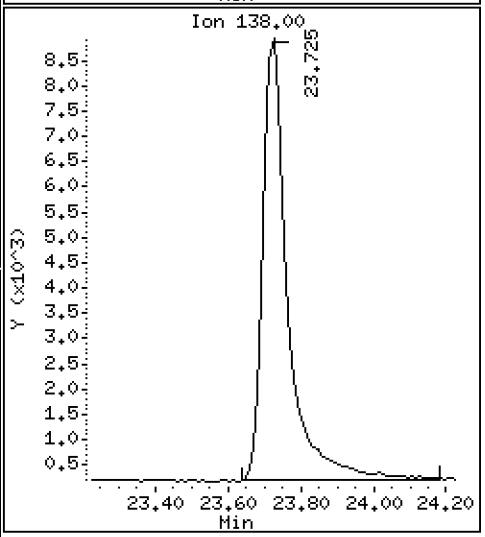
41 Benzo(g,h,i)perylene

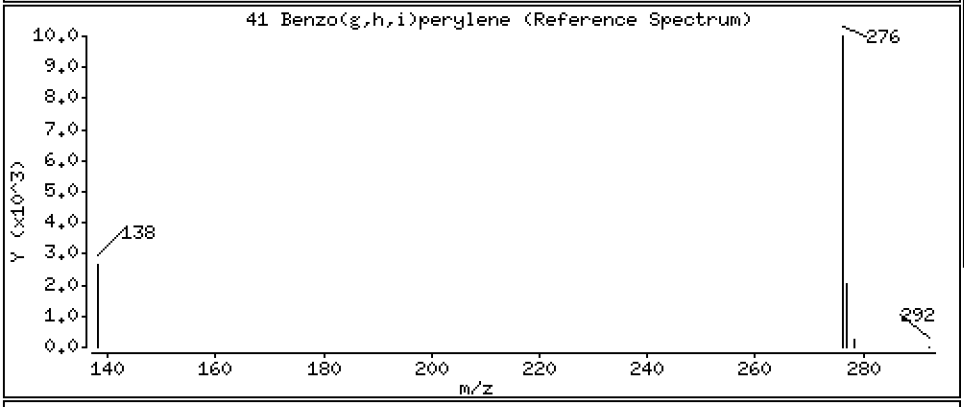
Concentration: 214 ng/mL

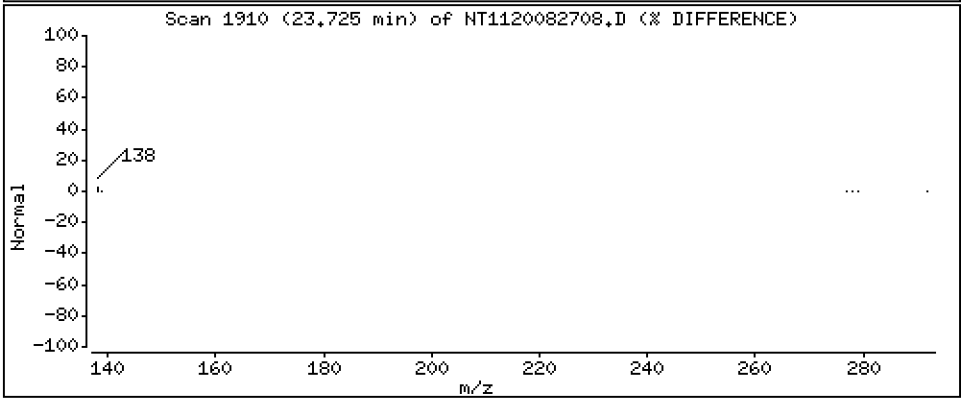












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Inj Date : 27-AUG-2020 15:38 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-SCV1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	202035	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	263329	224.480	224
	3 Benzo(b)thiophene	134	Compound Not Detected.					
$	4 2-Methylnaphthalene-d10	152	Compound Not Detected.					
	5 2-Methylnaphthalene	142	Compound Not Detected.					
	6 1-Methylnaphthalene	142	Compound Not Detected.					
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	Compound Not Detected.					
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	9.653	9.653	(0.984)	241360	233.261	233
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	90189	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	151880	221.934	222
	13 Dibenzofuran	168	Compound Not Detected.					
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	10.694	10.694	(1.090)	164299	233.486	233
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	142829	200.000	
	19 Phenanthrene	178	12.513	12.524	(1.003)	217246	232.514	233
	21 Anthracene	178	12.576	12.576	(1.008)	207807	222.597	223
	22 Carbazole	167	Compound Not Detected.					
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	Compound Not Detected.					
	25 Fluoranthene	202	14.607	14.607	(1.170)	220035	236.211	236
	26 Pyrene	202	15.107	15.107	(1.210)	224689	235.115	235
	27 Benzo(a)anthracene	228	17.123	17.122	(0.994)	170476	223.013	223
*	28 Chrysene-d12	240	17.222	17.214	(1.000)	104063	200.000	
	29 Chrysene	228	17.264	17.264	(1.002)	185336	215.323	215
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	137886	212.389	212
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	222044	260.291	260
	32 Benzo(j)fluoranthene	252	Compound Not Detected.					
	34 Benzo(e)pyrene	252	Compound Not Detected.					
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	144487	213.091	213
*	36 Perylene-d12	264	19.981	19.981	(1.000)	119273	200.000	
	37 Perylene	252	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
$ 38 Dibenzo(a,h)anthracene-d14	292	Compound Not Detected.					
39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	107076	191.902	192
40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	149356	226.827	227
41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	141191	214.457	214

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	202035	-6.18
11 Acenaphthene-d10	102217	51109	204434	90189	-11.77
18 Phenanthrene-d10	170387	85194	340774	142829	-16.17
28 Chrysene-d12	116138	58069	232276	104063	-10.40
36 Perylene-d12	139038	69519	278076	119273	-14.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.22	0.05
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082708.D

Lab ID: SIH0304-SCV1
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 15:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

** FIRST SURROGATE NOT FOUND. ICAL Check not performed **

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

INITIAL CALIBRATION CHECK

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Instrument ID:	NT11	Calibration:	DH00073
Lab File ID:	NT1121041602.D	Calibration Date:	08/27/2020
Sequence:	SJD0232	Injection Date:	04/16/21
Lab Sample ID:	SJD0232-ICV1	Injection Time:	10:42
Sequence Name:	Initial Cal Check		

		CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF		
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT	
Naphthalene	A	250.00	227	1.1612470	1.0562520		-9.2	+/-20	
2-Methylnaphthalene	A	250.00	244	0.9361384	0.9123065		-2.4	+/-20	
1-Methylnaphthalene	A	250.00	252	0.8702122	0.8778416		0.8	+/-20	
2-Chloronaphthalene	A	250.00	199	1.7417600	1.3897610		-20.4	+/-20	*
Acenaphthylene	A	250.00	203	2.2945630	1.8662280		-18.8	+/-20	
Acenaphthene	A	250.00	205	1.5175830	1.2455540		-18.0	+/-20	
Dibenzofuran	A	250.00	197	2.0257800	1.5948390		-21.2	+/-20	*
Fluorene	A	250.00	211	1.5604500	1.3163870		-15.6	+/-20	
Phenanthrene	A	250.00	224	1.3083250	1.1697300		-10.4	+/-20	
Anthracene	A	250.00	220	1.3072390	1.1492260		-12.0	+/-20	
Carbazole	A	250.00	240	1.3929680	1.3346780		-4.0	+/-20	
Fluoranthene	A	250.00	226	1.3043810	1.1793420		-9.6	+/-20	
Pyrene	A	250.00	229	1.3381820	1.2251460		-8.4	+/-20	
Benzo(a)anthracene	A	250.00	216	1.4691530	1.2718430		-13.6	+/-20	
Chrysene	A	250.00	208	1.6542610	1.3761050		-16.8	+/-20	
Benzo(b)fluoranthene	A	250.00	248	1.0886210	1.0791410		-0.8	+/-20	
Benzo(k)fluoranthene	A	250.00	204	1.4304320	1.1668910		-18.4	+/-20	
Benzo(j)fluoranthene	A	250.00	209	1.5458300	1.2934500		-16.4	+/-20	
Benzofluoranthenes, Total	A	750.00	661	1.3549610	1.1798270		-11.9	+/-20	
Benzo(a)pyrene	A	250.00	244	1.1369780	1.1083440		-2.4	+/-20	
Perylene	A	250.00	220	1.2953700	1.1405460		-12.0	+/-20	
Indeno(1,2,3-cd)pyrene	A	250.00	264	1.1041170	1.1656290		5.6	+/-20	
Dibenzo(a,h)anthracene	A	250.00	263	0.8775199	0.9897372		5.2	+/-20	
Benzo(g,h,i)perylene	A	250.00	250	1.1039640	1.1037550		0.0	+/-20	
2-Methylnaphthalene-d10	A	250.00	243	0.8041846	0.7827113		-2.8	+/-20	
Dibenzo[a,h]anthracene-d14	A	250.00	260	0.7035414	0.8156947		4.0	+/-20	
Fluoranthene-d10	A	250.00	216	1.0485620	0.9052285		-13.6	+/-20	

* Values outside of QC limits

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041602.D

Date : 16-APR-2021 10:42

Client ID:

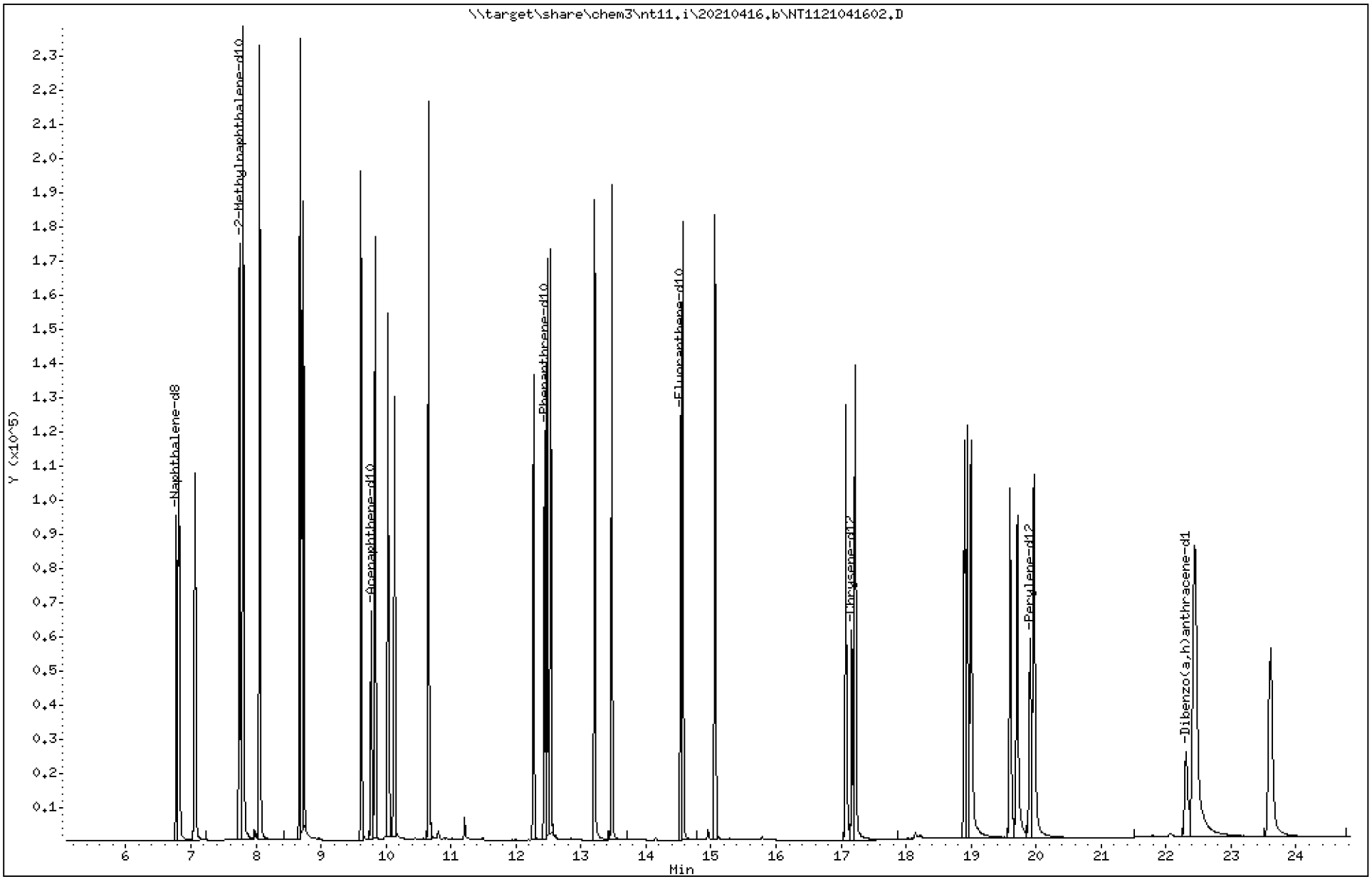
Instrument: nt11.i

Sample Info: SJD0232-ICV1

Operator: VTS

Column phase: Rxi-17Sil MS

Column diameter: 0.25



ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041602.D
Lab Smp Id: SJD0232-ICV1
Inj Date : 16-APR-2021 10:42 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SJD0232-ICV1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	ON-COL (ng/mL)
*	1 Naphthalene-d8	136	6.777	6.777	(1.000)	142104	200.000	
	2 Naphthalene	128	6.813	6.813	(1.005)	187622	250.000	227
	3 Benzo(b)thiophene	134	7.057	7.057	(1.041)	152983	250.000	235
$	4 2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	139033	250.000	243
	5 2-Methylnaphthalene	142	7.801	7.801	(1.151)	162053	250.000	244
	6 1-Methylnaphthalene	142	8.054	8.054	(1.188)	155931	250.000	252
	7 2-Chloronaphthalene	162	8.705	8.705	(0.891)	139499	250.000	199
	8 Biphenyl	154	8.673	8.673	(0.888)	183357	250.000	197(H)
	9 2,6-Dimethylnaphthalene	156	8.726	8.726	(0.893)	143806	250.000	208
	10 Acenaphthylene	152	9.616	9.616	(0.984)	187325	250.000	203
*	11 Acenaphthene-d10	164	9.770	9.770	(1.000)	80301	200.000	
	12 Acenaphthene	153	9.833	9.833	(1.006)	125024	250.000	205
	13 Dibenzofuran	168	10.036	10.036	(1.027)	160084	250.000	197
	14 2,3,5-Trimethylnaphthalene	170	10.137	10.137	(1.038)	105048	250.000	210
	16 Fluorene	166	10.655	10.655	(1.091)	132134	250.000	211
	17 Dibenzothiophene	184	12.271	12.271	(0.986)	146913	250.000	218
*	18 Phenanthrene-d10	188	12.439	12.439	(1.000)	121929	200.000	
	19 Phenanthrene	178	12.481	12.481	(1.003)	178280	250.000	224(H)
	21 Anthracene	178	12.533	12.533	(1.008)	175155	250.000	220
	22 Carbazole	167	13.207	13.207	(1.062)	203420	250.000	240
	23 1-Methylphenanthrene	192	13.478	13.478	(1.083)	162575	250.000	231
$	24 Fluoranthene-d10	212	14.530	14.530	(1.168)	137967	250.000	216
	25 Fluoranthene	202	14.568	14.568	(1.171)	179745	250.000	226
	26 Pyrene	202	15.058	15.058	(1.211)	186726	250.000	229
	27 Benzo(a)anthracene	228	17.072	17.072	(0.995)	149529	250.000	216
*	28 Chrysene-d12	240	17.163	17.163	(1.000)	94055	200.000	
	29 Chrysene	228	17.213	17.213	(1.003)	161787	250.000	208
	30 Benzo(b)fluoranthene	252	18.894	18.894	(0.949)	154019	250.000	248(H)
	31 Benzo(k)fluoranthene	252	18.942	18.942	(0.952)	166543	250.000	204(H)
	32 Benzo(j)fluoranthene	252	19.000	19.000	(0.955)	184606	250.000	209
	34 Benzo(e)pyrene	252	19.605	19.605	(0.985)	152235	250.000	216(H)
	35 Benzo(a)pyrene	252	19.711	19.711	(0.990)	158187	250.000	244
*	36 Perylene-d12	264	19.903	19.903	(1.000)	114179	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng/mL)	AMOUNTS ON-COL (ng/mL)
	37 Perylene	252	19.970	19.970	(1.003)	162783	250.000	220
$	38 Dibenzo(a,h)anthracene-d14	292	22.305	22.305	(1.121)	116419	250.000	260
	39 Dibenzo(a,h)anthracene	278	22.427	22.427	(1.127)	141259	250.000	263
	40 Indeno(1,2,3-cd)pyrene	276	22.449	22.449	(1.128)	166363	250.000	264
	41 Benzo(g,h,i)perylene	276	23.601	23.601	(1.186)	157532	250.000	250

QC Flag Legend

H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041602.D
Lab Smp Id: SJD0232-ICV1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 09:06
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	142104	0.00
11 Acenaphthene-d10	80301	40151	160602	80301	0.00
18 Phenanthrene-d10	121929	60965	243858	121929	0.00
28 Chrysene-d12	94055	47028	188110	94055	0.00
36 Perylene-d12	114179	57090	228358	114179	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041602.D

Lab ID: SJD0232-ICV1
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 10:42

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

No RRT check. Ccal file.

On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20210416.b

Instrument: nt11.i Date: 16-APR-2021 Method: 20210416.b\lowsim.m

INITIAL CAL: 27-AUG-2020

Compound	%RSD or R^2
NO Q-FLAGS	

ICV CAL: NT1121041602.D 16-APR-2021 10:42

Compound	%D
Dibenzofuran	-21.3
2-Chloronaphthalene	-20.2
Biphenyl	-21.2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Instrument ID:	NT11	Calibration:	DH00073
Lab File ID:	NT1120082708.D	Calibration Date:	08/27/2020
Sequence:	SIH0304	Injection Date:	08/27/20
Lab Sample ID:	SIH0304-SCV1	Injection Time:	15:38
Sequence Name:	PAH 250 SCV		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT	
Naphthalene	A	250.00	224	1.1612470	1.0427060		-10.2	+/-20	
Acenaphthylene	A	250.00	233	2.2945630	2.1409260		-6.7	+/-20	
Acenaphthene	A	250.00	222	1.5175830	1.3472150		-11.2	+/-20	
Fluorene	A	250.00	233	1.5604500	1.4573750		-6.6	+/-20	
Phenanthrene	A	250.00	233	1.3083250	1.2168170		-7.0	+/-20	
Anthracene	A	250.00	223	1.3072390	1.1639480		-11.0	+/-20	
Fluoranthene	A	250.00	236	1.3043810	1.2324390		-5.5	+/-20	
Pyrene	A	250.00	235	1.3381820	1.2585060		-6.0	+/-20	
Benzo(a)anthracene	A	250.00	223	1.4691530	1.3105600		-10.8	+/-20	
Chrysene	A	250.00	215	1.6542610	1.4247980		-13.9	+/-20	
Benzo(b)fluoranthene	A	250.00	212	1.0886210	0.9248430		-15.0	+/-20	
Benzo(k)fluoranthene	A	250.00	260	1.4304320	1.4893160		4.1	+/-20	
Benzofluoranthenes, Total	A	500.00	473	1.3549610	1.2070800		-5.5		
Benzo(a)pyrene	A	250.00	213	1.1369780	0.9691179		-14.8	+/-20	
Indeno(1,2,3-cd)pyrene	A	250.00	227	1.1041170	1.0017760		-9.3	+/-20	
Dibenzo(a,h)anthracene	A	250.00	192	0.8775199	0.7181910		-23.2	+/-20	*
Benzo(g,h,i)perylene	A	250.00	214	1.1039640	0.9470106		-14.2	+/-20	

* Values outside of QC limits

Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

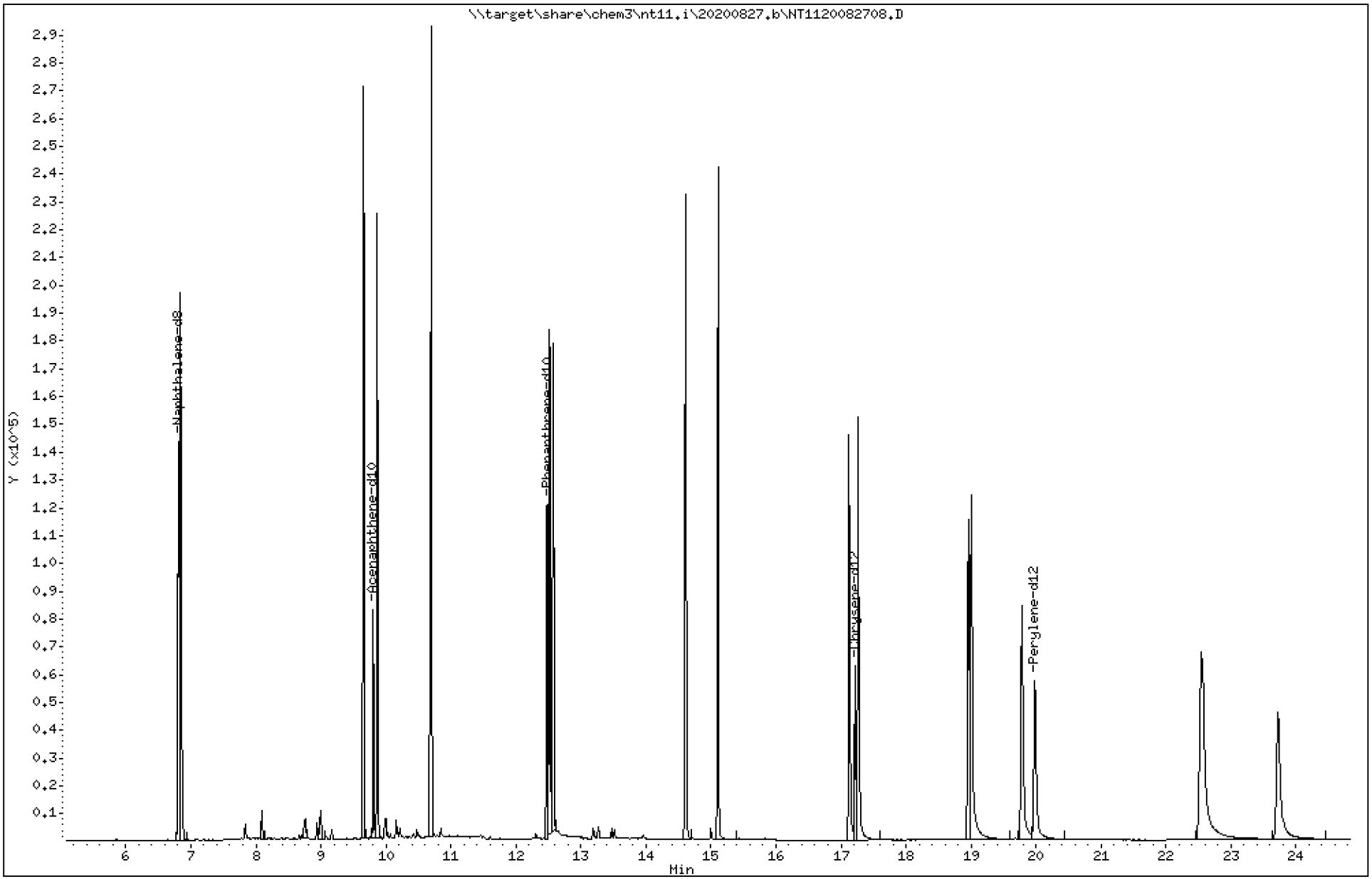
Instrument: nt11.i

Sample Info: SIH0304-SCV1

Operator: VTS

Column phase: Rxi-17Sil MS

Column diameter: 0.25



Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

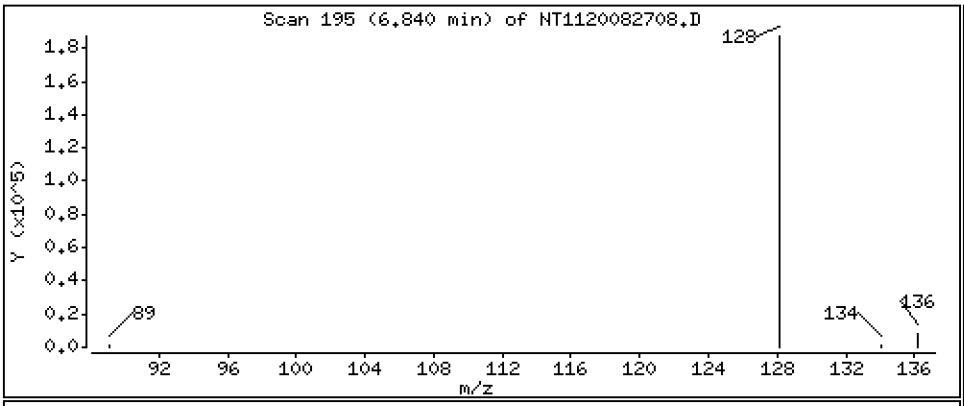
Operator: VTS

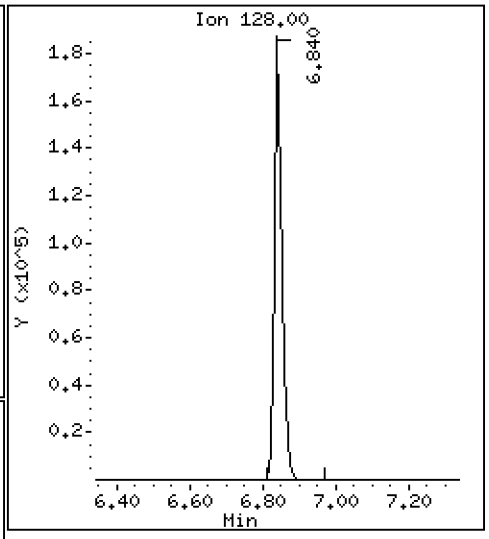
Column phase: Rxi-17Sil MS

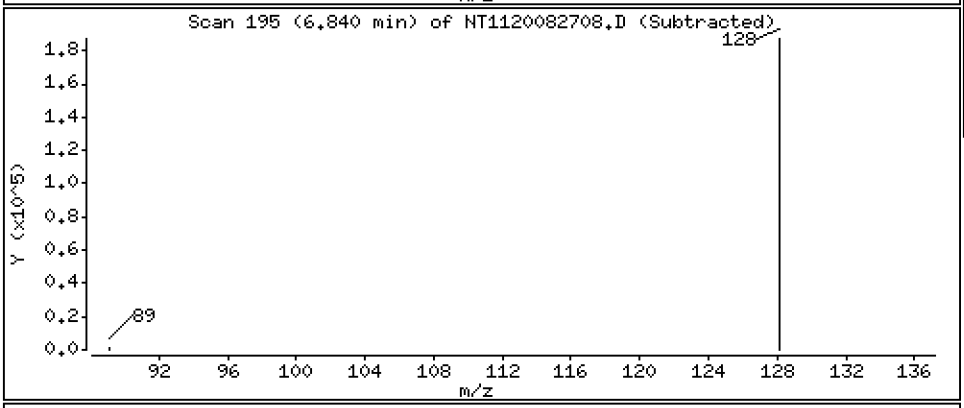
Column diameter: 0.25

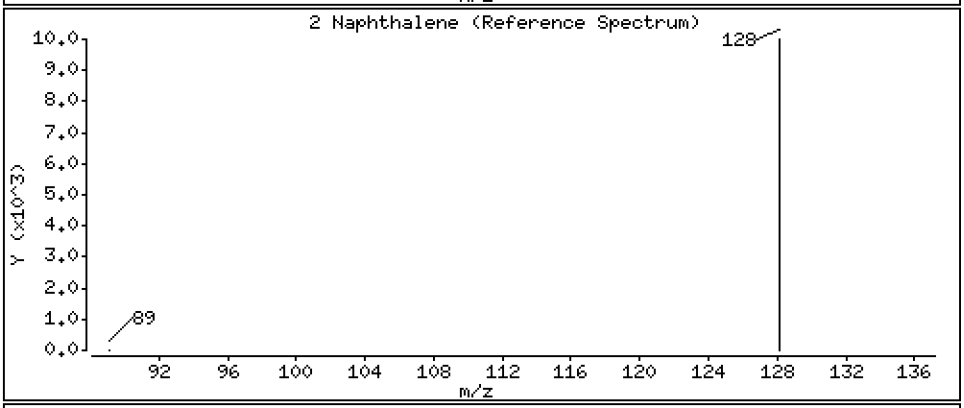
2 Naphthalene

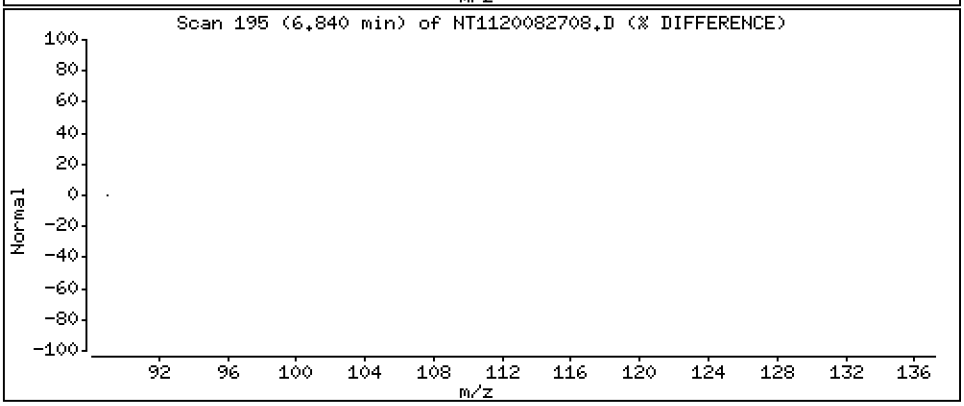
Concentration: 224 ng/mL











Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

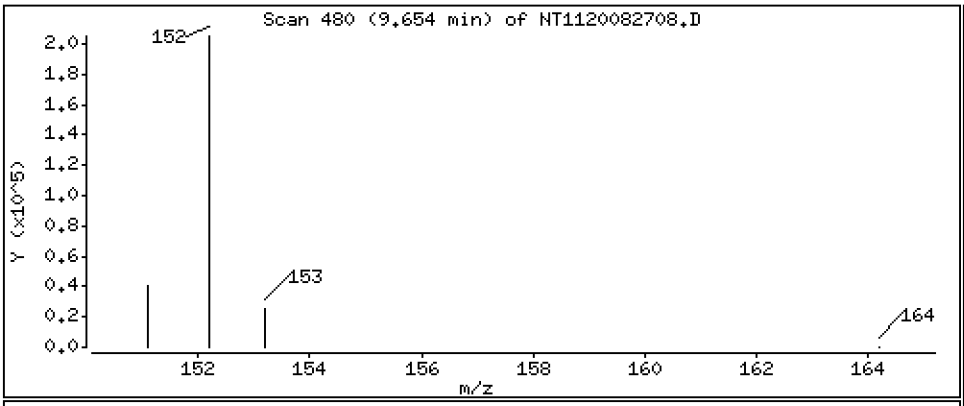
Operator: VTS

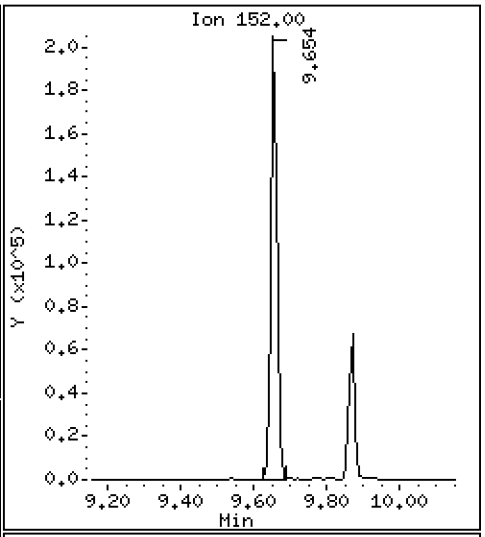
Column phase: Rxi-17Sil MS

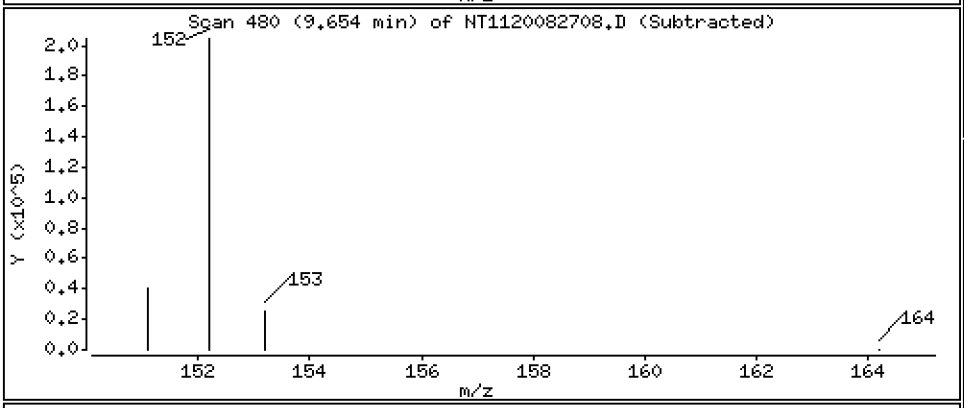
Column diameter: 0.25

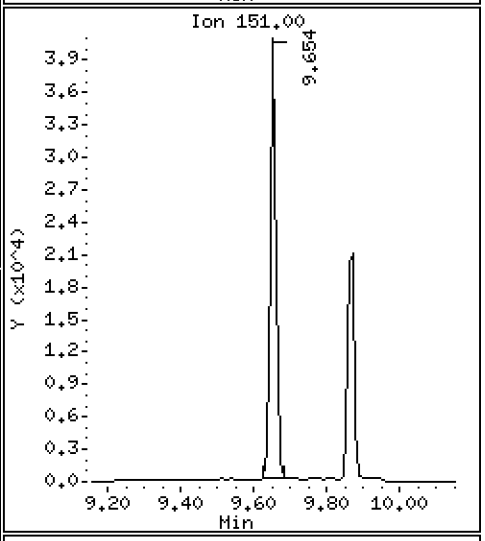
10 Acenaphthylene

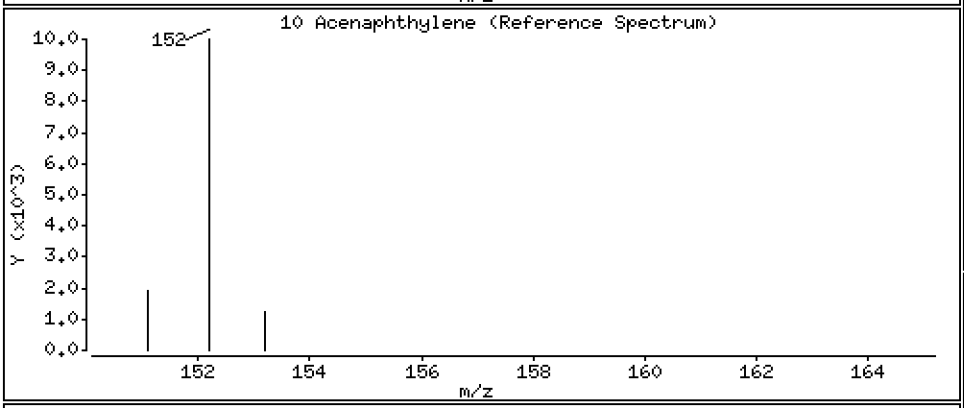
Concentration: 233 ng/mL

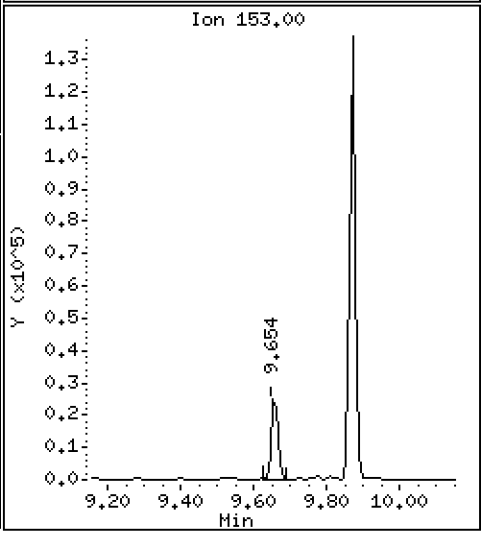


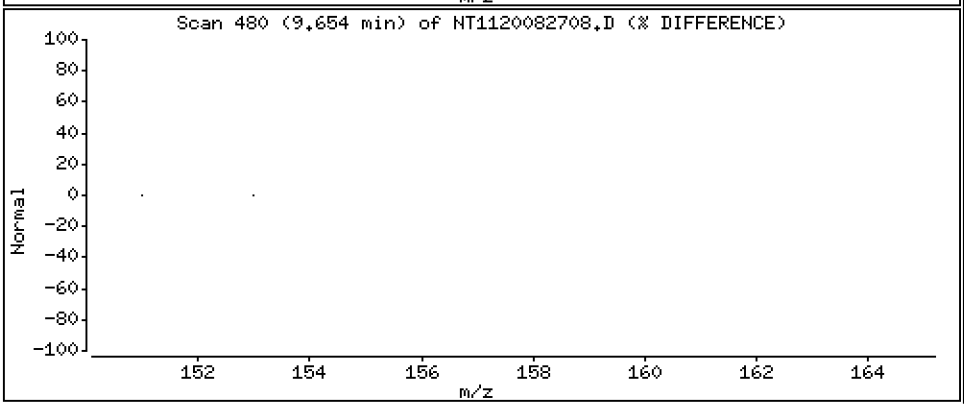












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

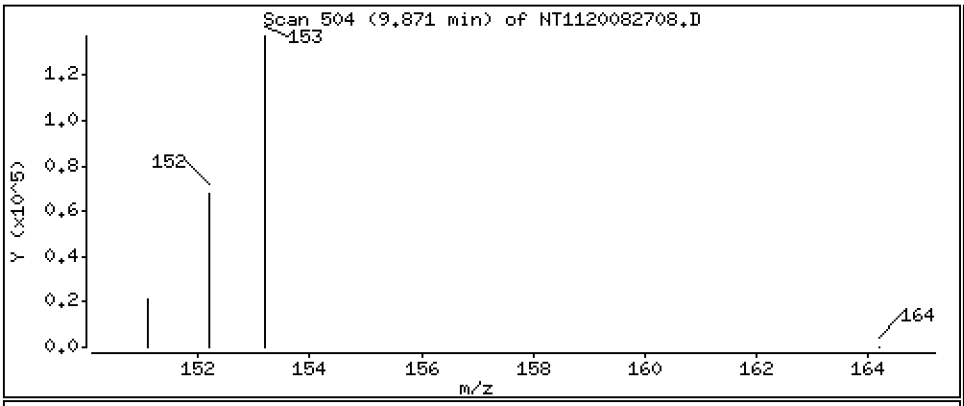
Operator: VTS

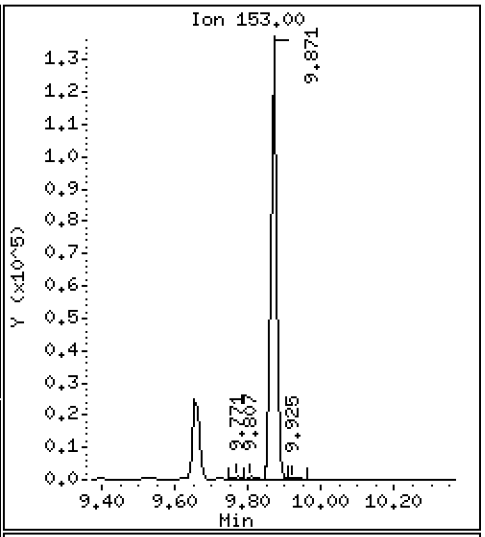
Column phase: Rxi-17Sil MS

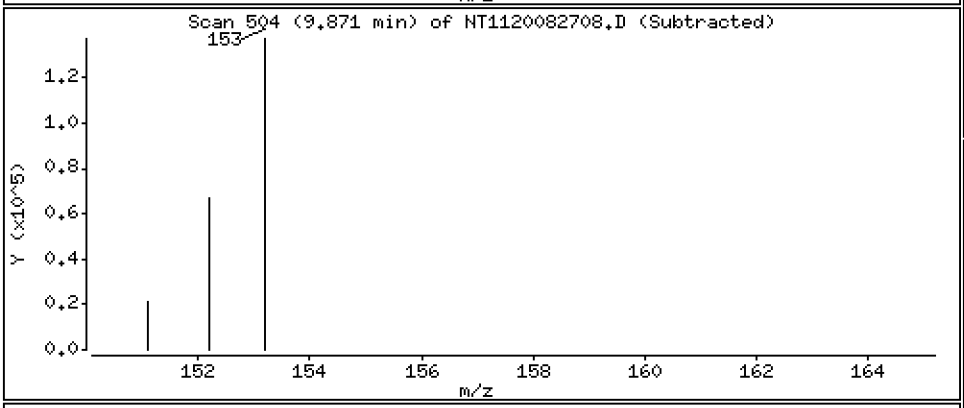
Column diameter: 0.25

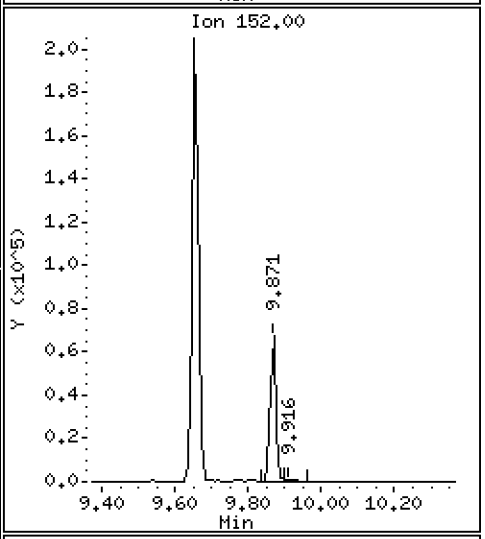
12 Acenaphthene

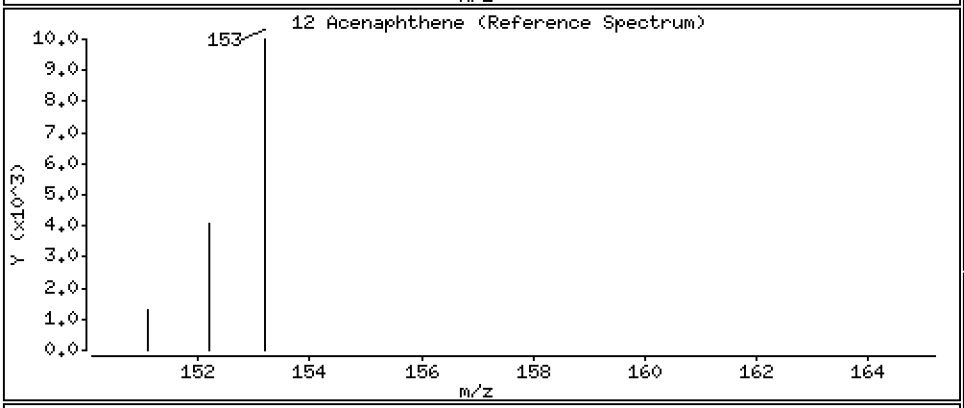
Concentration: 222 ng/mL

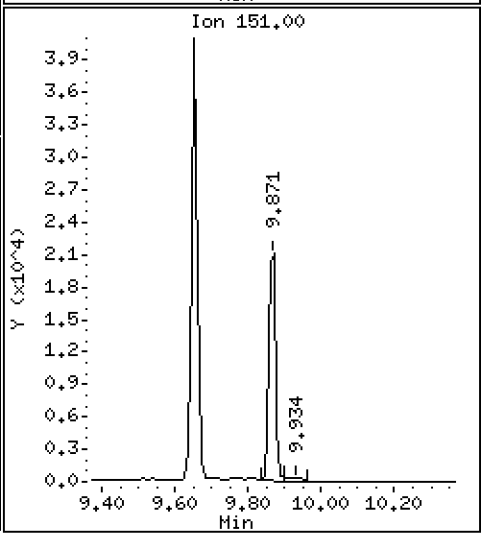


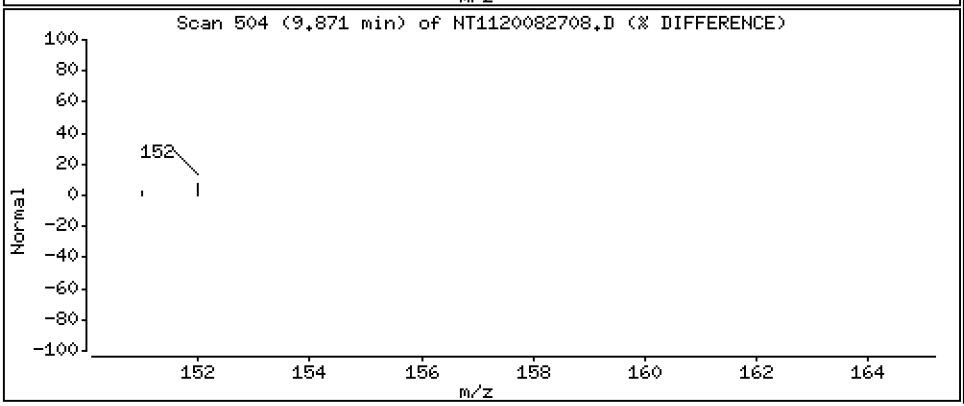












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

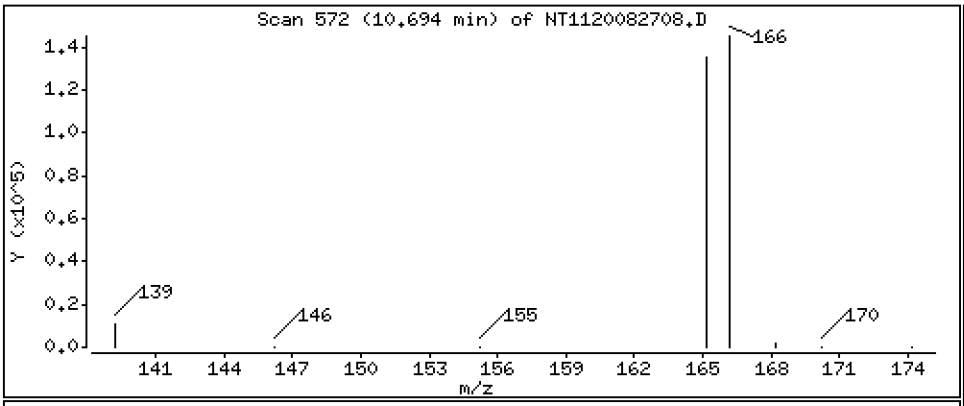
Operator: VTS

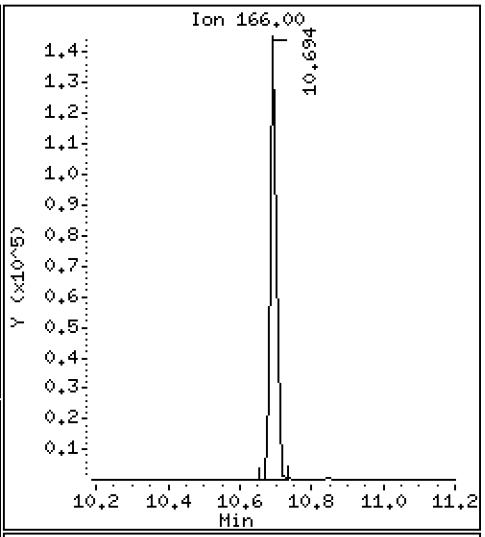
Column phase: Rxi-17Sil MS

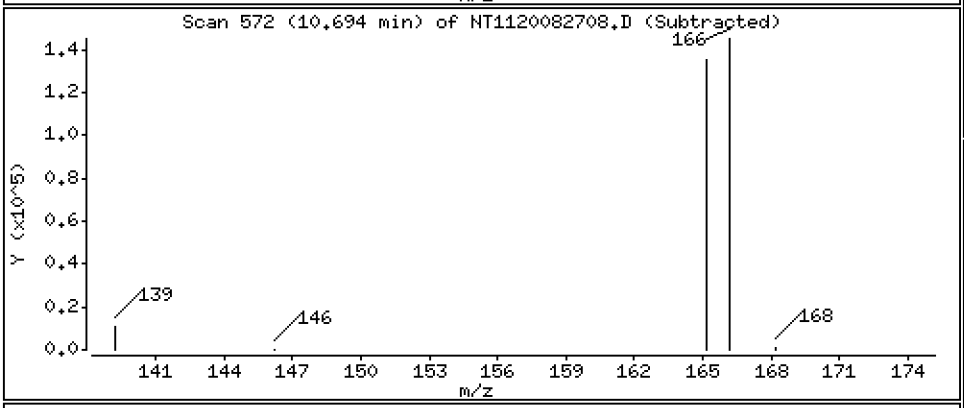
Column diameter: 0.25

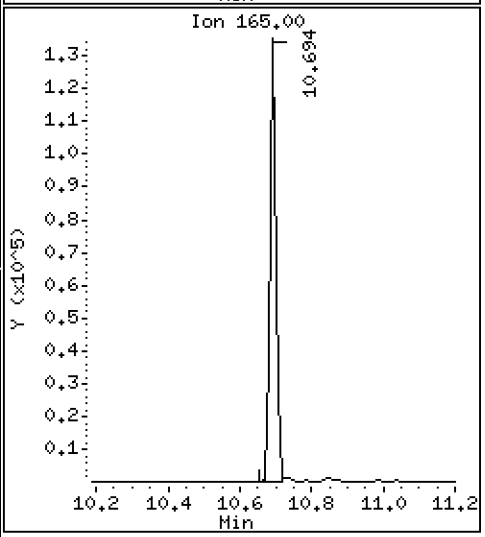
16 Fluorene

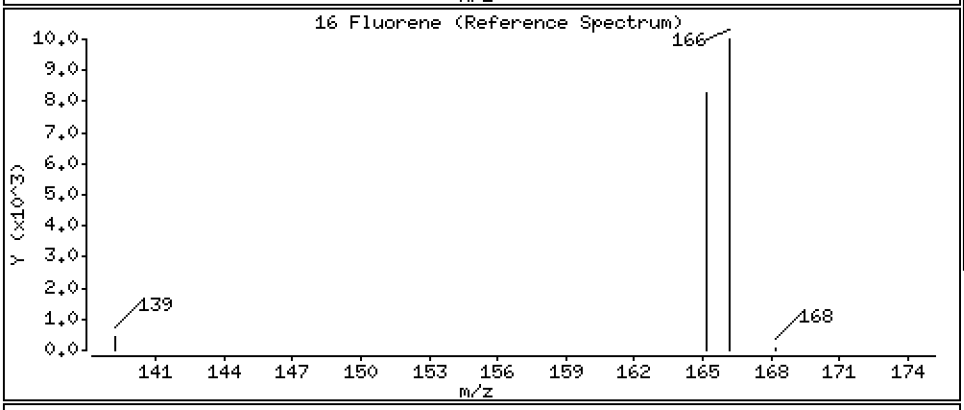
Concentration: 233 ng/mL

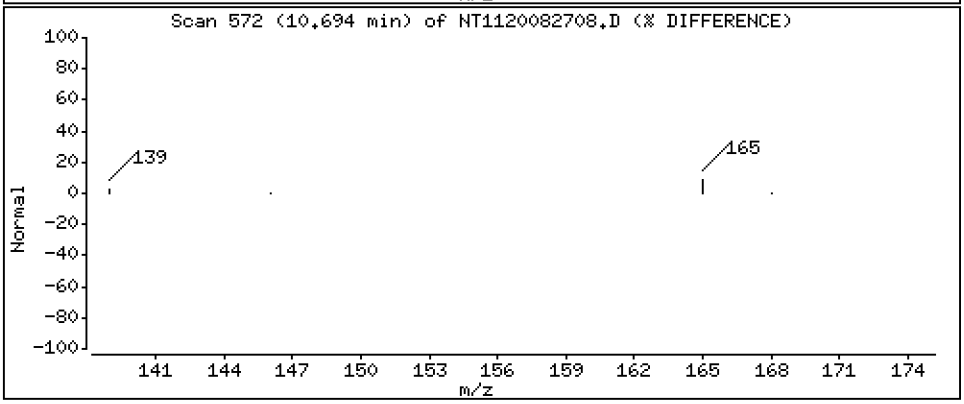












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

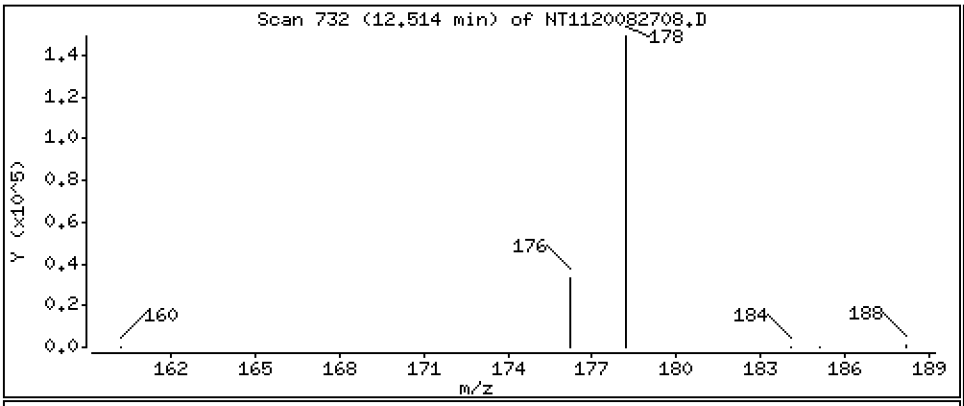
Operator: VTS

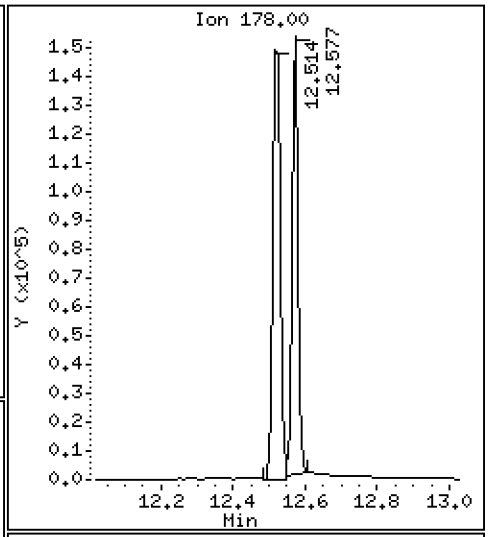
Column phase: Rxi-17Sil MS

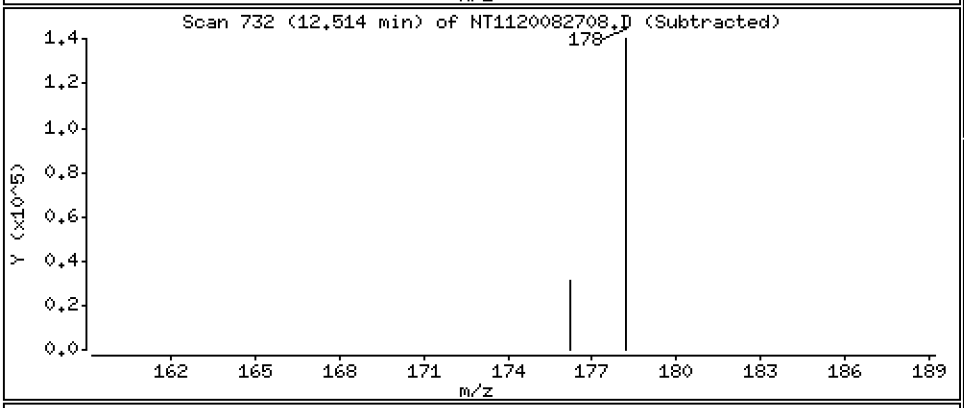
Column diameter: 0.25

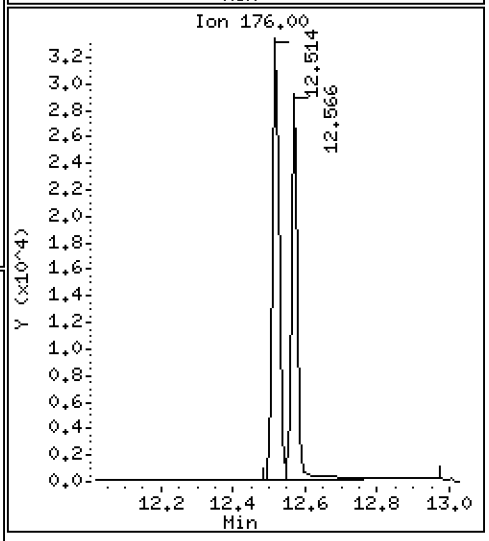
19 Phenanthrene

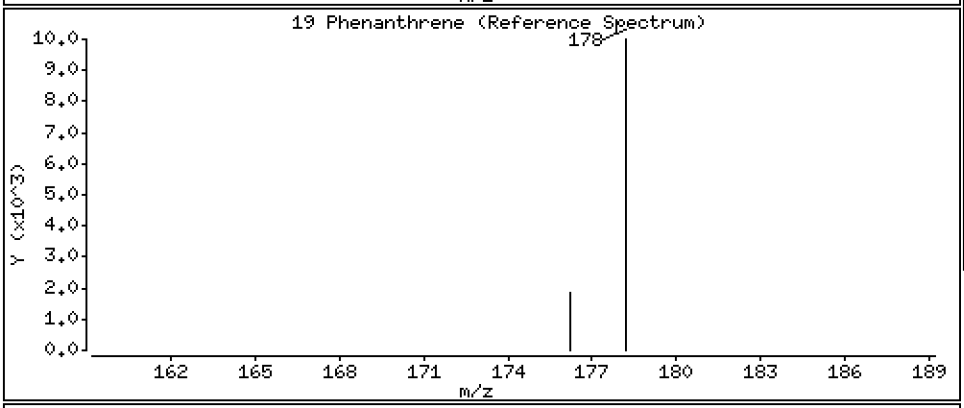
Concentration: 233 ng/mL

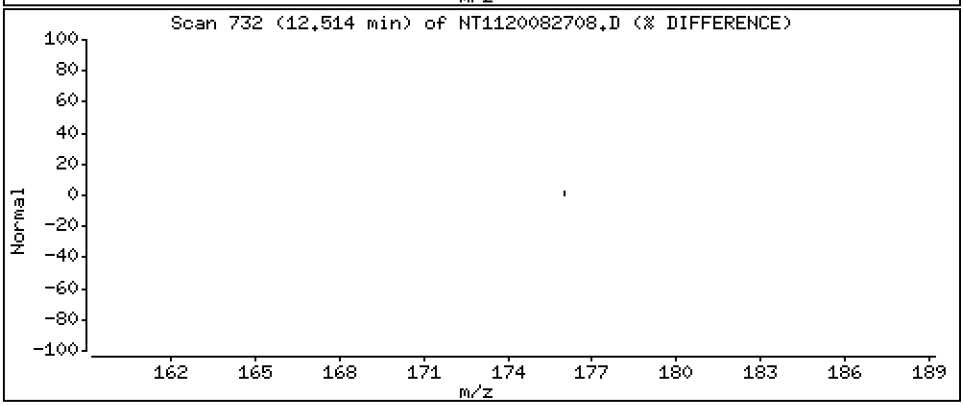












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

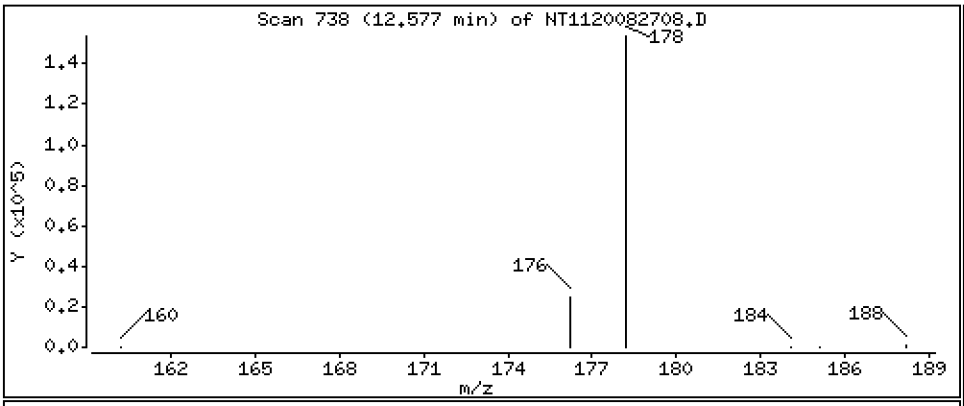
Operator: VTS

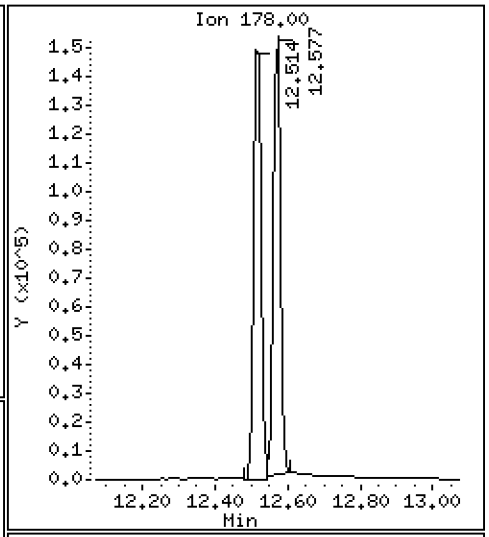
Column phase: Rxi-17Sil MS

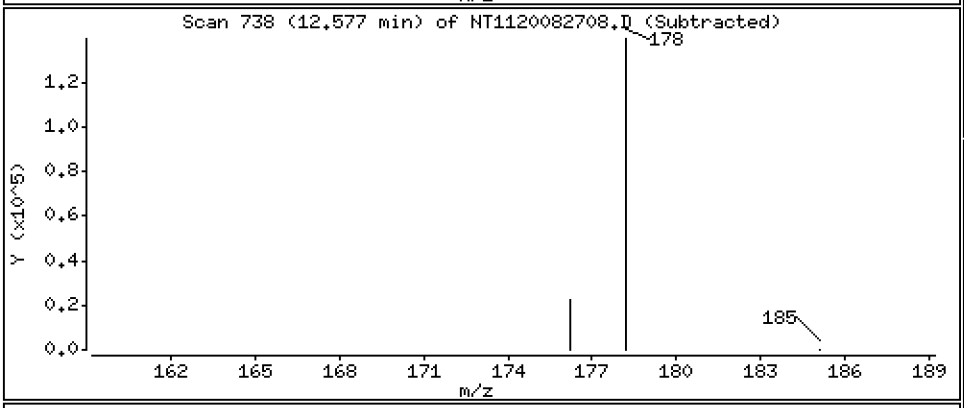
Column diameter: 0.25

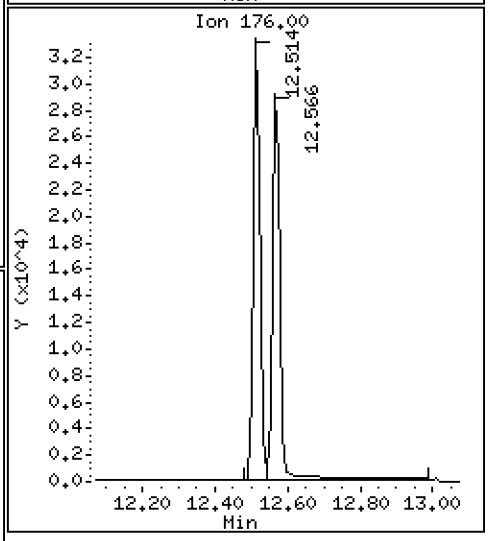
21 Anthracene

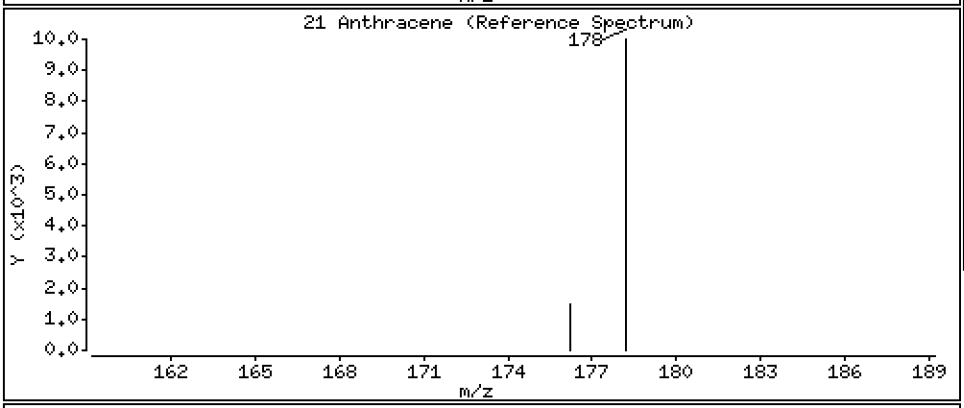
Concentration: 223 ng/mL

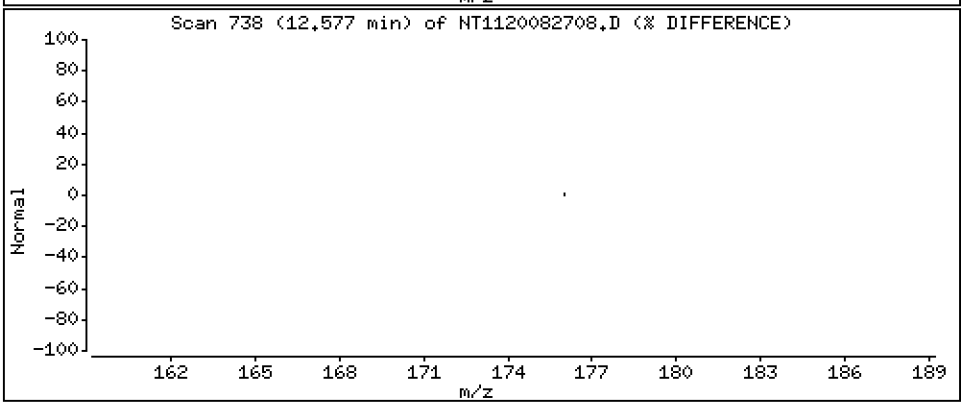












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

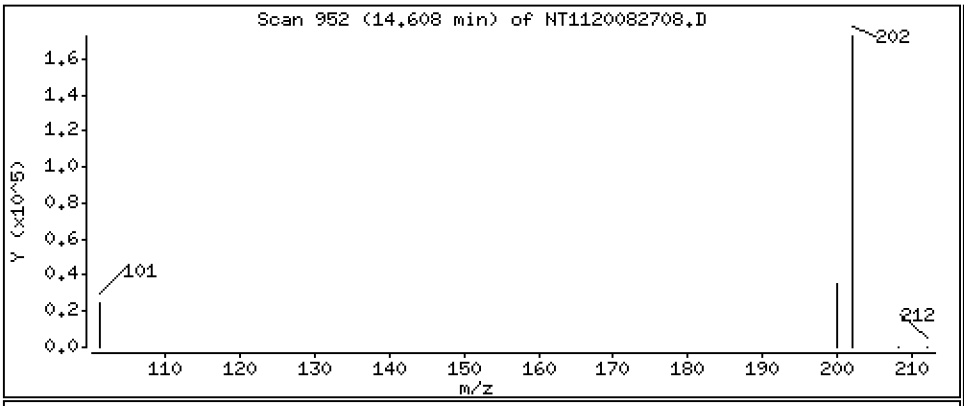
Operator: VTS

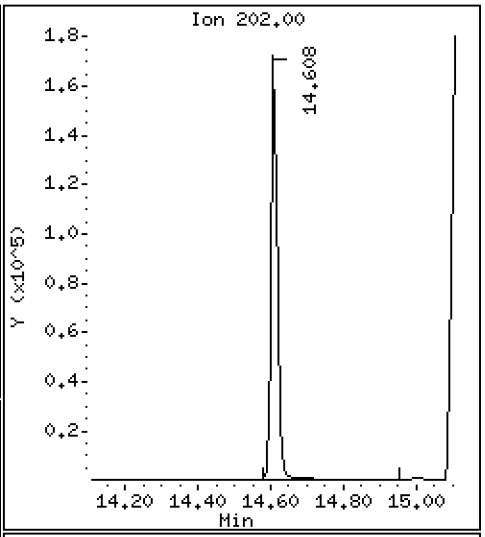
Column phase: Rxi-17Sil MS

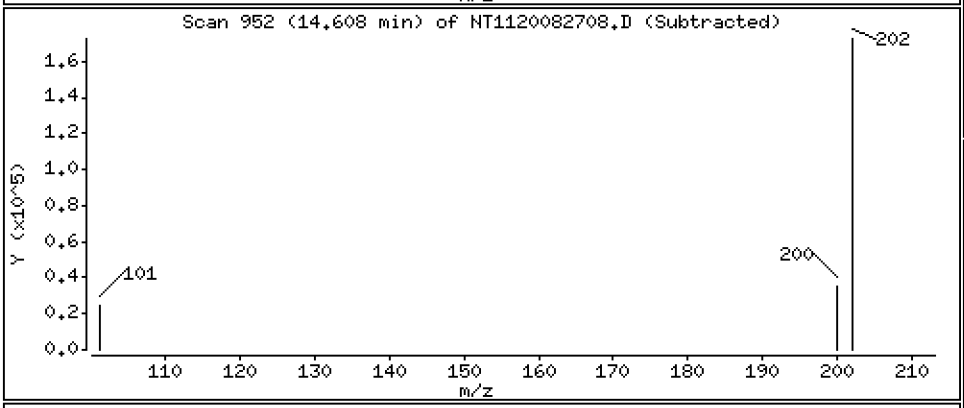
Column diameter: 0.25

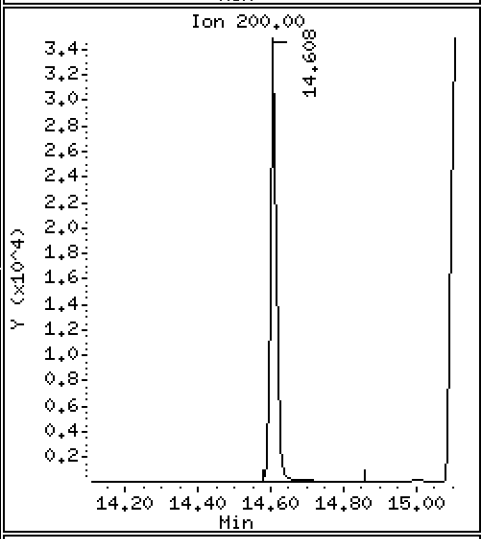
25 Fluoranthene

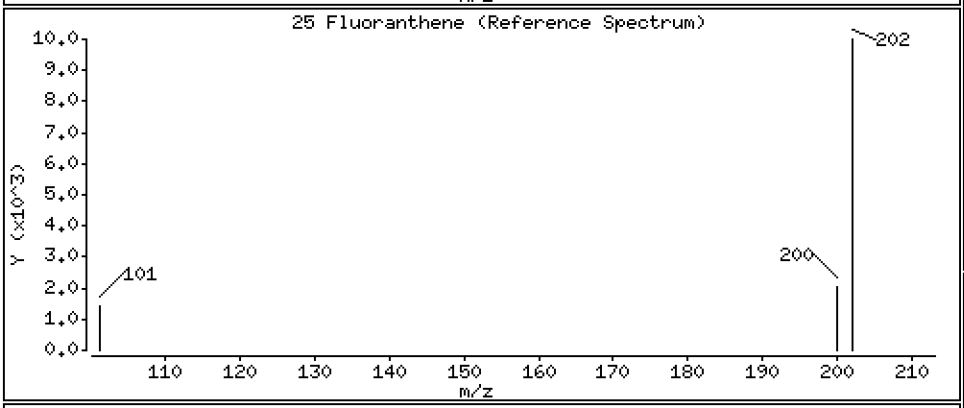
Concentration: 236 ng/mL

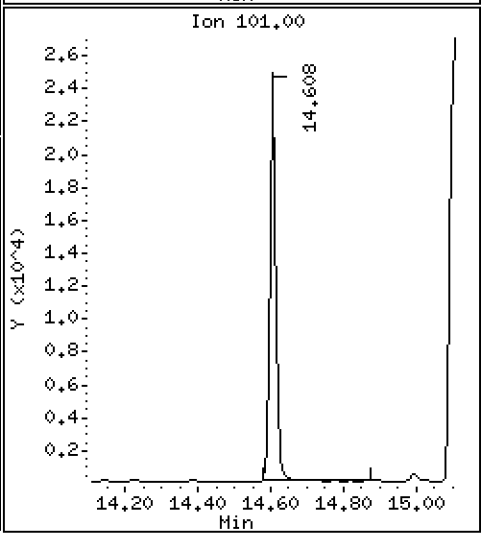


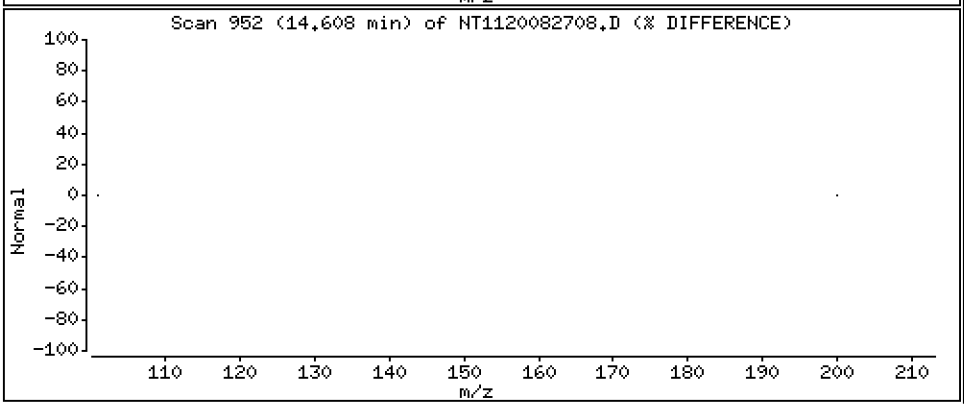












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

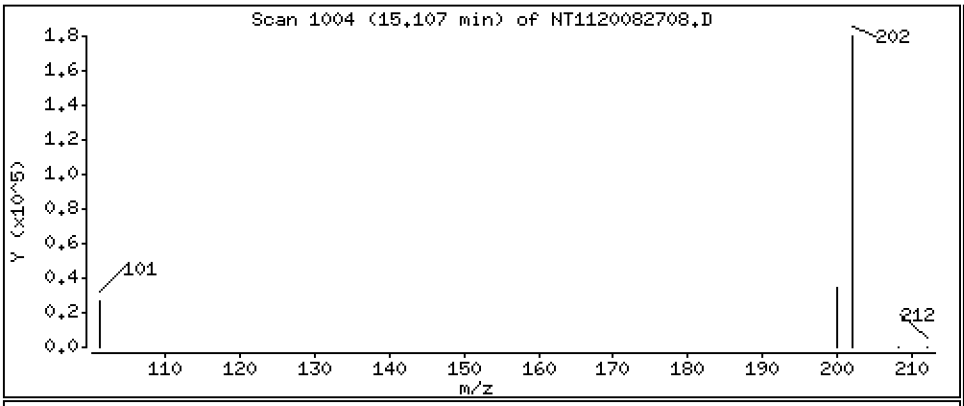
Operator: VTS

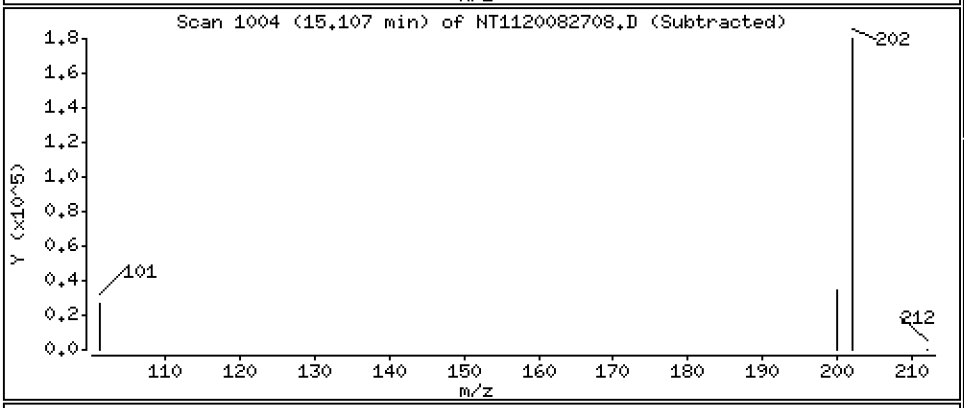
Column phase: Rxi-17Sil MS

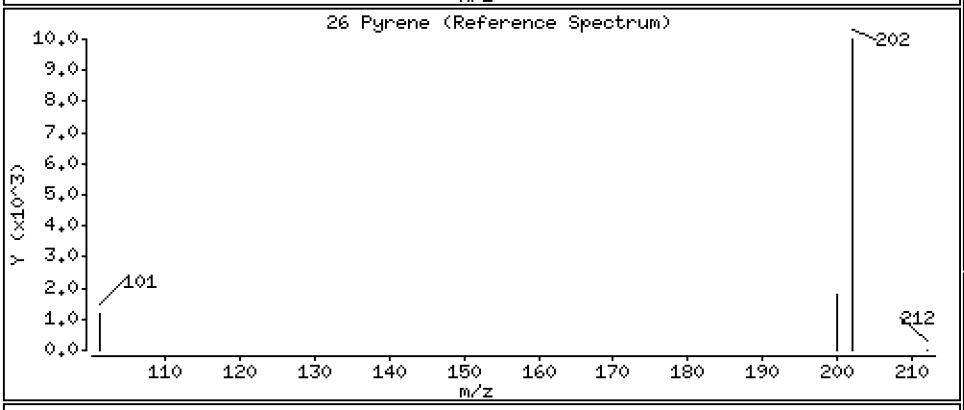
Column diameter: 0.25

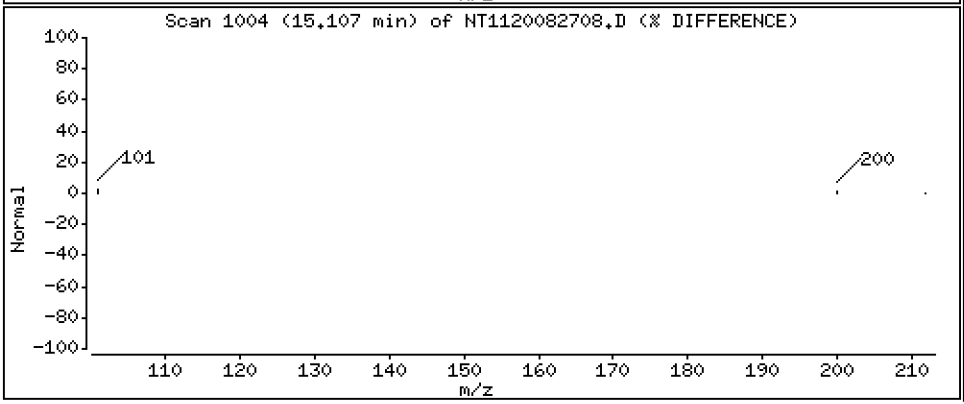
26 Pyrene

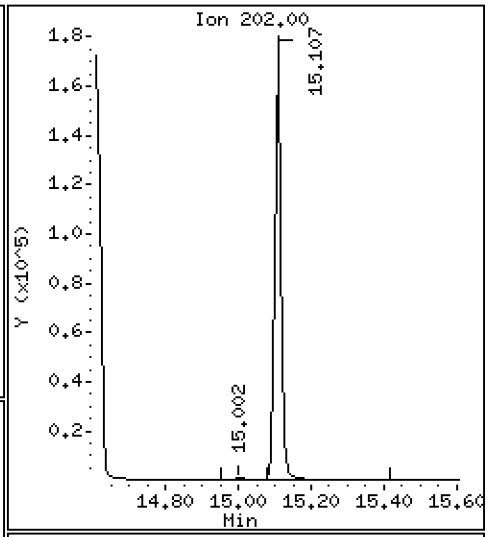
Concentration: 235 ng/mL

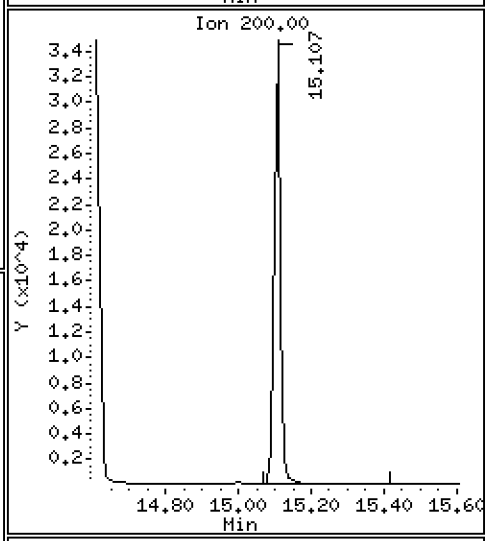


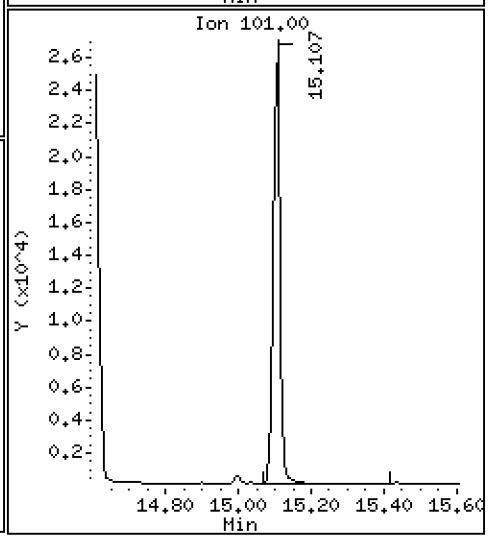












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

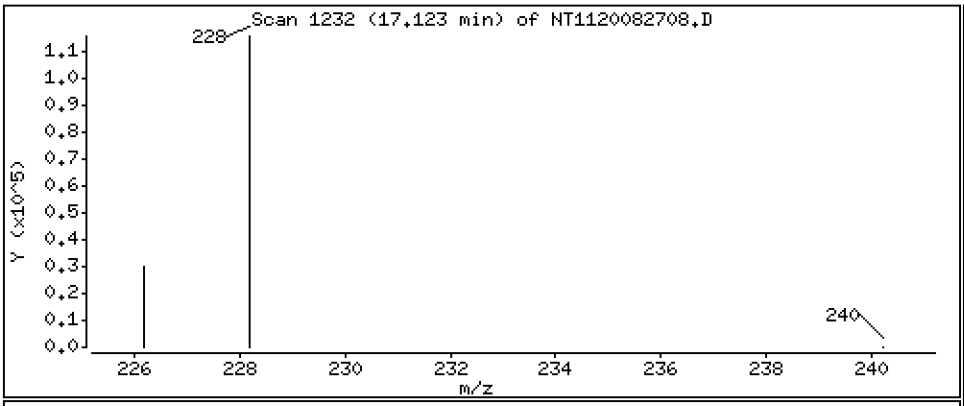
Operator: VTS

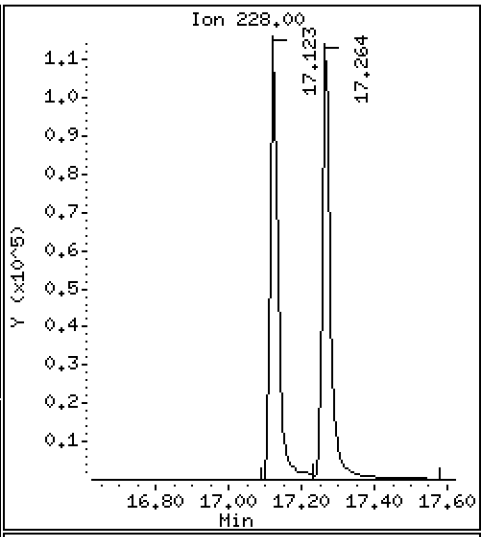
Column phase: Rxi-17Sil MS

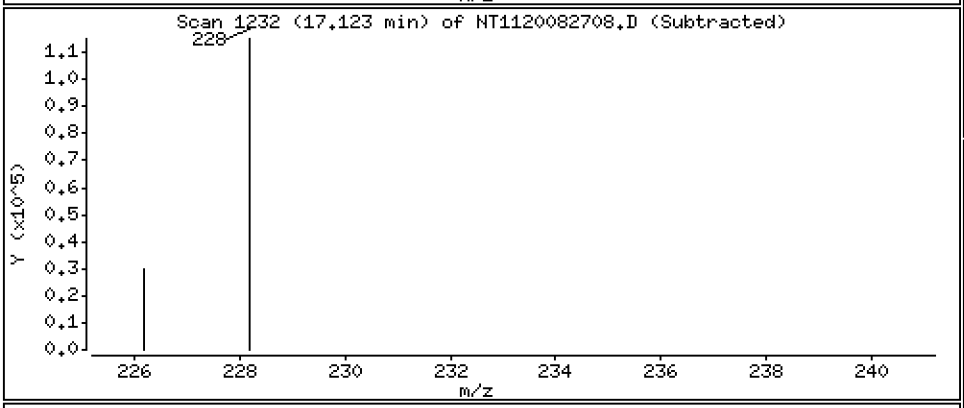
Column diameter: 0.25

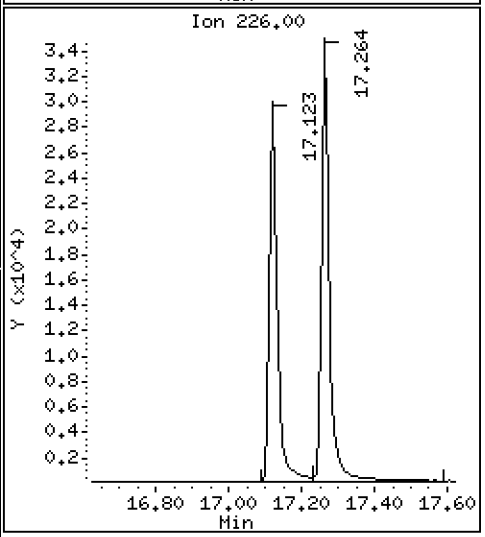
27 Benzo(a)anthracene

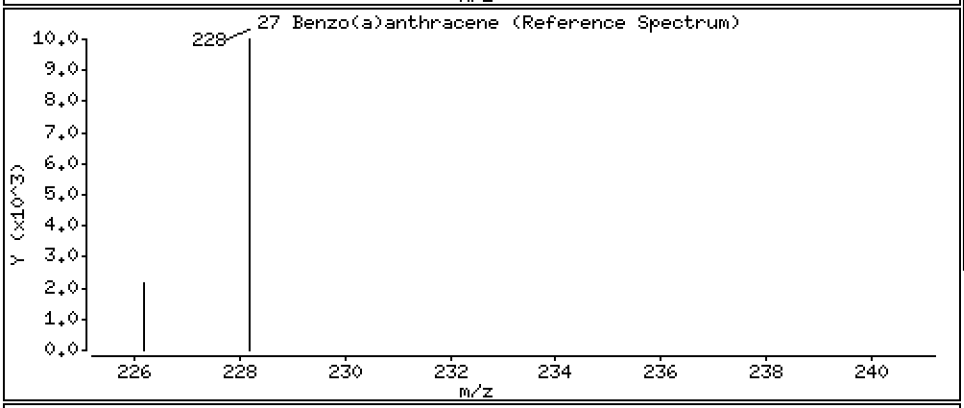
Concentration: 223 ng/mL

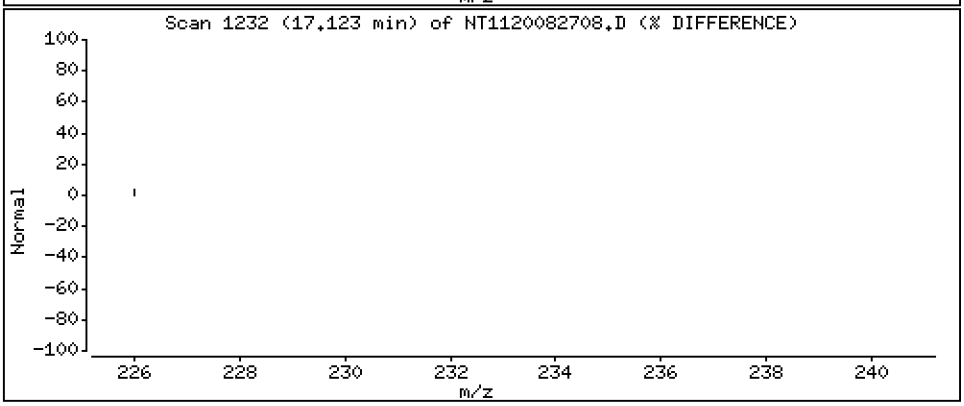












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

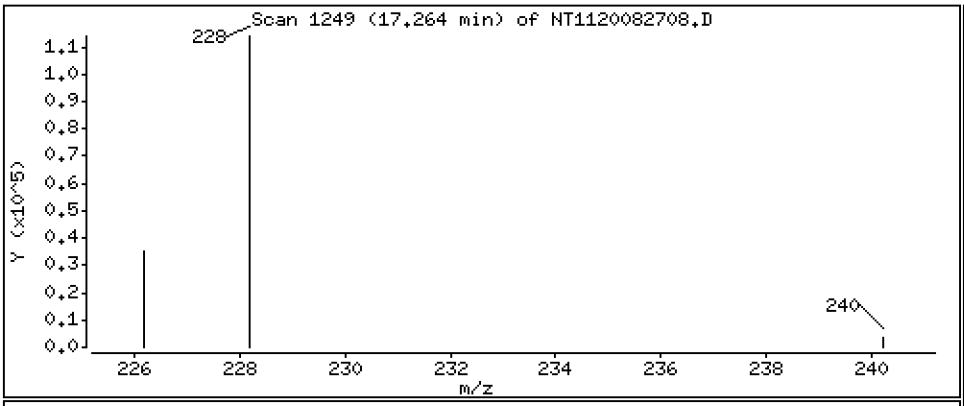
Operator: VTS

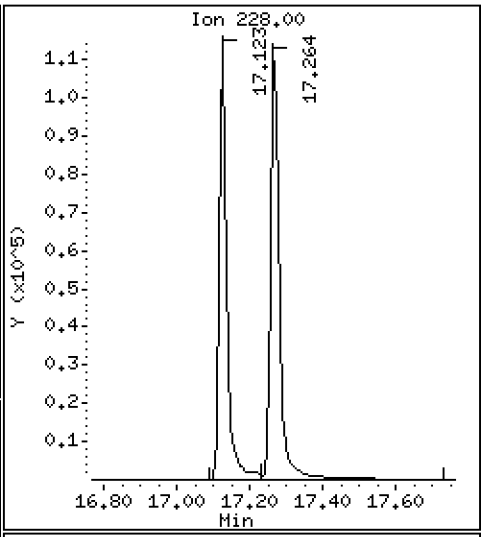
Column phase: Rxi-17Sil MS

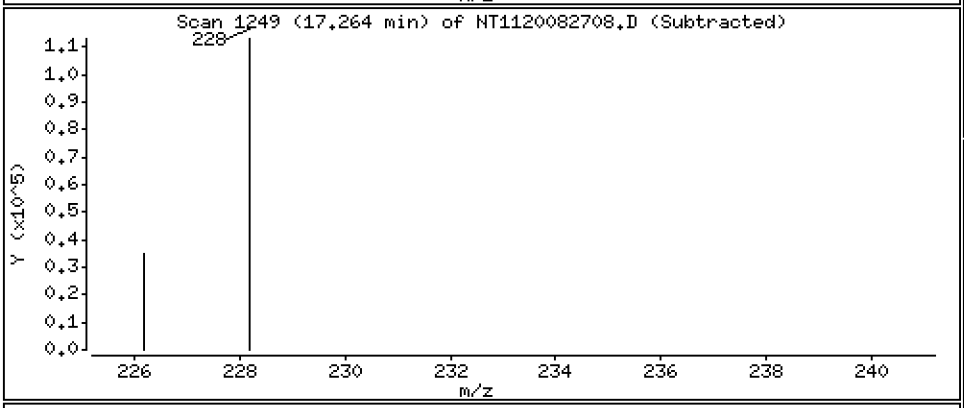
Column diameter: 0.25

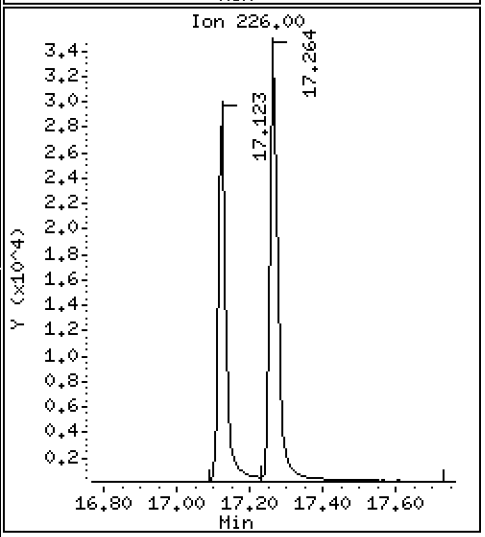
29 Chrysene

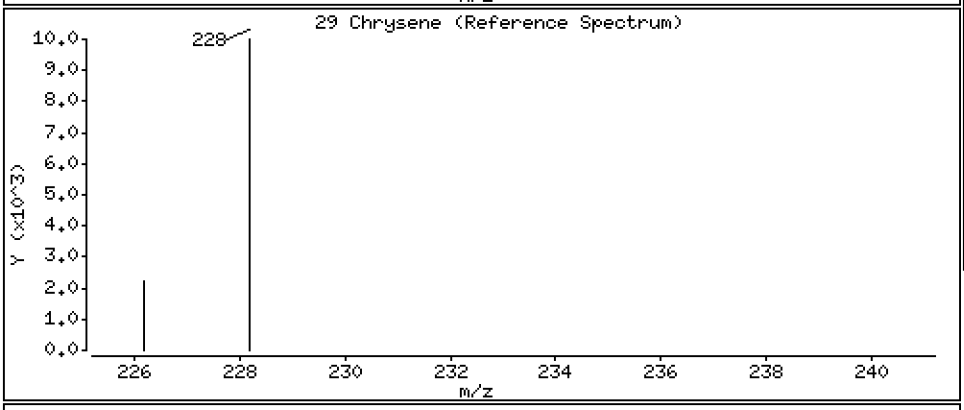
Concentration: 215 ng/mL

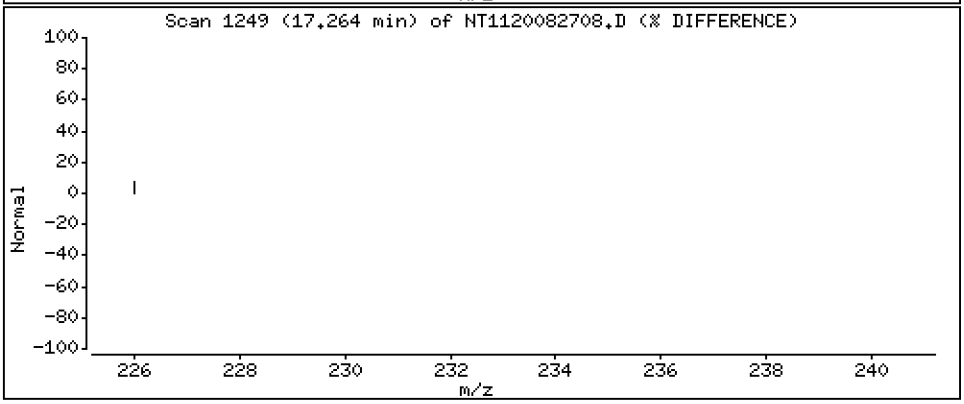












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

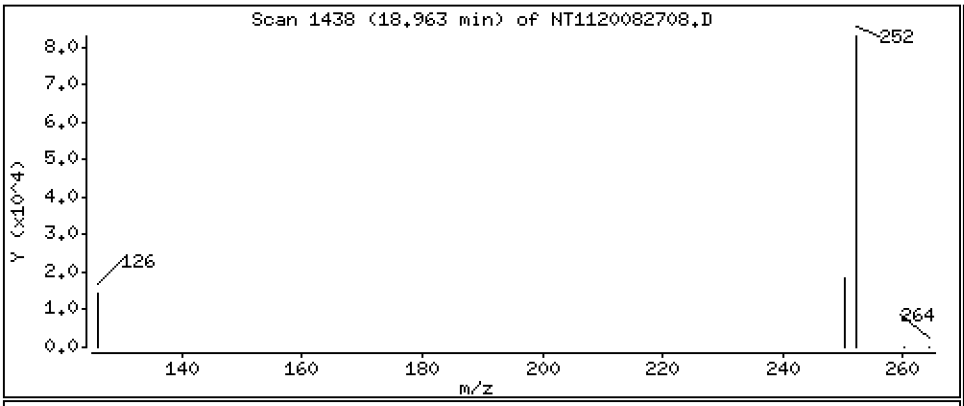
Operator: VTS

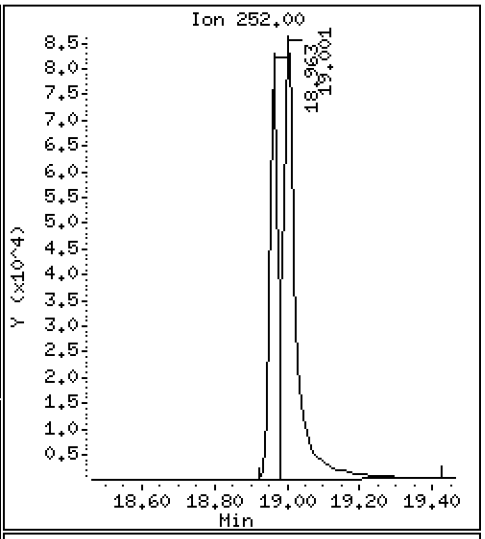
Column phase: Rxi-17Sil MS

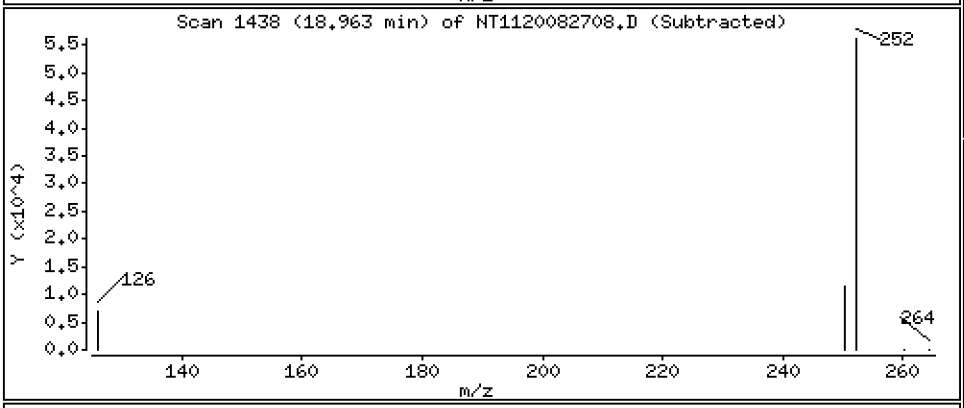
Column diameter: 0.25

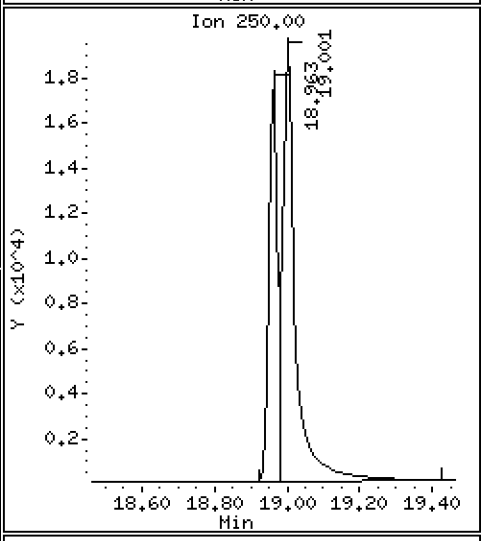
30 Benzo(b)fluoranthene

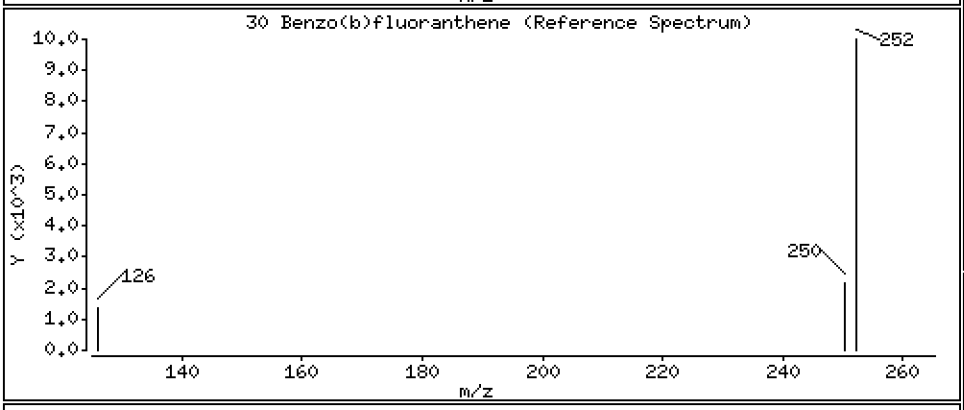
Concentration: 212 ng/mL

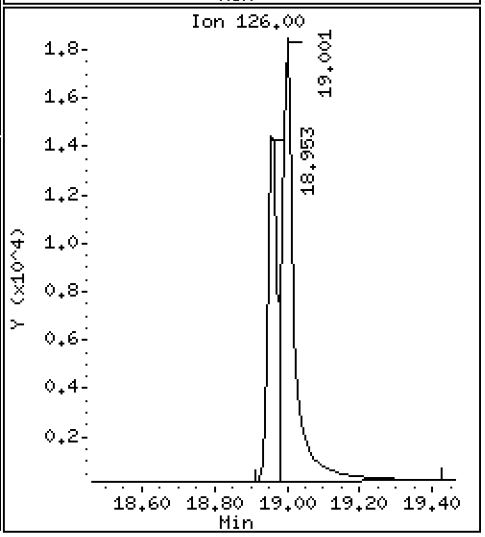


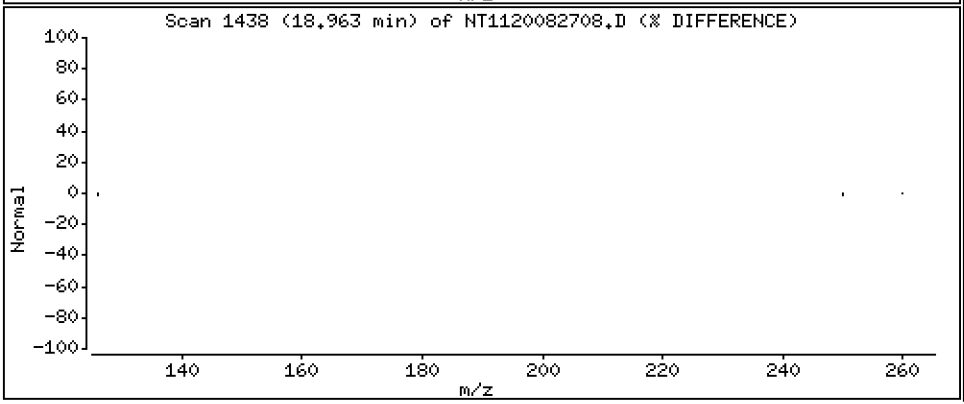












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

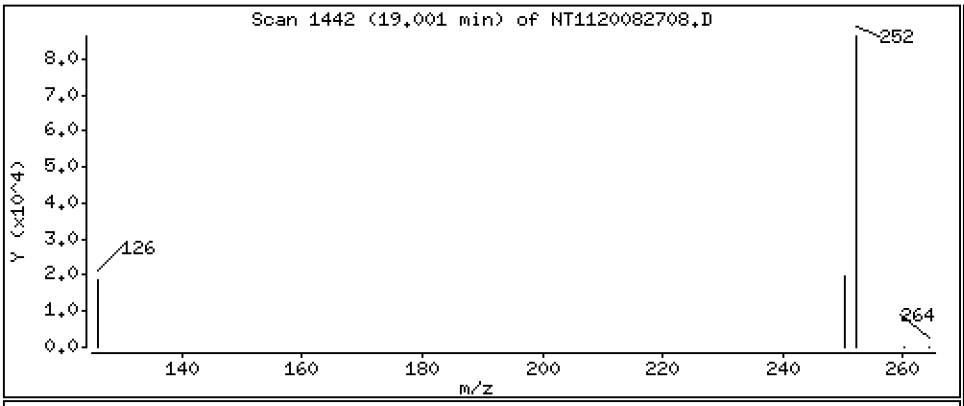
Operator: VTS

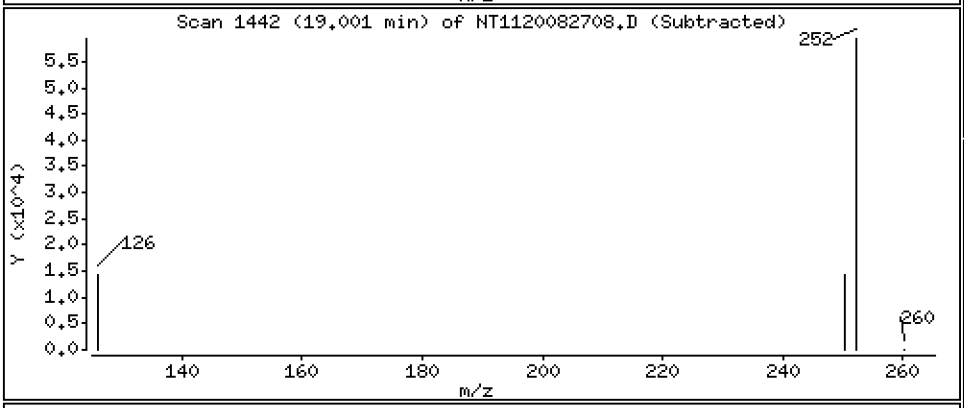
Column phase: Rxi-17Sil MS

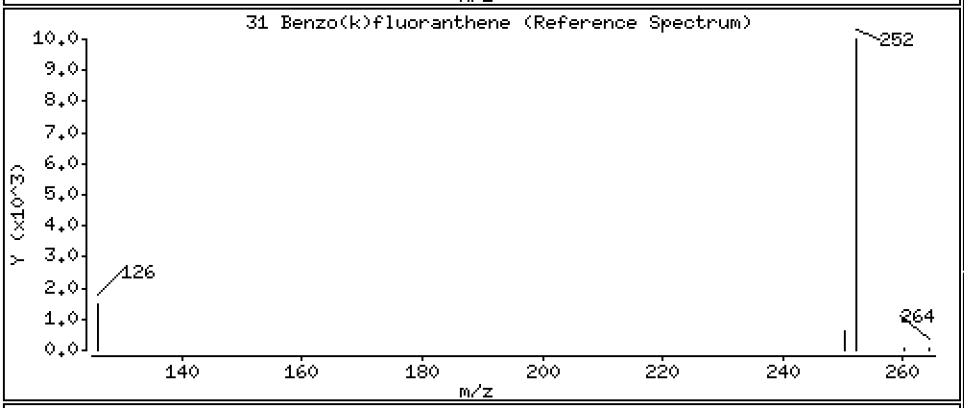
Column diameter: 0.25

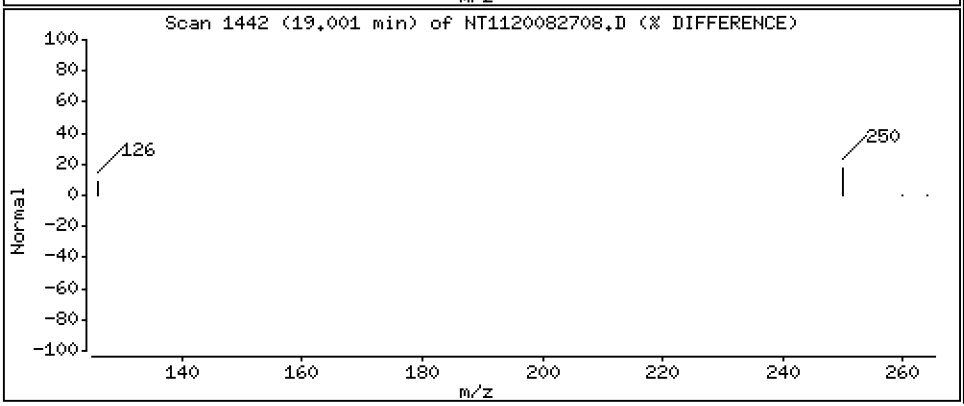
31 Benzo(k)fluoranthene

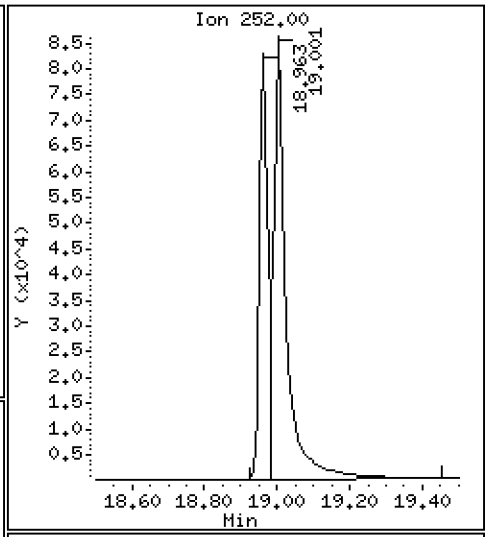
Concentration: 260 ng/mL

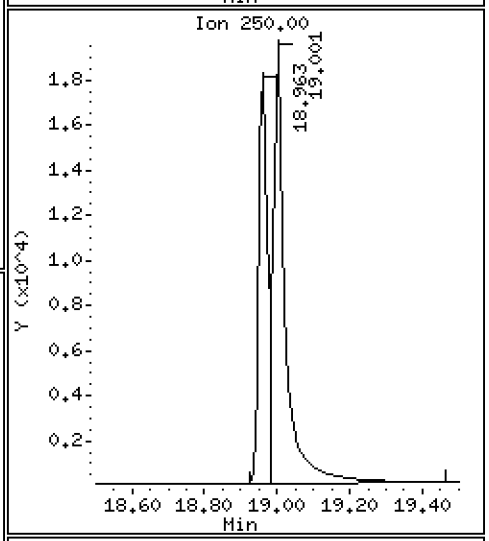


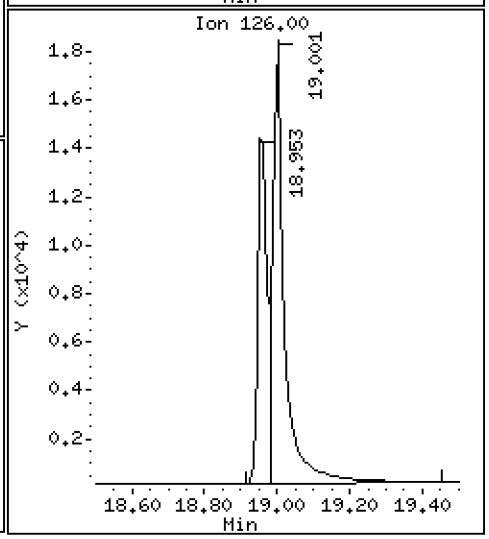












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

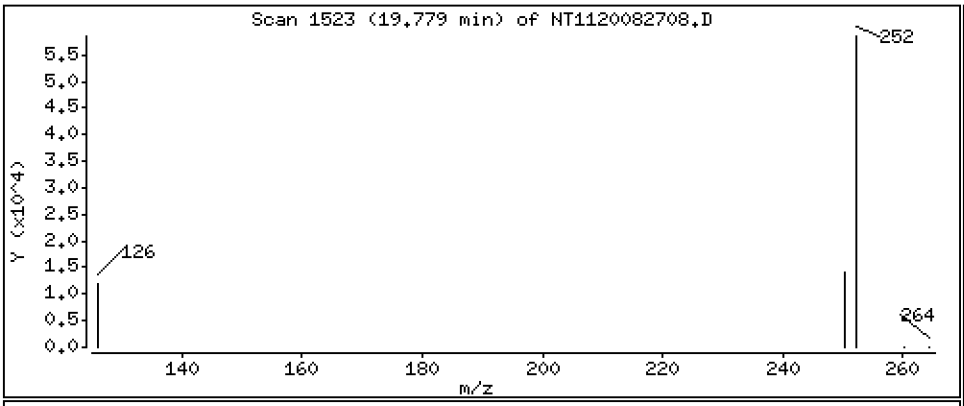
Operator: VTS

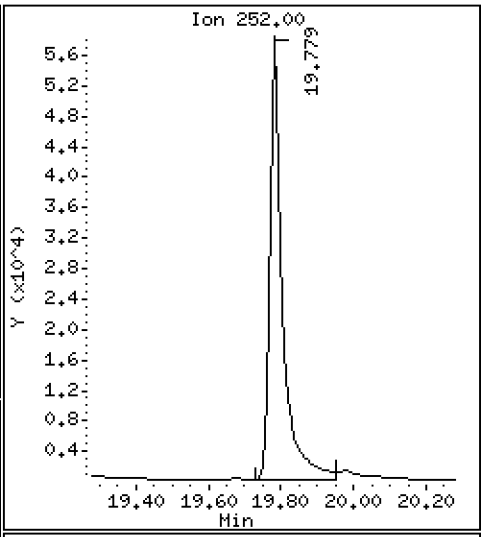
Column phase: Rxi-17Sil MS

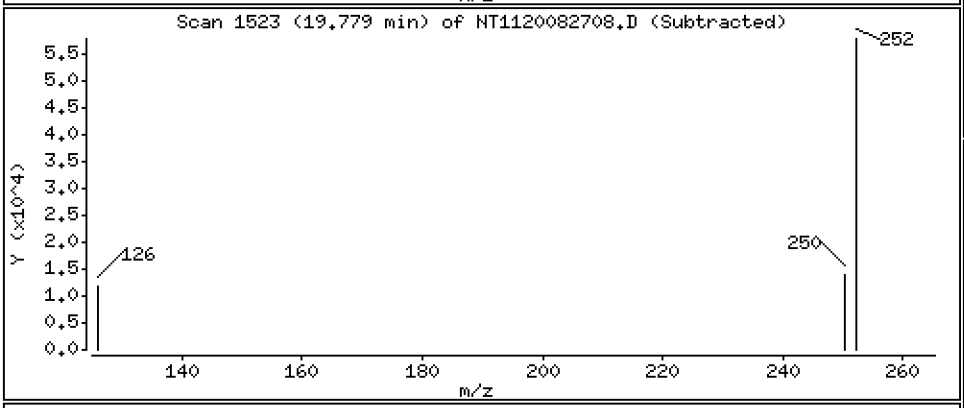
Column diameter: 0.25

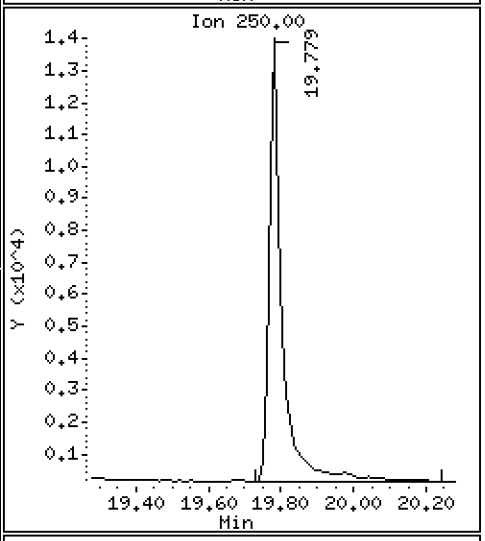
35 Benzo(a)pyrene

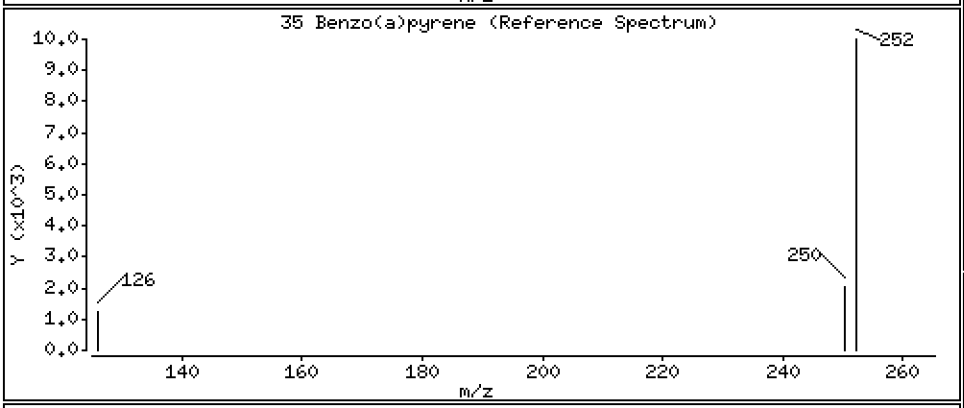
Concentration: 213 ng/mL

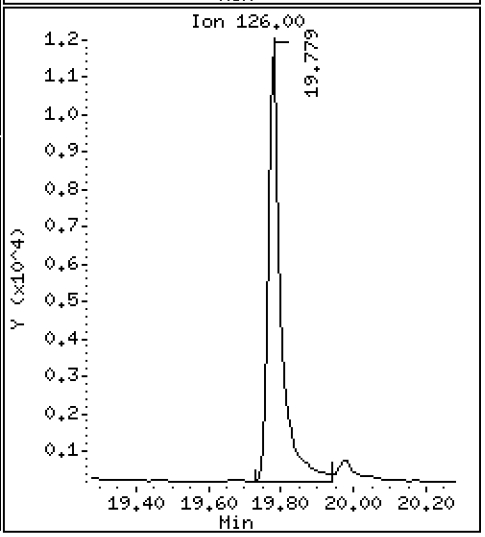


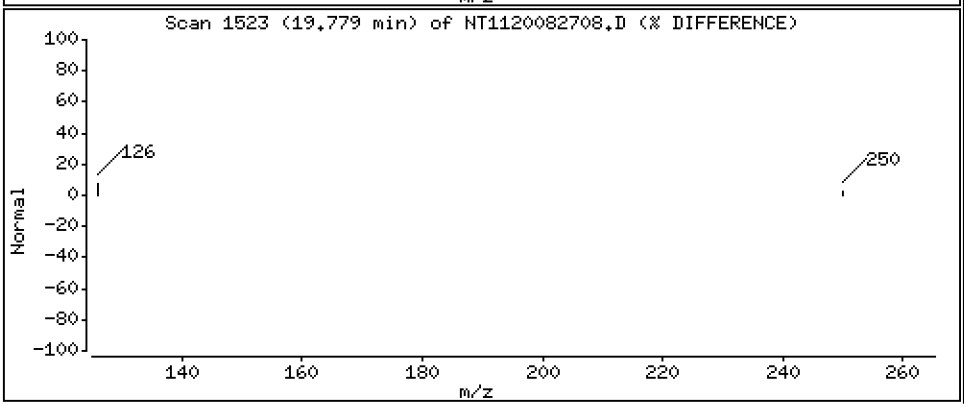












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

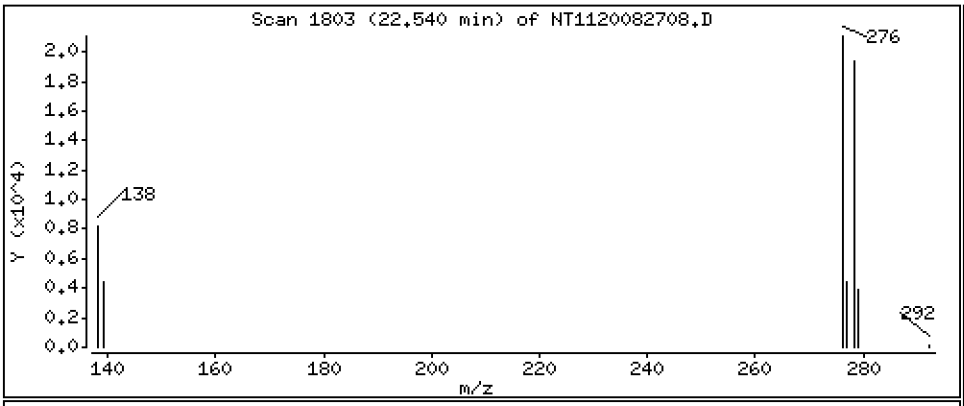
Operator: VTS

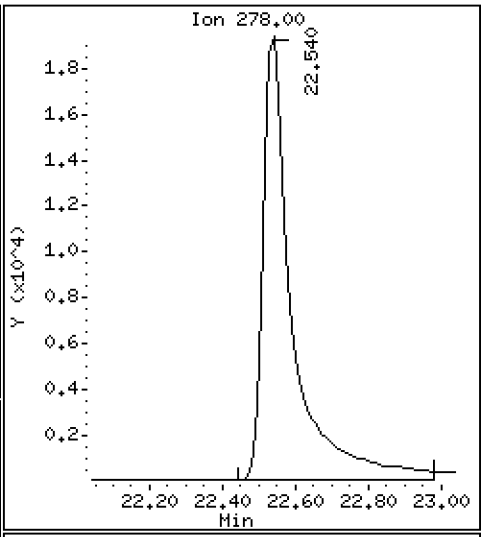
Column phase: Rxi-17Sil MS

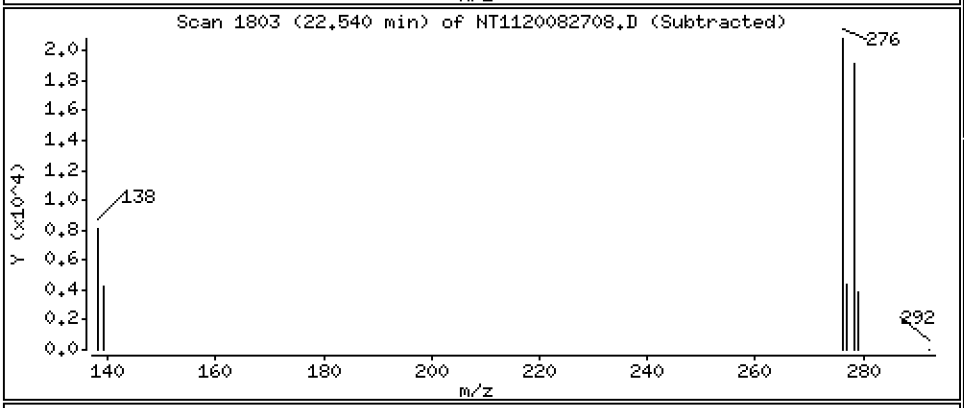
Column diameter: 0.25

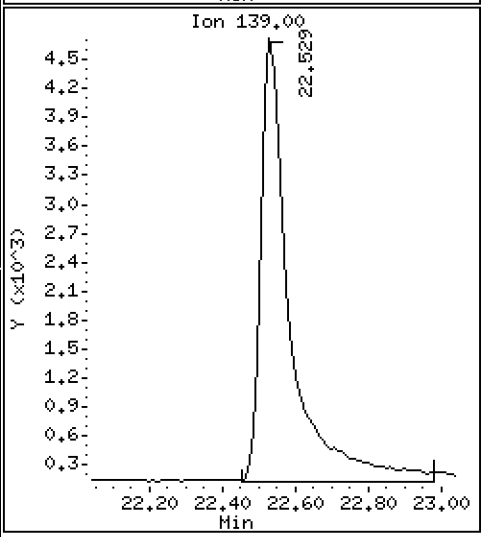
39 Dibenzo(a,h)anthracene

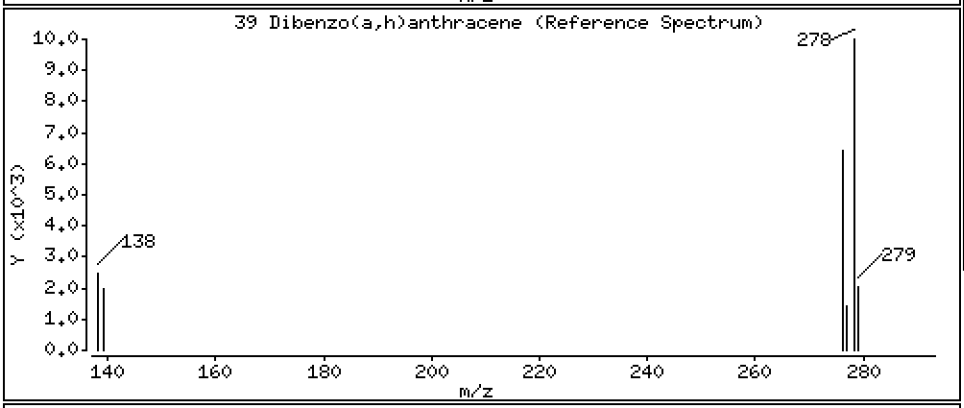
Concentration: 192 ng/mL

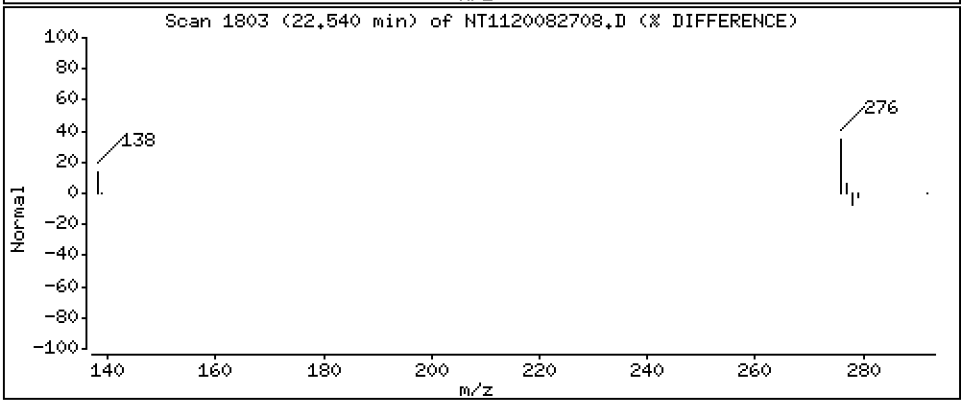












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

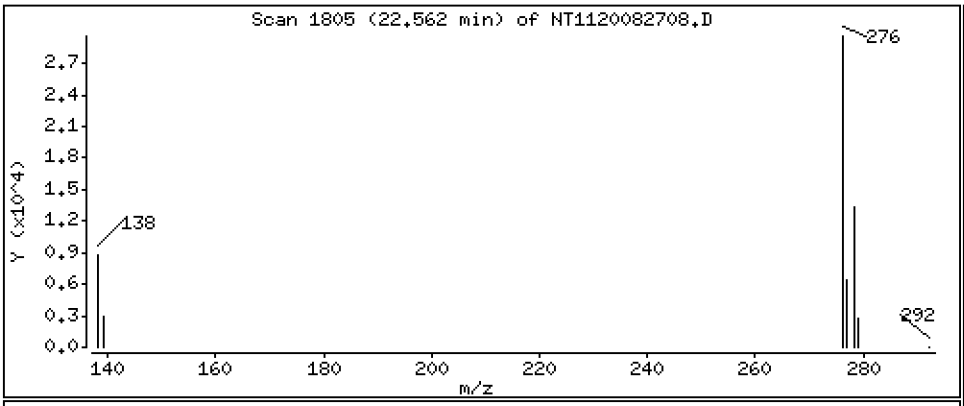
Operator: VTS

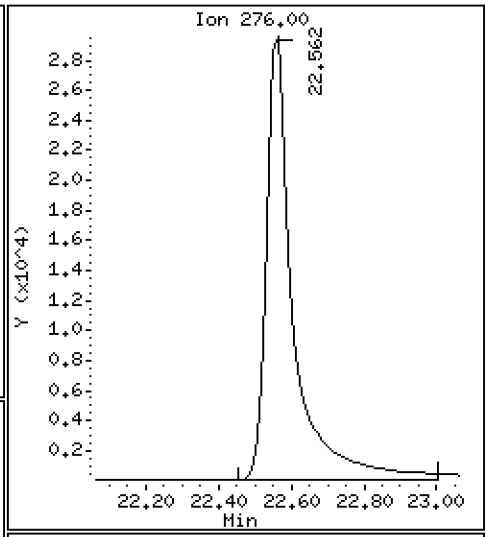
Column phase: Rxi-17Sil MS

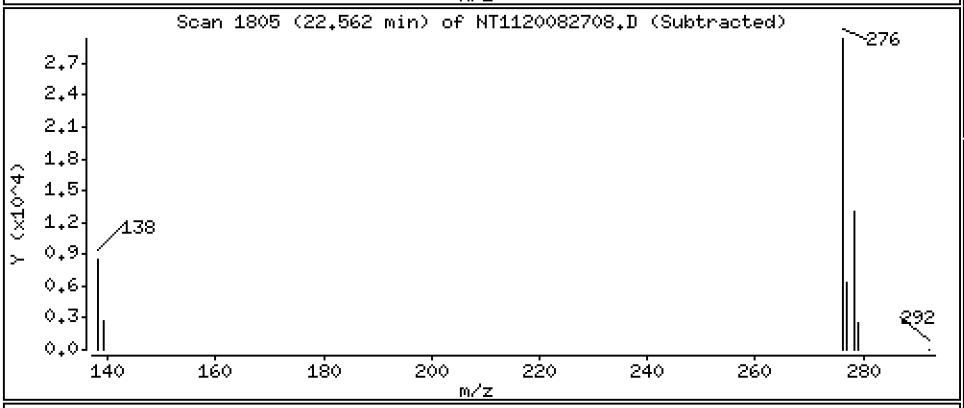
Column diameter: 0.25

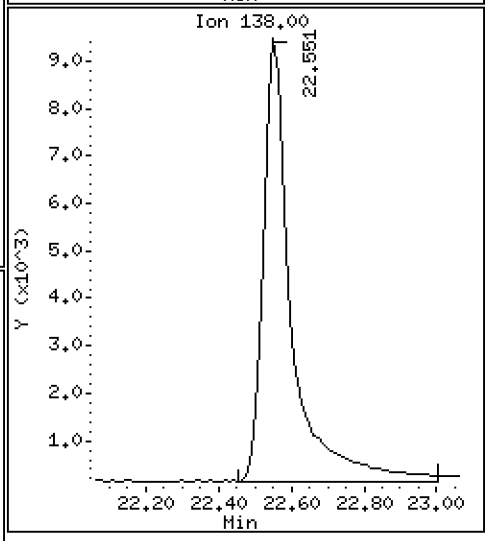
40 Indeno(1,2,3-cd)pyrene

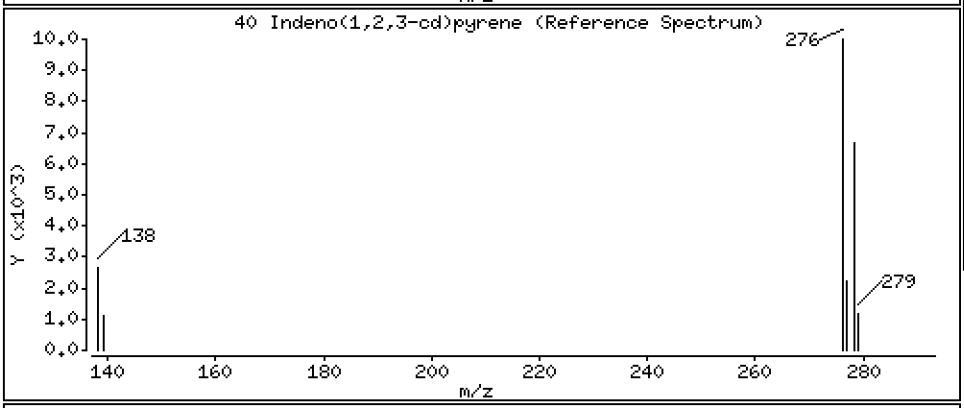
Concentration: 227 ng/mL

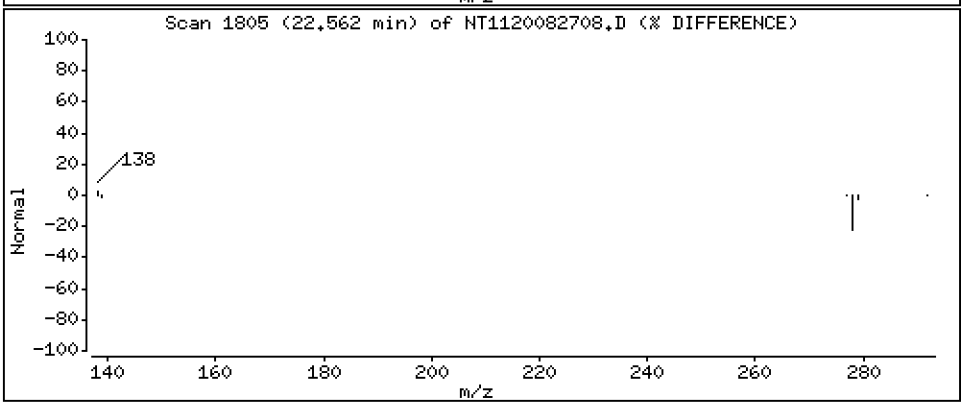












Data File: \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D

Date : 27-AUG-2020 15:38

Client ID:

Instrument: nt11.i

Sample Info: SIH0304-SCV1

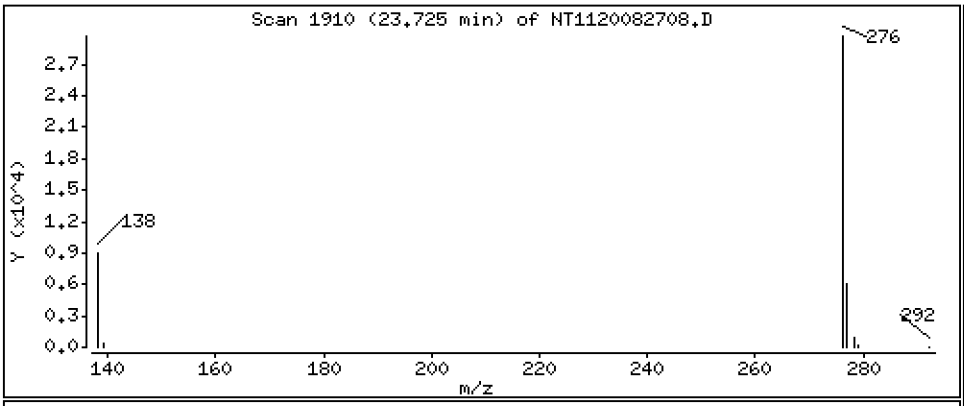
Operator: VTS

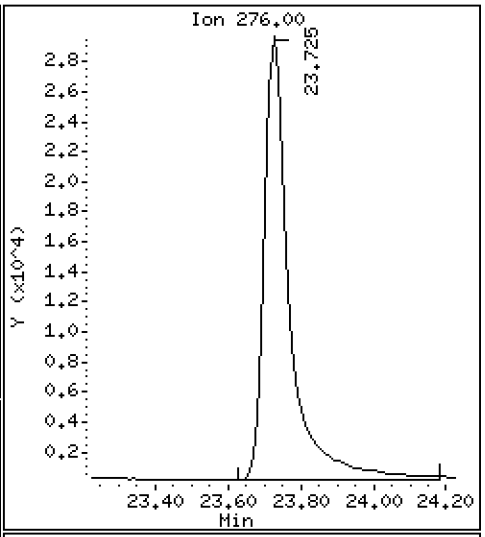
Column phase: Rxi-17Sil MS

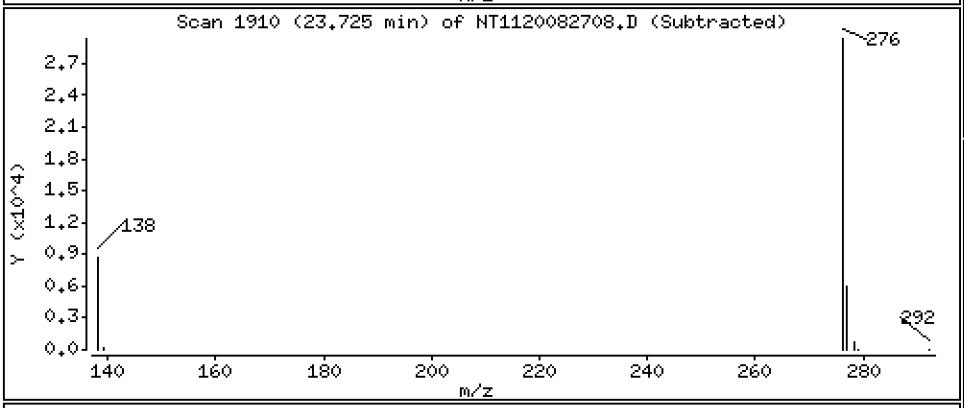
Column diameter: 0.25

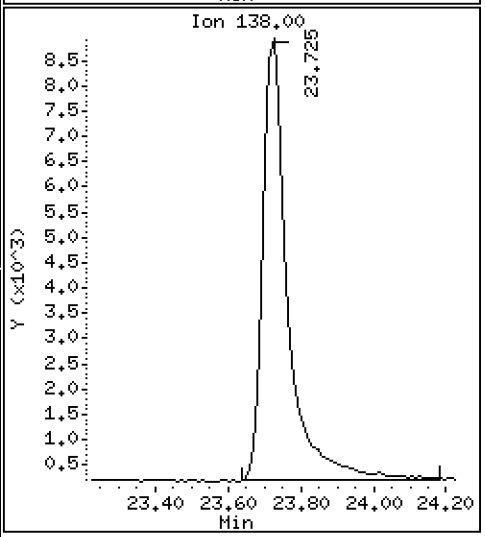
41 Benzo(g,h,i)perylene

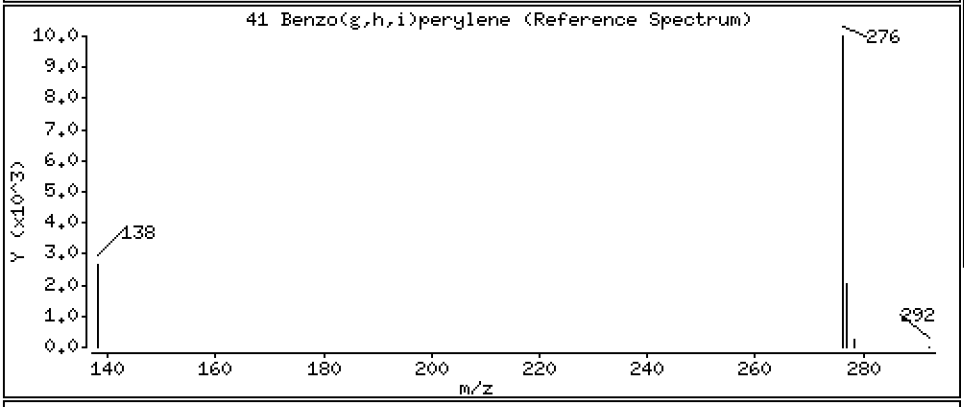
Concentration: 214 ng/mL

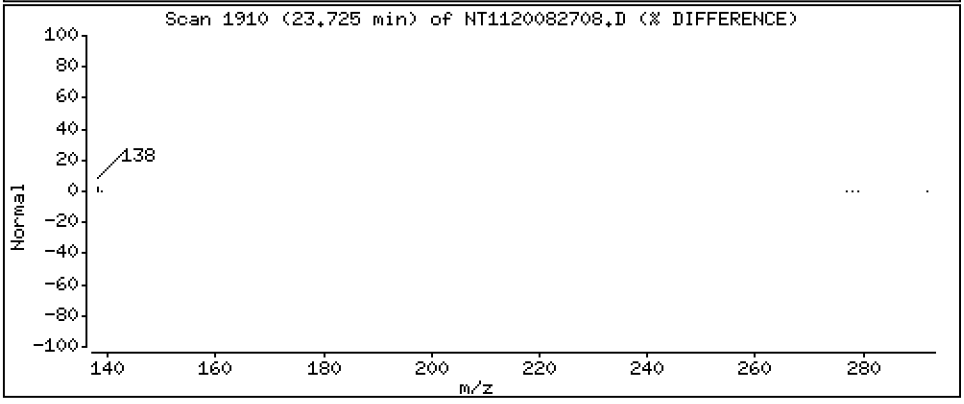












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20200827.b\NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Inj Date : 27-AUG-2020 15:38 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SIH0304-SCV1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Meth Date : 28-Aug-2020 07:11 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.804	6.804	(1.000)	202035	200.000	
	2 Naphthalene	128	6.840	6.840	(1.005)	263329	224.480	224
	3 Benzo(b)thiophene	134	Compound Not Detected.					
$	4 2-Methylnaphthalene-d10	152	Compound Not Detected.					
	5 2-Methylnaphthalene	142	Compound Not Detected.					
	6 1-Methylnaphthalene	142	Compound Not Detected.					
	7 2-Chloronaphthalene	162	Compound Not Detected.					
	8 Biphenyl	154	Compound Not Detected.					
	9 2,6-Dimethylnaphthalene	156	Compound Not Detected.					
	10 Acenaphthylene	152	9.653	9.653	(0.984)	241360	233.261	233
*	11 Acenaphthene-d10	164	9.807	9.807	(1.000)	90189	200.000	
	12 Acenaphthene	153	9.870	9.870	(1.006)	151880	221.934	222
	13 Dibenzofuran	168	Compound Not Detected.					
	14 2,3,5-Trimethylnaphthalene	170	Compound Not Detected.					
	16 Fluorene	166	10.694	10.694	(1.090)	164299	233.486	233
	17 Dibenzothiophene	184	Compound Not Detected.					
*	18 Phenanthrene-d10	188	12.482	12.482	(1.000)	142829	200.000	
	19 Phenanthrene	178	12.513	12.524	(1.003)	217246	232.514	233
	21 Anthracene	178	12.576	12.576	(1.008)	207807	222.597	223
	22 Carbazole	167	Compound Not Detected.					
	23 1-Methylphenanthrene	192	Compound Not Detected.					
$	24 Fluoranthene-d10	212	Compound Not Detected.					
	25 Fluoranthene	202	14.607	14.607	(1.170)	220035	236.211	236
	26 Pyrene	202	15.107	15.107	(1.210)	224689	235.115	235
	27 Benzo(a)anthracene	228	17.123	17.122	(0.994)	170476	223.013	223
*	28 Chrysene-d12	240	17.222	17.214	(1.000)	104063	200.000	
	29 Chrysene	228	17.264	17.264	(1.002)	185336	215.323	215
	30 Benzo(b)fluoranthene	252	18.962	18.962	(0.949)	137886	212.389	212
	31 Benzo(k)fluoranthene	252	19.001	19.001	(0.951)	222044	260.291	260
	32 Benzo(j)fluoranthene	252	Compound Not Detected.					
	34 Benzo(e)pyrene	252	Compound Not Detected.					
	35 Benzo(a)pyrene	252	19.779	19.779	(0.990)	144487	213.091	213
*	36 Perylene-d12	264	19.981	19.981	(1.000)	119273	200.000	
	37 Perylene	252	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
$ 38 Dibenzo(a,h)anthracene-d14	292	Compound Not Detected.					
39 Dibenzo(a,h)anthracene	278	22.540	22.540	(1.128)	107076	191.902	192
40 Indeno(1,2,3-cd)pyrene	276	22.562	22.562	(1.129)	149356	226.827	227
41 Benzo(g,h,i)perylene	276	23.725	23.725	(1.187)	141191	214.457	214

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1120082708.D
Lab Smp Id: SIH0304-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20200827.b\lowsim.m
Misc Info:

Calibration Date: 27-AUG-2020
Calibration Time: 12:35
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	215332	107666	430664	202035	-6.18
11 Acenaphthene-d10	102217	51109	204434	90189	-11.77
18 Phenanthrene-d10	170387	85194	340774	142829	-16.17
28 Chrysene-d12	116138	58069	232276	104063	-10.40
36 Perylene-d12	139038	69519	278076	119273	-14.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.81	6.31	7.31	6.80	-0.13
11 Acenaphthene-d10	9.81	9.31	10.31	9.81	-0.00
18 Phenanthrene-d10	12.48	11.98	12.98	12.48	-0.00
28 Chrysene-d12	17.21	16.71	17.71	17.22	0.05
36 Perylene-d12	19.98	19.48	20.48	19.98	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1120082708.D

Lab ID: SIH0304-SCV1
nt11.i, 20200827.b\lowsim.m,   27-AUG-2020 15:38

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

** FIRST SURROGATE NOT FOUND. ICAL Check not performed **

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1120082704.D

On Column LOD for nt11.i, 20200827.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

CONTINUING CALIBRATION CHECK
EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Instrument ID:	NT11	Calibration:	DH00073
Lab File ID:	NT1121041623.D	Calibration Date:	08/27/2020
Sequence:	SJD0232	Injection Date:	04/16/21
Lab Sample ID:	SJD0232-CCV1	Injection Time:	21:46
Sequence Name:	Calibration Check		

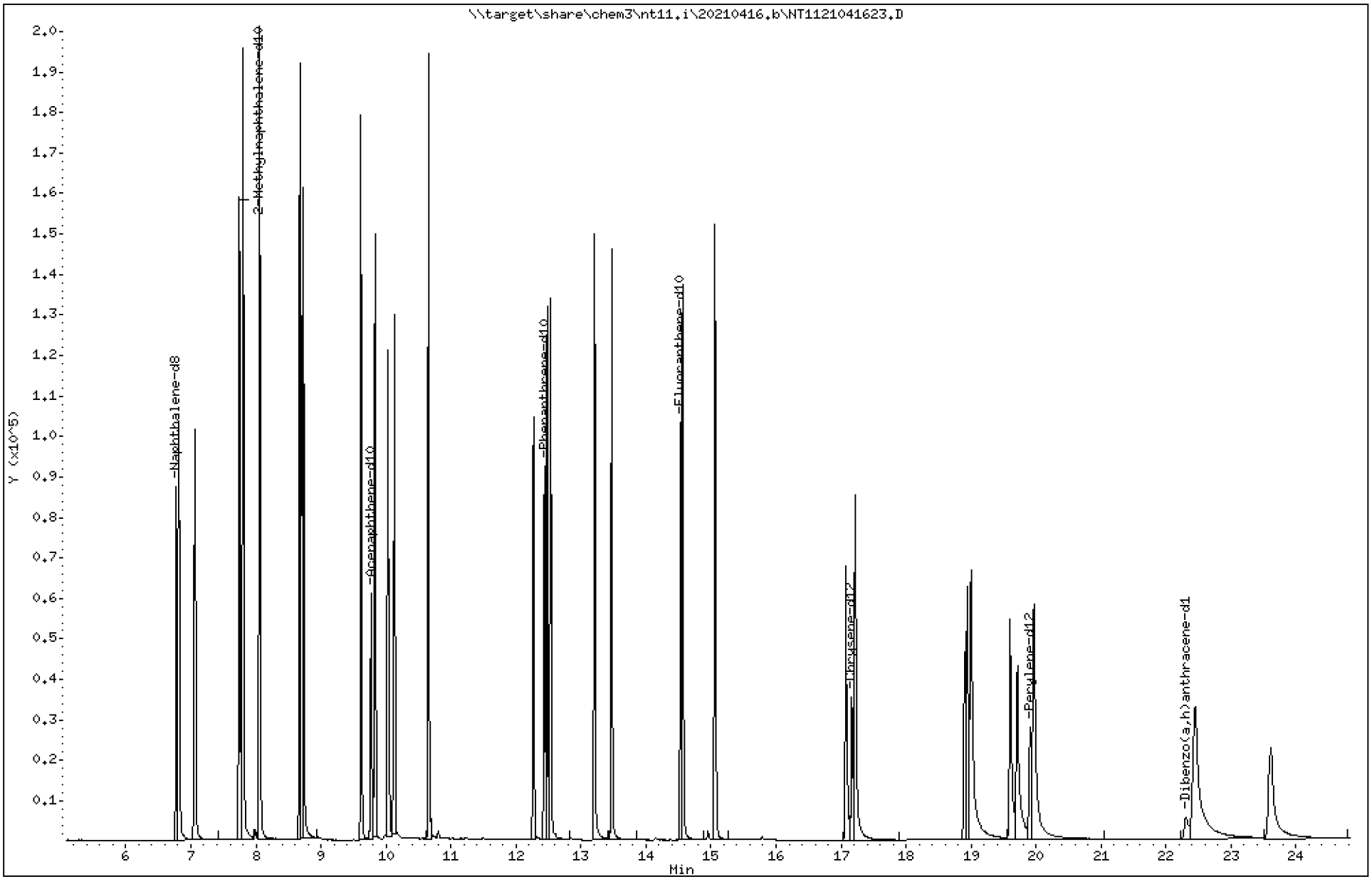
		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Naphthalene	A	250.00	222	1.1612470	1.0304870		-11.3	+/-50
2-Methylnaphthalene	A	250.00	229	0.9361384	0.8591929		-8.2	+/-50
1-Methylnaphthalene	A	250.00	239	0.8702122	0.8334292		-4.2	+/-50
2-Chloronaphthalene	A	250.00	208	1.7417600	1.4493410		-16.8	+/-50
Acenaphthylene	A	250.00	201	2.2945630	1.8445610		-19.6	+/-50
Acenaphthene	A	250.00	205	1.5175830	1.2431000		-18.1	+/-50
Dibenzofuran	A	250.00	198	2.0257800	1.6054970		-20.7	+/-50
Fluorene	A	250.00	207	1.5604500	1.2907670		-17.3	+/-50
Phenanthrene	A	250.00	227	1.3083250	1.1870510		-9.3	+/-50
Anthracene	A	250.00	232	1.3072390	1.2125810		-7.2	+/-50
Carbazole	A	250.00	226	1.3929680	1.2597140		-9.6	+/-50
Fluoranthene	A	250.00	223	1.3043810	1.1658090		-10.6	+/-50
Pyrene	A	250.00	222	1.3381820	1.1857930		-11.4	+/-50
Benzo(a)anthracene	A	250.00	201	1.4691530	1.1834980		-19.4	+/-50
Chrysene	A	250.00	221	1.6542610	1.4619740		-11.6	+/-50
Benzo(b)fluoranthene	A	250.00	146	1.0886210	0.6373717		-41.5	+/-50
Benzo(k)fluoranthene	A	250.00	220	1.4304320	1.2593790		-12.0	+/-50
Benzo(j)fluoranthene	A	250.00	282	1.5458300	1.7465980		13.0	+/-50
Benzofluoranthenes, Total	A	750.00	649	1.3549610	1.2144500		-13.5	+/-50
Benzo(a)pyrene	A	250.00	229	1.1369780	1.0430460		-8.3	+/-50
Perylene	A	250.00	234	1.2953700	1.2124380		-6.4	+/-50
Indeno(1,2,3-cd)pyrene	A	250.00	207	1.1041170	0.9138409		-17.2	+/-50
Dibenzo(a,h)anthracene	A	250.00	190	0.8775199	0.7117553		-23.9	+/-50
Benzo(g,h,i)perylene	A	250.00	216	1.1039640	0.9551986		-13.5	+/-50
2-Methylnaphthalene-d10	A	250.00	230	0.8041846	0.7409948		-7.9	+/-50
Dibenzo[a,h]anthracene-d14	A	250.00	178	0.7035414	0.5537867		-28.9	+/-50
Fluoranthene-d10	A	250.00	210	1.0485620	0.8818611		-15.9	+/-50

* Values outside of QC limits

Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D
Date : 16-APR-2021 21:46
Client ID:
Sample Info: SJD0232-CCV1

Instrument: nt11.i
Operator: VTS
Column diameter: 0.25

Column phase: Rxi-17Sil MS



Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

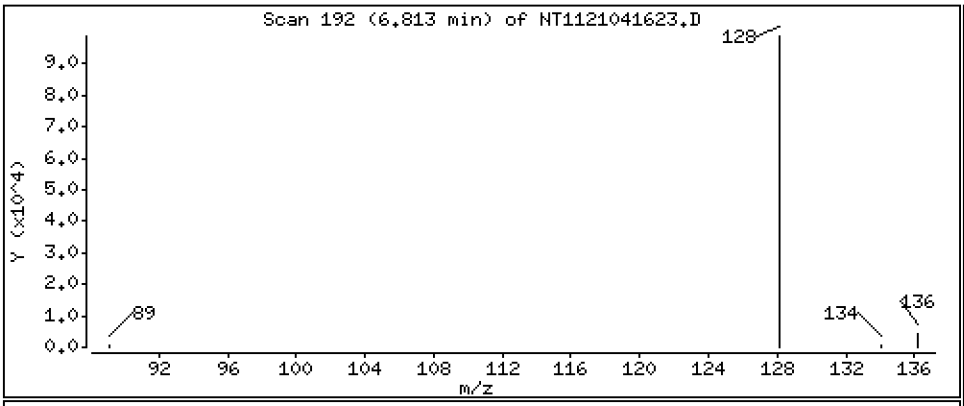
Operator: VTS

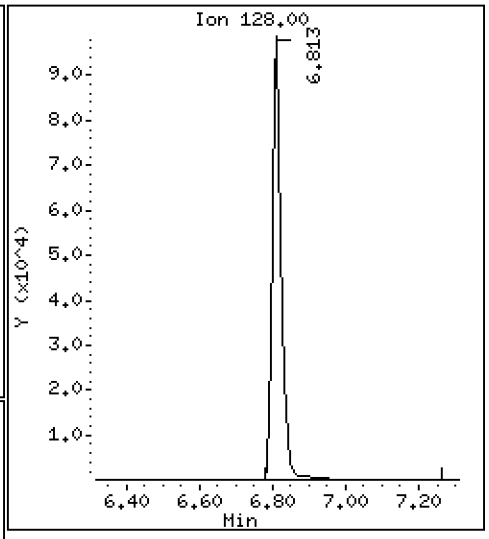
Column phase: Rxi-17Sil MS

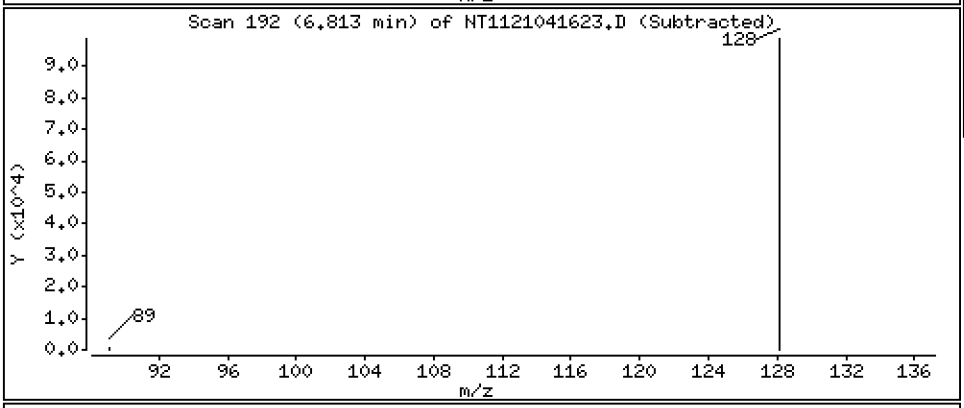
Column diameter: 0.25

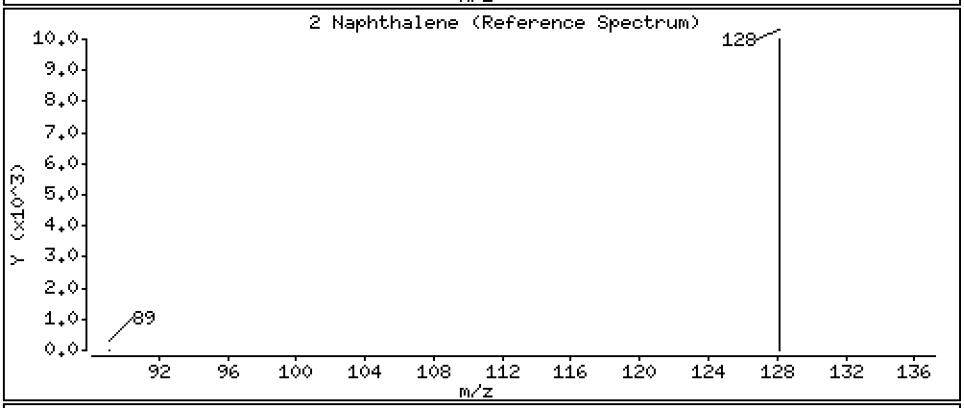
2 Naphthalene

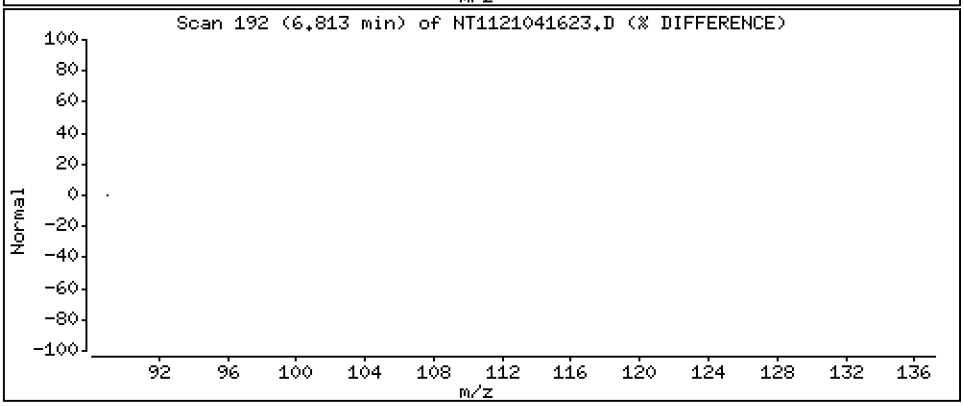
Concentration: 222 ng/mL











Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

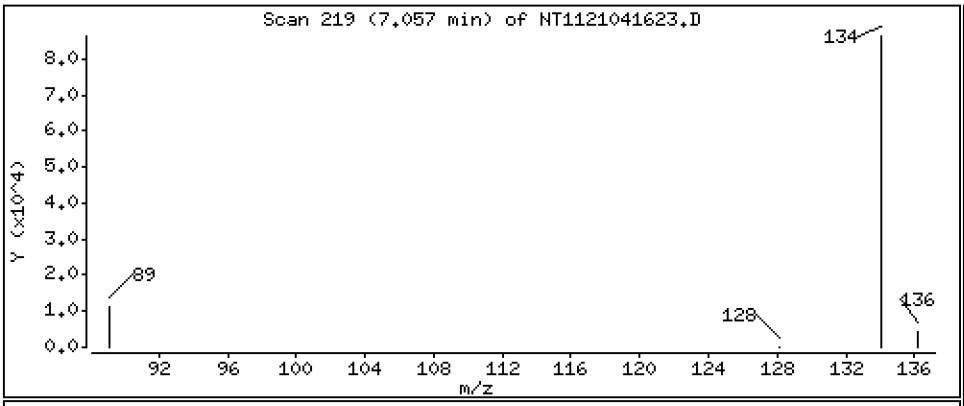
Operator: VTS

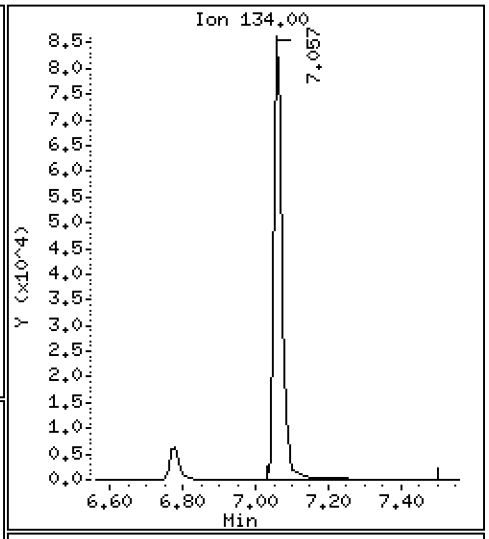
Column phase: Rxi-17Sil MS

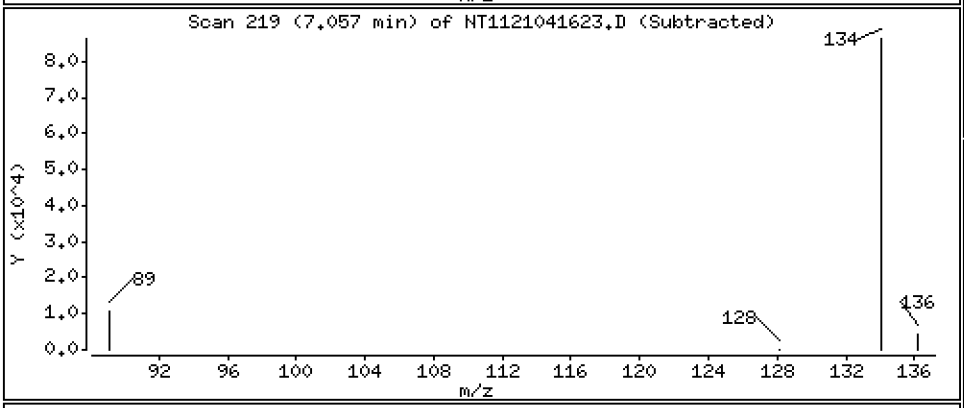
Column diameter: 0.25

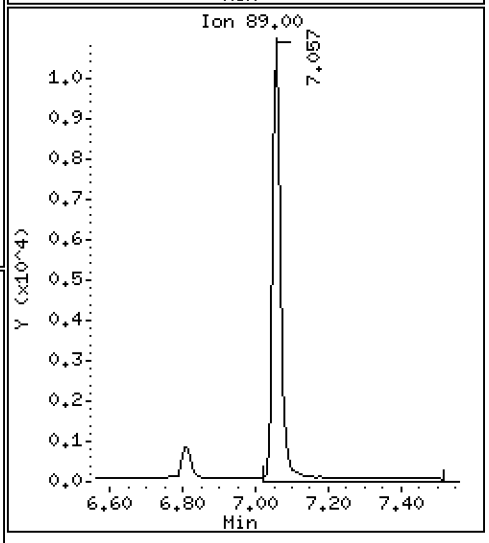
3 Benzo(b)thiophene

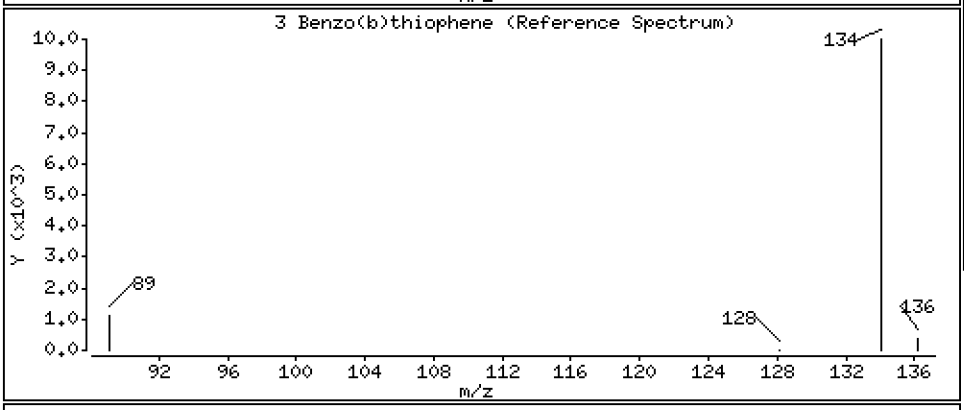
Concentration: 229 ng/mL

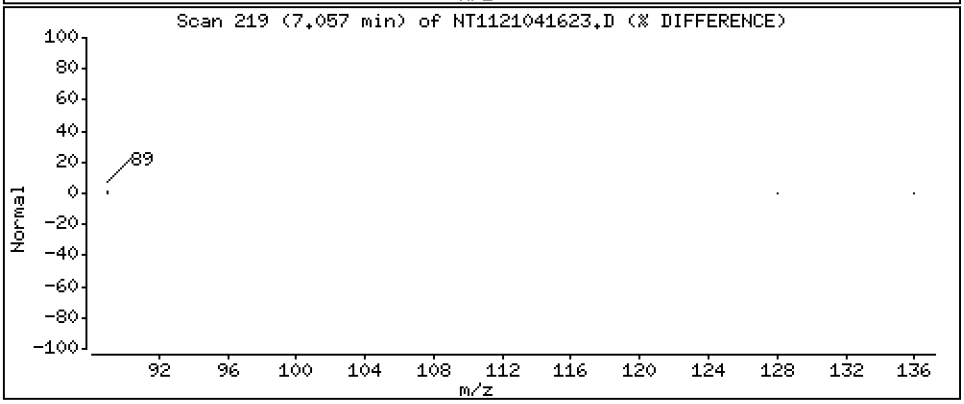












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

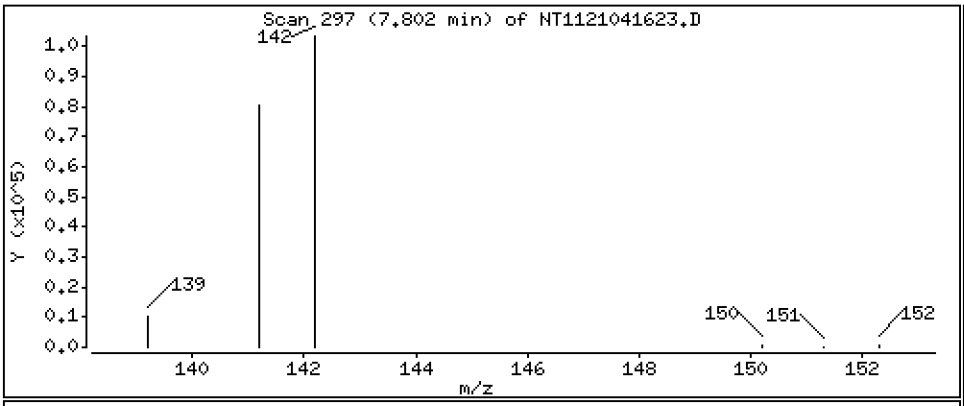
Operator: VTS

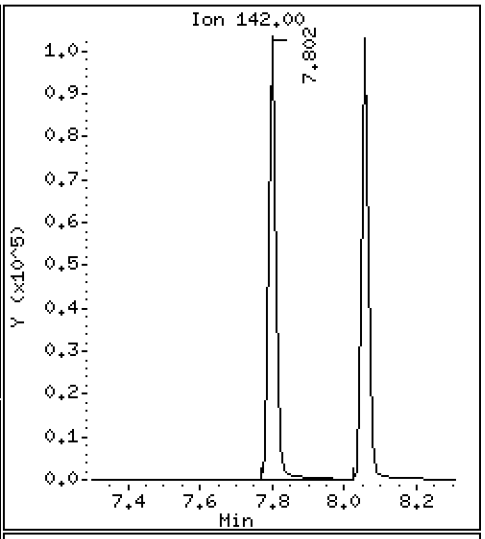
Column phase: Rxi-17Sil MS

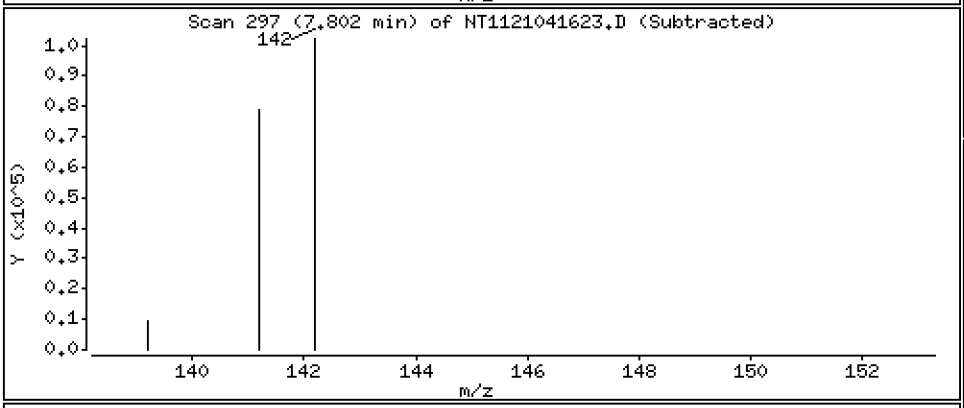
Column diameter: 0.25

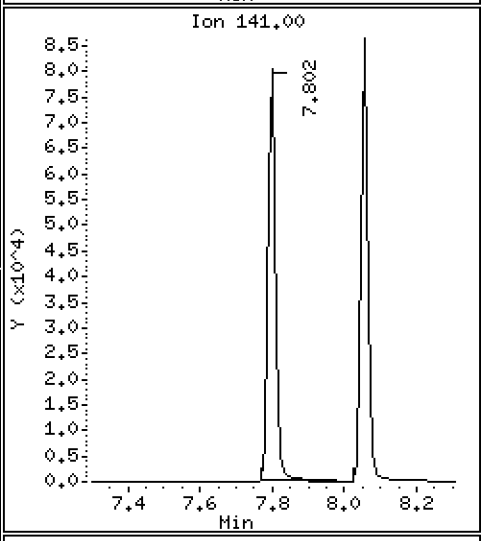
5 2-Methylnaphthalene

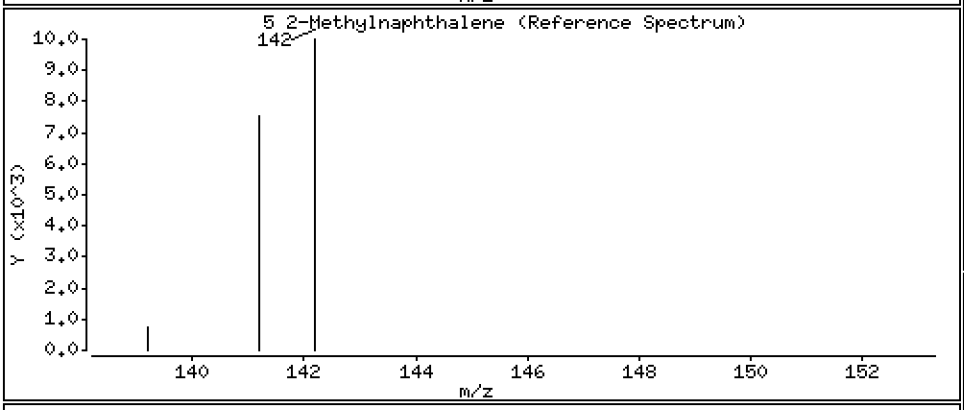
Concentration: 229 ng/mL

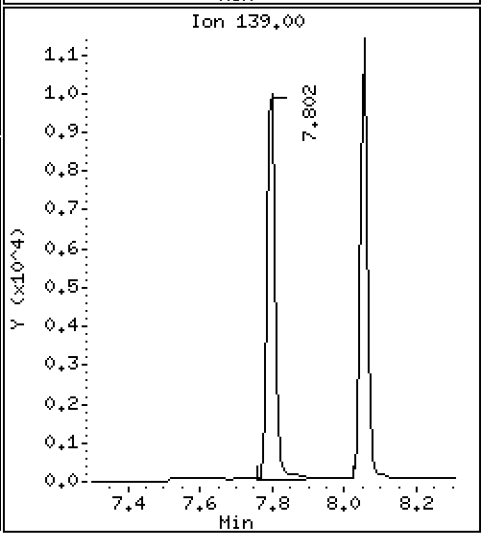


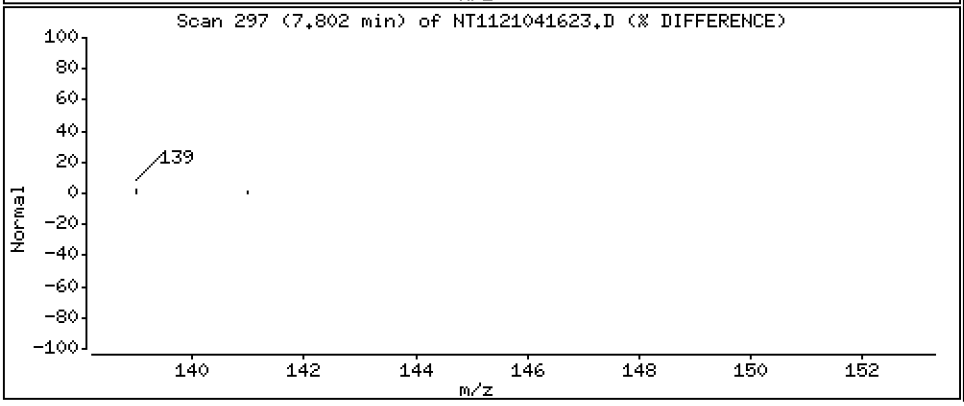












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

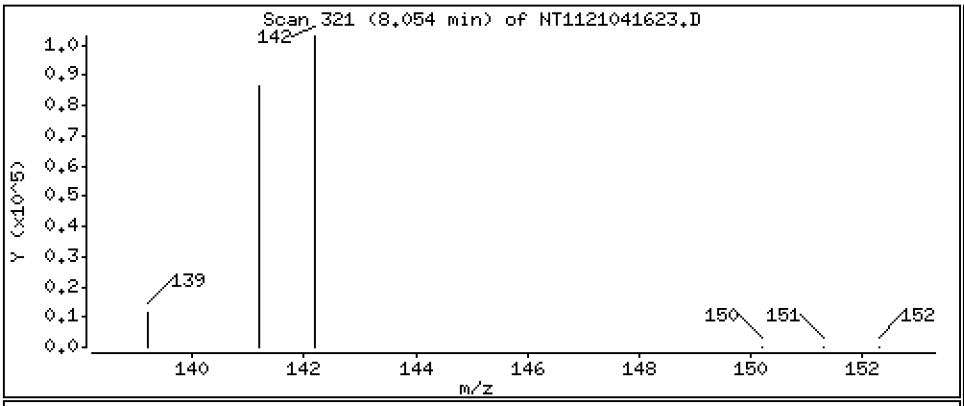
Operator: VTS

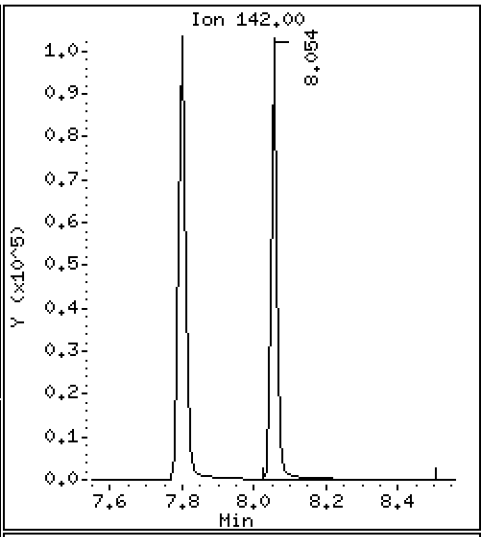
Column phase: Rxi-17Sil MS

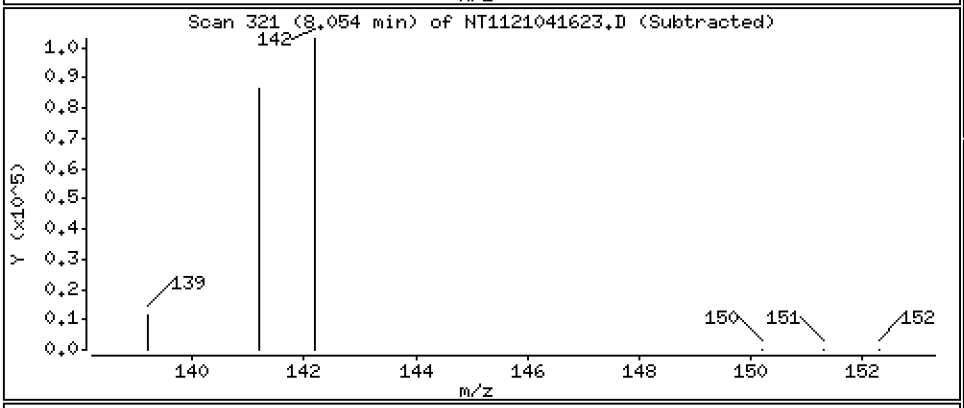
Column diameter: 0.25

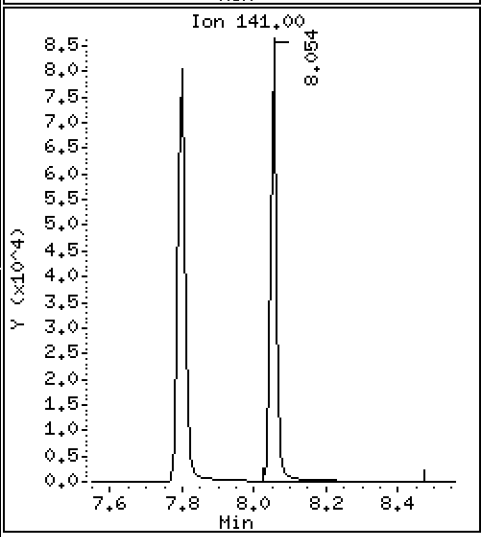
6 1-Methylnaphthalene

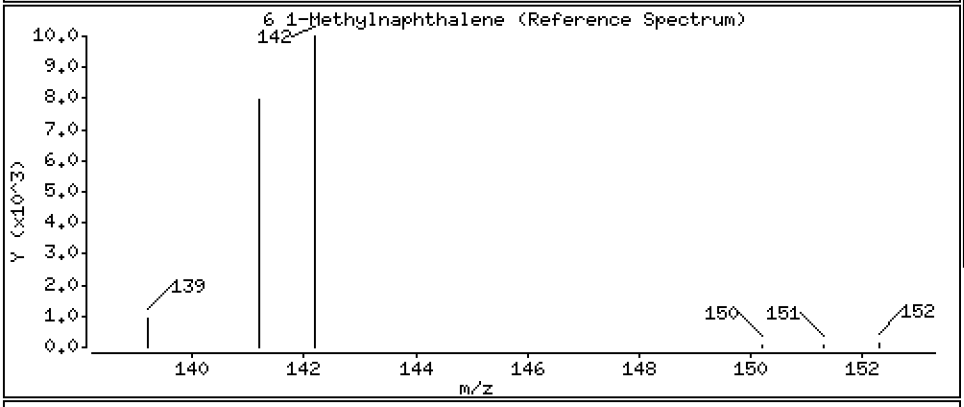
Concentration: 239 ng/mL

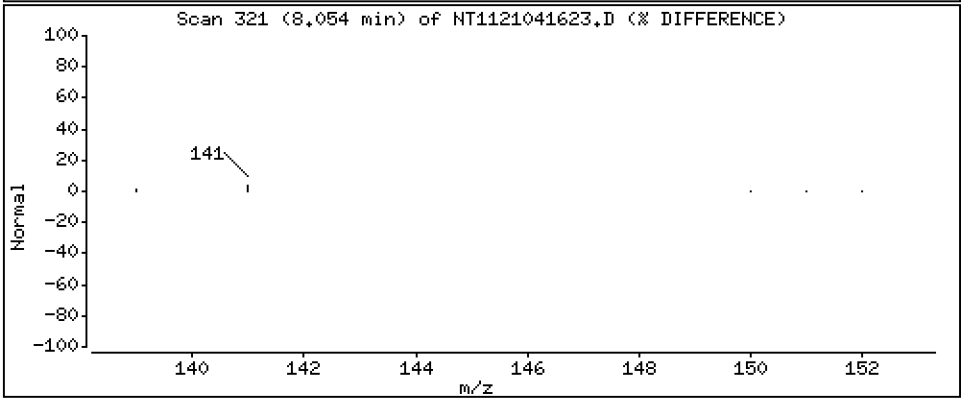












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

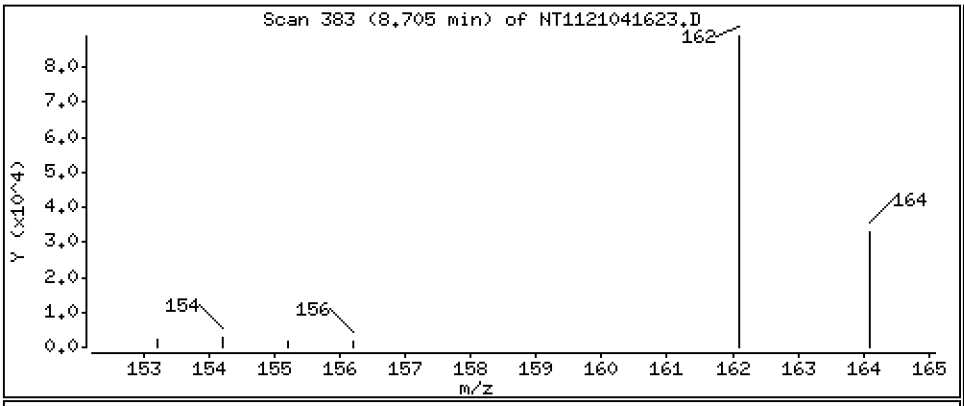
Operator: VTS

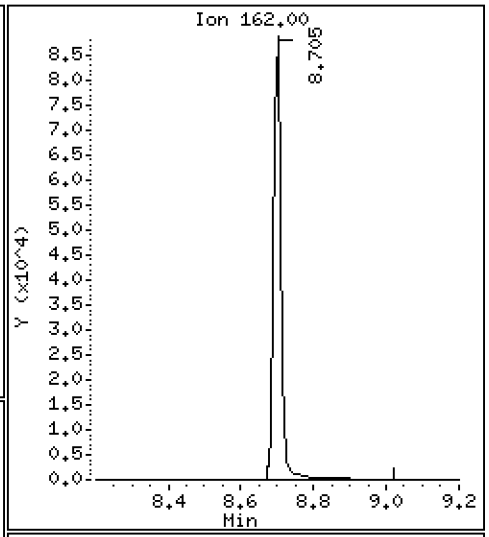
Column phase: Rxi-17Sil MS

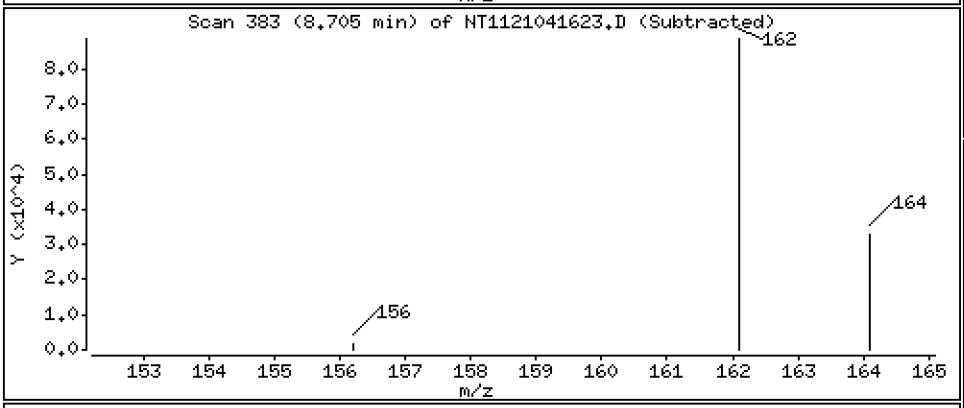
Column diameter: 0.25

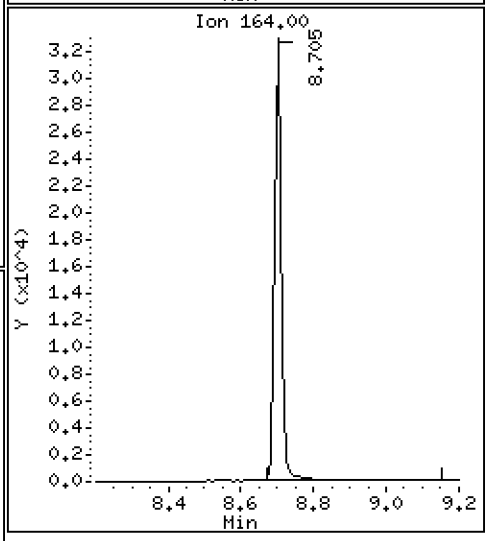
7 2-Chloronaphthalene

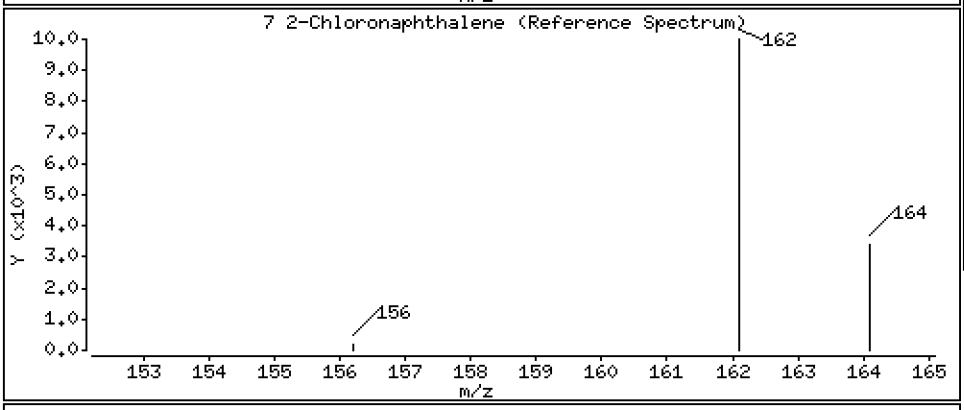
Concentration: 208 ng/mL

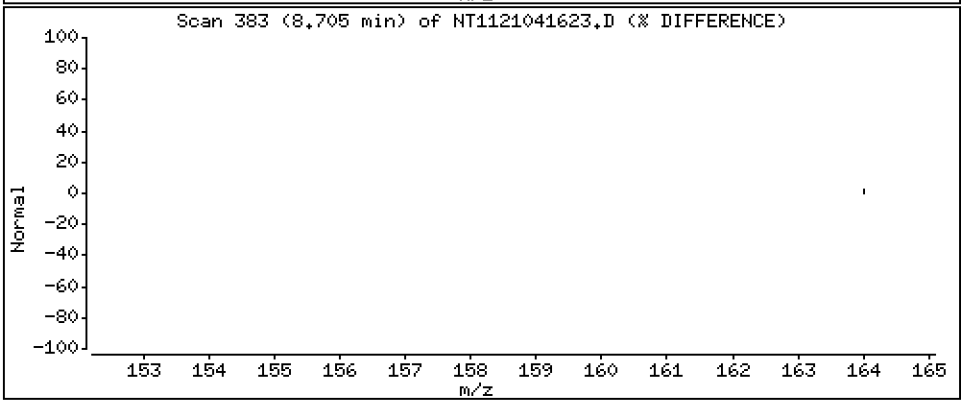












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

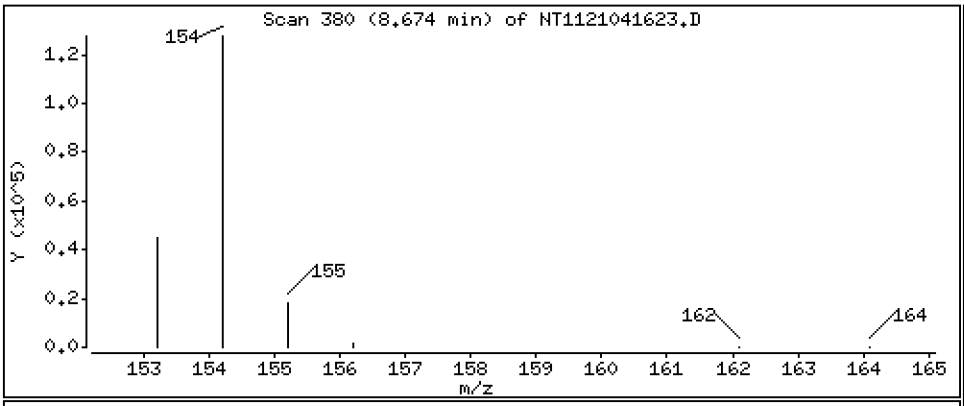
Operator: VTS

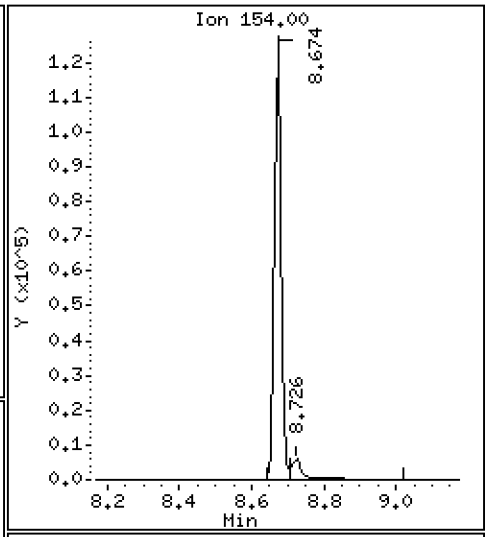
Column phase: Rxi-17Sil MS

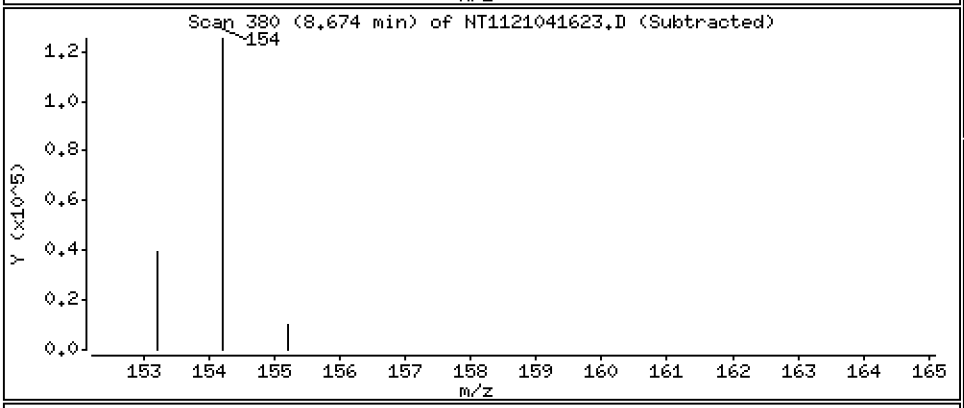
Column diameter: 0.25

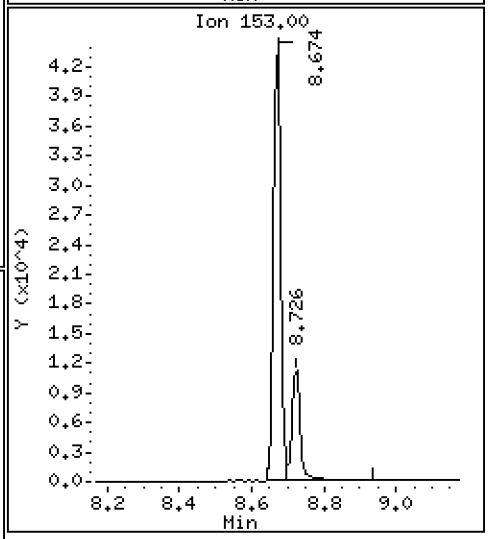
8 Biphenyl

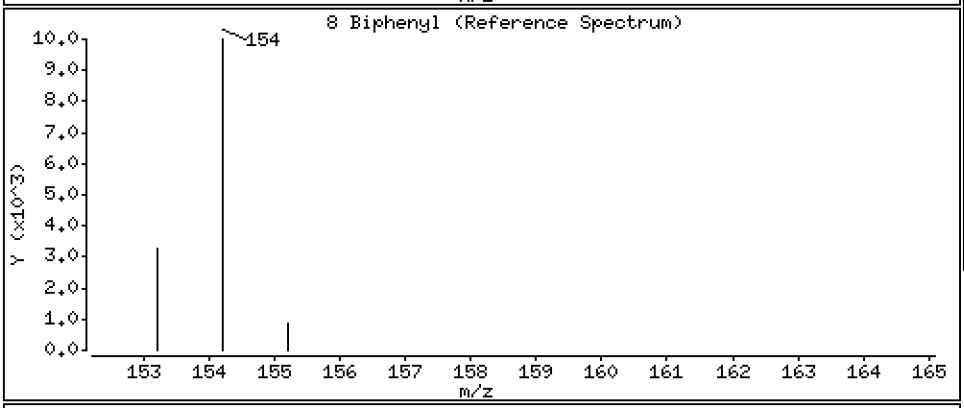
Concentration: 195 ng/mL

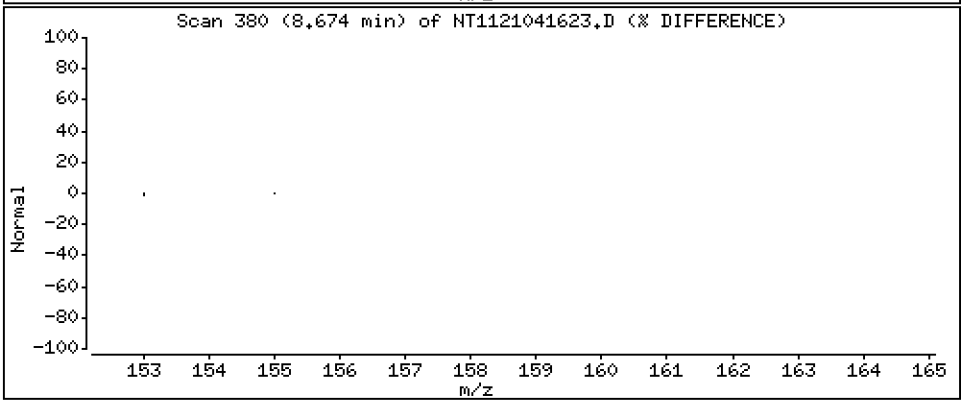












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

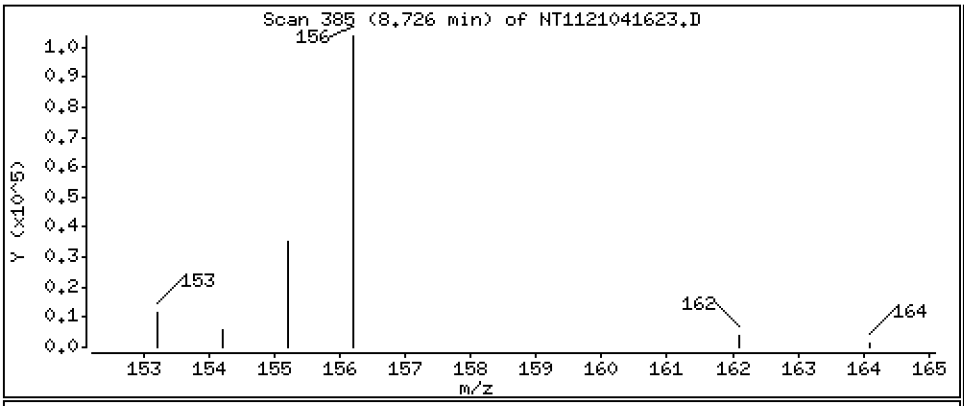
Operator: VTS

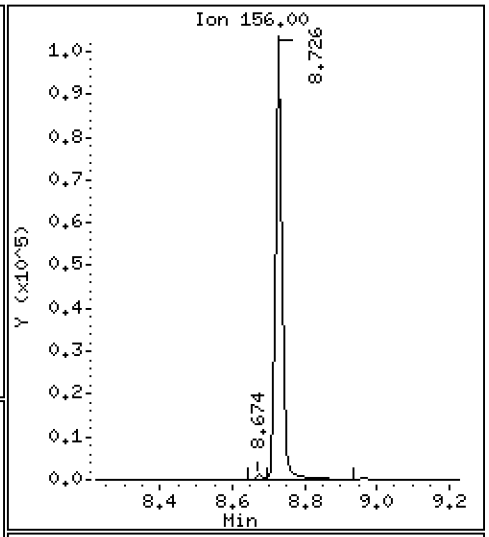
Column phase: Rxi-17Sil MS

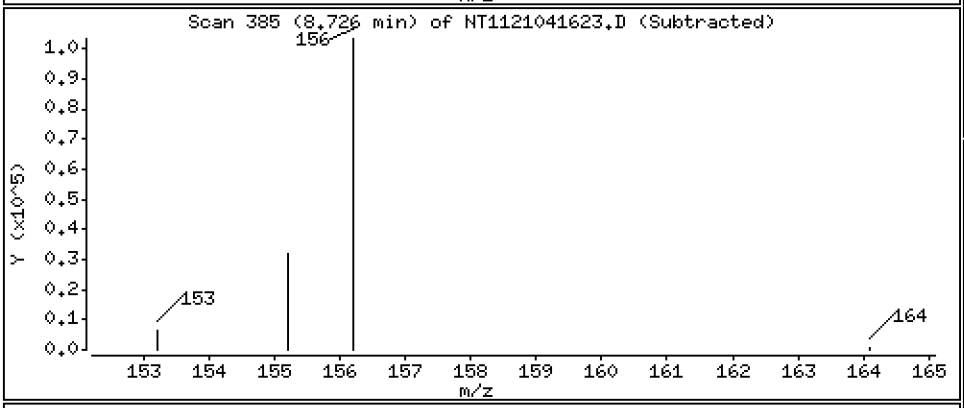
Column diameter: 0.25

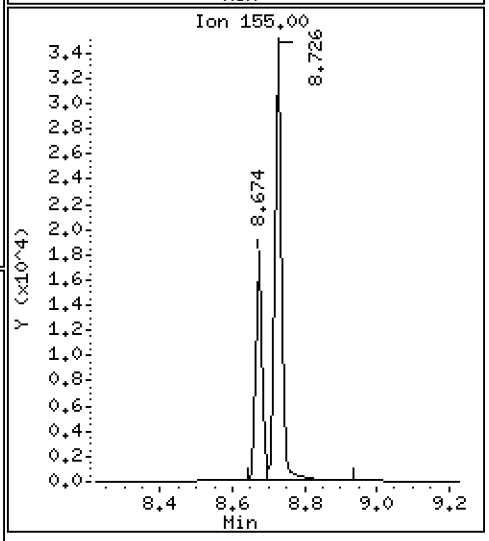
9 2,6-Dimethylnaphthalene

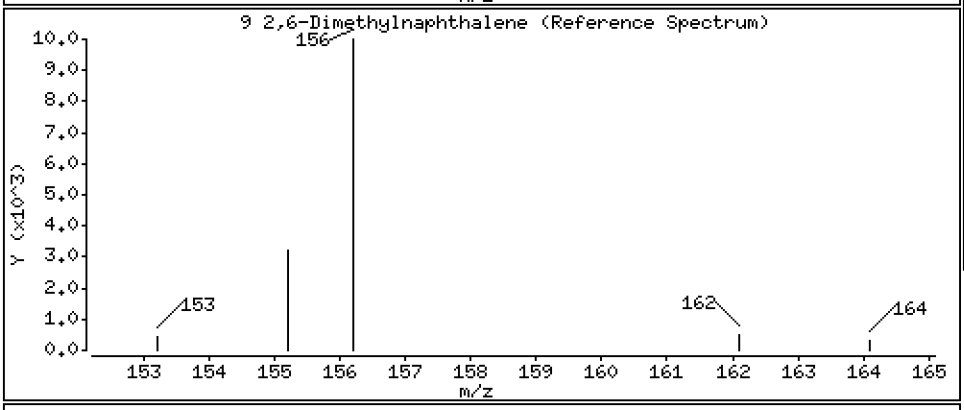
Concentration: 206 ng/mL

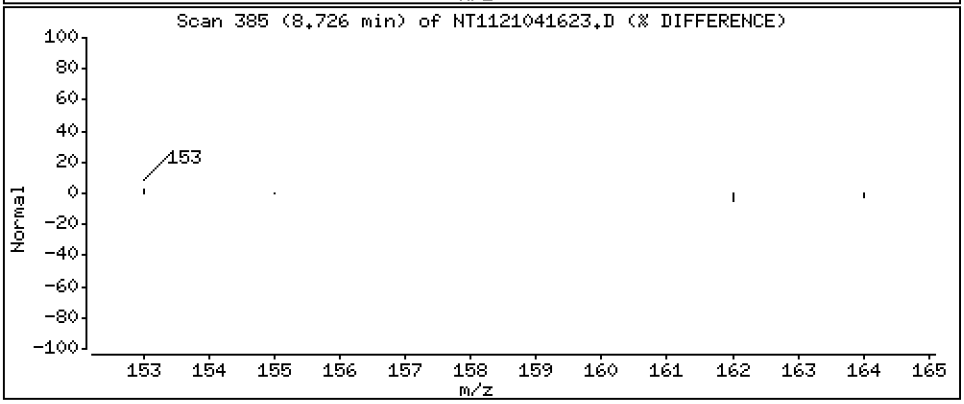












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

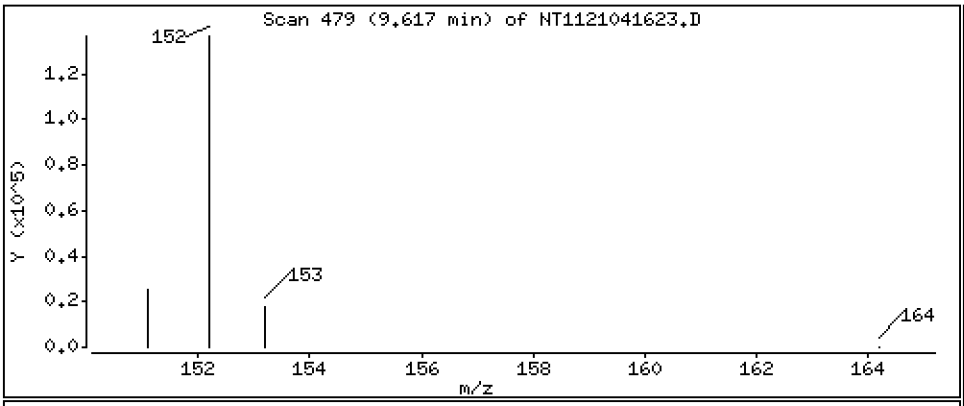
Operator: VTS

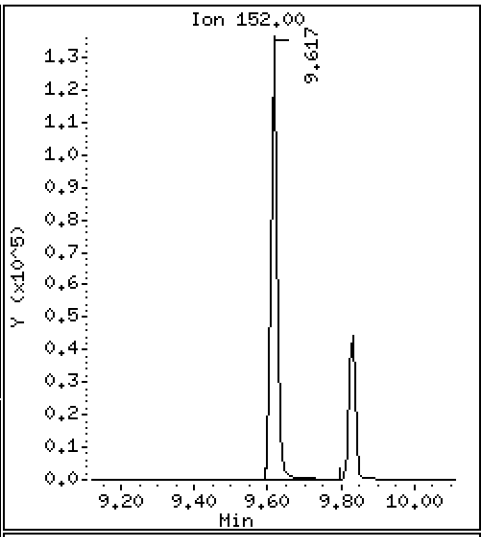
Column phase: Rxi-17Sil MS

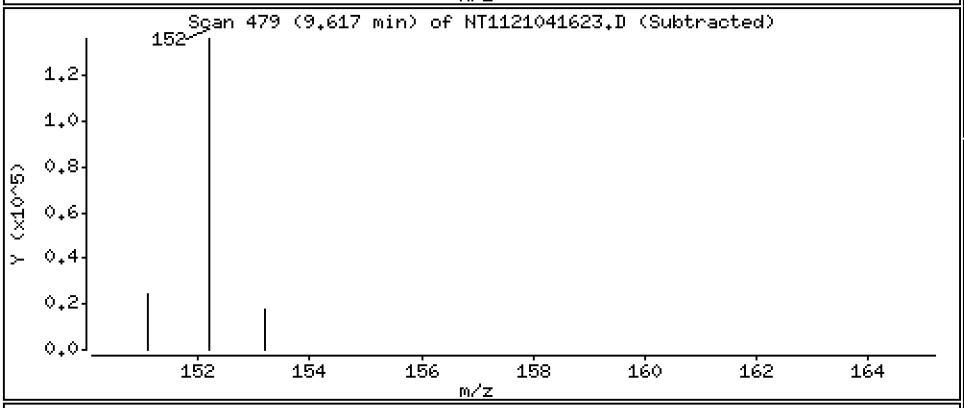
Column diameter: 0.25

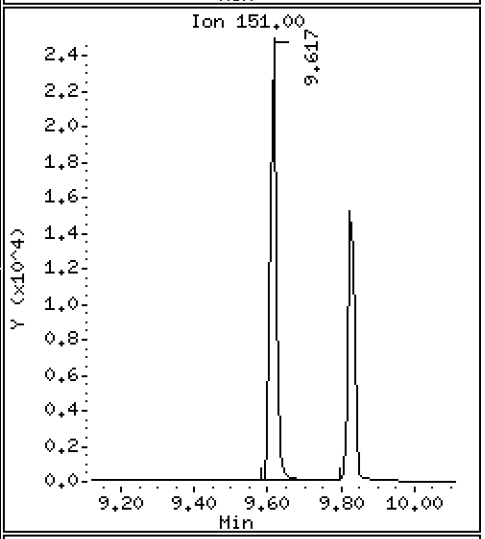
10 Acenaphthylene

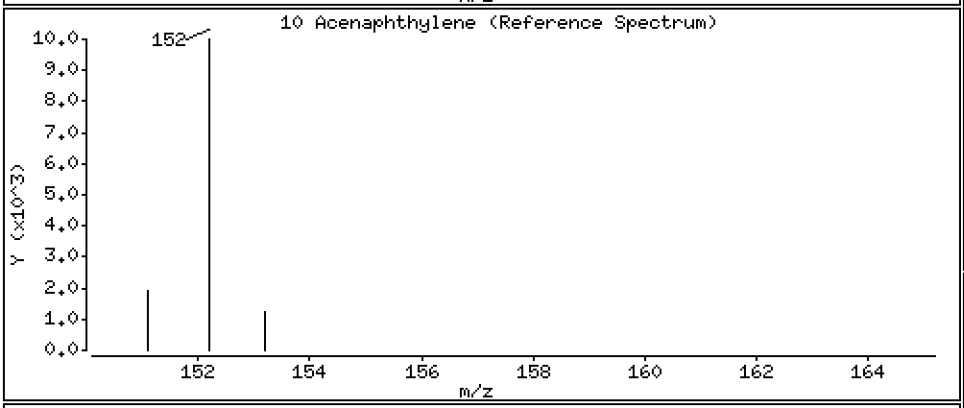
Concentration: 201 ng/mL

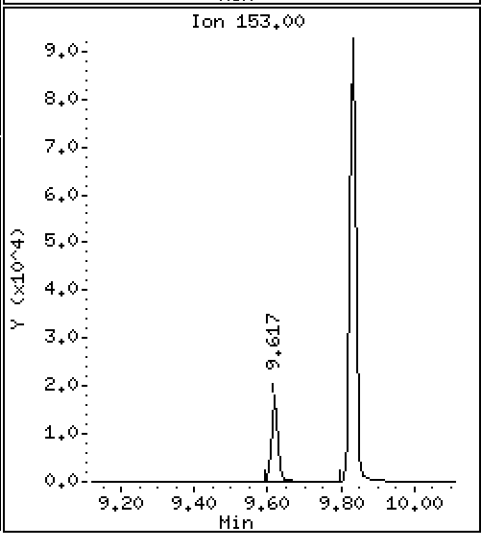


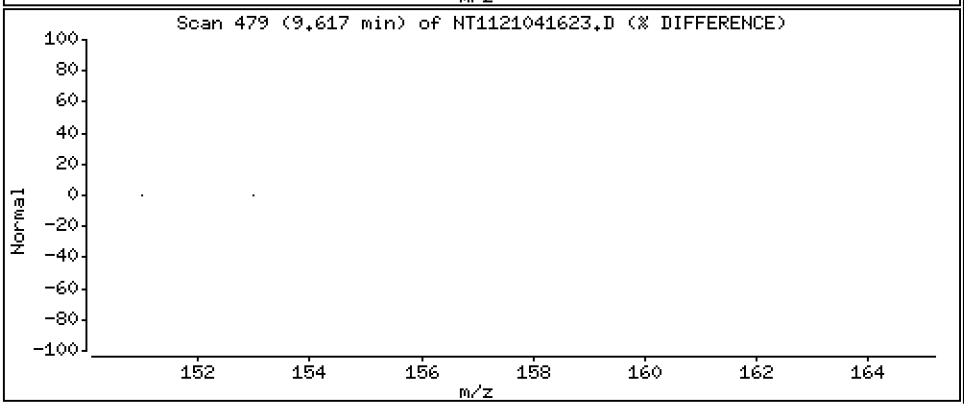












Date : 16-APR-2021 21:46

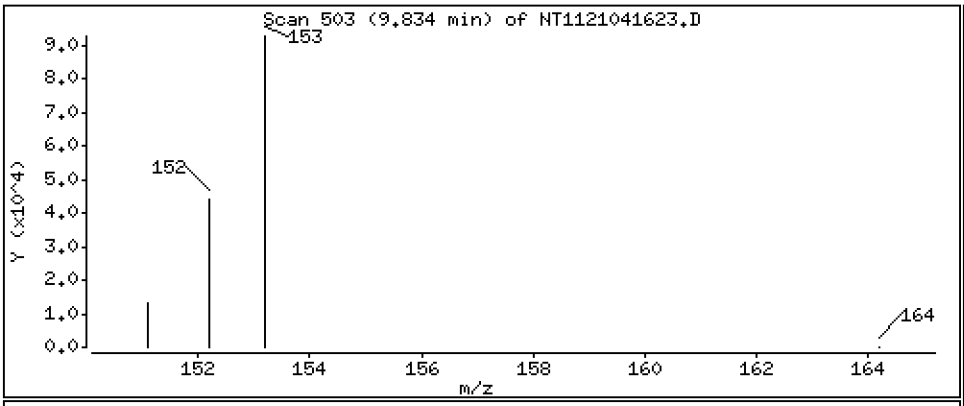
Client ID: Instrument: nt11.i

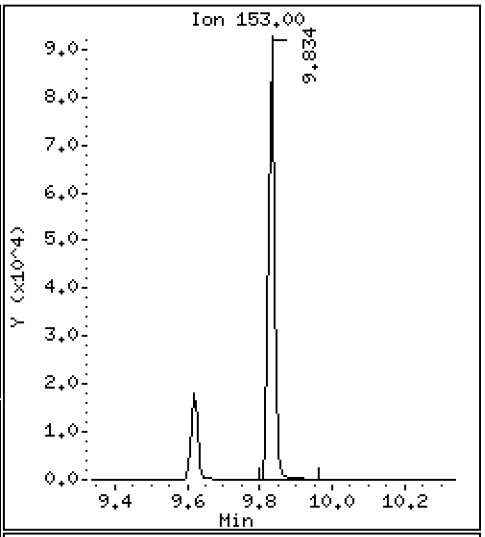
Sample Info: SJD0232-CCV1

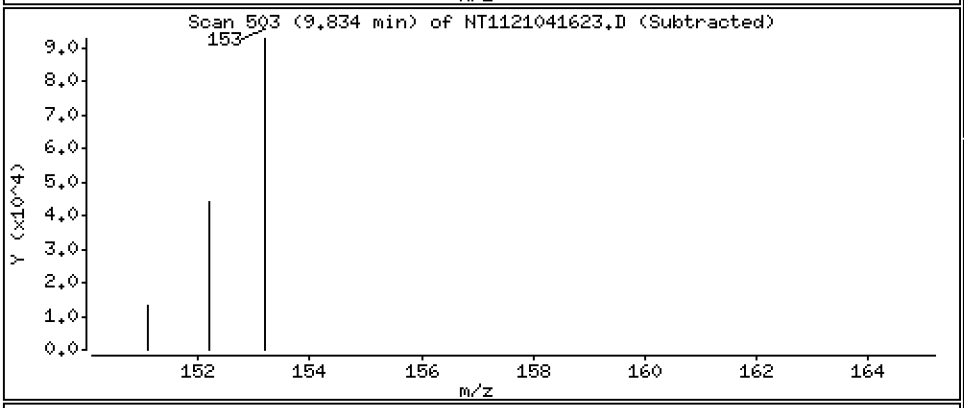
Operator: VTS

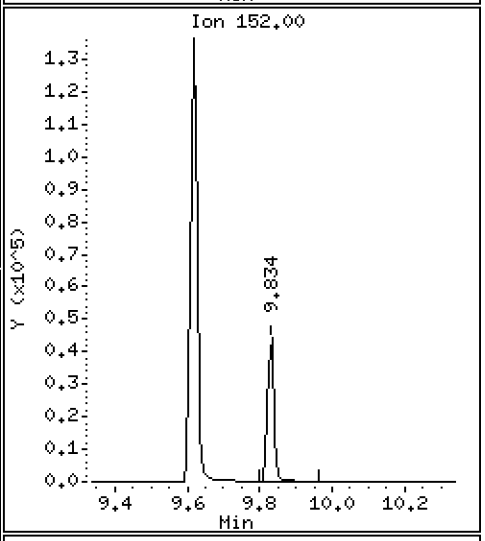
Column phase: Rxi-17Sil MS Column diameter: 0.25

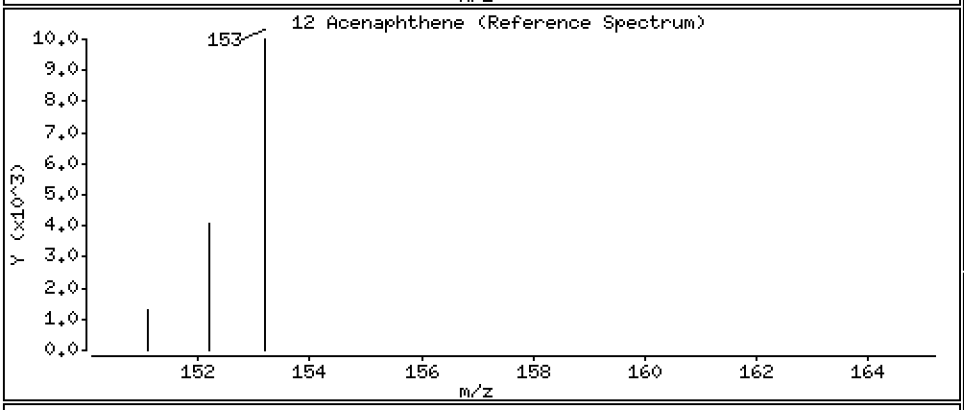
12 Acenaphthene Concentration: 205 ng/mL

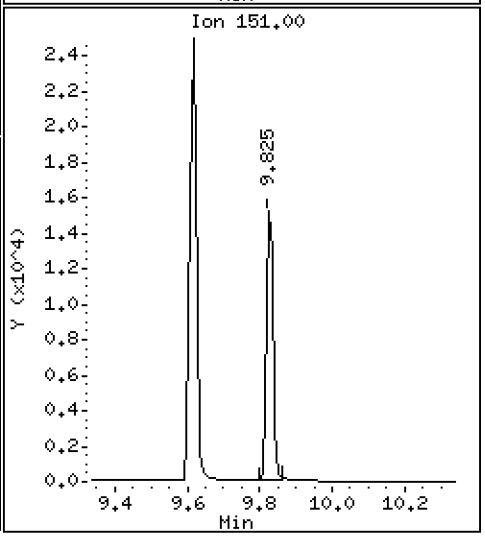


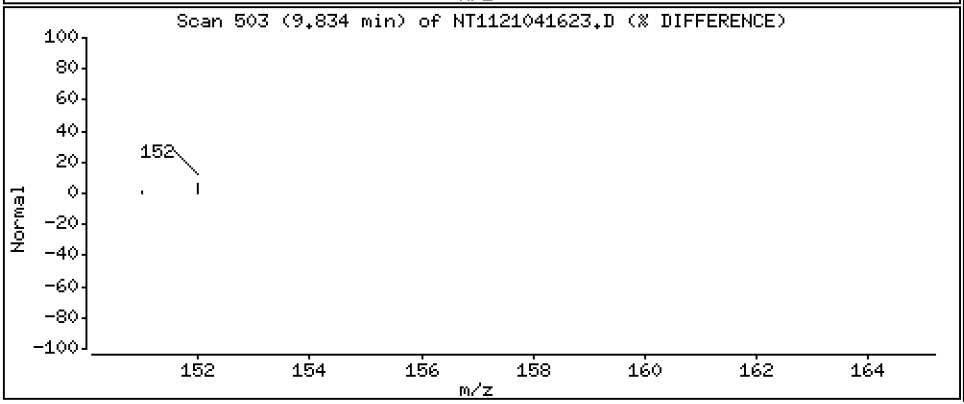












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

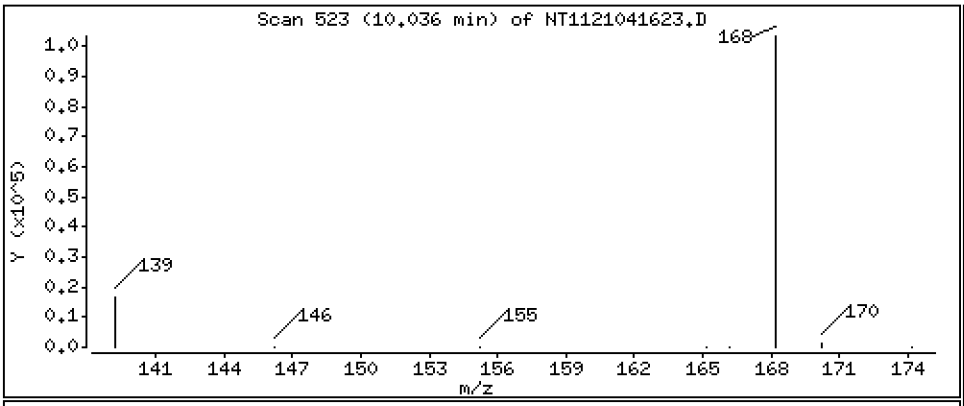
Operator: VTS

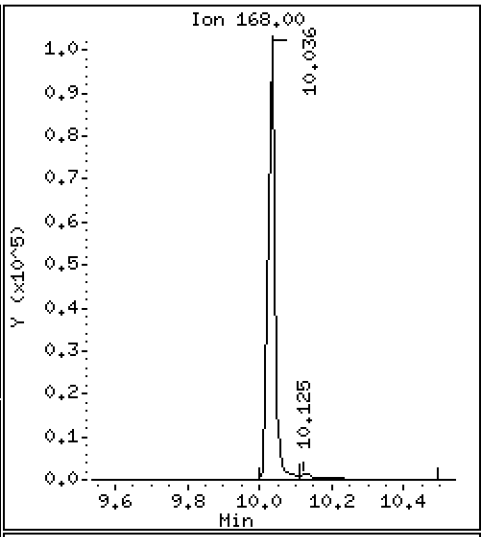
Column phase: Rxi-17Sil MS

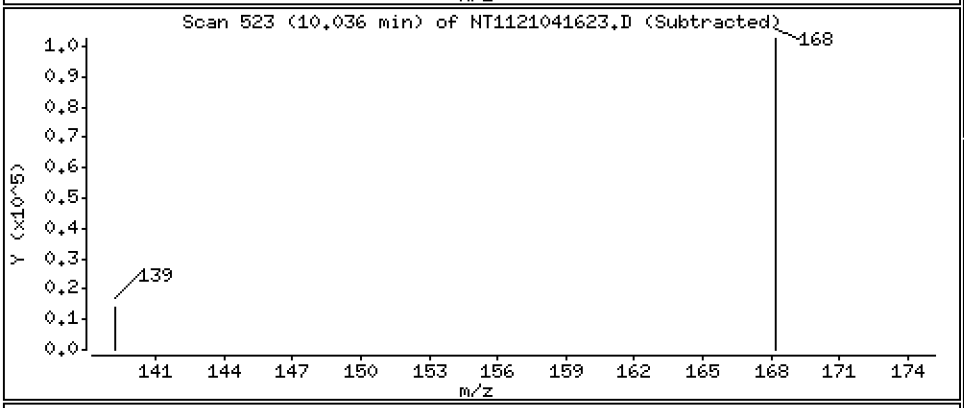
Column diameter: 0.25

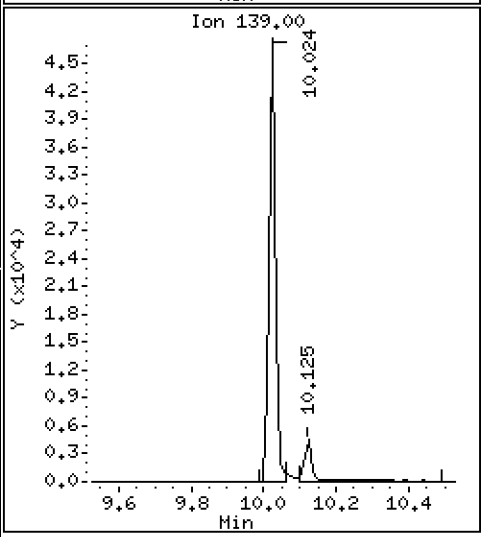
13 Dibenzofuran

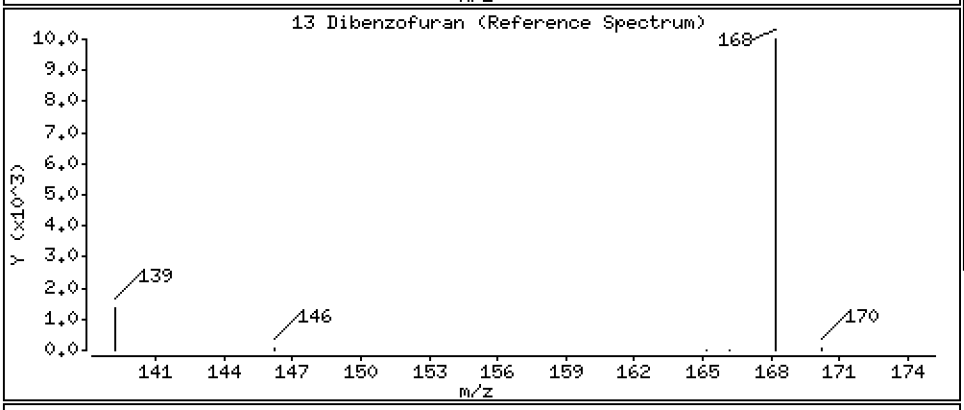
Concentration: 198 ng/mL

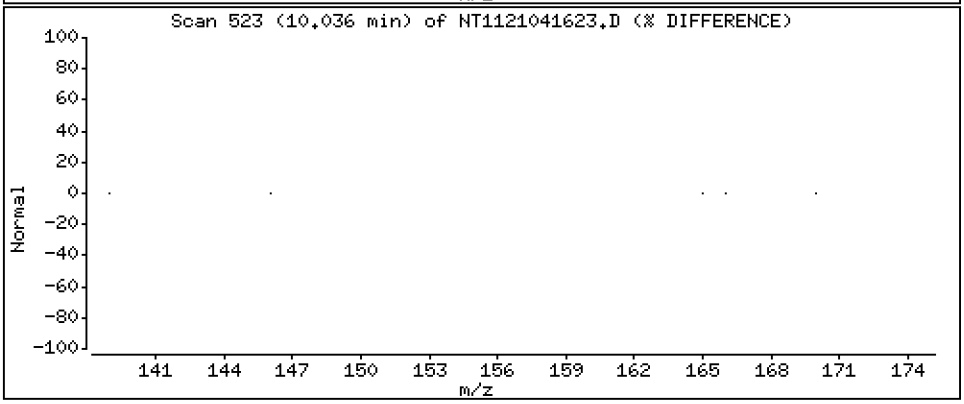












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

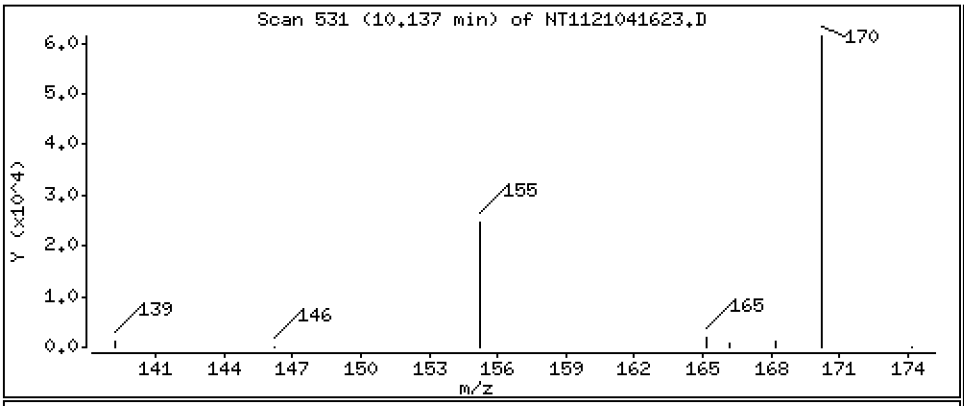
Operator: VTS

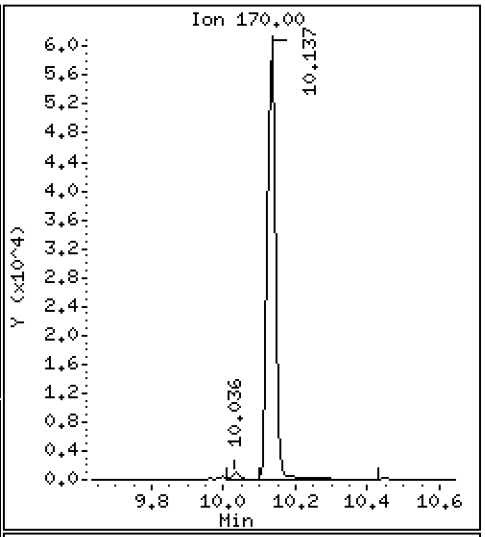
Column phase: Rxi-17Sil MS

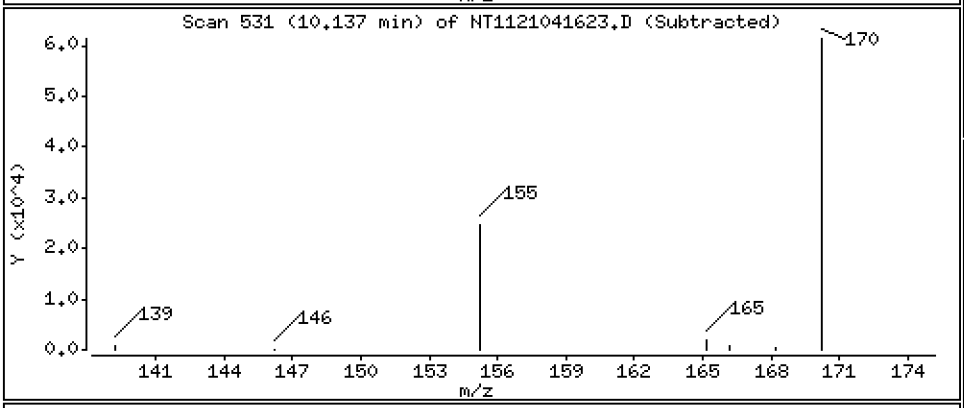
Column diameter: 0.25

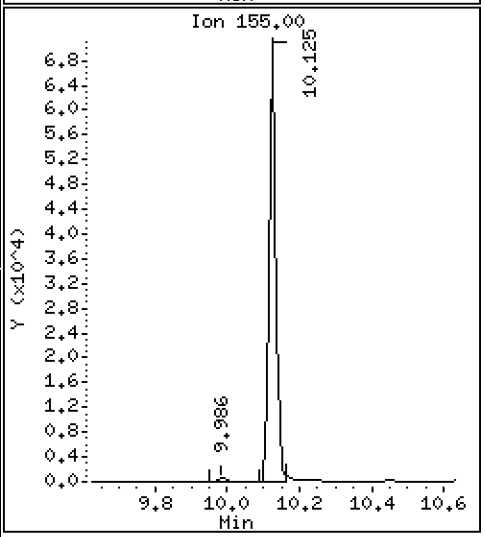
14 2,3,5-Trimethylnaphthalene

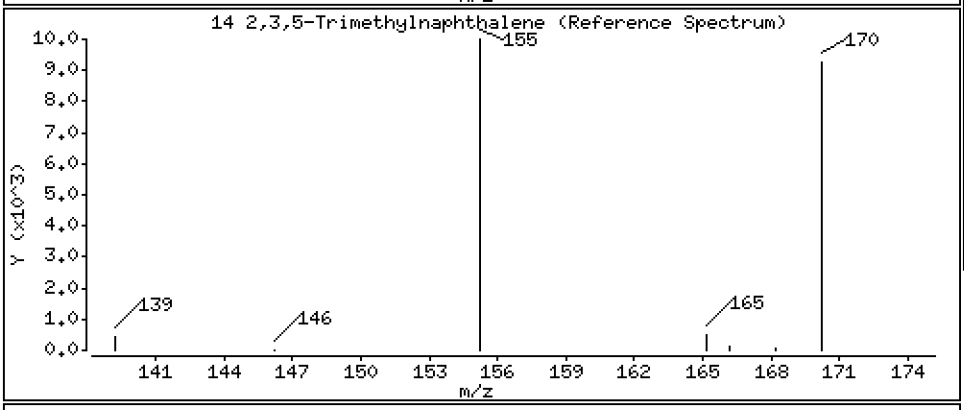
Concentration: 206 ng/mL

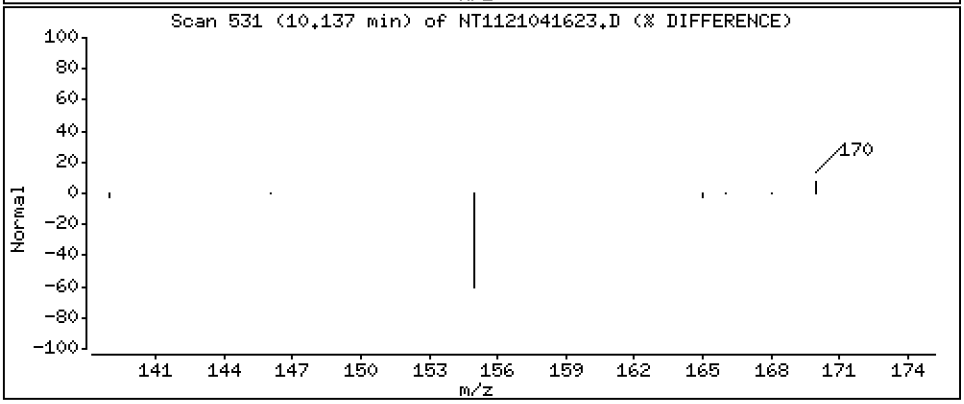












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

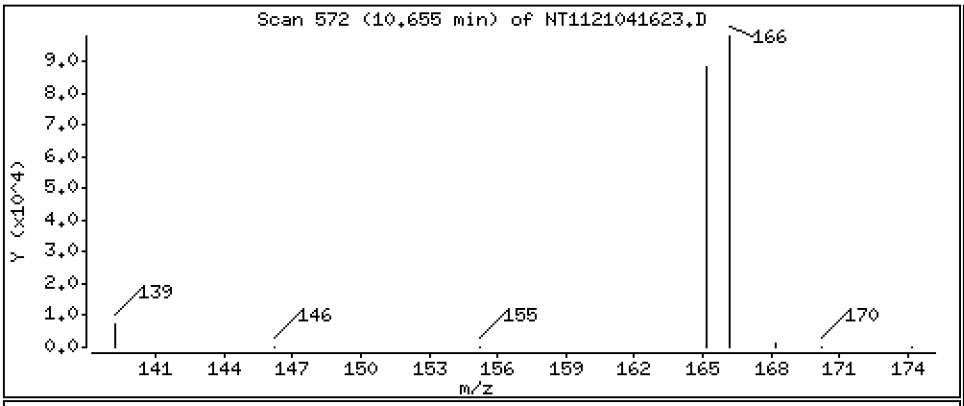
Operator: VTS

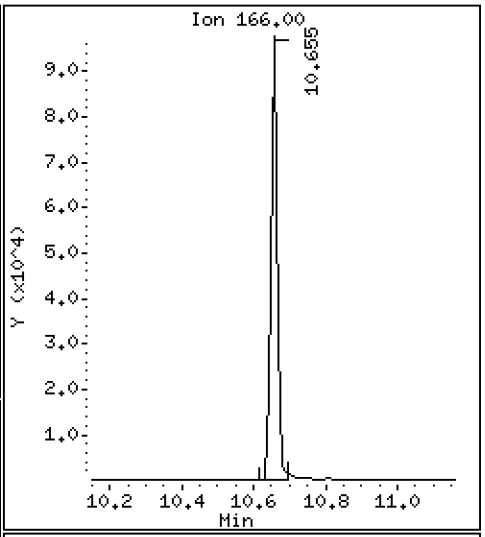
Column phase: Rxi-17Sil MS

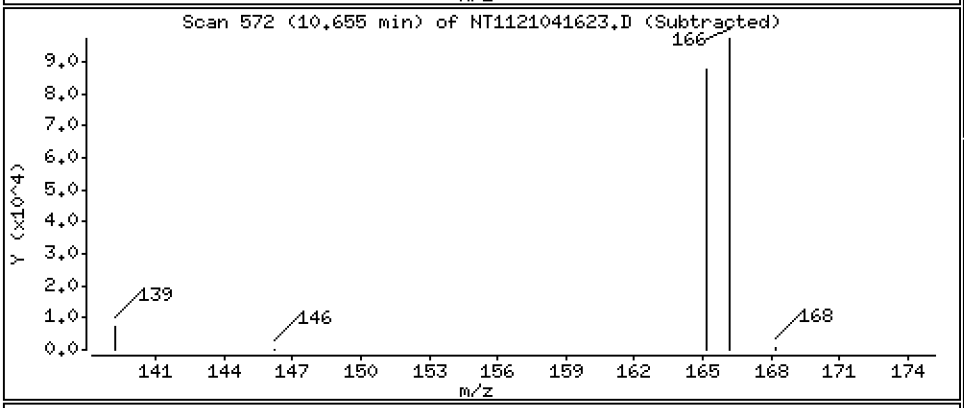
Column diameter: 0.25

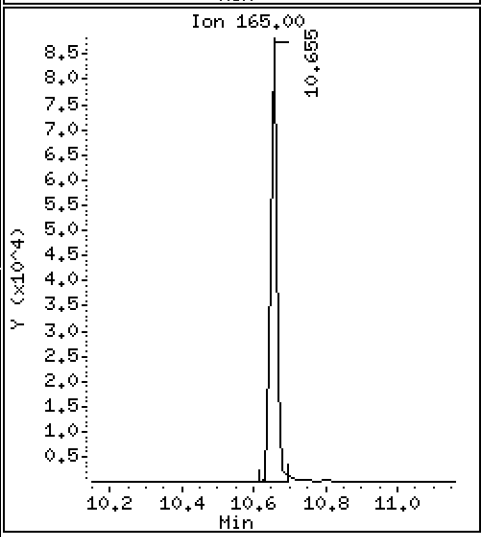
16 Fluorene

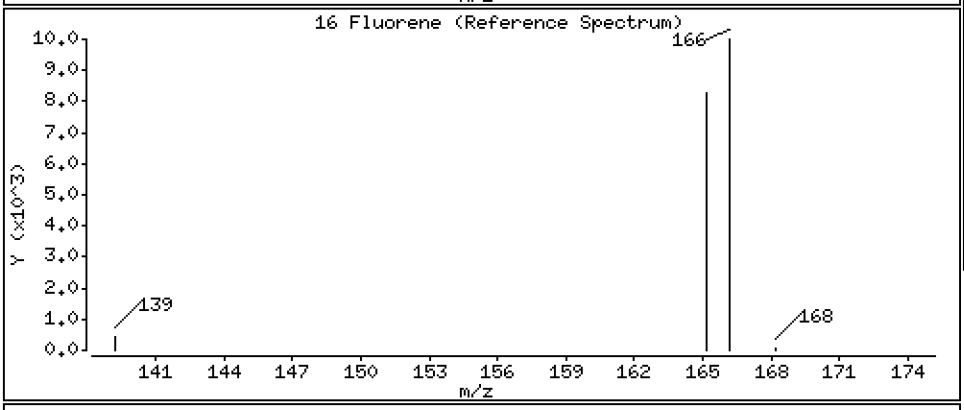
Concentration: 207 ng/mL

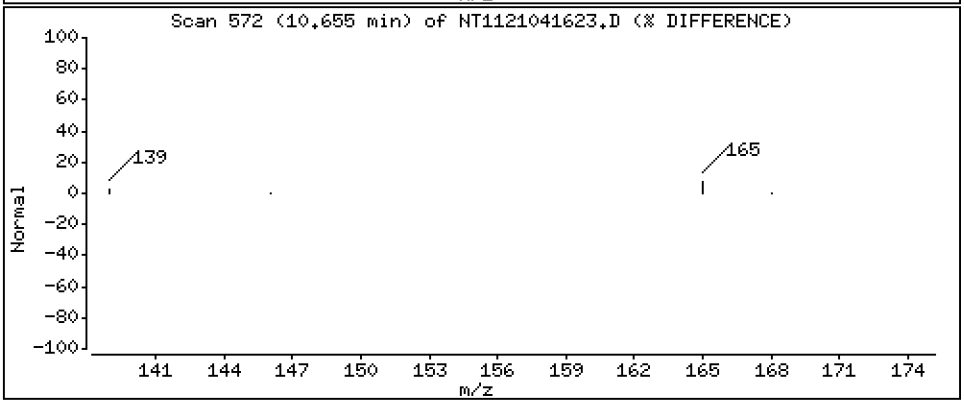












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

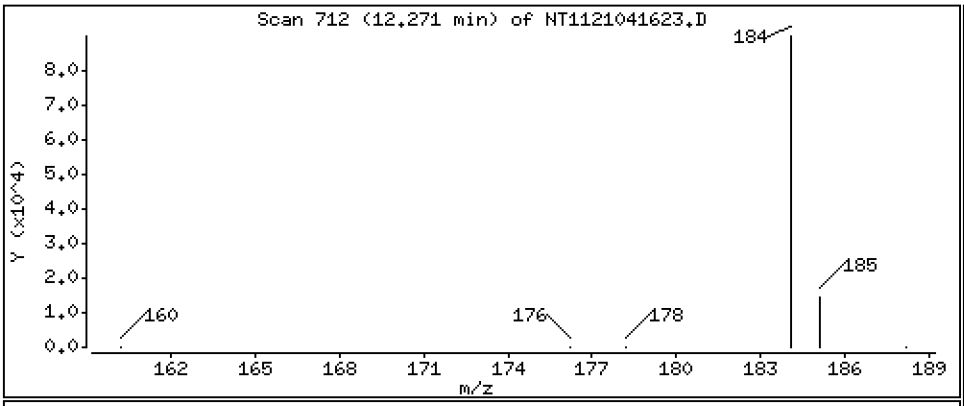
Operator: VTS

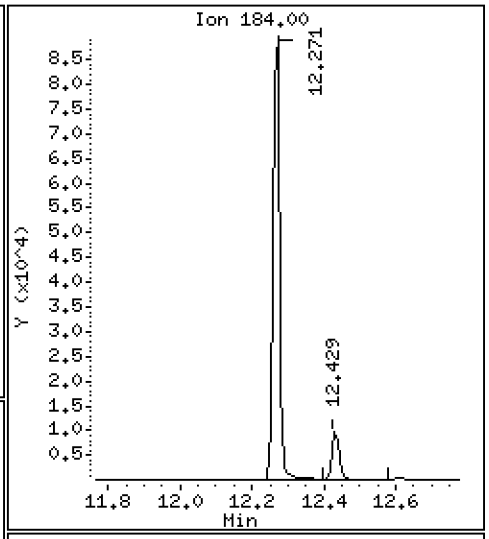
Column phase: Rxi-17Sil MS

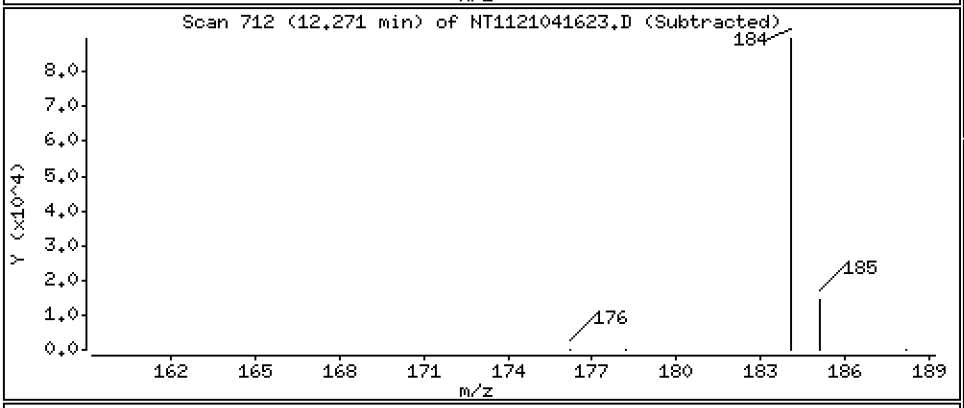
Column diameter: 0.25

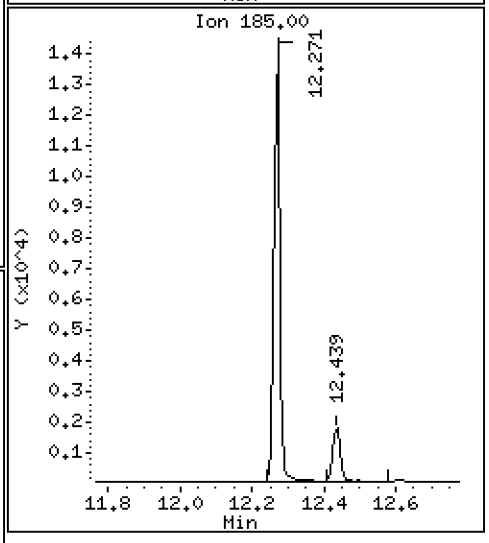
17 Dibenzothiophene

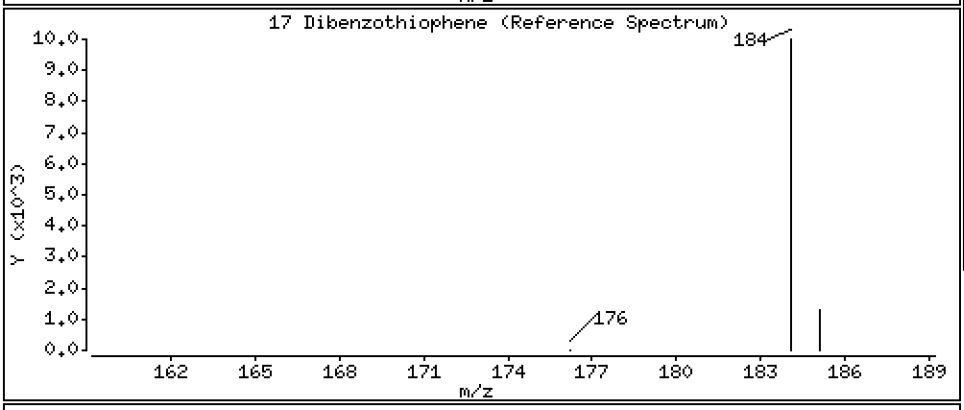
Concentration: 223 ng/mL

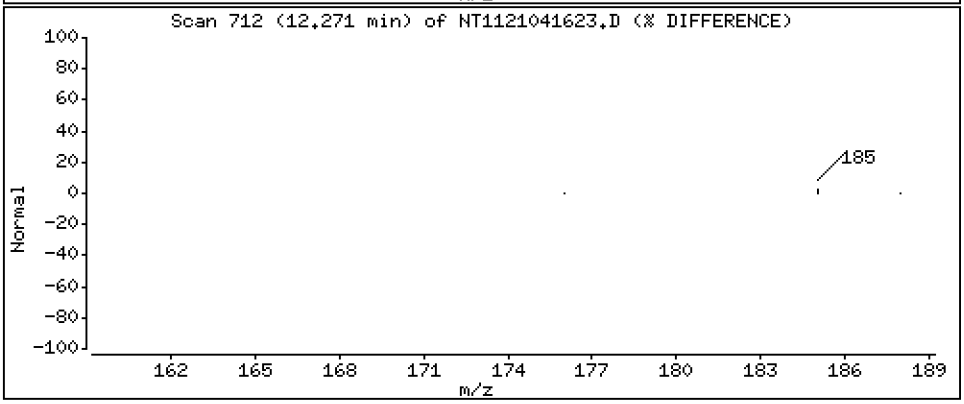












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

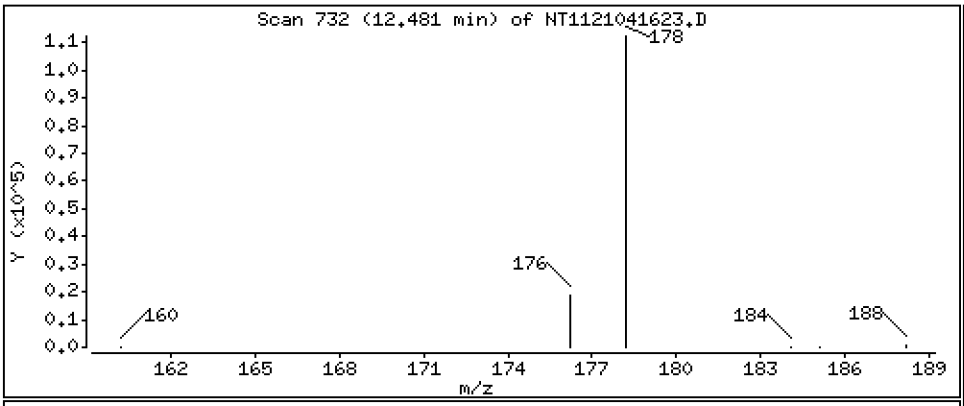
Operator: VTS

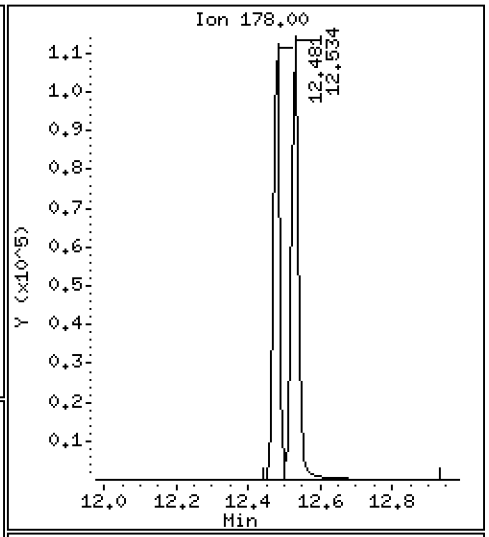
Column phase: Rxi-17Sil MS

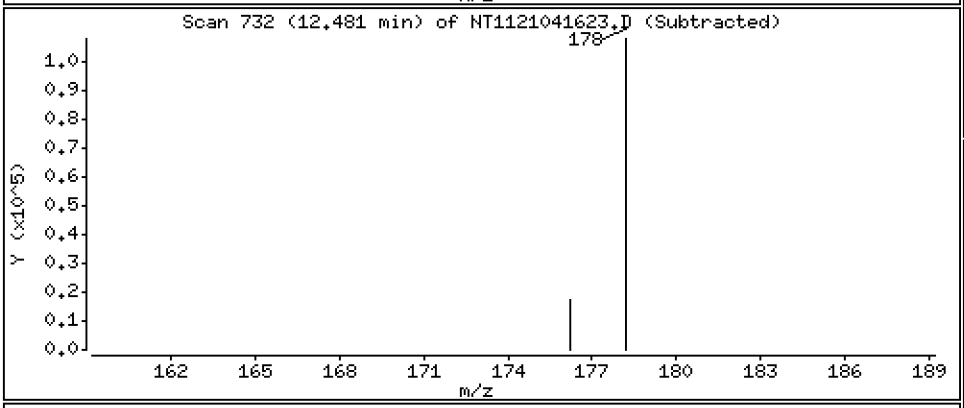
Column diameter: 0.25

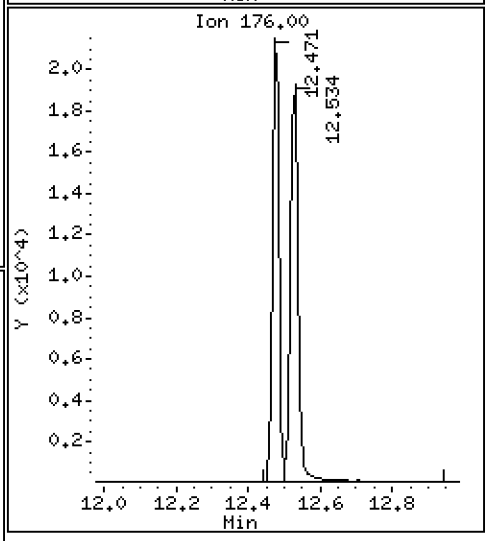
19 Phenanthrene

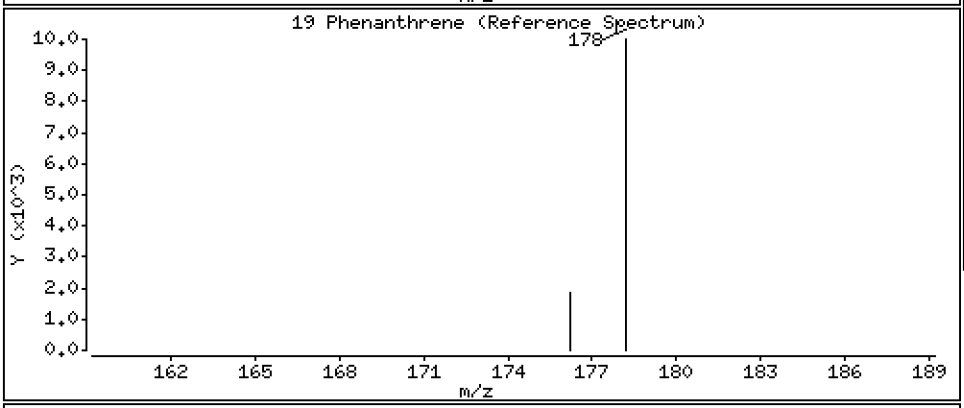
Concentration: 227 ng/mL

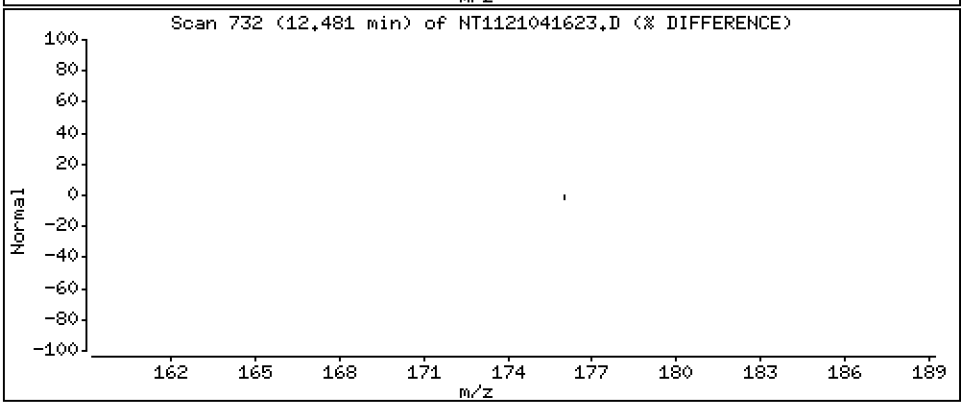












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

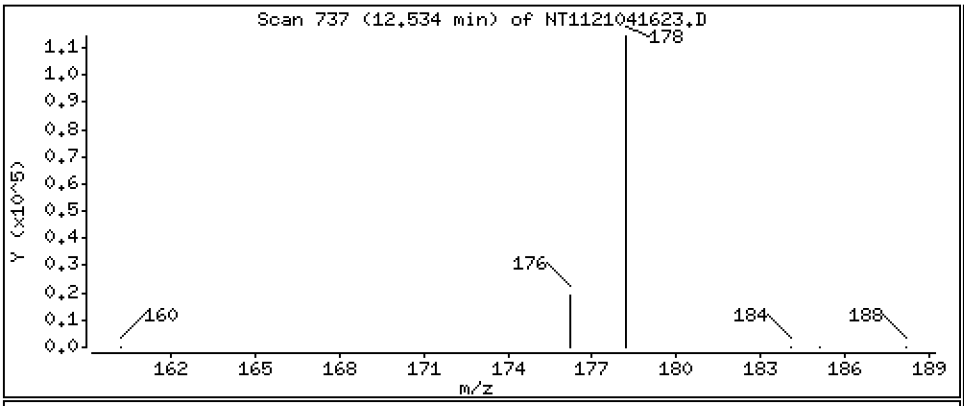
Operator: VTS

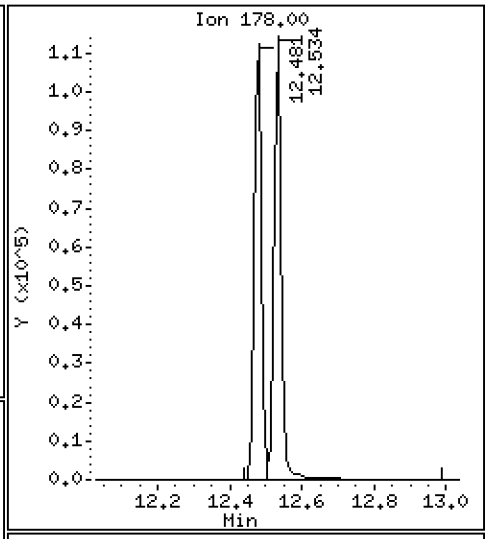
Column phase: Rxi-17Sil MS

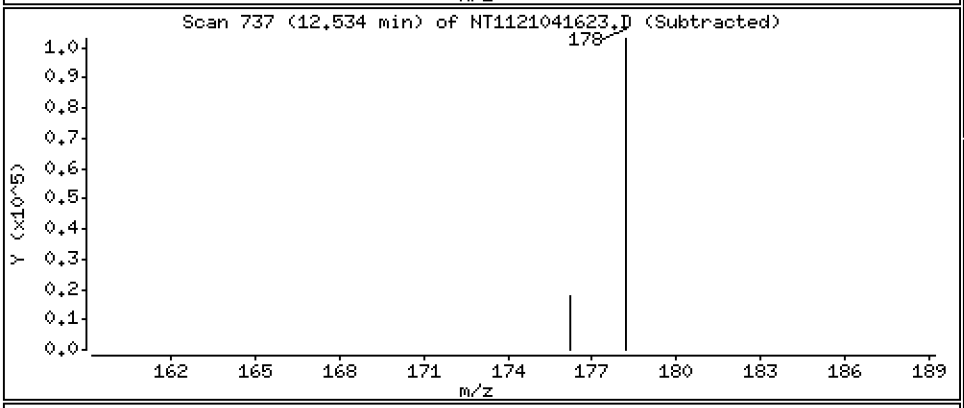
Column diameter: 0.25

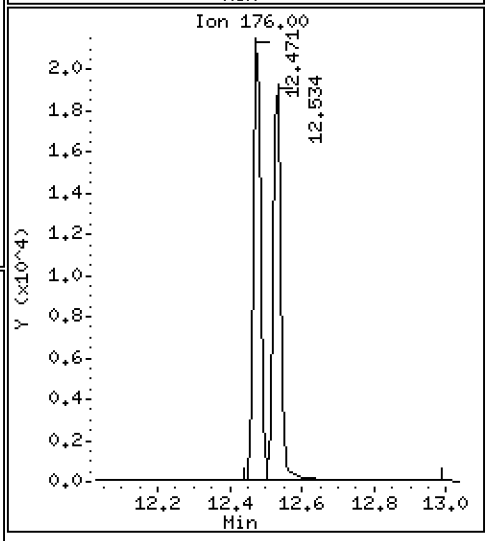
21 Anthracene

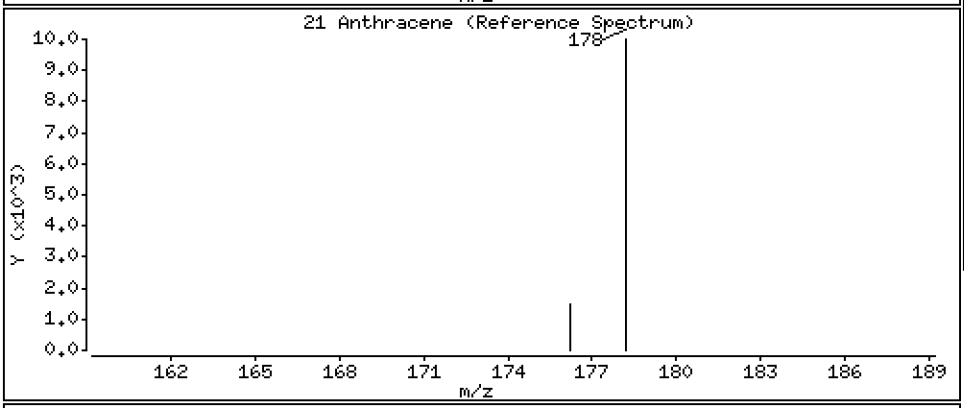
Concentration: 232 ng/mL

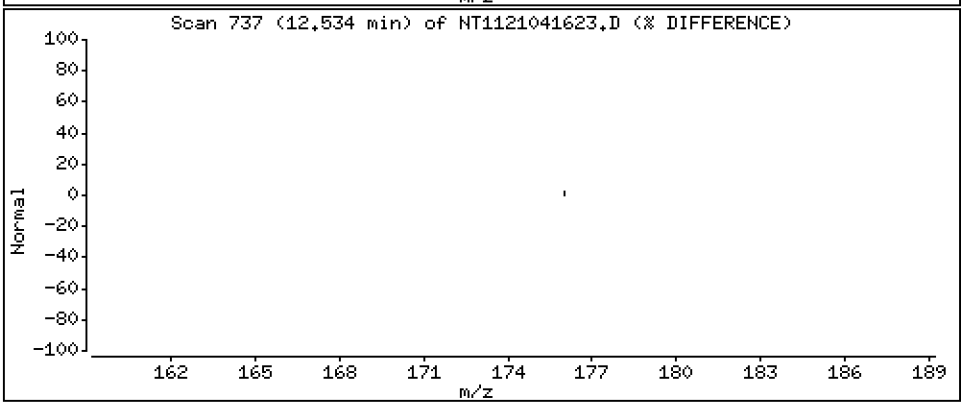












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

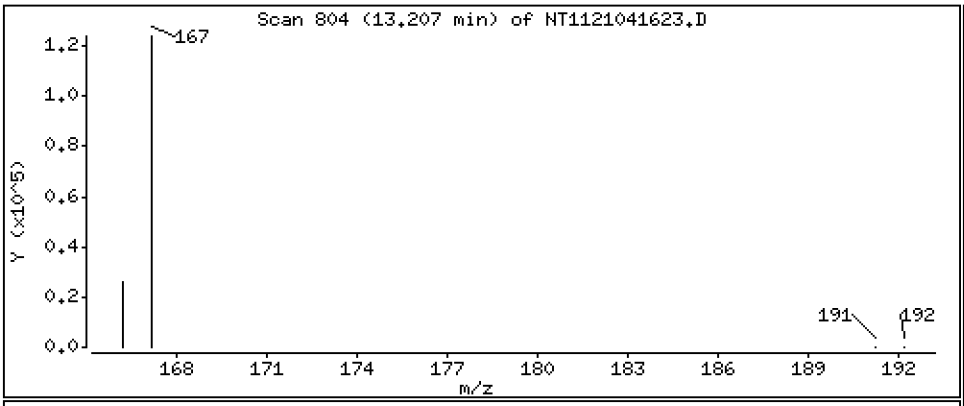
Operator: VTS

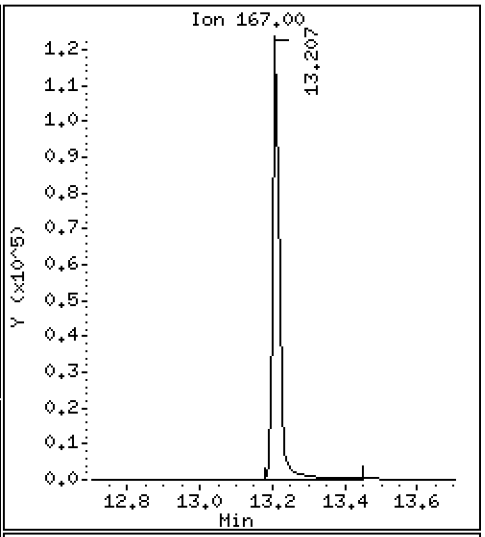
Column phase: Rxi-17Sil MS

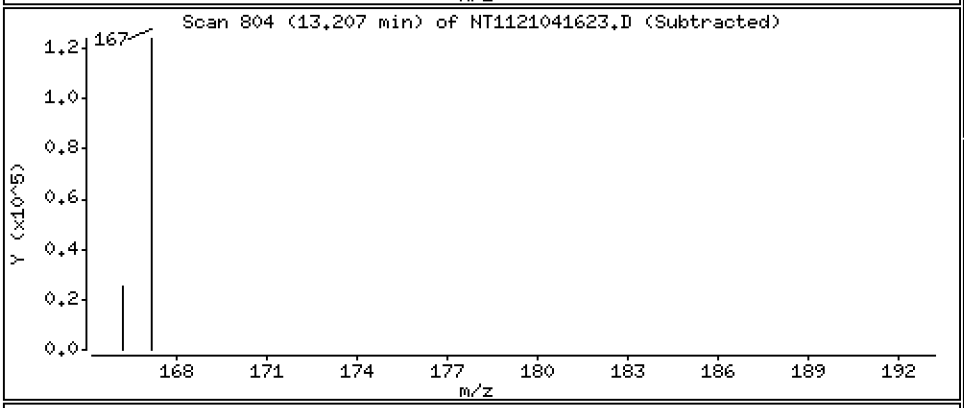
Column diameter: 0.25

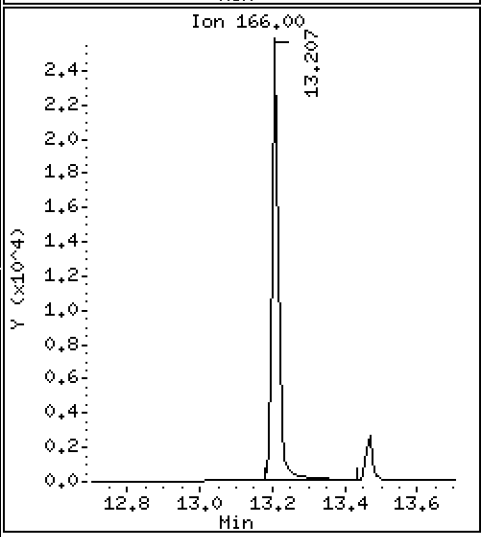
22 Carbazole

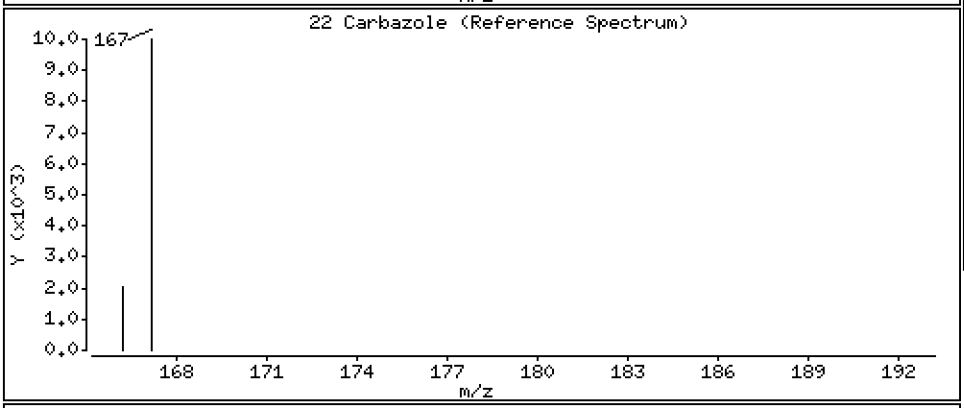
Concentration: 226 ng/mL

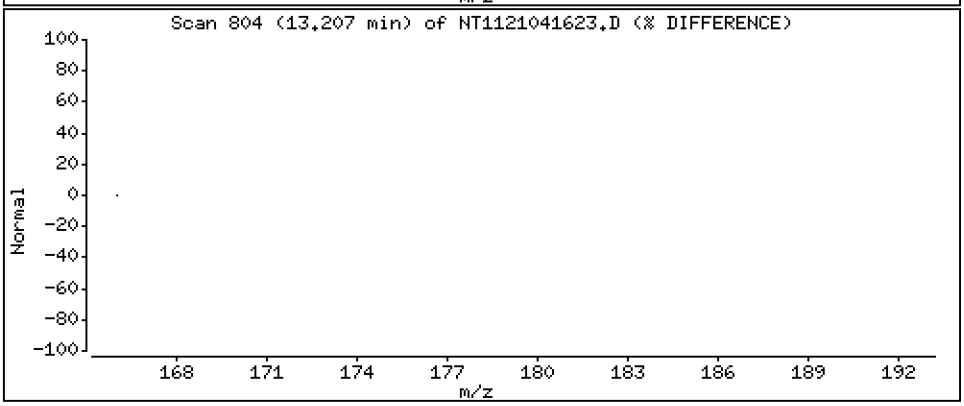












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

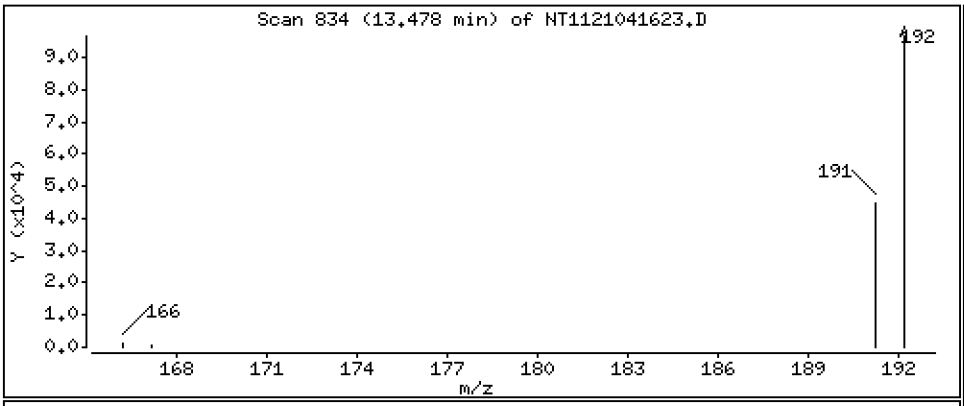
Operator: VTS

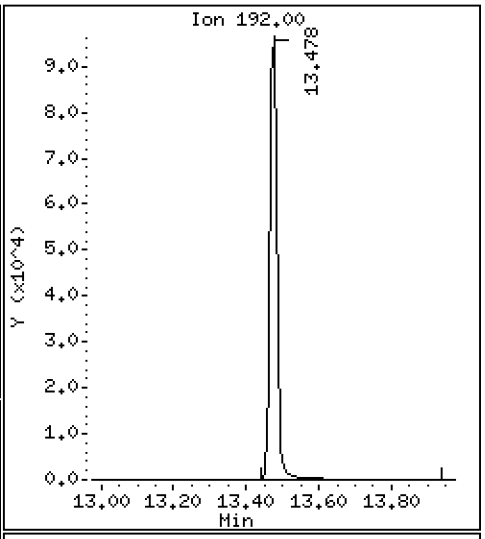
Column phase: Rxi-17Sil MS

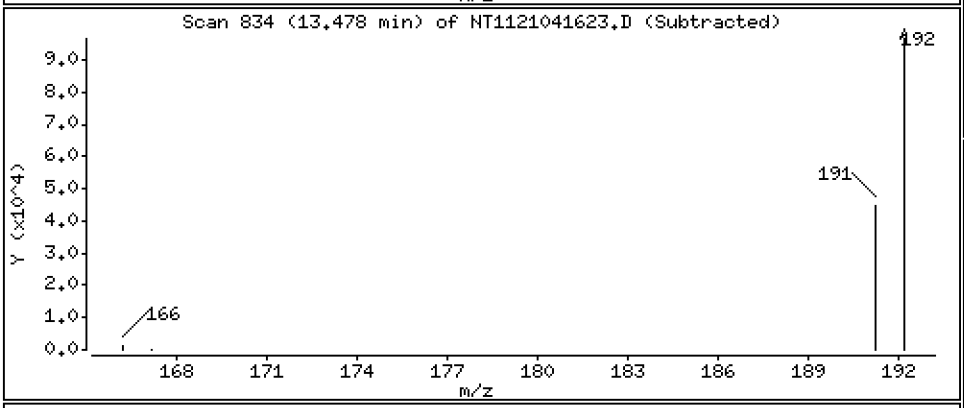
Column diameter: 0.25

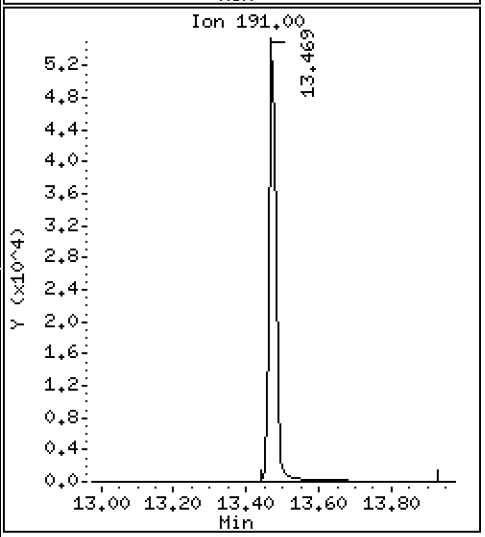
23 1-Methylphenanthrene

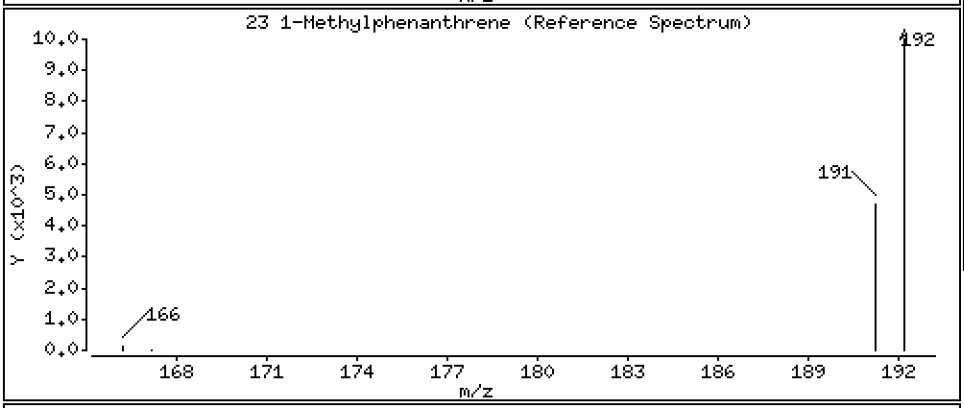
Concentration: 228 ng/mL

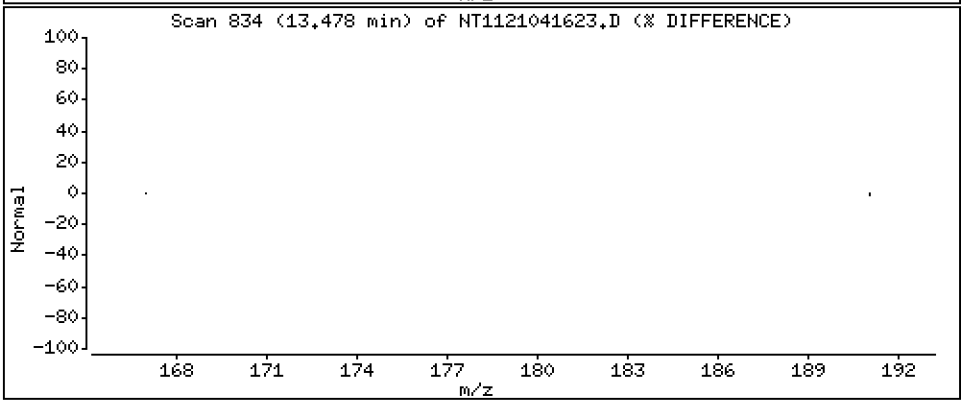












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

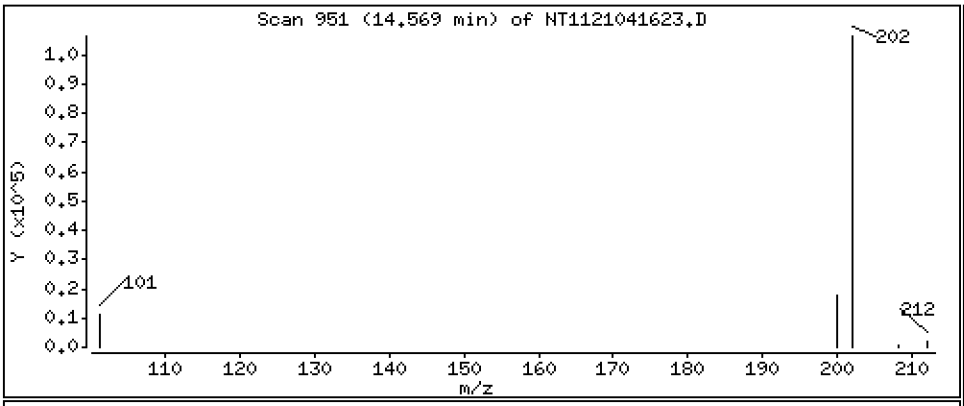
Operator: VTS

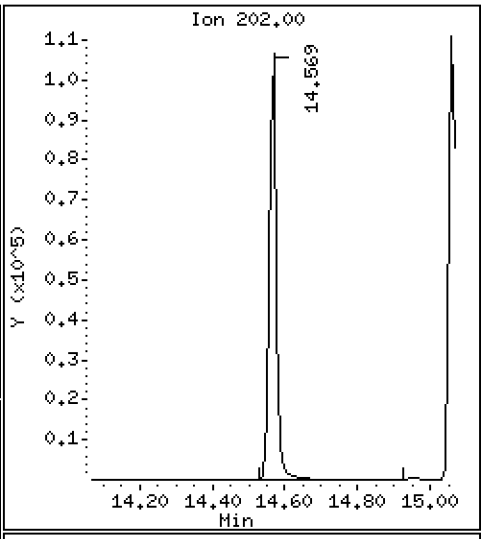
Column phase: Rxi-17Sil MS

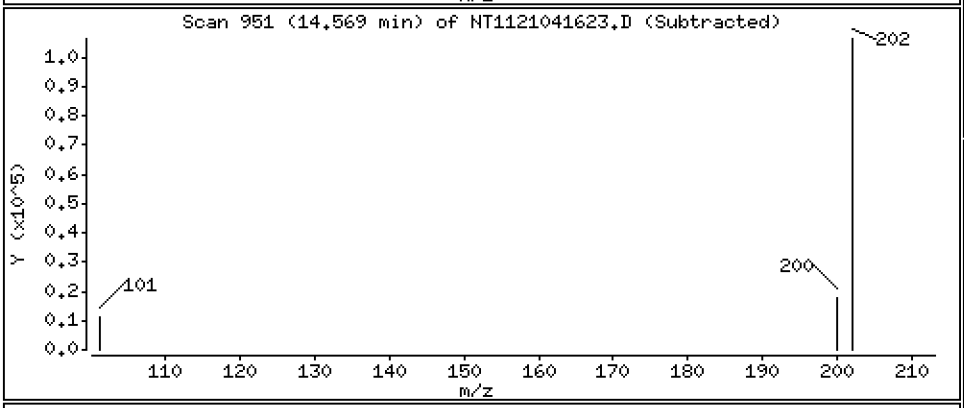
Column diameter: 0.25

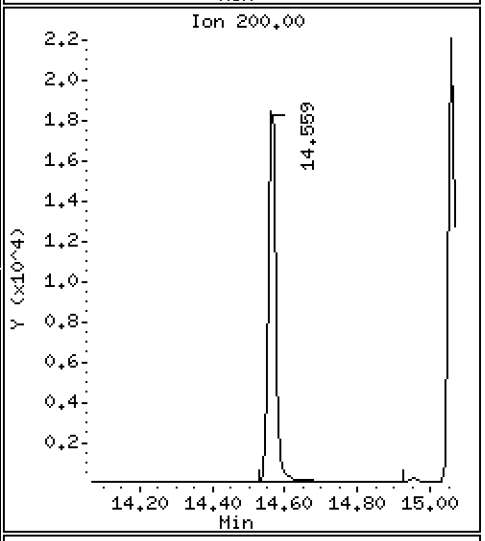
25 Fluoranthene

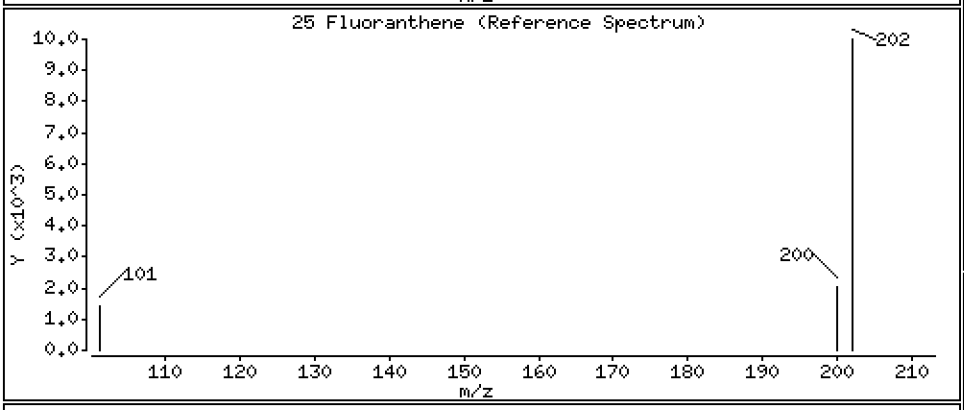
Concentration: 223 ng/mL

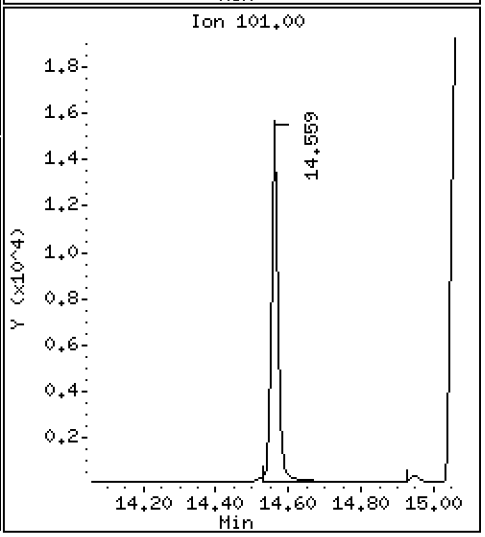


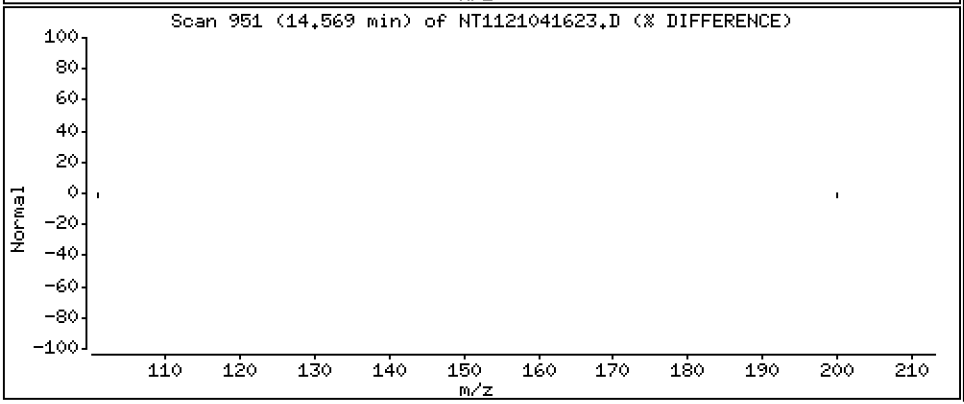












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

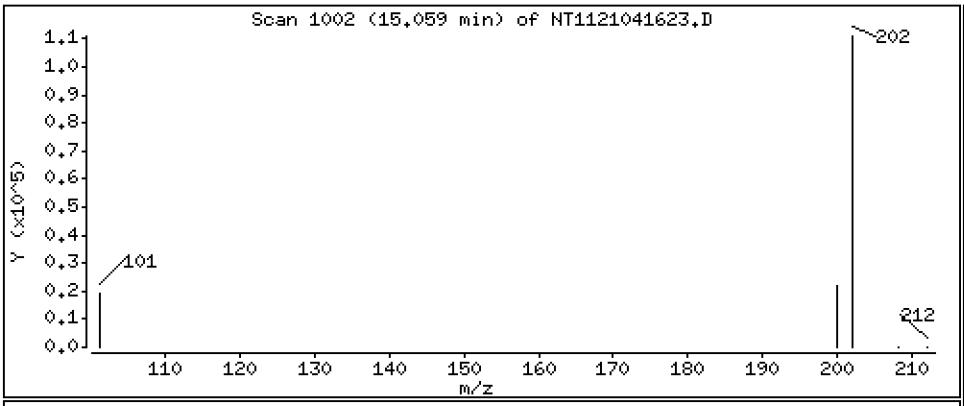
Operator: VTS

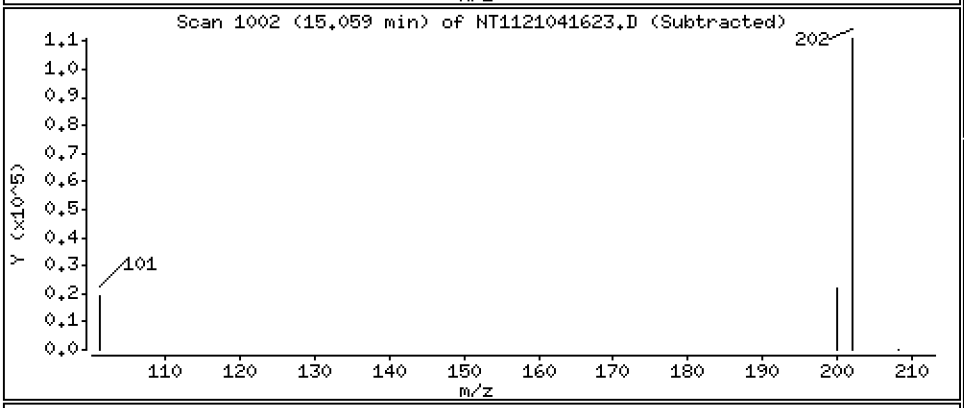
Column phase: Rxi-17Sil MS

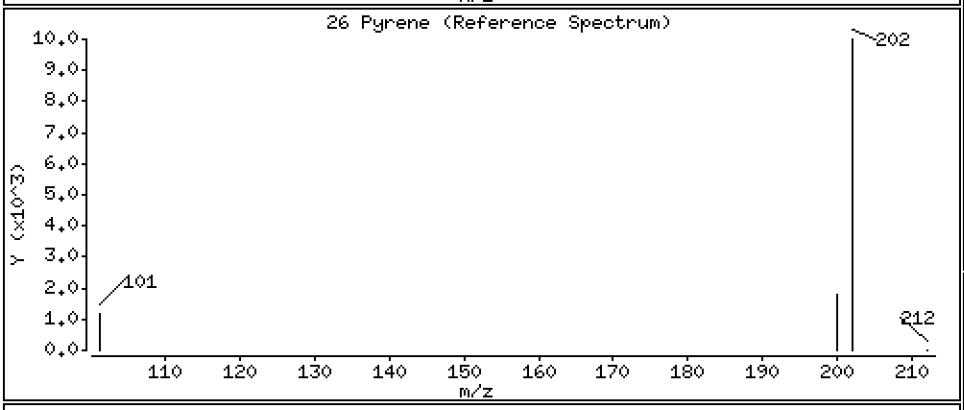
Column diameter: 0.25

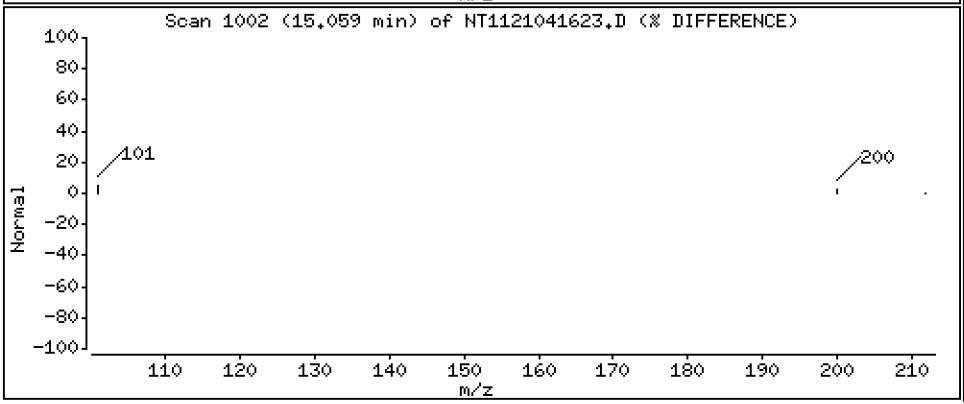
26 Pyrene

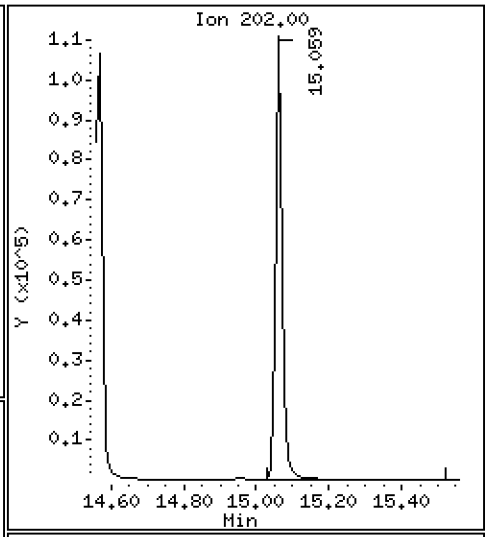
Concentration: 222 ng/mL

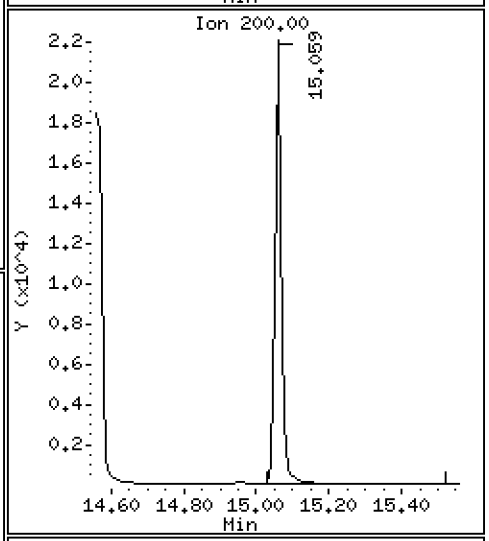


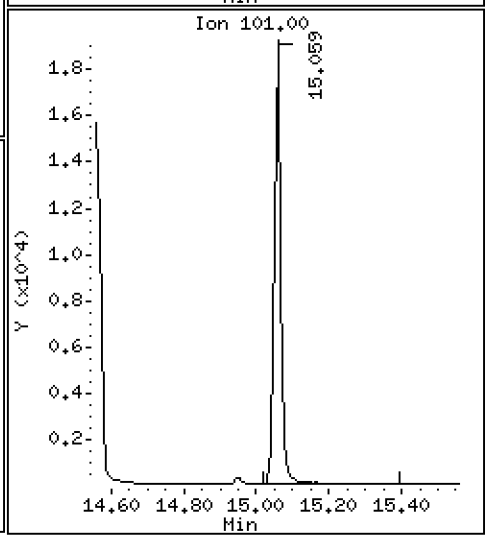












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

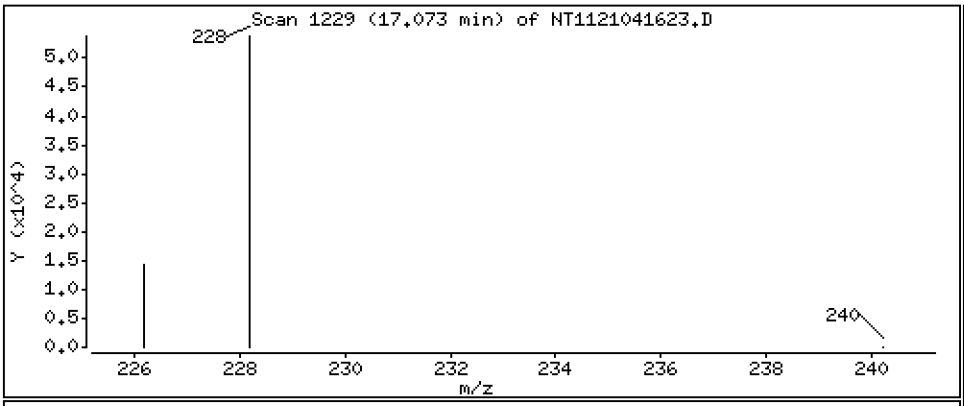
Operator: VTS

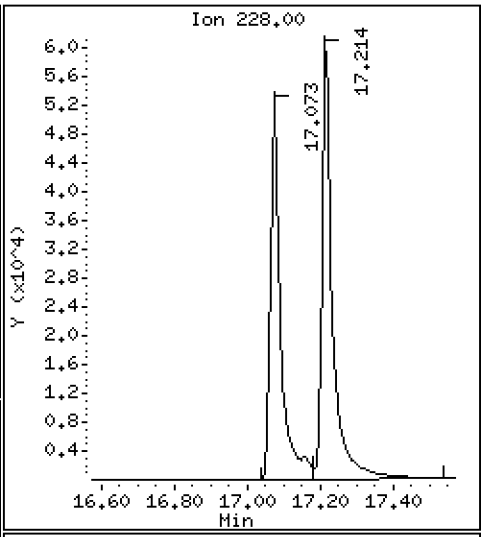
Column phase: Rxi-17Sil MS

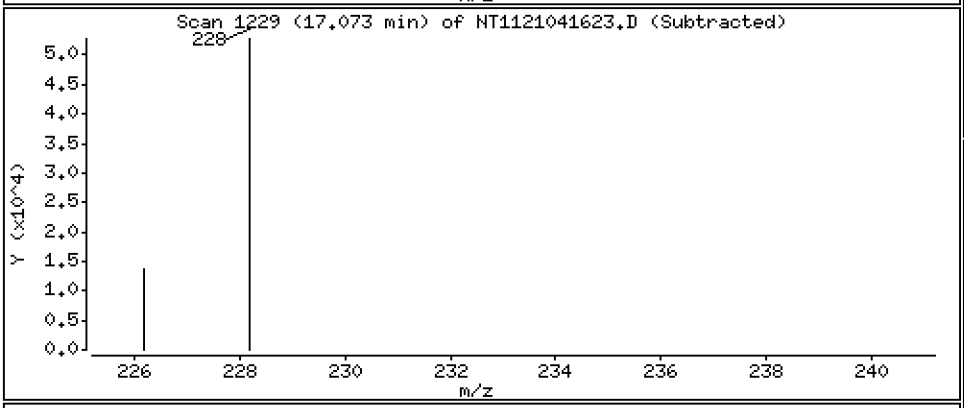
Column diameter: 0.25

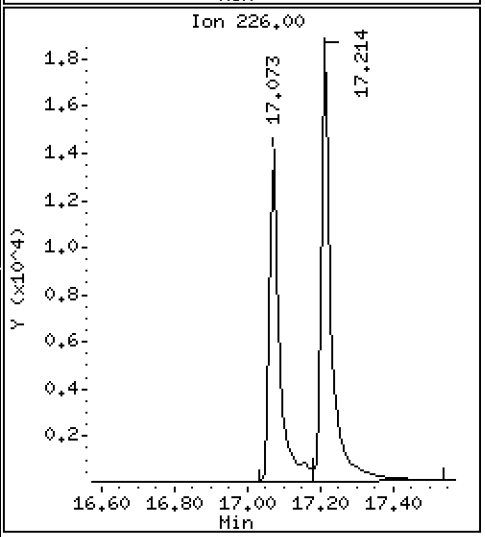
27 Benzo(a)anthracene

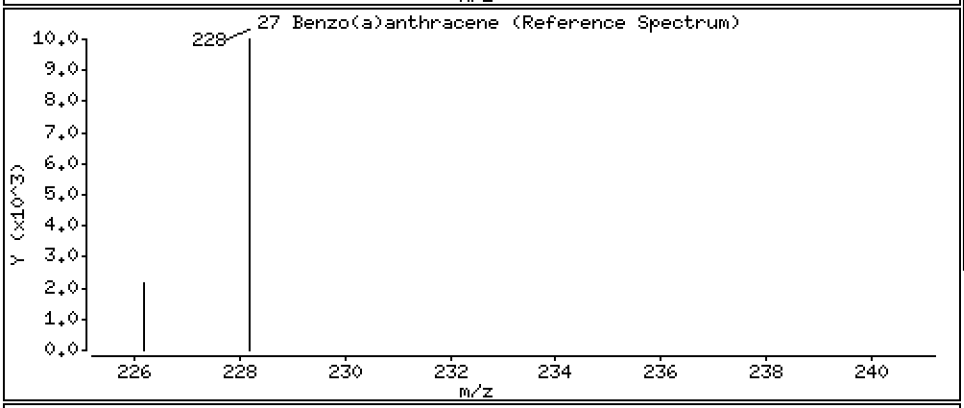
Concentration: 201 ng/mL

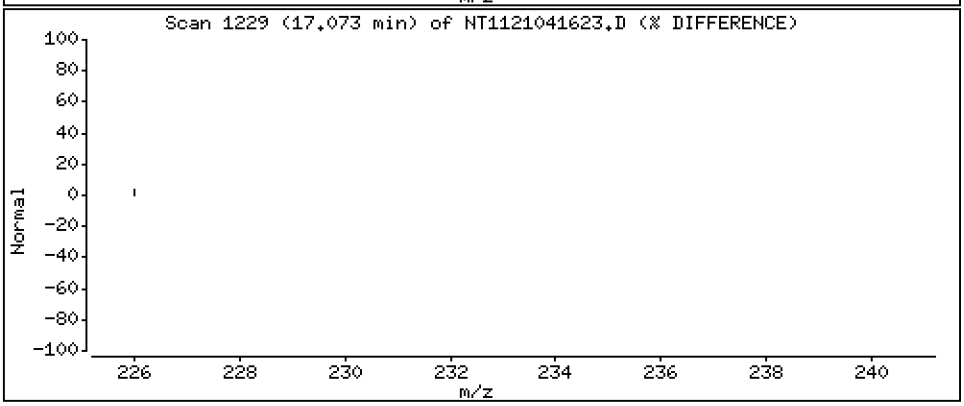












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

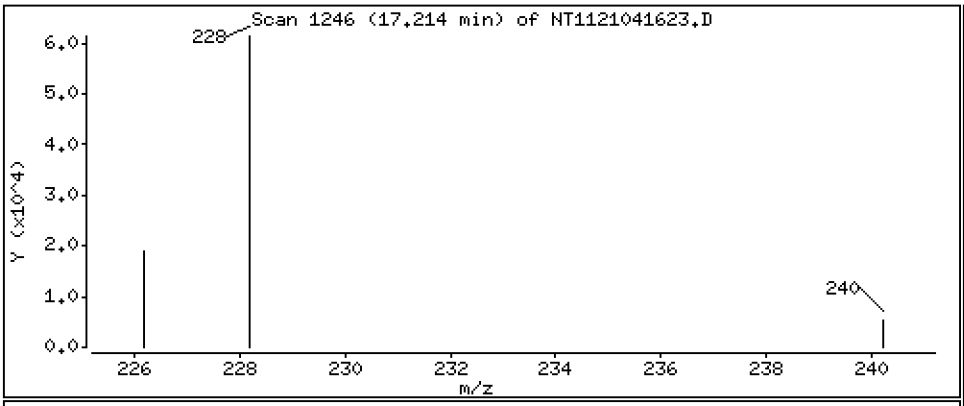
Operator: VTS

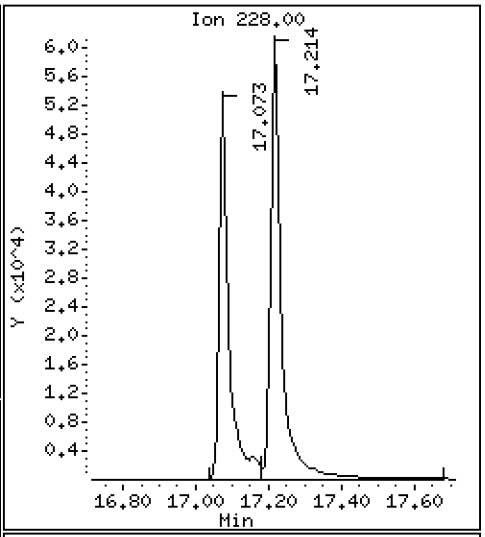
Column phase: Rxi-17Sil MS

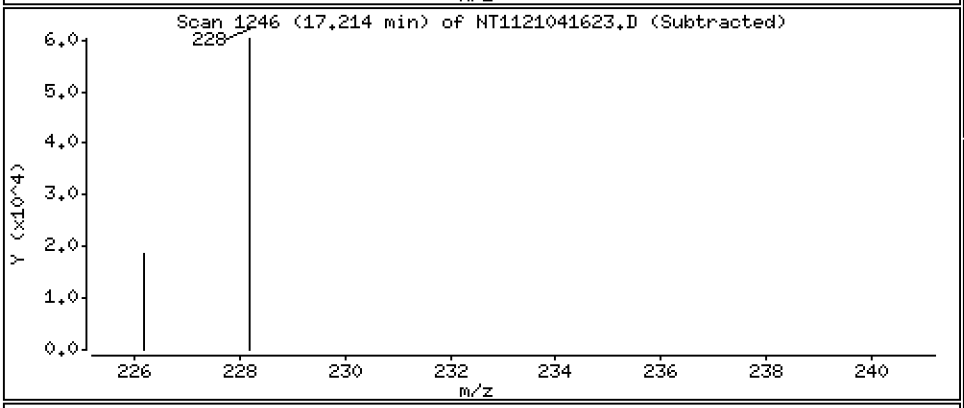
Column diameter: 0.25

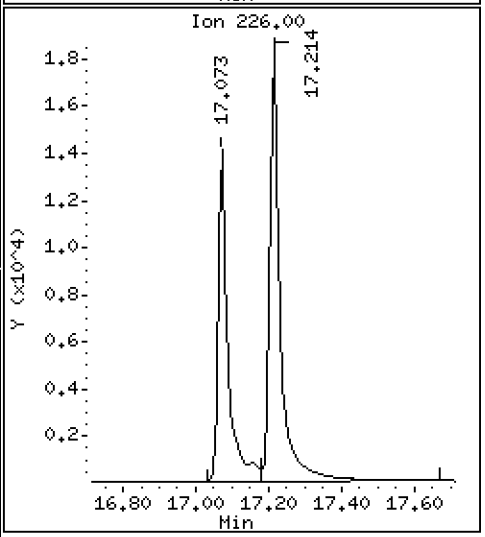
29 Chrysene

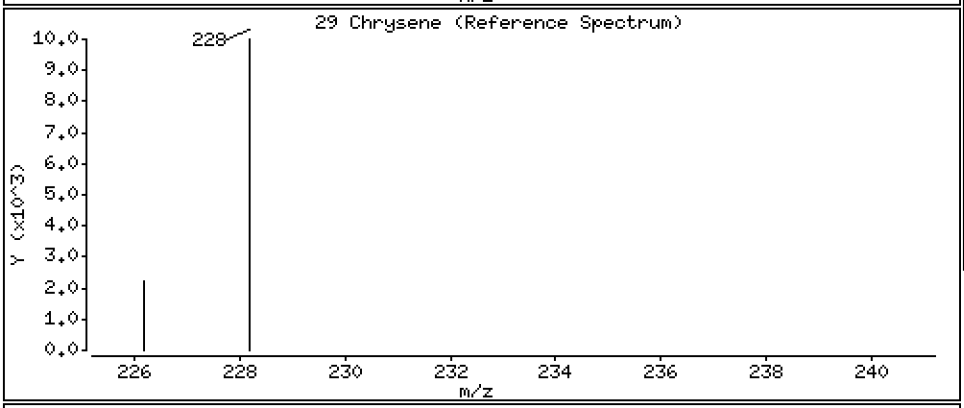
Concentration: 221 ng/mL

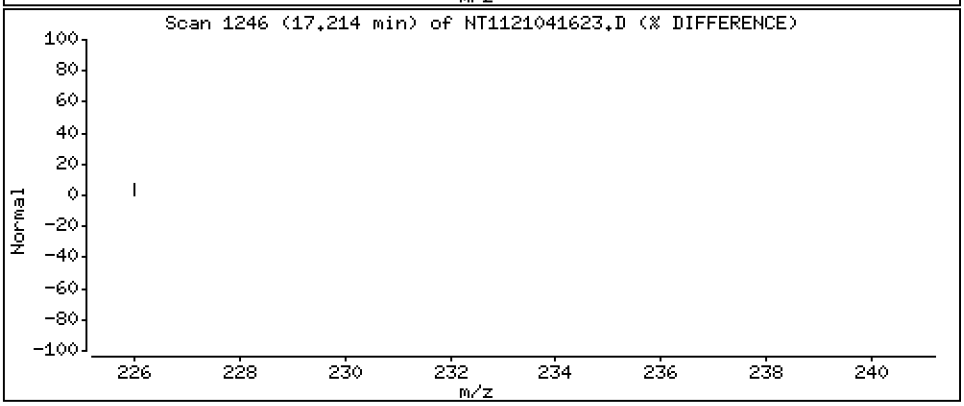












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

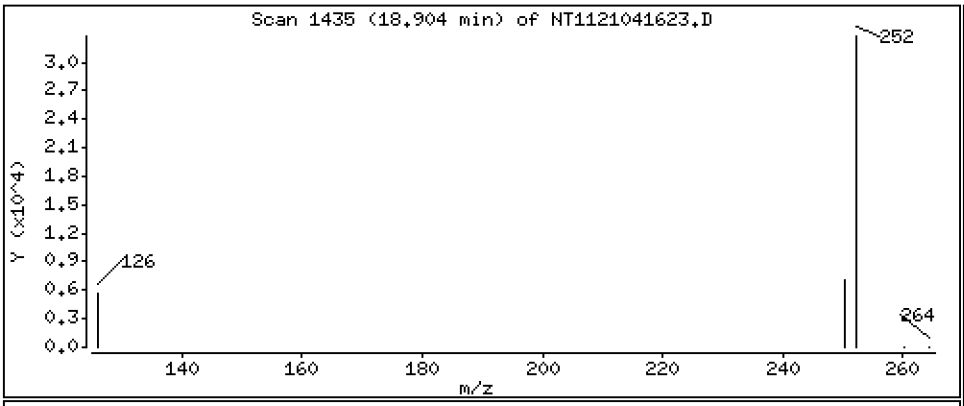
Operator: VTS

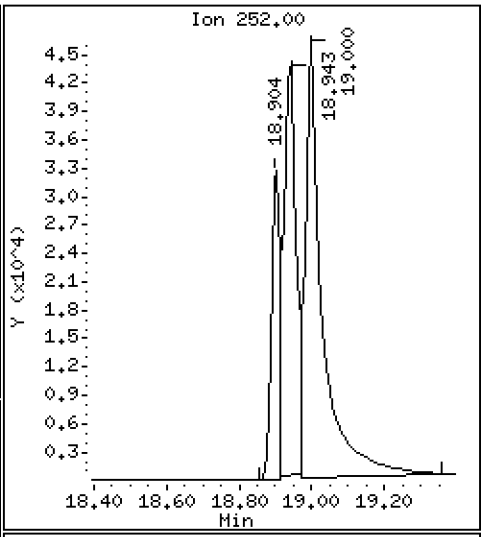
Column phase: Rxi-17Sil MS

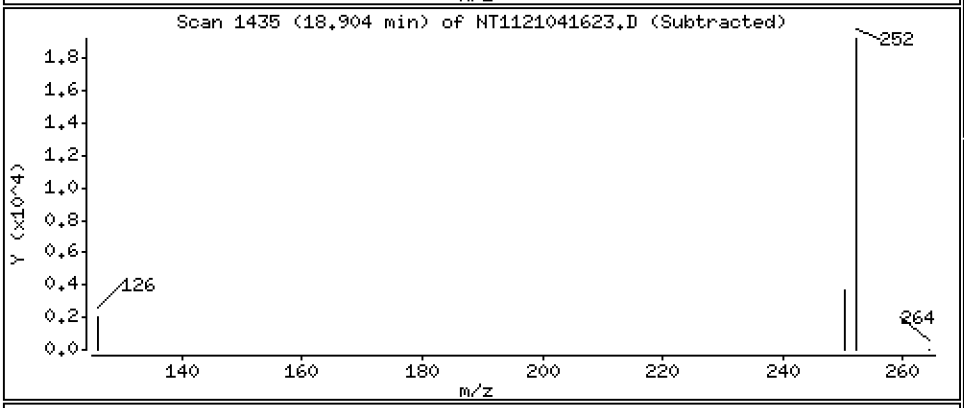
Column diameter: 0.25

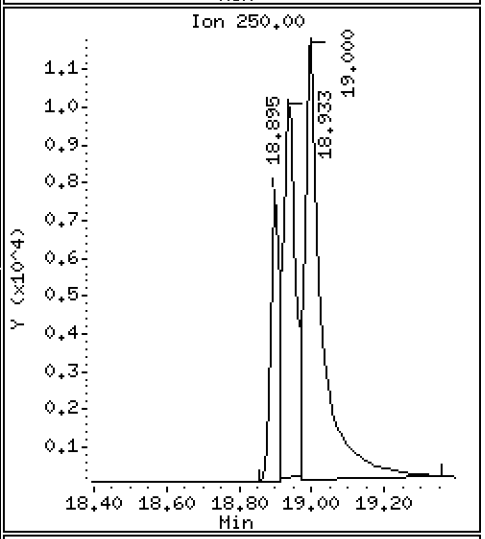
30 Benzo(b)fluoranthene

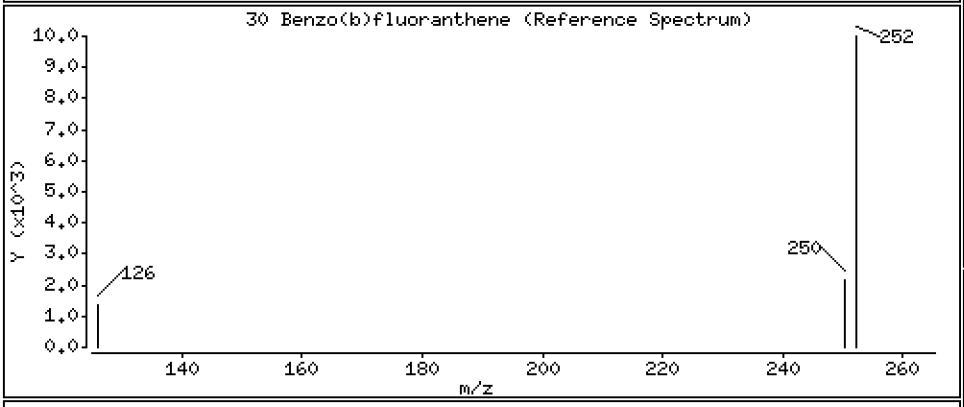
Concentration: 146 ng/mL

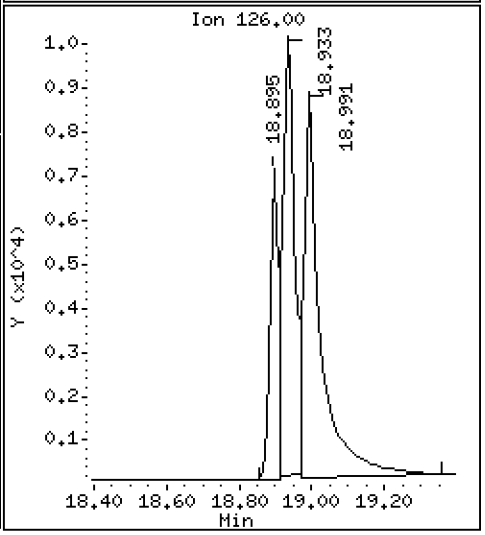


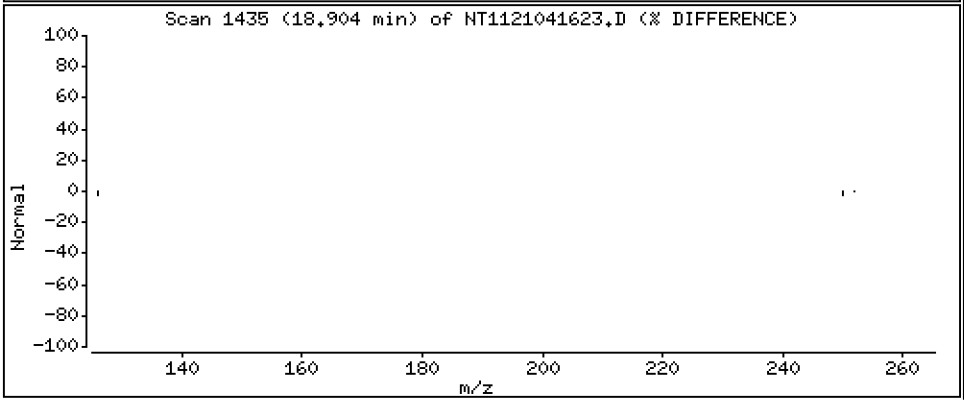












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

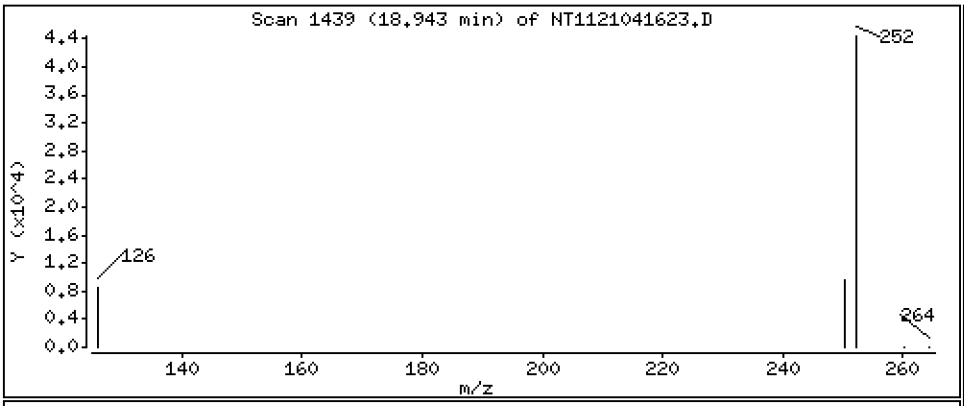
Operator: VTS

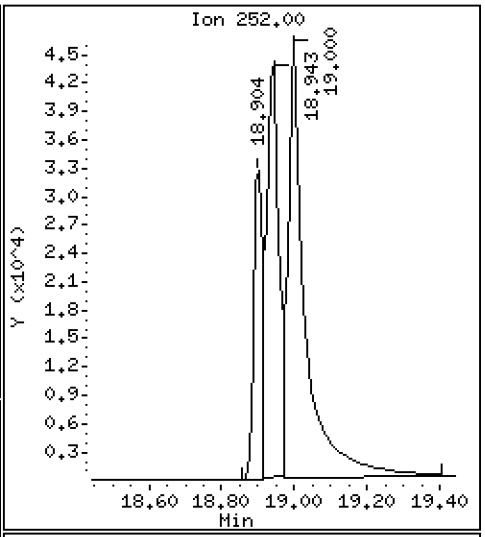
Column phase: Rxi-17Sil MS

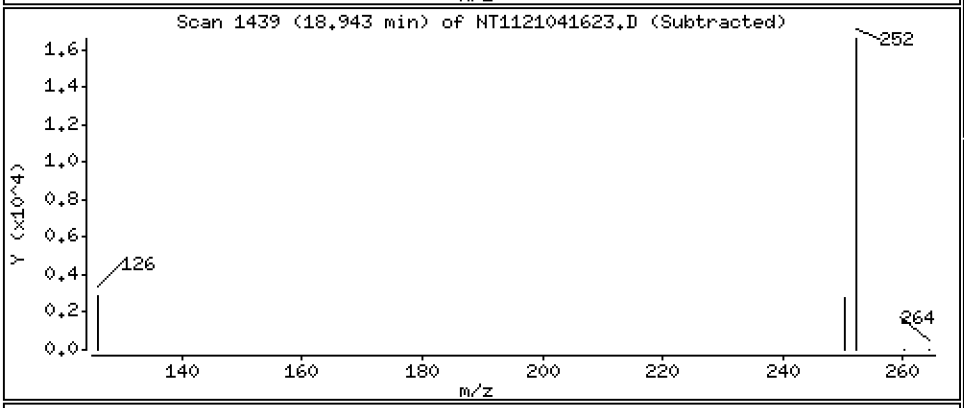
Column diameter: 0.25

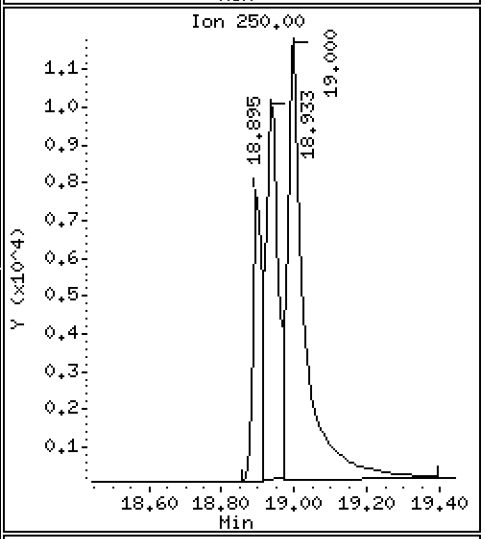
31 Benzo(k)fluoranthene

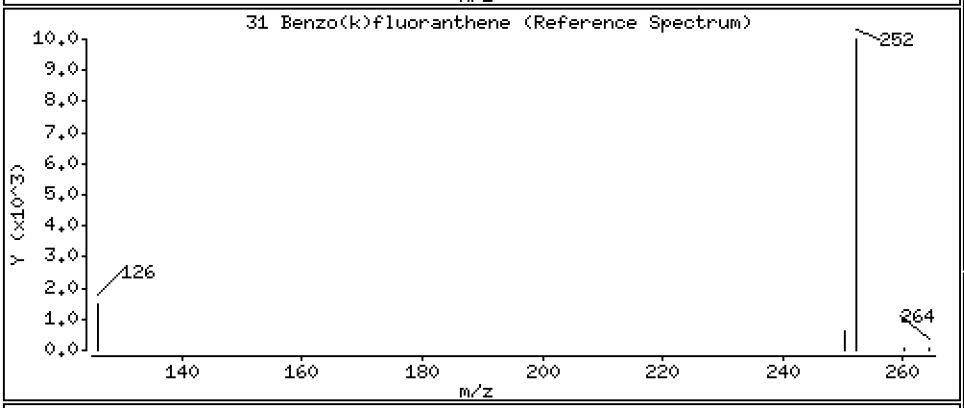
Concentration: 220 ng/mL

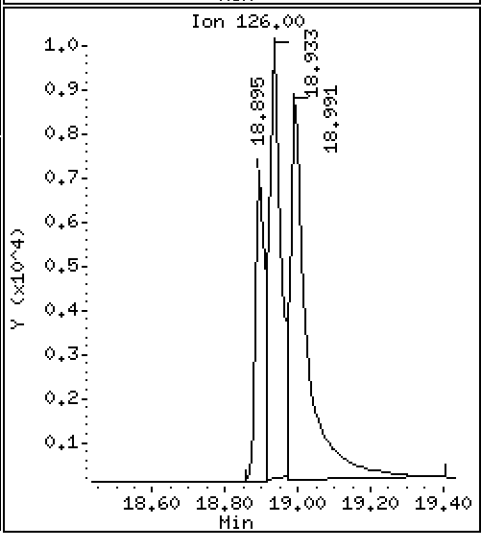


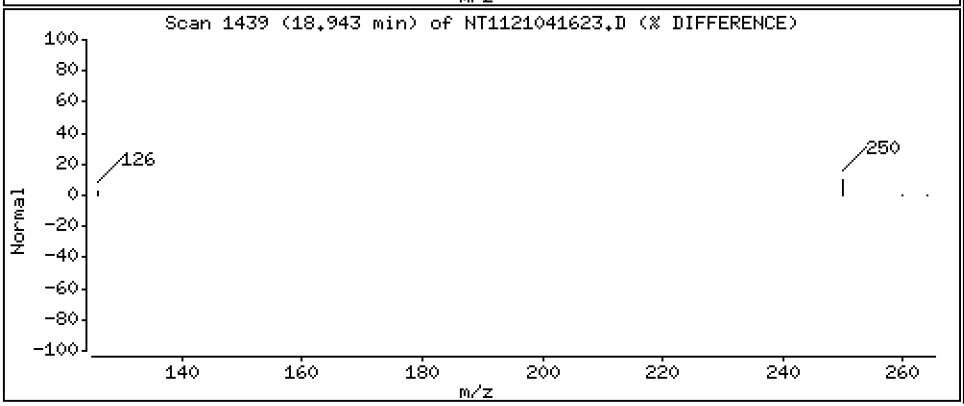












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

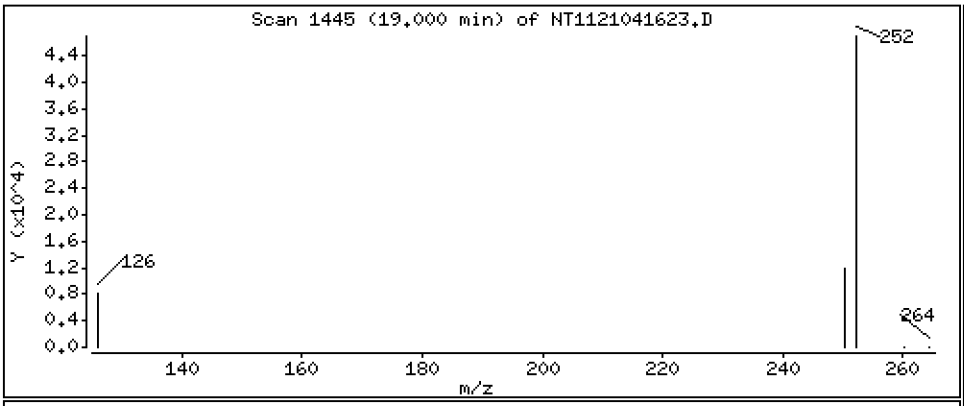
Operator: VTS

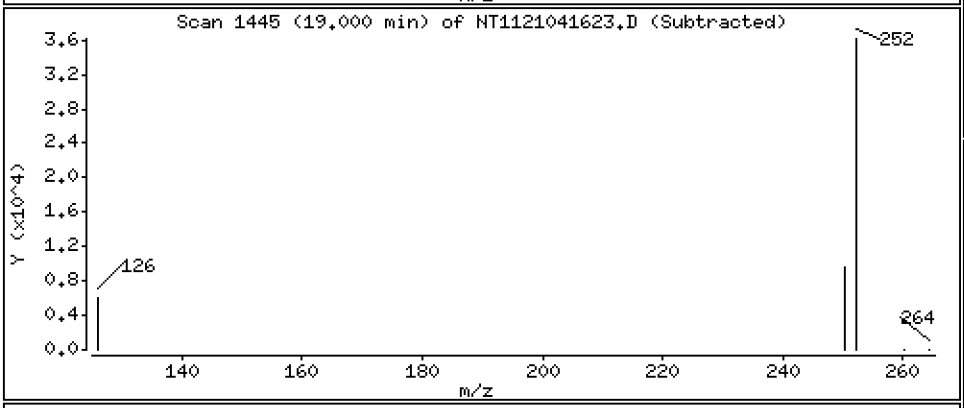
Column phase: Rxi-17Sil MS

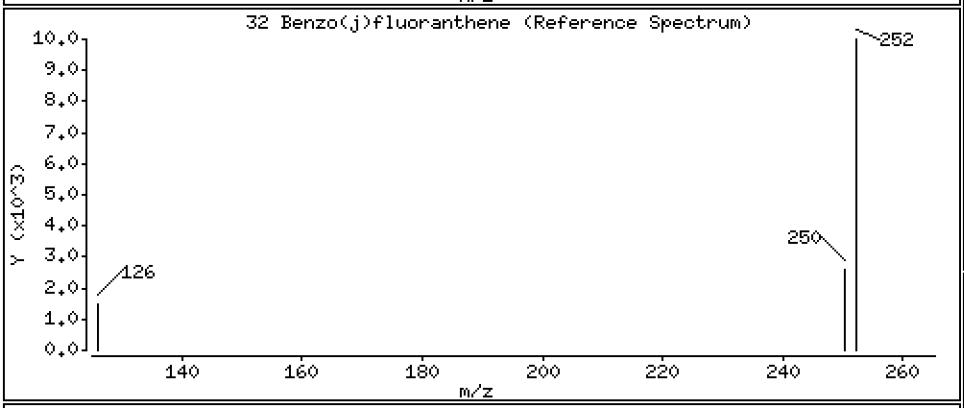
Column diameter: 0.25

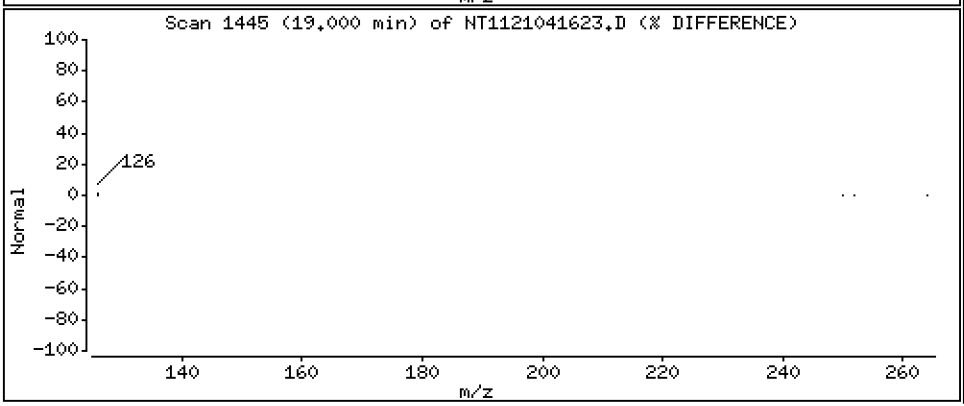
32 Benzo(j)fluoranthene

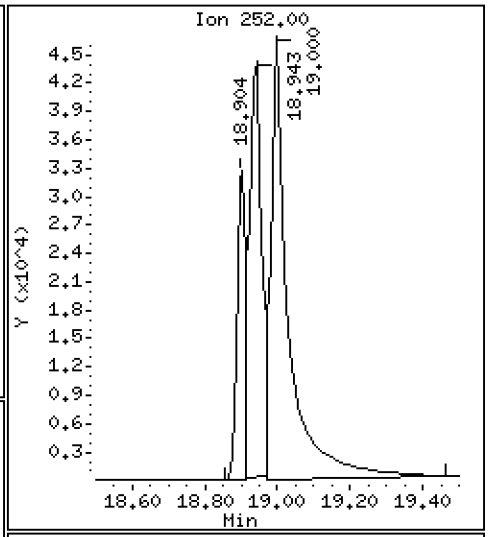
Concentration: 282 ng/mL

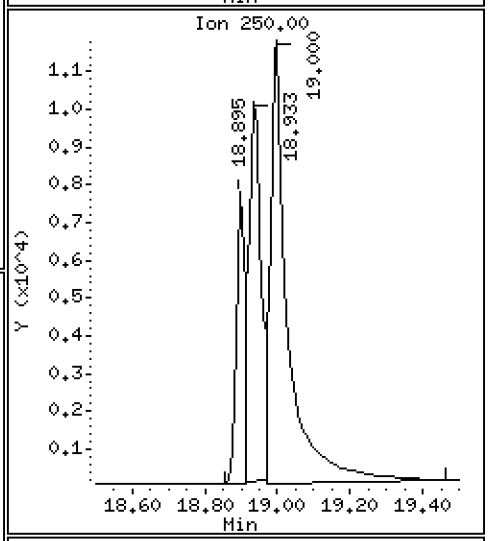


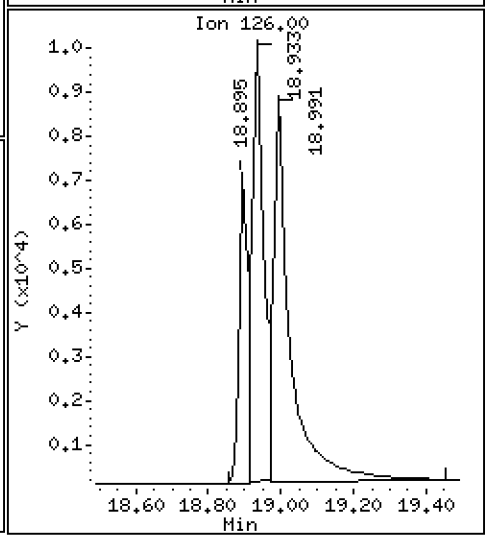












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

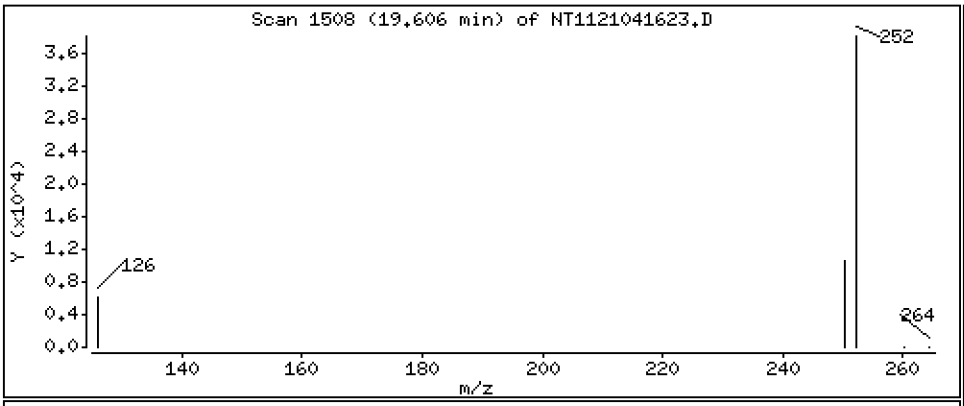
Operator: VTS

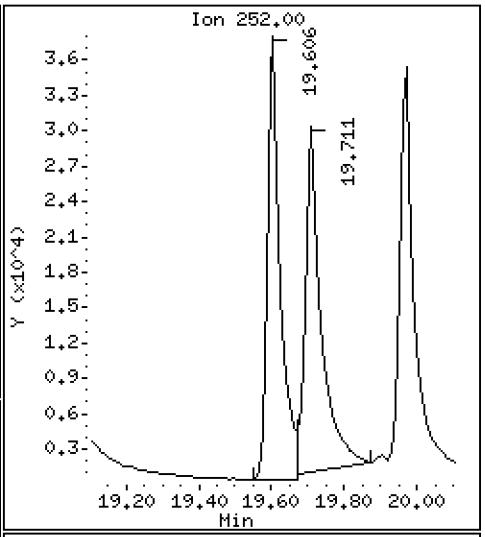
Column phase: Rxi-17Sil MS

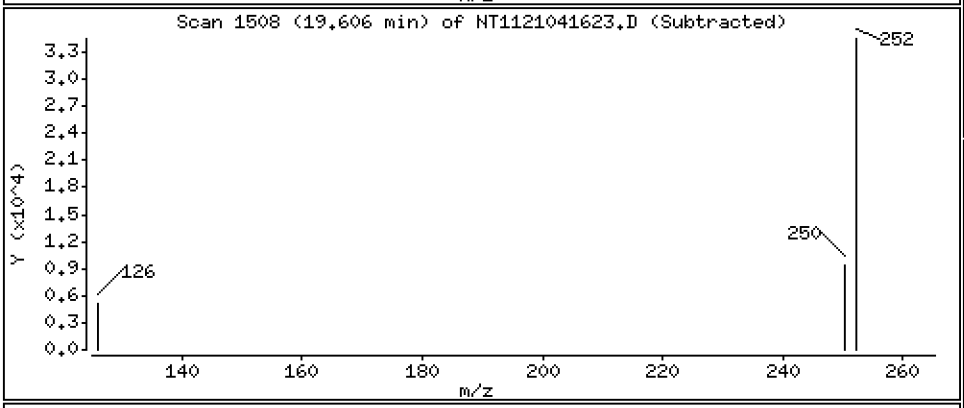
Column diameter: 0.25

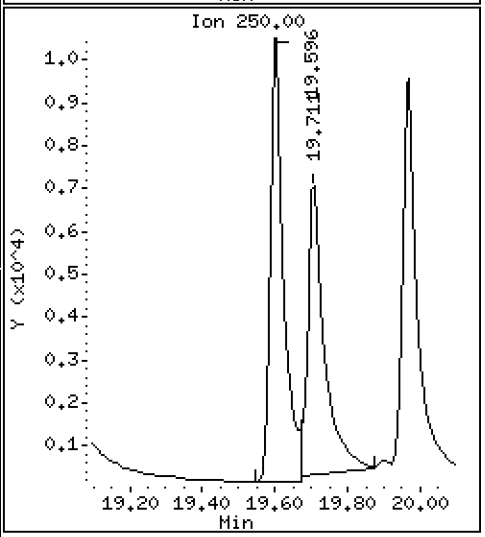
34 Benzo(e)pyrene

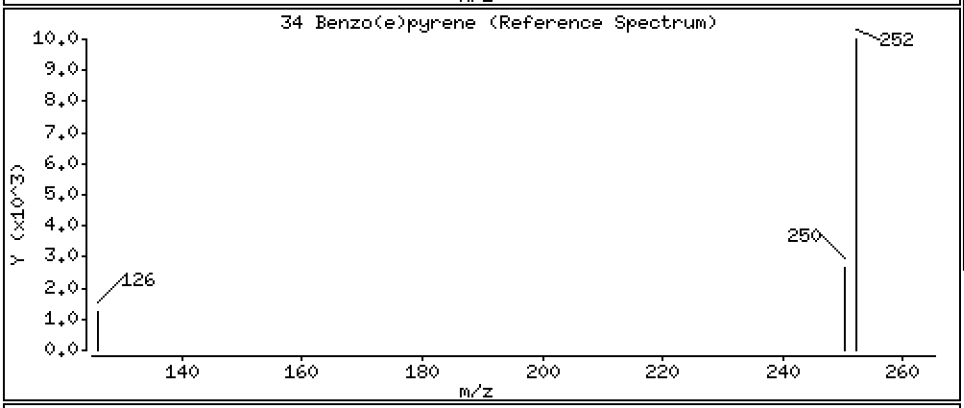
Concentration: 209 ng/mL

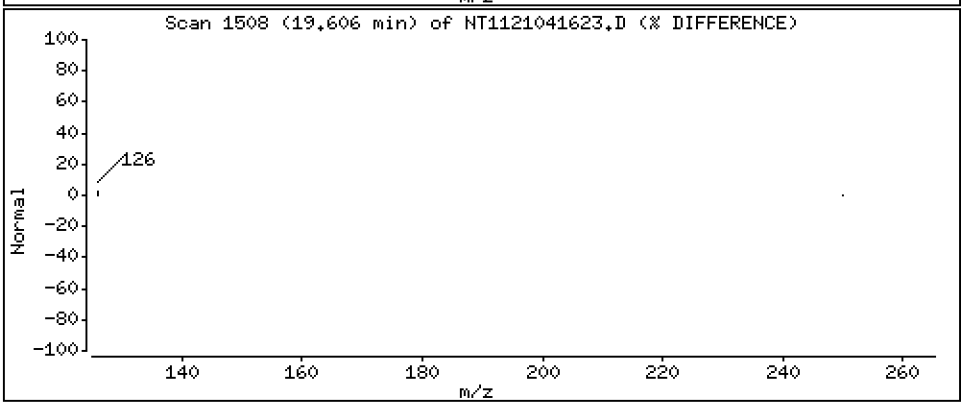












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

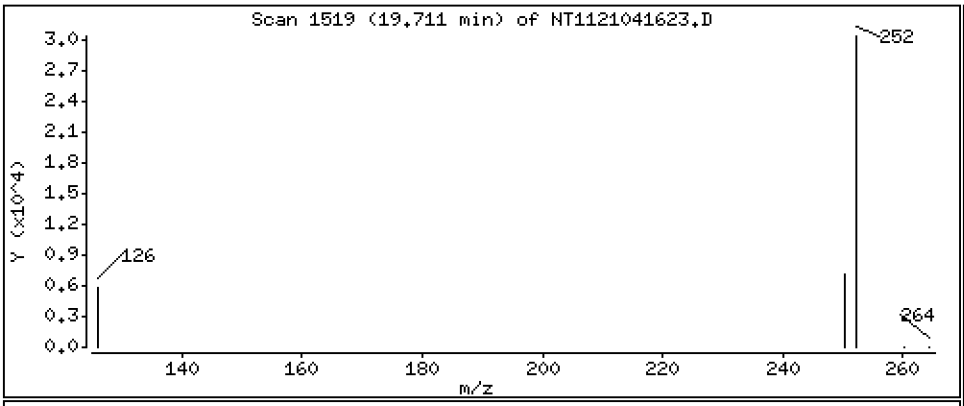
Operator: VTS

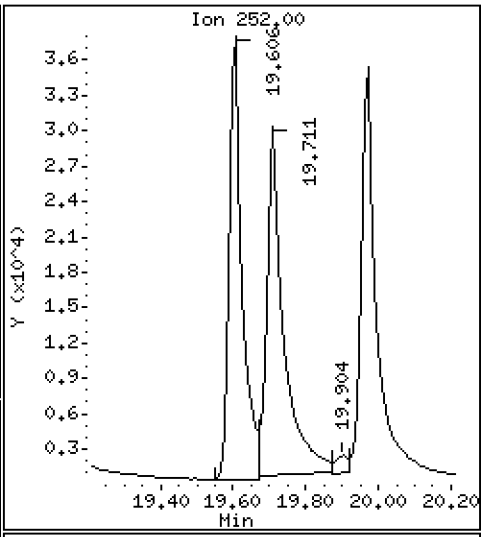
Column phase: Rxi-17Sil MS

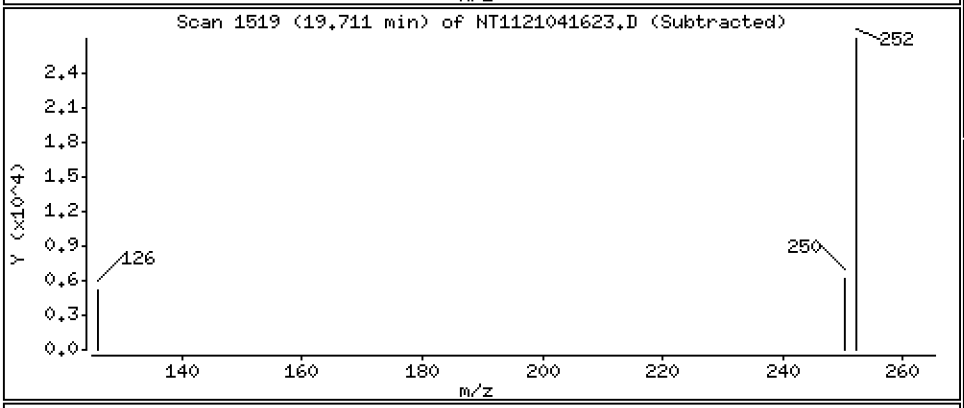
Column diameter: 0.25

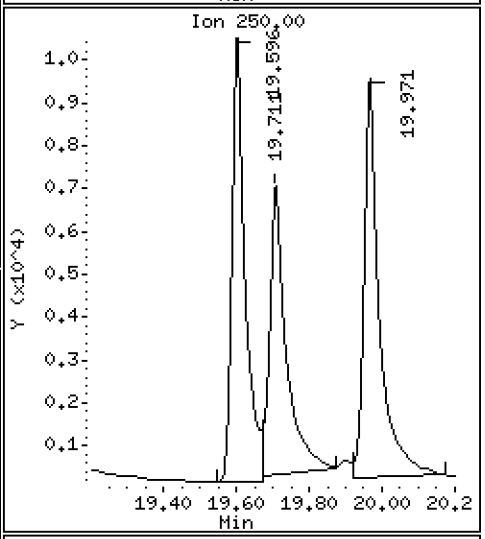
35 Benzo(a)pyrene

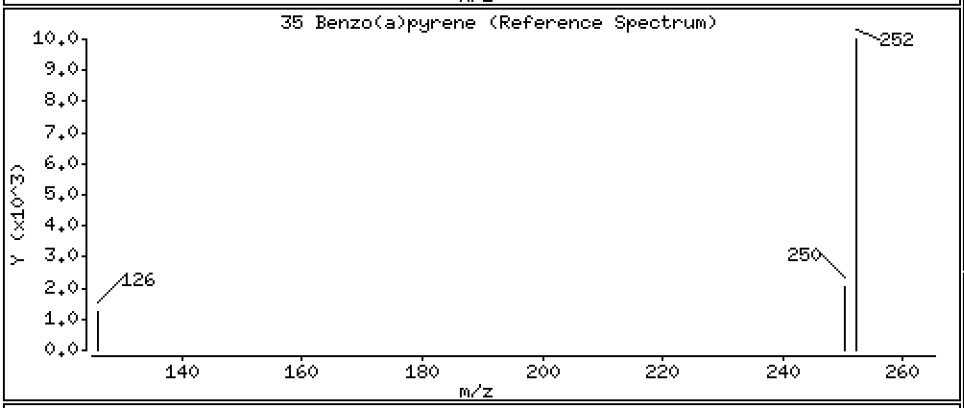
Concentration: 229 ng/mL

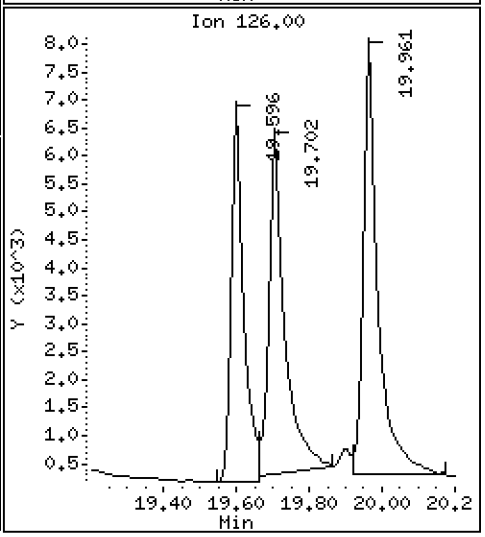


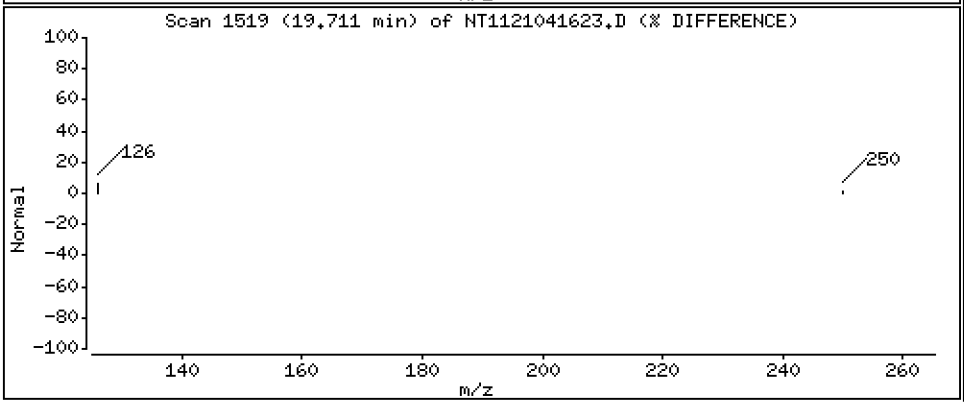












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

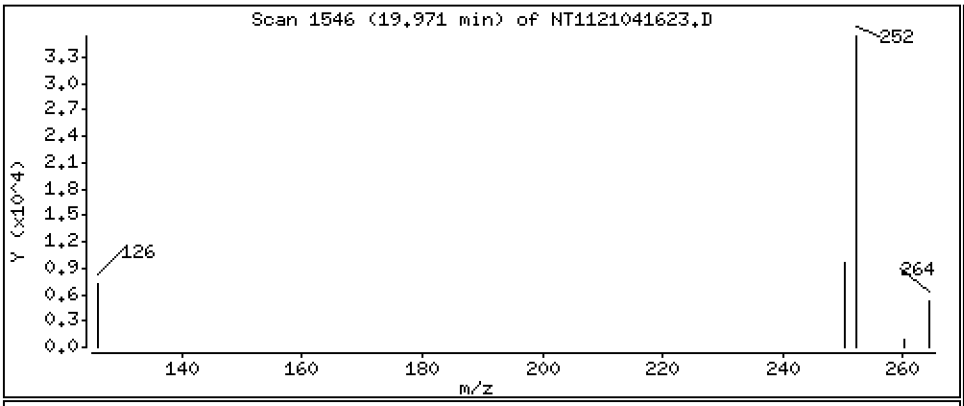
Operator: VTS

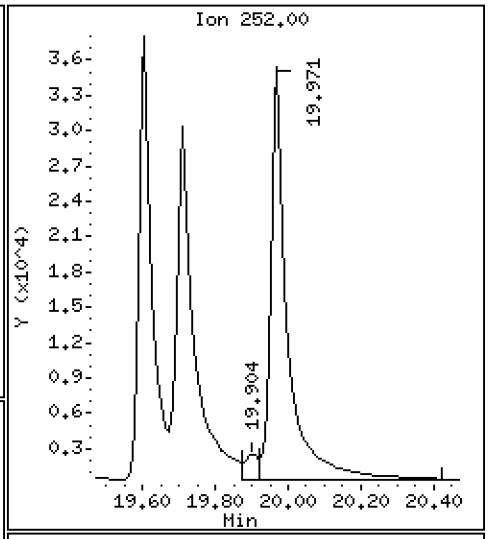
Column phase: Rxi-17Sil MS

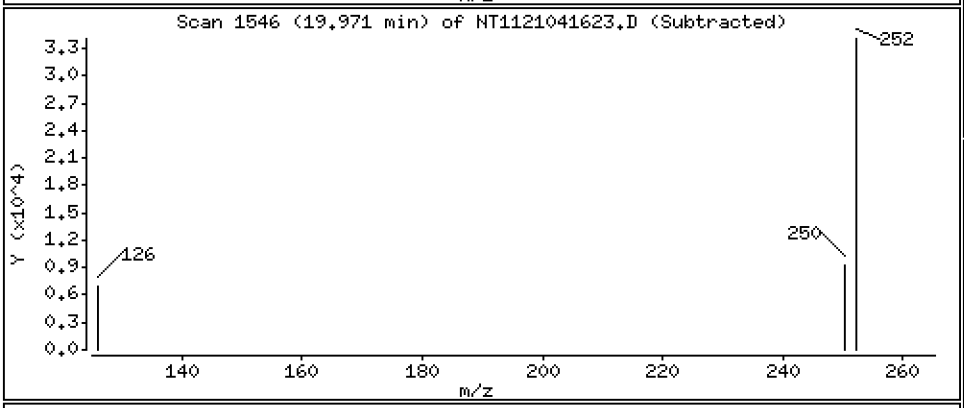
Column diameter: 0.25

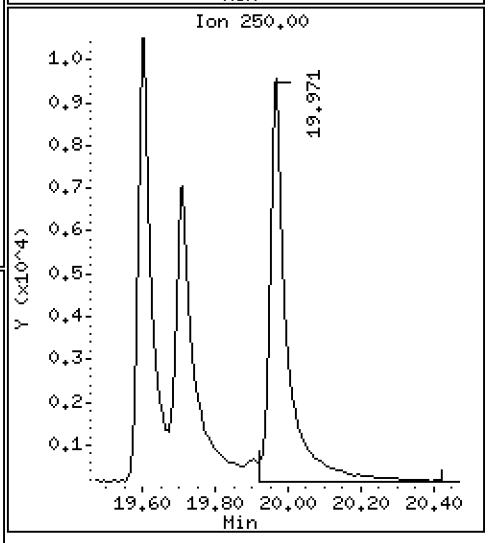
37 Perylene

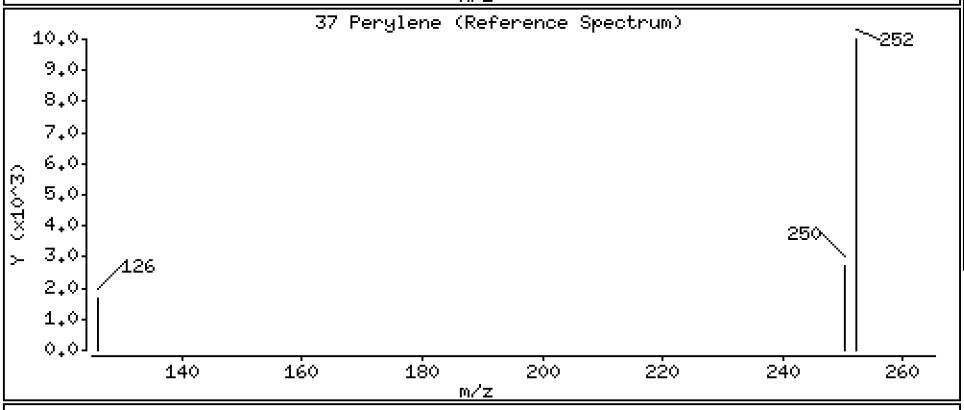
Concentration: 234 ng/mL

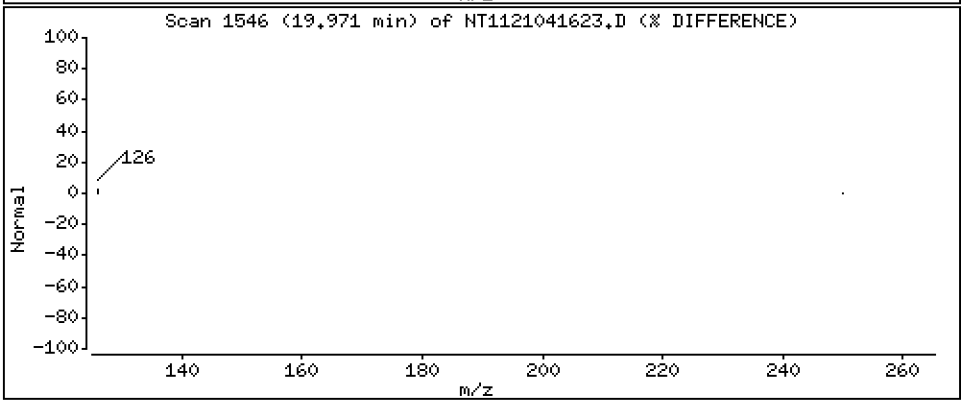












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

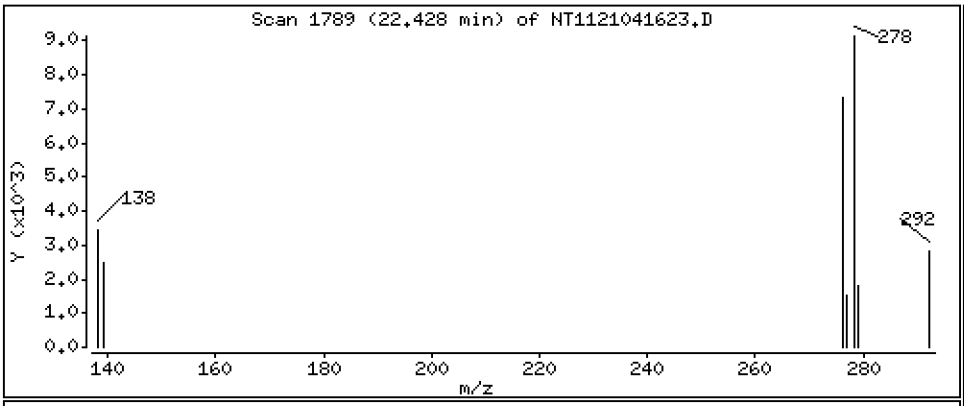
Operator: VTS

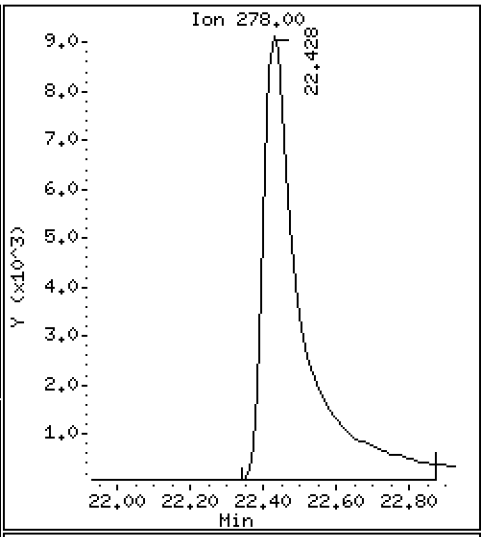
Column phase: Rxi-17Sil MS

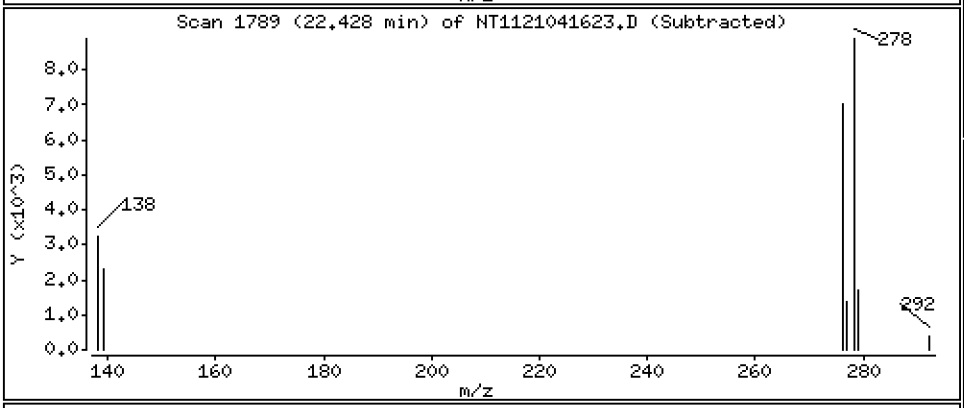
Column diameter: 0.25

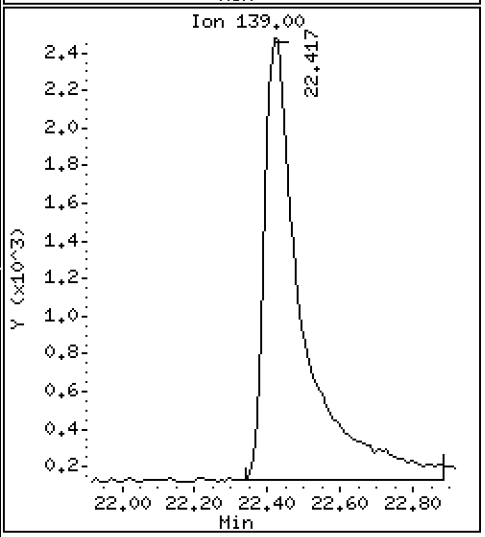
39 Dibenzo(a,h)anthracene

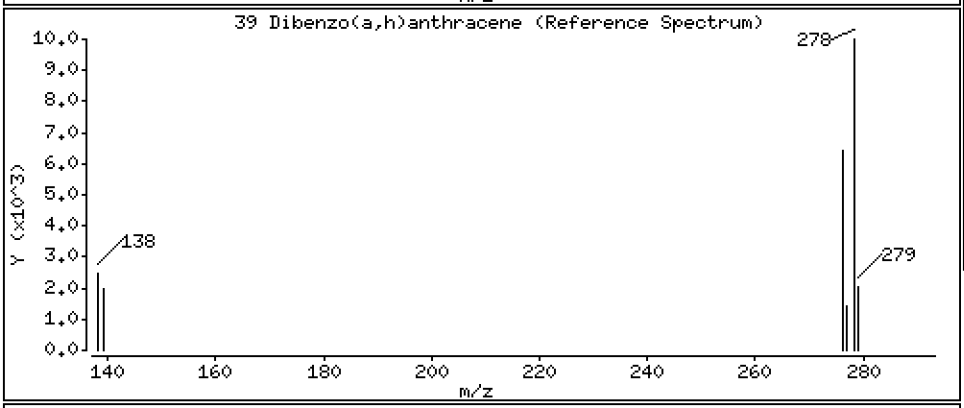
Concentration: 190 ng/mL

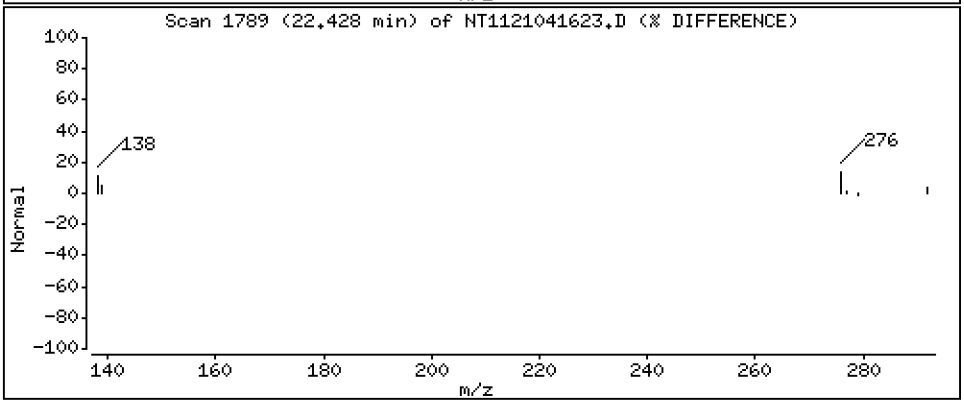












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

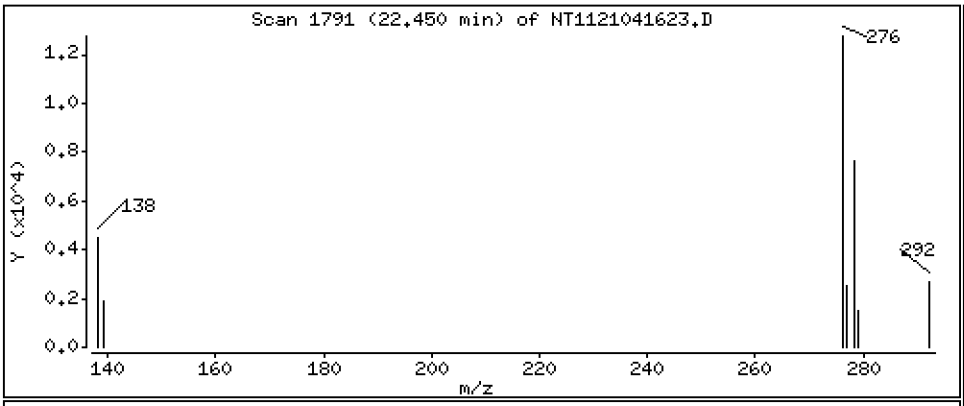
Operator: VTS

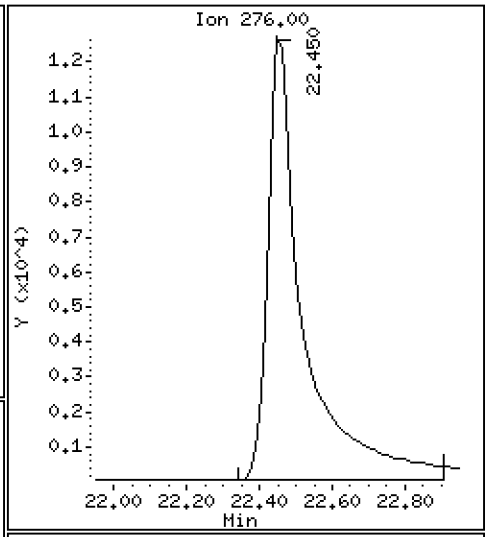
Column phase: Rxi-17Sil MS

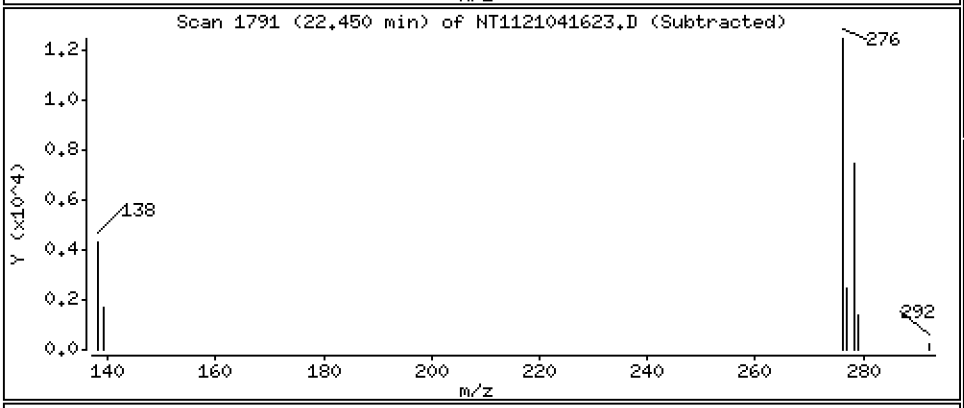
Column diameter: 0.25

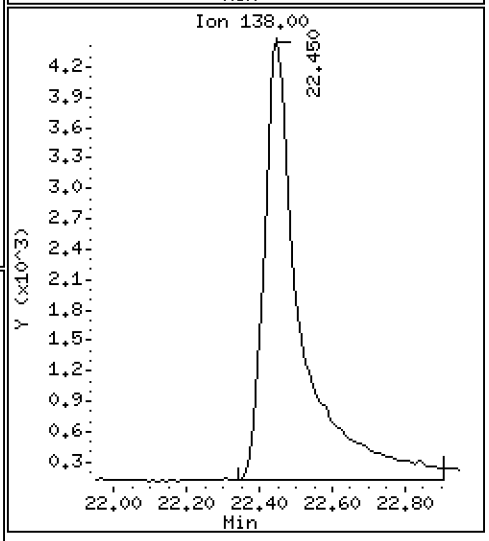
40 Indeno(1,2,3-cd)pyrene

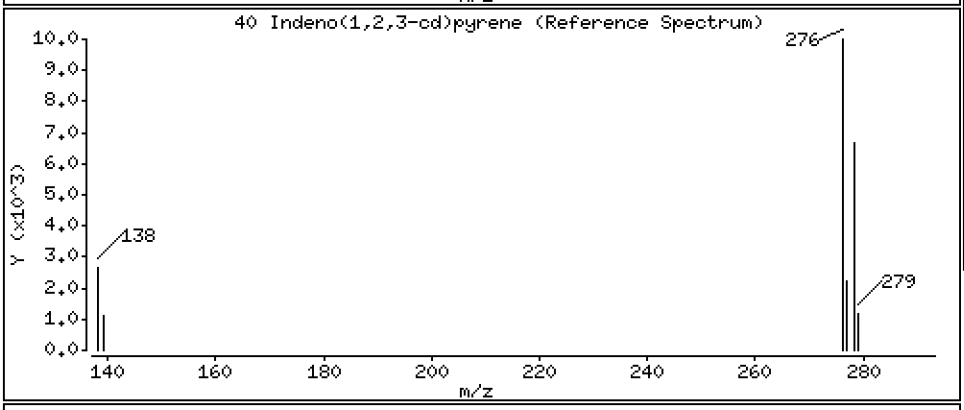
Concentration: 207 ng/mL

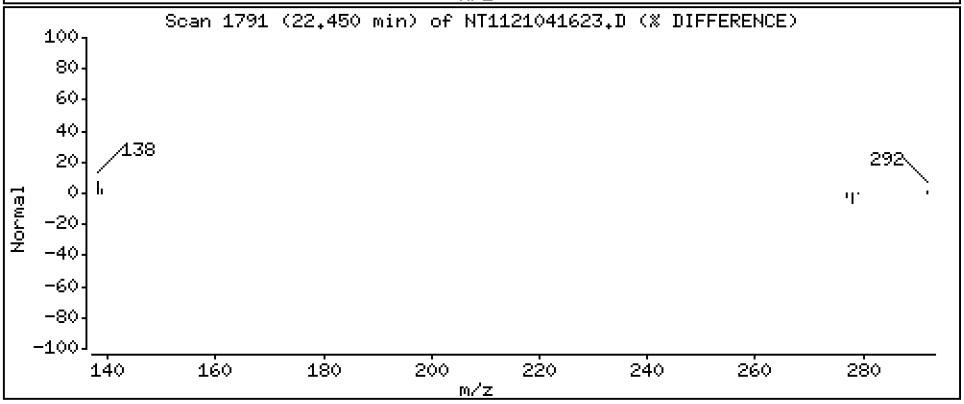












Data File: \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D

Date : 16-APR-2021 21:46

Client ID:

Instrument: nt11.i

Sample Info: SJD0232-CCV1

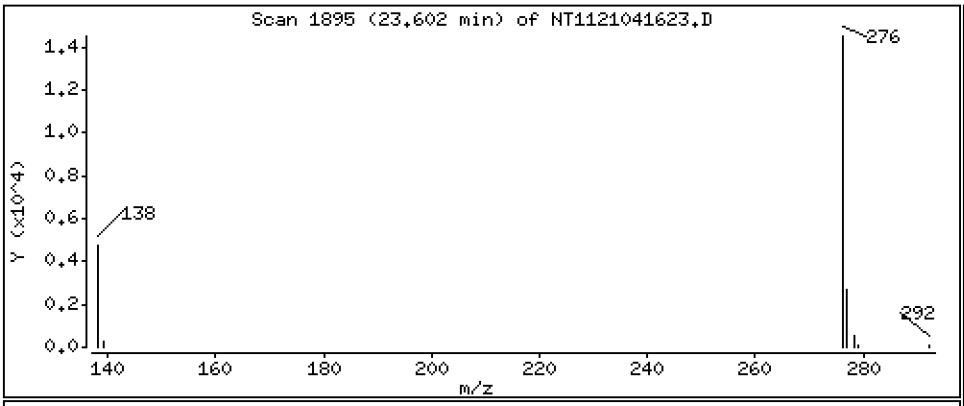
Operator: VTS

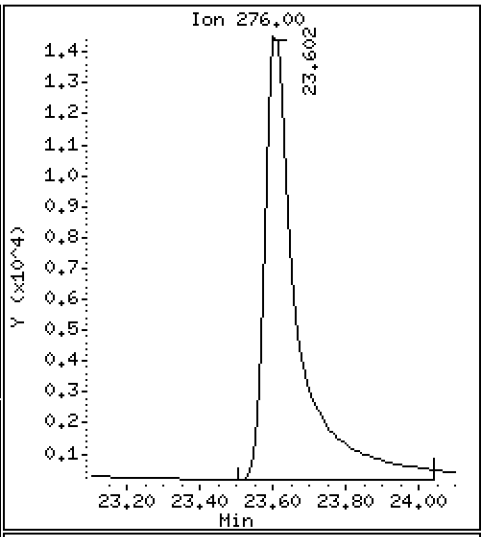
Column phase: Rxi-17Sil MS

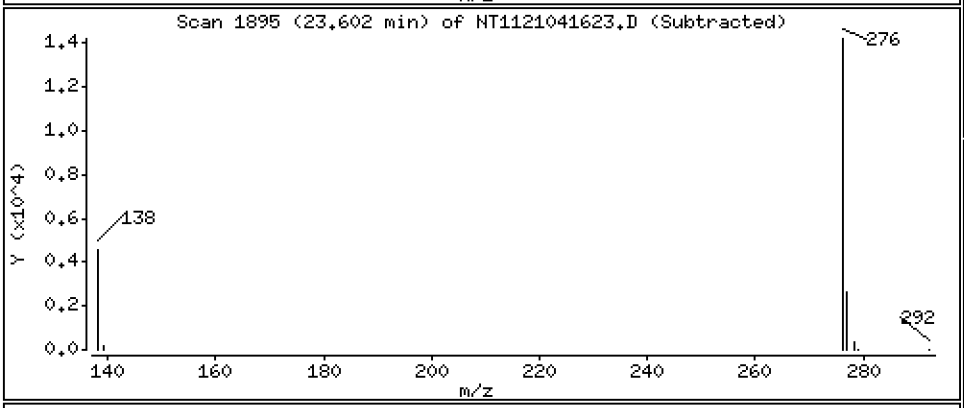
Column diameter: 0.25

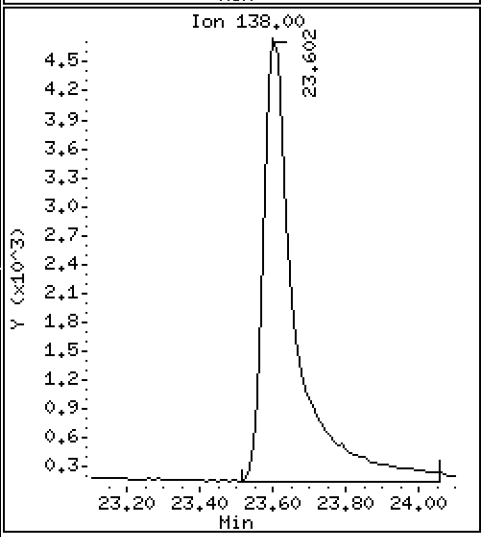
41 Benzo(g,h,i)perylene

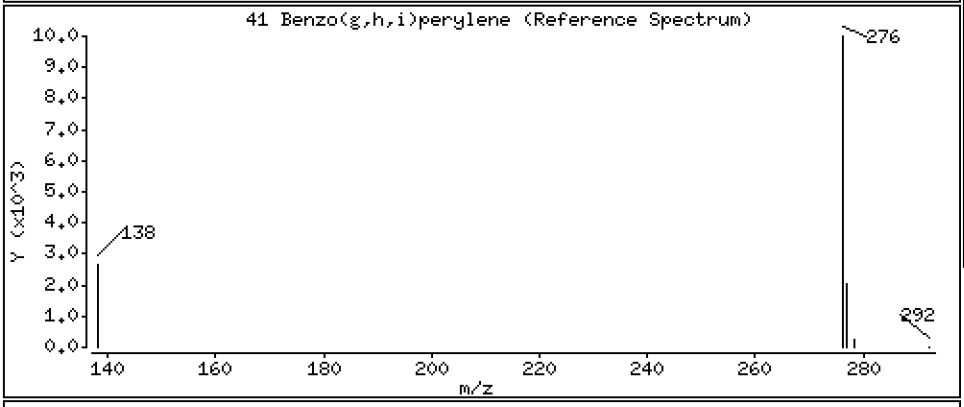
Concentration: 216 ng/mL

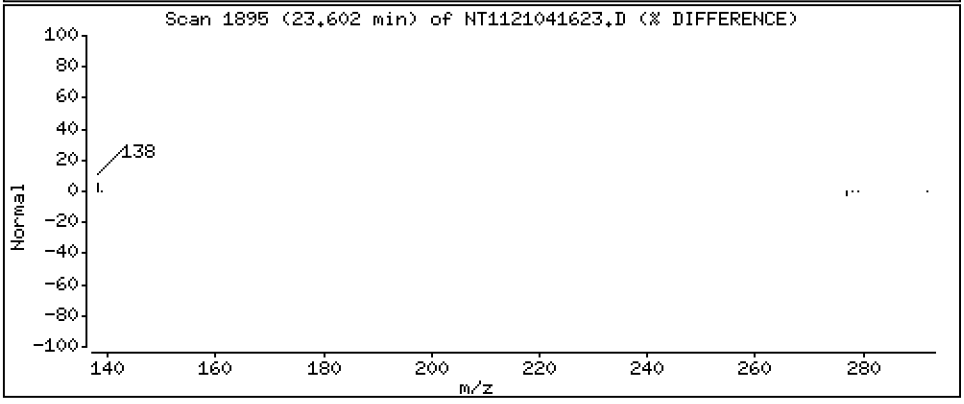












ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20210416.b\NT1121041623.D
Lab Smp Id: SJD0232-CCV1
Inj Date : 16-APR-2021 21:46 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : SJD0232-CCV1
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Meth Date : 16-Apr-2021 11:10 van Quant Type: ISTD
Cal Date : 27-AUG-2020 13:38 Cal File: NT1120082704.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS-202011

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)
*	1 Naphthalene-d8	136	6.777	6.777	(1.000)	132124	200.000	
	2 Naphthalene	128	6.813	6.813	(1.005)	170190	221.849	222
	3 Benzo(b)thiophene	134	7.057	7.057	(1.041)	138518	228.876	229
$	4 2-Methylnaphthalene-d10	152	7.749	7.749	(1.143)	122379	230.356	230
	5 2-Methylnaphthalene	142	7.801	7.801	(1.151)	141900	229.451	229
	6 1-Methylnaphthalene	142	8.054	8.054	(1.188)	137645	239.433	239
	7 2-Chloronaphthalene	162	8.705	8.705	(0.891)	129466	208.028	208
	8 Biphenyl	154	8.673	8.673	(0.888)	161514	194.915	195
	9 2,6-Dimethylnaphthalene	156	8.726	8.726	(0.893)	126756	206.168	206
	10 Acenaphthylene	152	9.616	9.616	(0.984)	164770	200.971	201
*	11 Acenaphthene-d10	164	9.770	9.770	(1.000)	71462	200.000	
	12 Acenaphthene	153	9.833	9.833	(1.006)	111043	204.783	205
	13 Dibenzofuran	168	10.036	10.036	(1.027)	143415	198.133	198
	14 2,3,5-Trimethylnaphthalene	170	10.137	10.137	(1.038)	91681	205.931	206
	16 Fluorene	166	10.655	10.655	(1.091)	115301	206.794	207
	17 Dibenzothiophene	184	12.271	12.271	(0.986)	128744	222.991	223
*	18 Phenanthrene-d10	188	12.439	12.439	(1.000)	104284	200.000	
	19 Phenanthrene	178	12.481	12.481	(1.003)	154738	226.826	227
	21 Anthracene	178	12.534	12.533	(1.008)	158066	231.897	232
	22 Carbazole	167	13.207	13.207	(1.062)	164210	226.084	226
	23 1-Methylphenanthrene	192	13.478	13.478	(1.083)	137601	228.346	228
$	24 Fluoranthene-d10	212	14.530	14.530	(1.168)	114955	210.255	210
	25 Fluoranthene	202	14.568	14.568	(1.171)	151969	223.441	223
	26 Pyrene	202	15.058	15.058	(1.211)	154574	221.530	222
	27 Benzo(a)anthracene	228	17.072	17.072	(0.995)	102559	201.391	201
*	28 Chrysene-d12	240	17.163	17.163	(1.000)	69326	200.000	
	29 Chrysene	228	17.213	17.213	(1.003)	126691	220.941	221
	30 Benzo(b)fluoranthene	252	18.904	18.894	(0.950)	59364	146.371	146
	31 Benzo(k)fluoranthene	252	18.942	18.942	(0.952)	117297	220.105	220
	32 Benzo(j)fluoranthene	252	19.000	19.000	(0.955)	162676	282.469	282
	34 Benzo(e)pyrene	252	19.605	19.605	(0.985)	95878	208.758	209
	35 Benzo(a)pyrene	252	19.711	19.711	(0.990)	97148	229.346	229
*	36 Perylene-d12	264	19.903	19.903	(1.000)	74511	200.000	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
	37 Perylene	252	19.970	19.970	(1.003)	112925	233.995	234
$	38 Dibenzo(a,h)anthracene-d14	292	22.305	22.305	(1.121)	51579	177.724	178
	39 Dibenzo(a,h)anthracene	278	22.427	22.427	(1.127)	66292	190.212	190
	40 Indeno(1,2,3-cd)pyrene	276	22.449	22.449	(1.128)	85114	206.917	207
	41 Benzo(g,h,i)perylene	276	23.601	23.601	(1.186)	88966	216.311	216

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1121041623.D
Lab Smp Id: SJD0232-CCV1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20210416.b\lowsim.m
Misc Info:

Calibration Date: 16-APR-2021
Calibration Time: 10:42
Level:
Sample Type:

Test Mode:
Use Last Continuing Calibrator.

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	142104	71052	284208	132124	-7.02
11 Acenaphthene-d10	80301	40151	160602	71462	-11.01
18 Phenanthrene-d10	121929	60965	243858	104284	-14.47
28 Chrysene-d12	94055	47028	188110	69326	-26.29
36 Perylene-d12	114179	57090	228358	74511	-34.74

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.78	6.28	7.28	6.78	0.00
11 Acenaphthene-d10	9.77	9.27	10.27	9.77	0.00
18 Phenanthrene-d10	12.44	11.94	12.94	12.44	0.00
28 Chrysene-d12	17.16	16.66	17.66	17.16	0.00
36 Perylene-d12	19.90	19.40	20.40	19.90	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1121041623.D

Lab ID: SJD0232-CCV1
nt11.i, 20210416.b\lowsim.m,   16-APR-2021 21:46

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1121041602.D

On Column LOD for nt11.i, 20210416.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SIH0304	Instrument:	NT11
		Calibration:	DH00073

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
DFTPP	SIH0304-TUN1	NT1120082701.D	NA	08/27/20 12:20
PAH 250	SIH0304-CAL4	NT1120082702.D	NA	08/27/20 12:35
PAH 1000	SIH0304-CAL6	NT1120082703.D	NA	08/27/20 13:07
PAH 10	SIH0304-CAL1	NT1120082704.D	NA	08/27/20 13:38
PAH 500	SIH0304-CAL5	NT1120082705.D	NA	08/27/20 14:08
PAH 50	SIH0304-CAL2	NT1120082706.D	NA	08/27/20 14:38
PAH 100	SIH0304-CAL3	NT1120082707.D	NA	08/27/20 15:08
PAH 250 SCV	SIH0304-SCV1	NT1120082708.D	NA	08/27/20 15:38
Initial Cal Blank	SIH0304-ICB1	NT1120082709.D	NA	08/27/20 16:09

Printed: 8/28/2020 9:29:05AM

ANALYSIS SEQUENCE

SIH0304

Instrument: NT11 Element Column ID: I005862
Calibration ID: DH00073 Tune File: 190904.U
EM Voltage: 1247

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SIH0304-TUN1	DFTPP	QC		1	I007631		
SIH0304-CAL4	PAH 250	QC		2	I004578	I002616	
SIH0304-CAL6	PAH 1000	QC		3	I004580	I002616	
SIH0304-CAL1	PAH 10	QC		4	I004575	I002616	
SIH0304-CAL5	PAH 500	QC		5	I004579	I002616	
SIH0304-CAL2	PAH 50	QC		6	I004576	I002616	
SIH0304-CAL3	PAH 100	QC		7	I004577	I002616	
SIH0304-SCV1	PAH 250 SCV	QC		8	I004581	I002616	
SIH0304-ICB1	Initial Cal Blank	QC		9	I007632	I002616	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20200827.b

	Time	Filename	LabID	ClientId	DF									
1	1220	NT1120082701.D	SIH0304-TUN1		1	|NO ISTDS FOUND||								
2	1235	NT1120082702.D	SIH0304-CAL4		1	6.81	215332	9.81	102217	12.48	170387	17.21	116138	19.98	139038
3	1307	NT1120082703.D	SIH0304-CAL6		1	6.81	211963	9.81	104596	12.48	173851	17.21	118274	19.98	139375
4	1338	NT1120082704.D	SIH0304-CAL1		1	6.80	218979	9.81	96342	12.48	152977	17.21	94808	19.98	108221
5	1408	NT1120082705.D	SIH0304-CAL5		1	6.80	205773	9.81	98118	12.48	160808	17.21	104617	19.98	121661
6	1438	NT1120082706.D	SIH0304-CAL2		1	6.80	206491	9.81	90319	12.48	134229	17.21	84619	19.98	93566
7	1508	NT1120082707.D	SIH0304-CAL3		1	6.80	198254	9.81	88696	12.48	133333	17.21	84043	19.98	92362
8	1538	NT1120082708.D	SIH0304-SCV1		1	6.80	202035	9.81	90189	12.48	142829	17.22	104063	19.98	119273
9	1609	NT1120082709.D	SIH0304-ICB1		1	6.80	216694	9.81	94656	12.48	145070	17.22	97049	19.98	107633

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20200827.b

Instrument: nt11.i Date: 27-AUG-2020

Time	Filename	LabID	DF	Manually Integrated Compounds
1220	NT1120082701.D	SIH0304-TUN1	1	NO MANUAL INTEGRATION
1235	NT1120082702.D	SIH0304-CAL4	1	NO MANUAL INTEGRATION
1307	NT1120082703.D	SIH0304-CAL6	1	NO MANUAL INTEGRATION
1338	NT1120082704.D	SIH0304-CAL1	1	Dibenzo(a,h)anthracene-d14,
1408	NT1120082705.D	SIH0304-CAL5	1	NO MANUAL INTEGRATION
1438	NT1120082706.D	SIH0304-CAL2	1	NO MANUAL INTEGRATION
1508	NT1120082707.D	SIH0304-CAL3	1	NO MANUAL INTEGRATION
1538	NT1120082708.D	SIH0304-SCV1	1	NO MANUAL INTEGRATION
1609	NT1120082709.D	SIH0304-ICB1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 28-Aug-2020 09:31

NT1120082701.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082702.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082703.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082704.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082705.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082706.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082707.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082708.D	Data Locked	van, 28-Aug-2020 09:31
NT1120082709.D	Data Locked	van, 28-Aug-2020 09:31

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Sequence: SJD0232

SDG: 21C0456
Project: Port of Tacoma - Kaiser GWM 2021
Instrument: NT11
Calibration: DH00073

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
DFTPP	SJD0232-TUN1	NT1121041601.D	NA	04/16/21 10:25
Initial Cal Check	SJD0232-ICV1	NT1121041602.D	NA	04/16/21 10:42
Blank	BJD0015-BLK1	NT1121041604.D	Water	04/16/21 11:22
LCS	BJD0015-BS1	NT1121041605.D	Water	04/16/21 11:54
MW-SPL1(S)-033021	21C0456-05	NT1121041606.D	Water	04/16/21 12:26
MW-SPL101(S)-033021	21C0456-06	NT1121041607.D	Water	04/16/21 12:58
MW-SPL2(S)-033021	21C0456-07	NT1121041608.D	Water	04/16/21 13:31
ZZZZZ	21C0332-01RE1	NT1121041609.D	Solid	04/16/21 14:03
ZZZZZ	21C0332-02RE1	NT1121041610.D	Solid	04/16/21 14:35
ZZZZZ	21C0332-03RE1	NT1121041611.D	Solid	04/16/21 15:17
ZZZZZ	21C0332-04	NT1121041612.D	Solid	04/16/21 15:49
ZZZZZ	21C0332-05	NT1121041613.D	Solid	04/16/21 16:22
ZZZZZ	21C0332-06	NT1121041614.D	Solid	04/16/21 16:54
ZZZZZ	21C0395-01	NT1121041617.D	Solid	04/16/21 18:31
ZZZZZ	BJD0120-BLK1	NT1121041618.D	Water	04/16/21 19:03
ZZZZZ	BJD0120-BS1	NT1121041619.D	Water	04/16/21 19:36
ZZZZZ	21D0041-01	NT1121041620.D	Water	04/16/21 20:09
ZZZZZ	21D0041-03	NT1121041621.D	Water	04/16/21 20:41
ZZZZZ	21D0041-05	NT1121041622.D	Water	04/16/21 21:13
Calibration Check	SJD0232-CCV1	NT1121041623.D	NA	04/16/21 21:46

Printed: 4/17/2021 9:44:45AM

ANALYSIS SEQUENCE

SJD0232

Instrument: NT11 Element Column ID:
Calibration ID: DH00073 Tune File:
EM Voltage:

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJD0232-TUN1	DFTPP	QC		1	I007631		
SJD0232-ICV1	Initial Cal Check	QC		2	I009255	J002777	
BJD0015-BLK1	Blank	QC		3		J002777	
BJD0015-BS1	LCS	QC		4		J002777	
21C0456-05	MW-SPL1(S)-033021	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	B 01	5		J002777	
21C0456-06	MW-SPL101(S)-033021	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	B 01	6		J002777	
21C0456-07	MW-SPL2(S)-033021	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	B 01	7		J002777	
21C0332-01RE1	RIFS-SMA5-SG08-062420	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	8		J002777	Added 4/16/2021 by VTS
21C0332-02RE1	RIFS-SMA5-SG07-062620	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	9		J002777	Added 4/16/2021 by VTS
21C0332-03RE1	RIFS-SMA5-SG10-062620	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	10		J002777	Added 4/16/2021 by VTS
21C0332-04	RIFS-SMA5-SG110-062620	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	11		J002777	
21C0332-05	RIFS-SMA5-SG28-062720	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	12		J002777	
21C0332-06	RIFS-SMA5-SG24-062720	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	13		J002777	
BJC0885-MS1	Matrix Spike	QC		14		J002777	
BJC0885-MSD1	Matrix Spike Dup	QC		15		J002777	
21C0395-01	B-5	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	A 02	16		J002777	
BJD0120-BLK1	Blank	QC		17		J002777	
BJD0120-BS1	LCS	QC		18		J002777	
21D0041-01	MW-13-210331	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	F 01	19		J002777	Waters
21D0041-03	MW-14-210331	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	F 01	20		J002777	Waters
21D0041-05	MW-04-210331	270E-SIM PAH Low (0.01ug/L or 0.5ug/k	F 01	21		J002777	Waters
SJD0232-CCV1	Calibration Check	QC		22	I009255	J002777	

Printed: 4/17/2021 9:44:45AM

ANALYSIS SEQUENCE

SJD0232

Instrument: NT11 Element Column ID:
Calibration ID: DH00073 Tune File:
EM Voltage:

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20210416.b

	Time	Filename	LabID	ClientId	DF										
1	1025	NT1121041601.D	SJD0232-TUN1		1	|NO ISTDS FOUND||									
2	1042	NT1121041602.D	SJD0232-ICV1		1	| 6.78	142104||	9.77	80301||	12.44	121929||	17.16	94055||	19.90	114179|
3	1122	NT1121041604.D	BJD0015-BLK1		1	| 6.78	224176||	9.77	114192||	12.44	174927||	17.16	128451||	19.90	152372|
4	1154	NT1121041605.D	BJD0015-BS1		1	| 6.78	187032||	9.77	101146||	12.44	153210||	17.16	113230||	19.90	133186|
5	1226	NT1121041606.D	21C0456-05		1	| 6.78	170554||	9.77	88926||	12.44	132416||	17.16	96625||	19.90	112135|
6	1258	NT1121041607.D	21C0456-06		1	| 6.78	161124||	9.77	84088||	12.44	126495||	17.16	94065||	19.90	112704|
7	1331	NT1121041608.D	21C0456-07		1	| 6.78	154294||	9.77	80240||	12.44	120190||	17.16	88262||	19.90	103186|
8	1403	NT1121041609.D	21C0332-01RE1		50	| 6.78	141913||	9.77	75607||	12.44	124841||	17.16	90045||	19.90	110248|
9	1435	NT1121041610.D	21C0332-02RE1		50	| 6.78	142553||	9.77	76261||	12.44	123884||	17.16	90585||	19.90	109366|
10	1517	NT1121041611.D	21C0332-03RE1		100	| 6.78	146682||	9.77	77031||	12.44	121375||	17.17	87131||	19.91	103553|
11	1549	NT1121041612.D	21C0332-04		1000	| 6.78	141047||	9.77	72610||	12.44	111205||	17.16	84038||	19.90	94934|
12	1622	NT1121041613.D	21C0332-05		20	| 6.78	140839||	9.77	74193||	12.44	123255||	17.16	94358||	19.90	112055|
13	1654	NT1121041614.D	21C0332-06		50	| 6.78	146116||	9.77	75246||	12.44	113118||	17.16	86165||	19.90	101250|
14	1726	NT1121041615.D	BJC0885-MS1		50	| 6.78	141231||	9.77	72736||	12.44	113489||	17.16	83993||	19.91	99621|
15	1759	NT1121041616.D	BJC0885-MSD1		50	| 6.78	139225||	9.77	72196||	12.44	109663||	17.16	83430||	19.90	97870|
16	1831	NT1121041617.D	21C0395-01		1	| 6.78	136436||	9.77	72282||	12.44	113243||	17.16	86900||	19.90	103187|
17	1903	NT1121041618.D	BJD0120-BLK1		1	| 6.78	136065||	9.77	70307||	12.44	106022||	17.16	71781||	19.91	79928|
18	1936	NT1121041619.D	BJD0120-BS1		1	| 6.78	135166||	9.77	74083||	12.44	110368||	17.16	77035||	19.91	83421|
19	2009	NT1121041620.D	21D0041-01		1	| 6.78	132149||	9.77	69370||	12.44	103460||	17.16	74942||	19.91	74821|
20	2041	NT1121041621.D	21D0041-03		1	| 6.78	133389||	9.77	68643||	12.44	103751||	17.16	68018||	19.90	69506|

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20210416.b

	Time	Filename	LabID	ClientId	DF								
21	2113	NT1121041622.D	21D0041-05		1	6.78	136271	9.77	69718	12.44	110533	17.16	81847	19.90	84923
22	2146	NT1121041623.D	SJD0232-CCV1		1	6.78	132124	9.77	71462	12.44	104284	17.16	69326	19.90	74511

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem3\nt11.i\20210416.b

Instrument: nt11.i Date: 16-APR-2021

Time	Filename	LabID	DF	Manually Integrated Compounds
1025	NT1121041601.D	SJD0232-TUN1	1	NO MANUAL INTEGRATION
1042	NT1121041602.D	SJD0232-ICV1	1	NO MANUAL INTEGRATION
1122	NT1121041604.D	BJD0015-BLK1	1	Naphthalene, 1-Methylnaphthalene,
1154	NT1121041605.D	BJD0015-BS1	1	NO MANUAL INTEGRATION
1226	NT1121041606.D	21C0456-05	1	Naphthalene, Dibenzofuran, Fluoranthene, Pyrene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(j)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene, 1-Methylnaphthalene, Carbazole,
1258	NT1121041607.D	21C0456-06	1	Naphthalene, Dibenzofuran, Fluoranthene, Pyrene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(j)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene, 1-Methylnaphthal Benzo(b)thiophene, Carbazole,
1331	NT1121041608.D	21C0456-07	1	Naphthalene, 2-Methylnaphthalene, Dibenzofuran, Anthracene, Fluoranthene, Pyrene, 1-Methylnaphthalene, Perylene, Biphenyl,
1403	NT1121041609.D	21C0332-01RE1	50	Dibenzofuran, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene, 1-Methylnaphthalene, Perylene, 2,6-Dimethylnaphtha Biphenyl, 2-Methylnaphthalene-d10, Dibenzo(a,h)anthracene-d14,
1435	NT1121041610.D	21C0332-02RE1	50	Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, 1-Methylnaphthalene, Per Benzo(b)thiophene, 2,6-Dimethylnaphthalene, Carbazole, Biphenyl, 2-Methylnaphthalene-d10, Dibenzo(a,h) Fluoranthene-d10,
1517	NT1121041611.D	21C0332-03RE1	100	Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene, 1-Methylnaphthalene, Perylene, 2,6-Dimethylnaphthalene, 1-Methyl Biphenyl, 2-Methylnaphthalene-d10, Fluoranthene-d10,
1549	NT1121041612.D	21C0332-04	1000	Naphthalene, Dibenzofuran, Dibenzo(a,h)anthracene, 2-Methylnaphthalene-d10,
1622	NT1121041613.D	21C0332-05	20	Naphthalene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, 1-Methylnaphthalene, Benzo(b)thio 2,6-Dimethylnaphthalene, Carbazole, Biphenyl, Dibenzo(a,h)anthracene-d14,
1654	NT1121041614.D	21C0332-06	50	Naphthalene, Dibenzofuran, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylen 1-Methylnaphthalene, Perylene, Perylene-d12, 2,6-Dimethylnaphthalene, 1-Methylphenanthrene, Biphenyl, 2-Methylnaphthalene-d10, Dibenzo(a,h)anthracene-d14, Fluoranthene-d10,
1726	NT1121041615.D	BJC0885-MS1	50	Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, 1-Methylnaphthalene, 2-C 1-Methylphenanthrene, Biphenyl, 2-Methylnaphthalene-d10,

1759	NT1121041616.D	BJC0885-MSD1	50	Anthracene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, 1-Methylnaph Benzo(b)thiophene, 2-Chloronaphthalene, 1-Methylphenanthrene, Carbazole, Biphenyl, 2-Methylnaphthalene Dibenzo(a,h)anthracene-d14, Fluoranthene-d10,
1831	NT1121041617.D	21C0395-01	1	Fluorene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(j)fluoranthene, Benzo(g,h,i)perylene, 1-Methylnaphthalen Benzo(b)thiophene, 2,6-Dimethylnaphthalene, 1-Methylphenanthrene, Carbazole, Biphenyl,
1903	NT1121041618.D	BJD0120-BLK1	1	Naphthalene, 2-Methylnaphthalene, Dibenzofuran, 1-Methylnaphthalene, Biphenyl,

Instrument: nt11.i Date: 16-APR-2021

Time	Filename	LabID	DF	Manually Integrated Compounds
1936	NT1121041619.D	BJD0120-BS1	1	NO MANUAL INTEGRATION
2009	NT1121041620.D	21D0041-01	1	2-Methylnaphthalene, Dibenzofuran, Anthracene, Fluoranthene, Pyrene, 1-Methylnaphthalene, 2,6-Dimethylnaphthalene, Carbazole, Biphenyl,
2041	NT1121041621.D	21D0041-03	1	Naphthalene, 2-Methylnaphthalene, Dibenzofuran, 1-Methylnaphthalene, Biphenyl,
2113	NT1121041622.D	21D0041-05	1	Phenanthrene, Fluoranthene, Pyrene, Chrysene, Benzo(g,h,i)perylene, 2,6-Dimethylnaphthalene, 1-Methylphenanthrene, Carbazole, Biphenyl,
2146	NT1121041623.D	SJD0232-CCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 17-Apr-2021 09:39

NT1121041601.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041602.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041604.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041605.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041606.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041607.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041608.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041609.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041610.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041611.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041612.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041613.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041614.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041615.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041616.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041617.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041618.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041619.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041620.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041621.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041622.D	Data Locked	van, 17-Apr-2021 09:39
NT1121041623.D	Data Locked	van, 17-Apr-2021 09:39

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Extract Dilution Bench Sheet

Sequence: SJD0322
Analyst: VB Date: 4.16.21

Sample ID	Primary Dilution				Secondary Dilution			
	Extract Volume (uL)	Diluent ID	Diluent Volume (uL)	Dilution Factor	Extract Volume (uL)	Diluent ID	Diluent Volume (uL)	Dilution Factor
21C0332-1, 2, 6, MS, MSD	10	DCM	490	50				
21C0322-3	5	DCM	495	100				
21C0322-4	50	DCM	450	10	5	DCM	495	1000
21C0322-5	25	DCM	475	20				

SURROGATE RECOVERY AND RT SUMMARY

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SIH0304	Instrument:	NT11
Calibration:	DH00073	Calibration Date:	08/27/2020

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SIH0304-ICB1 (Water)			Lab File ID: NT1120082709.D				Analyzed: 08/27/20 16:09	
2-Methylnaphthalene-d10	250.00	87.1	30 - 160	7.78	7.78	0.0000	N/A	
Dibenzo[a,h]anthracene-d14	250.00	71.3	30 - 160	22.418	22.418	0.0000	N/A	
Fluoranthene-d10	250.00	92.6	30 - 160	14.578	14.578	0.0000	N/A	

SURROGATE RECOVERY AND RT SUMMARY

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc.
SDG/WO: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0232
Instrument: NT11
Calibration: DH00073
Calibration Date: 08/27/2020

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJD0232-ICV1 (Water)			Lab File ID: NT1121041602.D			Analyzed: 04/16/21 10:42		
2-Methylnaphthalene-d10	250.00	97.2	80 - 120	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	250.00	104	80 - 120	22.305	22.418	-0.1130	N/A	
Fluoranthene-d10	250.00	86.4	80 - 120	14.53	14.578	-0.0480	N/A	
BJD0015-BLK1 (Water)			Lab File ID: NT1121041604.D			Analyzed: 04/16/21 11:22		
2-Methylnaphthalene-d10	0.30000	47.6	42 - 120	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	0.30000	56.5	29 - 120	22.316	22.418	-0.1020	N/A	
Fluoranthene-d10	0.30000	49.5	57 - 120	14.53	14.578	-0.0480	N/A	*
BJD0015-BS1 (Water)			Lab File ID: NT1121041605.D			Analyzed: 04/16/21 11:54		
2-Methylnaphthalene-d10	0.30000	61.9	42 - 120	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	0.30000	67.3	29 - 120	22.305	22.418	-0.1130	N/A	
Fluoranthene-d10	0.30000	60.0	57 - 120	14.53	14.578	-0.0480	N/A	
21C0456-05 (Water)			Lab File ID: NT1121041606.D			Analyzed: 04/16/21 12:26		
2-Methylnaphthalene-d10	0.30000	61.2	42 - 120	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	0.30000	69.4	29 - 120	22.305	22.418	-0.1130	N/A	
Fluoranthene-d10	0.30000	63.7	57 - 120	14.53	14.578	-0.0480	N/A	
21C0456-06 (Water)			Lab File ID: NT1121041607.D			Analyzed: 04/16/21 12:58		
2-Methylnaphthalene-d10	0.30000	65.1	42 - 120	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	0.30000	73.0	29 - 120	22.305	22.418	-0.1130	N/A	
Fluoranthene-d10	0.30000	67.6	57 - 120	14.53	14.578	-0.0480	N/A	
21C0456-07 (Water)			Lab File ID: NT1121041608.D			Analyzed: 04/16/21 13:31		
2-Methylnaphthalene-d10	0.30000	65.1	42 - 120	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	0.30000	69.8	29 - 120	22.305	22.418	-0.1130	N/A	
Fluoranthene-d10	0.30000	67.2	57 - 120	14.53	14.578	-0.0480	N/A	
SJD0232-CCV1 (Water)			Lab File ID: NT1121041623.D			Analyzed: 04/16/21 21:46		
2-Methylnaphthalene-d10	250.00	92.1	50 - 150	7.749	7.78	-0.0310	N/A	
Dibenzo[a,h]anthracene-d14	250.00	71.1	50 - 150	22.305	22.418	-0.1130	N/A	
Fluoranthene-d10	250.00	84.1	50 - 150	14.53	14.578	-0.0480	N/A	

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SIH0304	Instrument:	NT11
		Calibration:	DH00073

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SIH0304-SCV1)		(Water)		Lab File ID: NT1120082708.D				Analyzed: 08/27/20 15:38	
Naphthalene-d8	202035	6.804	215332	6.813	94	50 - 200	-0.009	+/-0.50	
Acenaphthene-d10	90189	9.807	102217	9.807	88	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	142829	12.482	170387	12.482	84	50 - 200	0.000	+/-0.50	
Chrysene-d12	104063	17.222	116138	17.214	90	50 - 200	0.008	+/-0.50	
Perylene-d12	119273	19.981	139038	19.981	86	50 - 200	0.000	+/-0.50	
Initial Cal Blank (SIH0304-ICB1)		(Water)		Lab File ID: NT1120082709.D				Analyzed: 08/27/20 16:09	
Naphthalene-d8	216694	6.804	215332	6.813	101	50 - 200	-0.009	+/-0.50	
Acenaphthene-d10	94656	9.807	102217	9.807	93	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	145070	12.482	170387	12.482	85	50 - 200	0.000	+/-0.50	
Chrysene-d12	97049	17.222	116138	17.214	84	50 - 200	0.008	+/-0.50	
Perylene-d12	107633	19.981	139038	19.981	77	50 - 200	0.000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0232
Instrument: NT11
Calibration: DH00073

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SJD0232-ICV1)		(Water)	Lab File ID: NT1121041602.D				Analyzed: 04/16/21 10:42		
Naphthalene-d8	142104	6.777	142104	6.777	100	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	80301	9.77	80301	9.77	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	121929	12.439	121929	12.439	100	50 - 200	0.000	+/-0.50	
Chrysene-d12	94055	17.163	94055	17.163	100	50 - 200	0.000	+/-0.50	
Perylene-d12	114179	19.903	114179	19.903	100	50 - 200	0.000	+/-0.50	
Blank (BJD0015-BLK1)		(Water)	Lab File ID: NT1121041604.D				Analyzed: 04/16/21 11:22		
Naphthalene-d8	224176	6.777	142104	6.777	158	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	114192	9.77	80301	9.77	142	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	174927	12.439	121929	12.439	143	50 - 200	0.000	+/-0.50	
Chrysene-d12	128451	17.163	94055	17.163	137	50 - 200	0.000	+/-0.50	
Perylene-d12	152372	19.903	114179	19.903	133	50 - 200	0.000	+/-0.50	
LCS (BJD0015-BS1)		(Water)	Lab File ID: NT1121041605.D				Analyzed: 04/16/21 11:54		
Naphthalene-d8	187032	6.777	142104	6.777	132	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	101146	9.77	80301	9.77	126	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	153210	12.439	121929	12.439	126	50 - 200	0.000	+/-0.50	
Chrysene-d12	113230	17.163	94055	17.163	120	50 - 200	0.000	+/-0.50	
Perylene-d12	133186	19.903	114179	19.903	117	50 - 200	0.000	+/-0.50	
MW-SPL1(S)-033021 (21C0456-05)		(Water)	Lab File ID: NT1121041606.D				Analyzed: 04/16/21 12:26		
Naphthalene-d8	170554	6.777	142104	6.777	120	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	88926	9.77	80301	9.77	111	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	132416	12.439	121929	12.439	109	50 - 200	0.000	+/-0.50	
Chrysene-d12	96625	17.163	94055	17.163	103	50 - 200	0.000	+/-0.50	
Perylene-d12	112135	19.903	114179	19.903	98	50 - 200	0.000	+/-0.50	
MW-SPL101(S)-033021 (21C0456-06)		(Water)	Lab File ID: NT1121041607.D				Analyzed: 04/16/21 12:58		
Naphthalene-d8	161124	6.777	142104	6.777	113	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	84088	9.77	80301	9.77	105	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	126495	12.439	121929	12.439	104	50 - 200	0.000	+/-0.50	
Chrysene-d12	94065	17.163	94055	17.163	100	50 - 200	0.000	+/-0.50	
Perylene-d12	112704	19.903	114179	19.903	99	50 - 200	0.000	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8270E-SIM

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SJD0232	Instrument:	NT11
		Calibration:	DH00073

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-SPL2(S)-033021 (21C0456-07)		(Water)	Lab File ID: NT1121041608.D				Analyzed: 04/16/21 13:31		
Naphthalene-d8	154294	6.777	142104	6.777	109	50 - 200	0.000	+/-0.50	
Acenaphthene-d10	80240	9.77	80301	9.77	100	50 - 200	0.000	+/-0.50	
Phenanthrene-d10	120190	12.439	121929	12.439	99	50 - 200	0.000	+/-0.50	
Chrysene-d12	88262	17.163	94055	17.163	94	50 - 200	0.000	+/-0.50	
Perylene-d12	103186	19.903	114179	19.903	90	50 - 200	0.000	+/-0.50	

HOLDING TIME SUMMARY

Analysis: EPA 8270E-SIM

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW-SPL1(S)-033021 21C0456-05	03/30/21 13:15	03/30/21 17:15	04/05/21 17:54	6	7	04/16/21 12:26	11	40	
MW-SPL101(S)-033021 21C0456-06	03/30/21 13:25	03/30/21 17:15	04/05/21 17:54	6	7	04/16/21 12:58	11	40	
MW-SPL2(S)-033021 21C0456-07	03/30/21 14:25	03/30/21 17:15	04/05/21 17:54	6	7	04/16/21 13:31	11	40	

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 8270E-SIM

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Matrix: Water Instrument: NT11

Analyte	MDL	RL	Units
Naphthalene	0.001	0.010	ug/L
2-Methylnaphthalene	0.001	0.010	ug/L
1-Methylnaphthalene	0.0009	0.010	ug/L
2-Chloronaphthalene	0.001	0.010	ug/L
Acenaphthylene	0.002	0.010	ug/L
Acenaphthene	0.003	0.010	ug/L
Dibenzofuran	0.002	0.010	ug/L
Fluorene	0.002	0.010	ug/L
Phenanthrene	0.001	0.010	ug/L
Anthracene	0.001	0.010	ug/L
Carbazole	0.001	0.010	ug/L
Fluoranthene	0.002	0.010	ug/L
Pyrene	0.001	0.010	ug/L
Benzo(a)anthracene	0.0008	0.010	ug/L
Chrysene	0.0009	0.010	ug/L
Benzo(b)fluoranthene	0.0005	0.010	ug/L
Benzo(k)fluoranthene	0.003	0.010	ug/L
Benzo(j)fluoranthene	0.002	0.010	ug/L
Benzofluoranthenes, Total	0.004	0.010	ug/L
Benzo(a)pyrene	0.002	0.010	ug/L
Perylene	0.006	0.010	ug/L
Indeno(1,2,3-cd)pyrene	0.001	0.010	ug/L
Dibenzo(a,h)anthracene	0.001	0.010	ug/L
Benzo(g,h,i)perylene	0.001	0.010	ug/L

I8227

Certificate of Analysis

SIGMA-ALDRICH

Product Name	Pentachlorophenol, 97%
Product Number	P2604
Product Brand	ALDRICH
CAS Number	87-86-5
Molecular Formula	C_6Cl_5OH
Molecular Weight	266.34

TEST	SPECIFICATION	LOT 07119HO RESULTS
APPEARANCE	WHITE TO OFF-WHITE OR LIGHT BLUE POWDER	OFF-WHITE POWDER
INFRARED SPECTRUM	CONFORMS TO STRUCTURE.	CONFORMS TO STRUCTURE AND STANDARD
TITRATION	97.5% - 102.5% (WITH AGNO3 AFTER OXYGEN	100.5 % (WITH AGNO3 AFTER OXYGEN COMBUSTION)
GAS LIQUID CHROMATOGRAPHY	97.5% (MINIMUM)	99.9 %
SOLUBILITY		100 MG/ML, 95% ETOH: VERY HAZY, FAINT YELLOW SOLUTION
QUALITY CONTROL ACCEPTANCE DATE		JUNE 2001

Barbara Rajzer, Supervisor
Quality Control
Milwaukee, Wisconsin USA

Certificate of Analysis

SIGMA-ALDRICH

Product Name	2,4,6-Tribromophenol, 99%
Product Number	137715
Product Brand	ALDRICH
CAS Number	118-79-6
Molecular Formula	$Br_3C_6H_2OH$
Molecular Weight	330.80

TEST	SPECIFICATION	LOT 03410KL RESULTS
APPEARANCE	WHITE TO OFF-WHITE TO PINK FLAKES, CHUNKS,	OFF-WHITE CHIPS
INFRARED SPECTRUM	CONFORMS TO STRUCTURE.	CONFORMS TO STRUCTURE
MELTING POINT		93 DEGREES CELSIUS
GAS LIQUID CHROMATOGRAPHY		99.4 %

Barbara Rajzer, Supervisor
Quality Control
Milwaukee, Wisconsin USA

Please wait...

I 8244

Certificate of Analysis

G006587
7/19/18

PAH Mixture

Product Number: US-106N **Page:** 1 of 1

Lot Number: CS-2324 **Lot Issue Date:** 04-May-2018 **Expiration Date:** 31-May-2021

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
acenaphthene	000083-32-9	RM09993	2003 ± 10 µg/mL
acenaphthylene	000208-96-8	RM09993	2002 ± 10 µg/mL
anthracene	000120-12-7	RM03477	2004 ± 10 µg/mL
benz[a]anthracene	000056-55-3	RM13735	2007 ± 10 µg/mL
benzo[b]fluoranthene	000205-99-2	RM09988	2002 ± 10 µg/mL
benzo[k]fluoranthene	000207-08-9	RM10962	2009 ± 10 µg/mL
benzo[ghi]perylene	000191-24-2	RM10337	2008 ± 10 µg/mL
benzo[a]pyrene	000050-32-8	RM13734	2006 ± 10 µg/mL
chrysene	000218-01-9	RM11308	2002 ± 10 µg/mL
dibenz[a,h]anthracene	000053-70-3	RM06786	2001 ± 10 µg/mL
fluoranthene	000206-44-0	RM12277	2006 ± 10 µg/mL
fluorene	000086-73-7	RM09441	2001 ± 10 µg/mL
indeno[1,2,3-cd]pyrene	000193-39-5	RM06789	2008 ± 10 µg/mL
naphthalene	000091-20-3	RM10445	2001 ± 10 µg/mL
phenanthrene	000085-01-8	RM10495	2006 ± 10 µg/mL
pyrene	000129-00-0	RM03479	2006 ± 10 µg/mL

Matrix: methylene chloride/benzene (1:1)

Storage: Store at Room Temperature (15° to 30°C).

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001
Registered
TUV USA, Inc.

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Product Name: DIBENZ[A,H]ANTHRACENE
(Isotopic Label & Enrichment Specification) (D14, 97%)

Lot Number: PR-28018

Catalog Number: DLM-677-0

Product Information

Chemical Purity Specification:	≥ 98%
MW*: ** For isotopically labeled compounds, MW listed is for the fully enriched product.*	292.43
Labeled CAS Number:	13250-98-1
Unlabeled CAS Number:	53-70-3
Chemical Formula:	C22D14
Storage:	Store at room temperature away from light and moisture.

G 01 04 36 JK
Read 11/09/18

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

1H NMR for Chemical Purity	Pass
1H NMR for Isotopic Enrichment	99.6%
2H NMR for Chemical Purity	Pass
GC/FID for Chemical Purity	99.3%
GC/MS for Identification	Conforms
GC/MS for Isotopic Enrichment	99.3%
Melting Point Range Determination	257-267°C

CIL subscribes to the following standards for different products: ISO Guide 34, ISO/IEC 17025, ISO 13485 and cGMP as appropriate.

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Product Name: DIBENZ[A,H]ANTHRACENE
(Isotopic Label & Enrichment Specification) (D14, 97%)

Lot Number: PR-28018

Catalog Number: DLM-677-0

Additional Testing Information:
Retest/Review Date: 02/28/27

CIL subscribes to the following standards for different products: ISO Guide 34, ISO/IEC 17025, ISO 13485 and cGMP as appropriate.

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729
info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

2-Chloronaphthalene

CATALOG NUMBER	N-10323-100MG
LOT NUMBER	7762100
DATE CERTIFIED	05/22/18
EXPIRATION DATE	05/31/24
CAS NUMBER	91-58-7
MOLECULAR FORMULA	C10H7Cl
MOLECULAR WEIGHT	162.62
STORAGE	Store in a cool dry place.
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.
ISO GUIDE 34 CERTIFIED	[ ]

Analytical Test	Value
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

G010438
2-Chloronaphthalene NEAT
Solvent / Lot: NEAT
Prep: 11/10/2018 by VS
Exp: 5/31/2024
Location: BOX P

Certified By:

Mary Beth O'Donnell

Mary Beth O'Donnell
CSM/TC

COA Form
Revision 3 (3/2015)

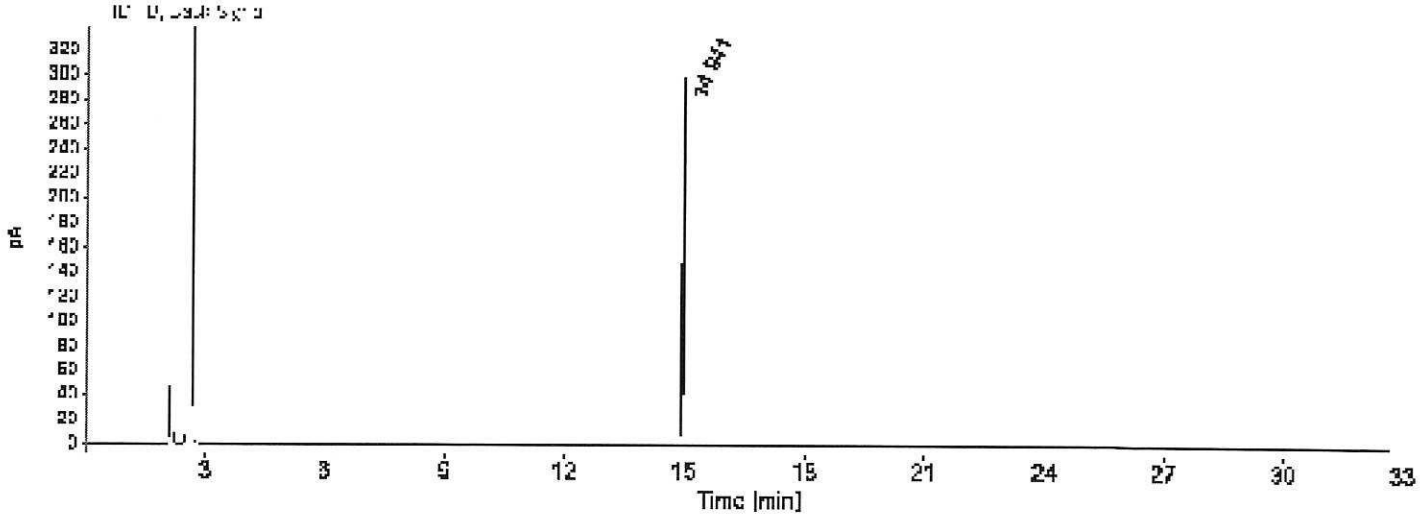
660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729
info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

Gas Chromatography / Flame Ionization Detector (GC/FID)

Data file: C:\Chem32\1\Data\2018 Data\0518\2-Chloronaphthalene.D
Sample name: 2-Chloronaphthalene

Instrument: GC3 **Location:** 209
Injection date: 5/22/2018 1:12:52 PM **Injection volume:** 1.0uL
Acq. method: REAR_SCREEN.M
Col Type: pn# 7HG-G006-17-C **Diameter** 250.000 **Length** 30.000



Signal: FID1 B, Back Signal

RT [min]	Type	Width [min]	Area	Height	Area%
14.941	BB	0.0410	808.8124	308.5675	100.0000
		Sum	808.8124		

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Analytical Reference Material ARM

ISO 9001 QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

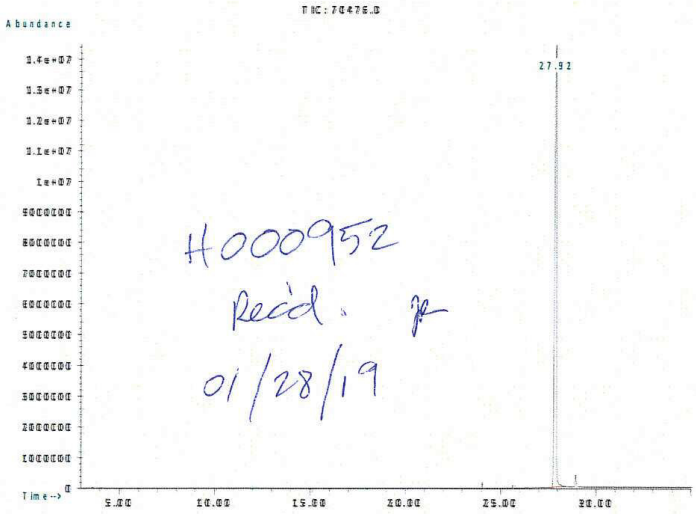
Part Number:	70476	**Solvent(s):**	**Lot#**
Lot Number:	011619	Methylene chloride	102669
Description:	Benzo(j)fluoranthene		
Expiration Date:	011624		
Recommended Storage:	Refrigerate (4 °C)		
Nominal Concentration (µg/mL):	1000		
NIST Test ID#:	2684186	5E-05 Balance Uncertainty	
Weight(s) shown below were combined and diluted to (mL):	25.0	0.001 Flask Uncertainty	

Formulated By: Mario Luis 011619 DATE

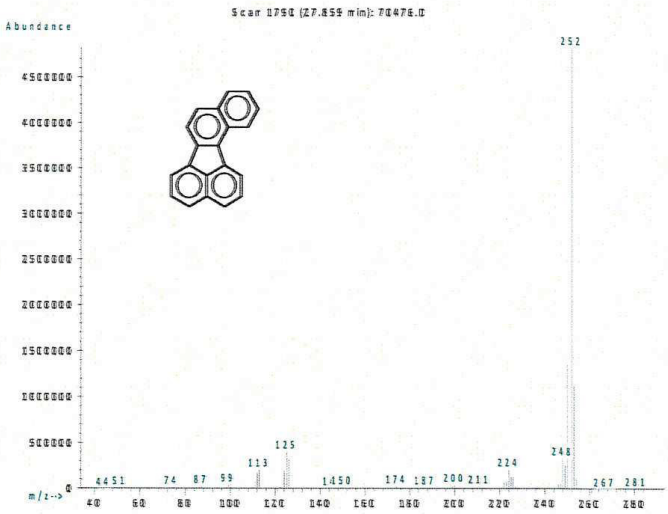
Reviewed By: Pedro L. Rentas 011619 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Benzo(j)fluoranthene	476	3-CSZ-153-20	1000	98.1	0.2	0.02547	0.02558	1004.2	5.7	205-82-3	0.2mg/m3	N/A

Method GC8MSD1M: Column:SBB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 290°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren.



H000952
Recd. JP
01/28/19



- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

H009550
SVOA-d14-Dibenzo(a,h)anthracene-2500ug/ml
Solvent / Lot: DCM/H008760
Prep: 10/2/2019 by VS
Exp: 10/2/2020
Location: Warm to 30C

Data :
Repor

L910C

H009569
LOW SIM PAH CAL-5ug/ml
Solvent / Lot: DCM/H008760
Prep: 10/3/2019 by VS
Exp: 5/17/2020
Location:

ARI Labs, Inc.

LOW LEVEL PNAs BY SW8270D-SIM

Data file : \\target\share\chem3\nt11.i\20191003.b\NT1119100302.D
Lab Smp Id: H009569-250
Inj Date : 03-OCT-2019 11:00 MS Autotune Date: 15-JAN-2015 16:59
Operator : VTS Inst ID: nt11.i
Smp Info : H009569-250
Misc Info :
Comment :
Method : \\target\share\chem3\nt11.i\20191003.b\lowsim.m
Meth Date : 03-Oct-2019 12:25 van Quant Type: ISTD
Cal Date : 03-OCT-2019 10:30 Cal File: NT1119100301.D
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH.sub
Target Version: 4.14
Processing Host: VANS

@ 250
Compard to old mix

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	FINAL (ng/mL)	
*	1 Naphthalene-d8	136	6.650	6.650	(1.000)	150999	200.000		
	2 Naphthalene	128	6.677	6.677	(1.004)	196187	256.450	256	
	3 Benzo(b)thiophene	134	6.930	6.930	(1.042)	159213	256.263	256	
$	4 2-Methylnaphthalene-d10	152	7.618	7.618	(1.146)	112539	239.085	239	
	5 2-Methylnaphthalene	142	7.670	7.670	(1.153)	141284	258.781	259	
	6 1-Methylnaphthalene	142	7.923	7.933	(1.191)	141015	257.499	257	
	7 2-Chloronaphthalene	162	8.574	8.574	(0.889)	130821	262.182	262	
	8 Biphenyl	154	8.542	8.553	(0.885)	167818	263.154	263	
	9 2,6-Dimethylnaphthalene	156	8.605	8.605	(0.892)	128101	261.452	261	
	10 Acenaphthylene	152	9.494	9.494	(0.984)	155523	257.952	258	
*	11 Acenaphthene-d10	164	9.648	9.648	(1.000)	73006	200.000		
	12 Acenaphthene	153	9.702	9.702	(1.006)	111115	261.393	261	
	13 Dibenzofuran	168	9.906	9.906	(1.027)	142747	262.407	262	
	14 2,3,5-Trimethylnaphthalene	170	10.007	10.007	(1.037)	101355	262.119	262	
	16 Fluorene	166	10.538	10.538	(1.092)	115264	260.004	260	
	17 Dibenzothiophene	184	12.142	12.142	(0.986)	154483	262.360	262	
*	18 Phenanthrene-d10	188	12.311	12.310	(1.000)	128794	200.000		
	19 Phenanthrene	178	12.353	12.353	(1.003)	155069	260.459	260	
	21 Anthracene	178	12.405	12.405	(1.008)	181695	259.415	259	
	22 Carbazole	167	13.095	13.095	(1.064)	179113	260.252	260	
	23 1-Methylphenanthrene	192	13.348	13.348	(1.084)	146014	260.198	260	
$	24 Fluoranthene-d10	212	14.411	14.411	(1.171)	136675	239.312	239	
	25 Fluoranthene	202	14.439	14.439	(1.173)	177769	261.870	262	
	26 Pyrene	202	14.939	14.939	(1.214)	181289	262.196	262	
	27 Benzo(a)anthracene	228	16.944	16.944	(0.995)	142356	260.815	261	
*	28 Chrysene-d12	240	17.035	17.043	(1.000)	97091	200.000		
	29 Chrysene	228	17.085	17.085	(1.003)	160479	268.375	268	
	30 Benzo(b)fluoranthene	252	18.755	18.755	(0.951)	144336	274.209	274	110%
	31 Benzo(k)fluoranthene	252	18.793	18.793	(0.953)	165195	266.919	267	
	32 Benzo(j)fluoranthene	252	18.851	18.851	(0.956)	169926	269.517	270	
	34 Benzo(e)pyrene	252	19.427	19.437	(0.985)	146932	270.097	270	
	35 Benzo(a)pyrene	252	19.533	19.533	(0.990)	139050	268.012	268	
*	36 Perylene-d12	264	19.725	19.725	(1.000)	104829	200.000		

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/mL)	CONCENTRATIONS FINAL (ng/mL)
37 Perylene	252	19.783	19.783	(1.003)	147335	269.490	269
$ 38 Dibenzo(a,h)anthracene-d14	292	22.044	22.044	(1.118)	93336	231.868	232
39 Dibenzo(a,h)anthracene	278	22.155	22.155	(1.123)	117340	266.540	267
40 Indeno(1,2,3-cd)pyrene	276	22.177	22.177	(1.124)	137482	266.881	267
41 Benzo(g,h,i)perylene	276	23.285	23.285	(1.180)	128893	267.641	268

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt11.i
Lab File ID: NT1119100302.D
Lab Smp Id: H009569-250
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: \\target\share\chem3\nt11.i\20191003.b\lowsim.m
Misc Info:

Calibration Date: 03-OCT-2019
Calibration Time: 10:30

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	201797	100899	403594	150999	-25.17
11 Acenaphthene-d10	96586	48293	193172	73006	-24.41
18 Phenanthrene-d10	169149	84575	338298	128794	-23.86
28 Chrysene-d12	126783	63392	253566	97091	-23.42
36 Perylene-d12	124340	62170	248680	104829	-15.69

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
1 Naphthalene-d8	6.65	6.15	7.15	6.65	0.00
11 Acenaphthene-d10	9.65	9.15	10.15	9.65	0.00
18 Phenanthrene-d10	12.31	11.81	12.81	12.31	0.00
28 Chrysene-d12	17.04	16.54	17.54	17.04	-0.05
36 Perylene-d12	19.73	19.23	20.23	19.73	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT1119100302.D

Lab ID: H009569-250
nt11.i, 20191003.b\lowsim.m, 03-OCT-2019 11:00

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

** CHECK CAL FILE ON TARGET REPORT! QUANT FROM CCAL. **

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND

NONE

RRT check based on Ccal File: NT1119100301.D

On Column LOD for nt11.i, 20191003.b\lowsim.m, PAH.sub = 0.0000

Exception: 2-Methylnaphthalene-d10 (Surr) 0.1000
Exception: Dibenzo(a,h)anthracene-d14 (Surr) 0.1000
Exception: Fluoranthene-d10 (Surr) 0.1000

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chem3\nt11.i\20191003.b\NT1119100302.D

Date : 03-OCT-2019 11:00

Client ID:

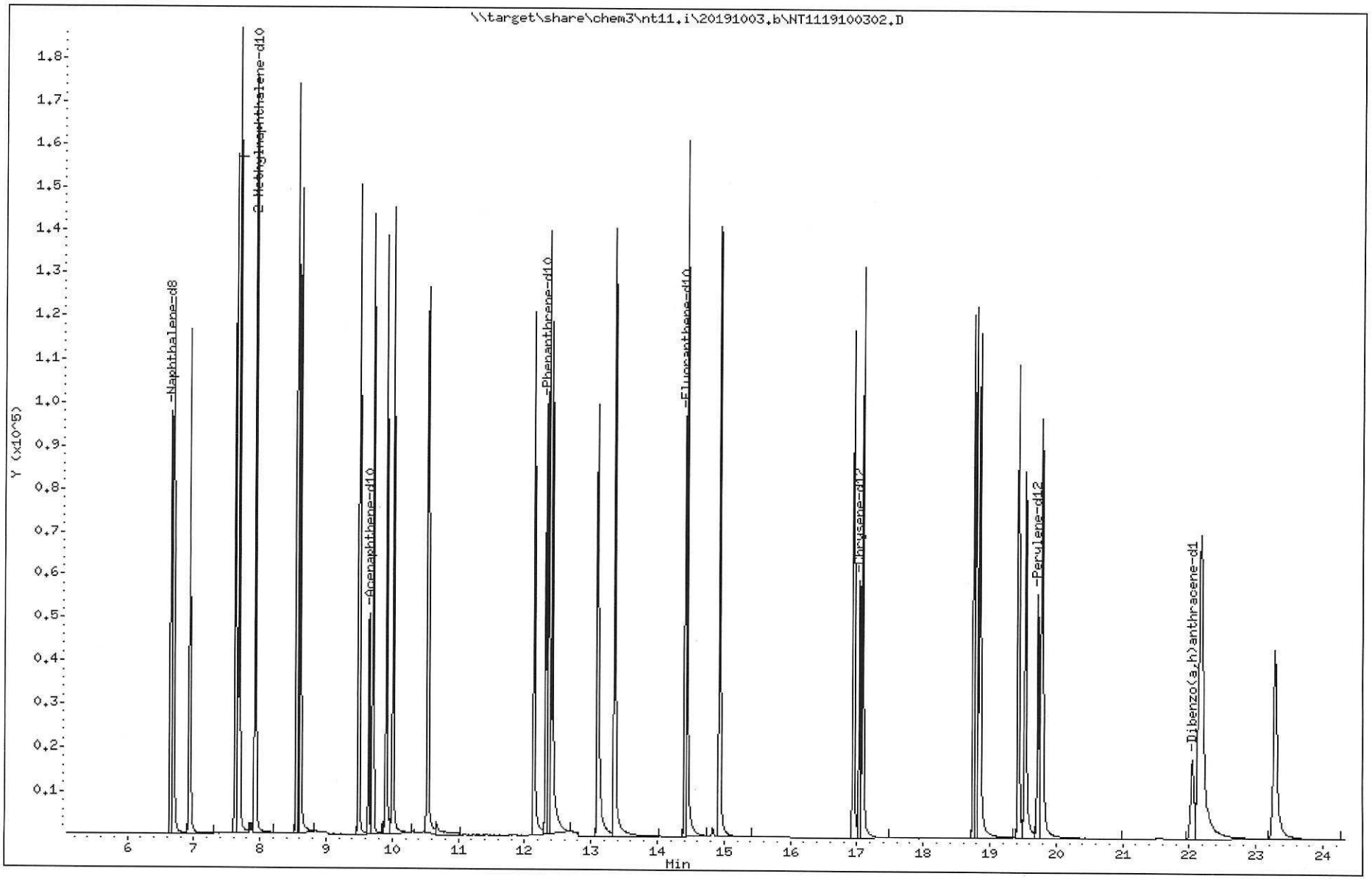
Sample Info: H009569-250

Column phase: Rxi-17Sil MS

Instrument: nt11.i

Operator: VTS

Column diameter: 0.25



RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 33913 **Lot No.:** A0149554

Description : SOM01.0 SIM Analysis Standard

SOM01.0 SIM Analysis Standard 2000µg/mL, Methylene chloride, 1mL /ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2-Methylnaphthalene-d10 **CAS #** 7297-45-2 (Lot AC-257) **Purity** 98%	2,000.2 µg/mL	+/- 11.7382 µg/mL +/- 90.1034 µg/mL +/- 99.9779 µg/mL		Gravimetric Unstressed Stressed
2	Fluoranthene-d10 **CAS #** 93951-69-0 (Lot PR-20668) **Purity** 98%	2,000.2 µg/mL	+/- 11.7382 µg/mL +/- 90.1034 µg/mL +/- 99.9779 µg/mL		Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

H010524
SOMO 1.0 SIM DMC
Solvent / Lot: A0149554
Prep: 10/26/2019 by VS
Exp: 4/30/2025
Location:

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician **Date Mixed:** 26-May-2019 **Balance:** B345965662

Justine Alderson - Operations Tech-ARM QC **Date Passed:** 29-May-2019

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

CERTIFIED WEIGHT REPORT

Part Number: 93462
Lot Number: 022620
Description: PAH Standard
30 components
Expiration Date: 022625
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s): Methylene chloride **Lot#** 102669

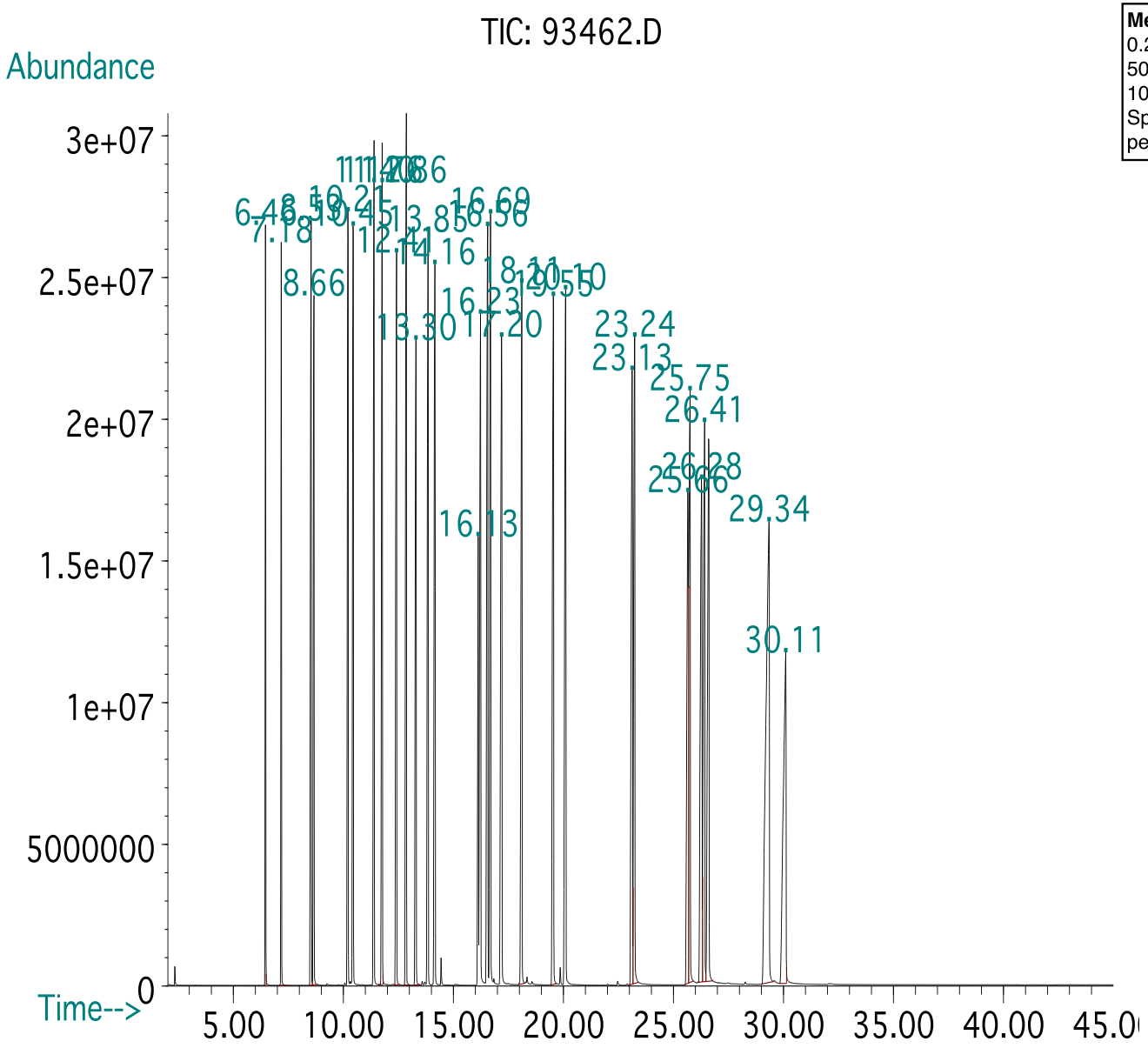
5E-05 Balance Uncertainty
Volume(s) shown below were combined and diluted to (mL): 20.0 0.003 Flask Uncertainty

Eli Aliaga 022620
Formulated By: Eli Aliaga DATE

Pedro Rentas 022620
Reviewed By: Pedro L. Rentas DATE

	Compound	Part Number	Lot Number	Dil. Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(ug/mL)	Final Conc.(ug/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	Acenaphthene	10007	060118	0.50	10.00	0.042	2000.1	999.5	9.3	83-32-9	N/A	ipr-rat 600mg/kg
2.	Acenaphthylene	10007	060118	0.50	10.00	0.042	2000.2	999.5	9.4	208-96-8	N/A	N/A
3.	Anthracene	10007	060118	0.50	10.00	0.042	2000.3	999.5	9.3	120-12-7	0.2mg/m3 (8H)	ipr-mus 430mg/kg
4.	Benzo(a)anthracene	10007	060118	0.50	10.00	0.042	2000.9	999.9	9.4	56-55-3	N/A	N/A
5.	Benzo(a)pyrene	10007	060118	0.50	10.00	0.042	2000.3	999.6	9.3	50-32-8	0.2mg/m3 (8H)	scu-rat 50mg/kg
6.	Benzo(b)fluoranthene	10007	060118	0.50	10.00	0.042	2000.7	999.8	9.4	205-99-2	N/A	N/A
7.	Benzo(k)fluoranthene	10007	060118	0.50	10.00	0.042	2000.6	999.7	9.4	207-08-9	N/A	N/A
8.	Benzo(g,h,i)perylene	10007	060118	0.50	10.00	0.042	2000.4	999.6	9.3	191-24-2	N/A	N/A
9.	Carbazole	10007	060118	0.50	10.00	0.042	2000.7	999.7	9.4	86-74-8	N/A	ipr-mus 200mg/kg
10.	Chrysene	10007	060118	0.50	10.00	0.042	2000.4	999.6	9.4	218-01-9	0.2mg/m3	N/A
11.	Dibenzo(a,h)anthracene	10007	060118	0.50	10.00	0.042	2000.5	999.7	9.4	53-70-3	0.2mg/m3	N/A
12.	Fluoranthene	10007	060118	0.50	10.00	0.042	2000.5	999.6	9.4	206-44-0	N/A	orl-rat 2000mg/kg
13.	Fluorene	10007	060118	0.50	10.00	0.042	2000.4	999.6	9.4	86-73-7	N/A	ipr-mus 2 g/kg
14.	Indeno(1,2,3-cd)pyrene	10007	060118	0.50	10.00	0.042	2000.3	999.5	9.4	193-39-5	N/A	N/A
15.	Naphthalene	10007	060118	0.50	10.00	0.042	2000.8	999.8	9.4	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
16.	Phenanthrene	10007	060118	0.50	10.00	0.042	2000.8	999.8	9.4	85-01-8	0.2mg/m3/8H	orl-mus 700mg/kg
17.	Pyrene	10007	060118	0.50	10.00	0.042	2000.0	999.4	9.4	129-00-0	0.2mg/m3/8H	orl-rat 2700mg/kg
18.	Benzo(e)pyrene	94851	021119	0.50	10.00	0.042	2001.6	1000.2	9.4	192-97-2	N/A	N/A
19.	Biphenyl	94851	021119	0.50	10.00	0.042	2003.6	1001.2	9.4	92-52-4	0.2 ppm(1mg/m3/8H)	orl-rat 2400mg/kg
20.	Decalin (49% cis, 51% trans)	94851	021119	0.50	10.00	0.042	2004.1	1001.4	9.4	91-17-8	N/A	N/A
21.	Dibenzofuran	94851	021119	0.50	10.00	0.042	2000.9	999.9	9.4	132-64-9	N/A	N/A
22.	Dibenzothiophene	94851	021119	0.50	10.00	0.042	2002.7	1000.7	9.4	132-65-0	N/A	orl-mus 470 mg/kg
23.	2,6-Dimethylnaphthalene	94851	021119	0.50	10.00	0.042	2000.7	999.8	9.4	581-42-0	N/A	N/A
24.	1-Methylnaphthalene	94851	021119	0.50	10.00	0.042	2001.0	999.9	9.4	90-12-0	N/A	orl-rat 1840mg/kg
25.	2-Methylnaphthalene	94851	021119	0.50	10.00	0.042	2001.6	1000.2	9.4	91-57-6	N/A	orl-rat 1630mg/kg
26.	1-Methylphenanthrene	94851	021119	0.50	10.00	0.042	2003.3	1001.1	13.2	832-69-9	N/A	N/A
27.	Pentachlorophenol	94851	021119	0.50	10.00	0.042	2003.0	1000.9	9.4	87-86-5	0.5mg/m3/8H (skin)	orl-rat 27mg/kg
28.	Perylene	94851	021119	0.50	10.00	0.042	2003.3	1001.0	9.4	198-55-0	N/A	N/A
29.	Thianaphthene	94851	021119	0.50	10.00	0.042	2000.3	999.6	9.4	95-15-8	N/A	N/A
30.	2,3,5-Trimethylnaphthalene	94851	021119	0.50	10.00	0.042	2003.3	1001.0	9.5	2245-38-7	N/A	N/A

- **The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.**
- **Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).**
- **Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.**
- **All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.**
- **Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).**



Method GC8MSD-2Long: Column:SPB-5 (30m X 0.25mm ID X 0.25μm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (14min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Gina McLane.

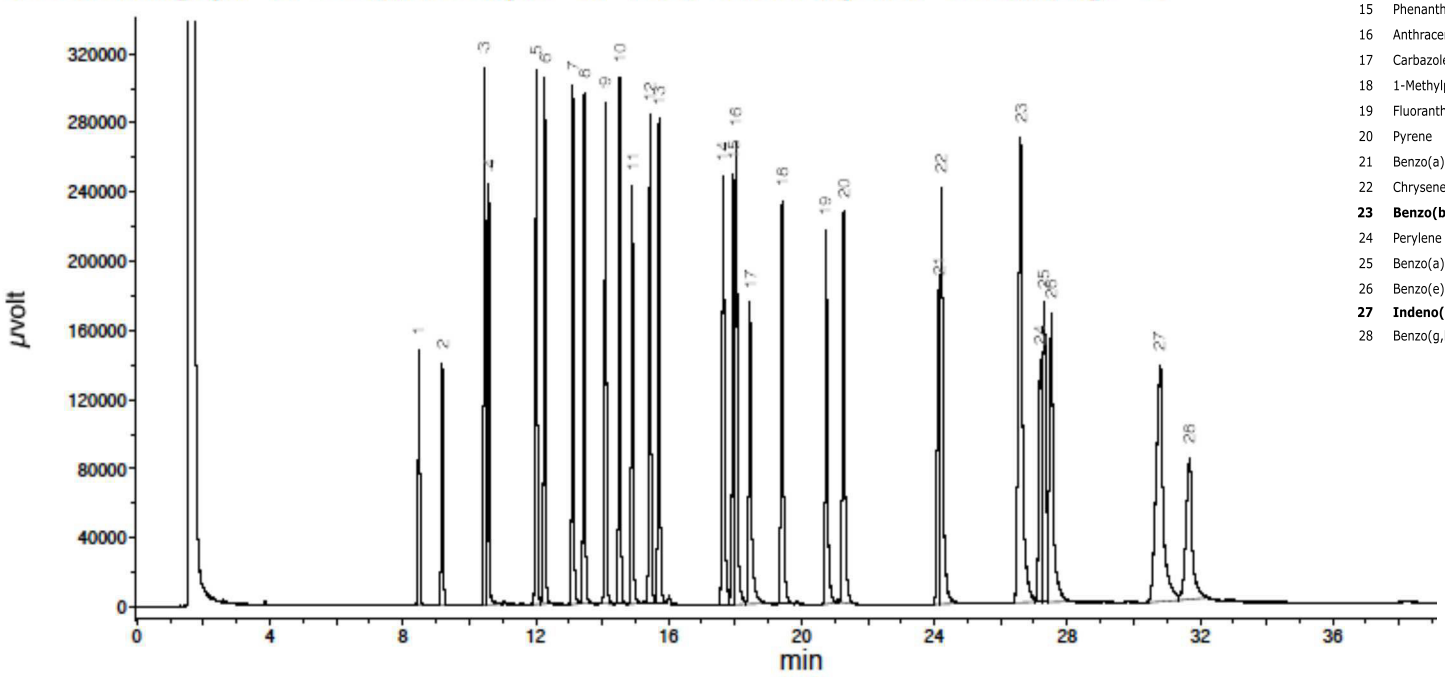
Retention Time (min.)	
Decahydronaphthalene (Decalin) (isomer)	6.46
Decahydronaphthalene (Decalin) (isomer)	7.18
Naphthalene	8.53
Thianaphthene	8.66
2-Methylnaphthalene	10.21
1-Methylnaphthalene	10.45
Biphenyl	11.4
2,6-Dimethylnaphthalene	11.76
Acenaphthylene	12.41
Acenaphthene	12.86
Dibenzofuran	13.3
2,3,5-Trimethylnaphthalene	13.85
Fluorene	14.16
Pentachlorophenol	16.13
Dibenzothiophene	16.23
Phenanthrene	16.56
Anthracene	16.69
Carbazole	17.2
1-Methylphenanthrene	18.11
Fluoranthene	19.55
Pyrene	20.1
Benzo(a)anthracene	23.13
Chrysene	23.24
Benzo(b)fluoranthene	25.66
Benzo(k)fluoranthene	25.75
Perylene	26.28
Benzo(a)pyrene	26.41
Benzo(e)pyrene	26.61
Indeno(1,2,3-cd)pyrene	29.34
Dibenzo(a,h)anthracene	29.34
Benzo(g,h,i)perylene	30.11

Run 47, "P93462 L022620 [1000µg/mL in MeCl2]"

Run Length: 40.00 min, 23999 points at 10 points/second.
Created: Wed, Mar 4, 2020 at 4:09:15 AM.
Sampled: Sequence "030220-GC9M2", Method "GC9-M2".
Analyzed using Method "GC9-M2".

Comments

GC9-M2 Analysis by Candice Warren
Column ID SPB-5 30 meter x 0.53mm x 1.5um Film Thickness.
Flow rates; Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL.
Hydrogen (detector) = 30 mL, Air (detector) =360 mLOven Temp 1 = 50°C (1 min).
Rate = 10°C/min, Oven Temp 2 = 300°C (14 min), Total Run Time = 40 Minutes. Injector Temp = 250°C.
FID Temp = 300°C, FID Signal = eDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 3



Peak No.	Name	FID RT (min.)
1	Decahydronaphthalene (Decalin) (isomer)	8.96
2	Decahydronaphthalene (Decalin) (isomer)	9.67
3	Naphthalene	10.96
4	Thianaphthene	11.09
5	2-Methylnaphthalene	12.53
6	1-Methylnaphthalene	12.78
7	Biphenyl	13.63
8	2,6-Dimethylnaphthalene	13.99
9	Acenaphthylene	14.63
10	Acenaphthene	15.07
11	Dibenzofuran	15.44
12	2,3,5-Trimethylnaphthalene	15.98
13	Fluorene	16.26
14	**Pentachlorophenol/Dibenzothiophene**	**18.22**
15	Phenanthrene	18.51
16	Anthracene	18.62
17	Carbazole	19.01
18	1-Methylphenanthrene	20.00
19	Fluoranthene	21.34
20	Pyrene	21.88
21	Benzo(a)anthracene	24.74
22	Chrysene	24.84
23	**Benzo(b)fluoranthene/Benzo(k)fluoranthene**	**27.36**
24	Perylene	28.04
25	Benzo(a)pyrene	28.18
26	Benzo(e)pyrene	28.42
27	**Indeno(1,2,3-cd)pyrene/Dibenzo(a,h)anthracene**	**32.26**
28	Benzo(g,h,i)perylene	33.30

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 33913 **Lot No.:** A0154854

Description : SOM01.0 SIM Analysis Standard

SOM01.0 SIM Analysis Standard 2000µg/mL, Methylene chloride, 1mL /ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2025 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2-Methylnaphthalene-d10	2,017.8 µg/mL	+/- 11.8417	µg/mL	Gravimetric
	CAS # 7297-45-2 (Lot AC-257)		+/- 90.8981	µg/mL	Unstressed
	Purity 98%		+/- 100.8597	µg/mL	Stressed
2	Fluoranthene-d10	1,999.2 µg/mL	+/- 11.7324	µg/mL	Gravimetric
	CAS # 93951-69-0 (Lot PR-20668)		+/- 90.0593	µg/mL	Unstressed
	Purity 98%		+/- 99.9290	µg/mL	Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

I 1369

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Product Name: DIBENZ[A,H]ANTHRACENE
(Isotopic Label & Enrichment Specification) (D14, 98%)

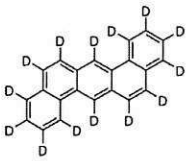
Lot Number: PR-30906

Catalog Number: DLM-677-0

Product Information

Chemical Purity Specification: ≥ 98%

MW*: 292.43
** For isotopically labeled compounds, MW listed is for the fully enriched product.*



Labeled CAS Number: 13250-98-1

Unlabeled CAS Number: 53-70-3

Chemical Formula: C22D14

I4874

Storage: Store at room temperature away from light and moisture.

Intended Use: For Research Use Only. Not for use in diagnostic procedures.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

The retest date for this chemical has been designated based on CIL's experience in working with chemical standards for over 30 years, and includes review of actual analytical results and relevant literature references. The retest date is valid only for unopened vials or ampoules that have been stored as recommended.

Approved by: Sashi Sivendran-Basak

Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

1H NMR for Chemical Purity	Pass
1H NMR for Isotopic Enrichment	99.4%
2H NMR for Chemical Purity	Pass
GC/FID for Chemical Purity	99.4%
GC/MS for Identification	Conforms
Melting Point Range Determination	261-267°C

Additional Testing Information:

CIL subscribes to the following standards for different products: ISO Guide 34, ISO/IEC 17025, ISO 13485 and cGMP as appropriate.

Certificate of Analysis

Phenova Certified Reference Materials are sold by Phenomenex.
411 Madrid Ave., Torrance, CA 90501 USA ▪ Tel: 310-212-0555 ▪ Fax: 310-328-7768 ▪ info@phenomenex.com
Access your MSDS and digital C of A at **www.phenomenex.com/mysupport. Re-order at www.phenomenex.com/standards**

Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101291
Description: GC/MS Tuning Mix
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Methylene chloride

Lot Number: CL10999
Certification Date: May 9, 2014
Expiration Date: December 31, 2023
Revision Date: June 19, 2015

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty (%)
Benzidine	92-87-5	1000	± 4.575%
Decafluorotriphenylphosphine (DFTPP)	5074-71-5	1000	± 2.420%
4,4'-DDT	50-29-3	1000	± 2.772%
Pentachlorophenol	87-86-5	1000	± 2.616%

I 5998

ACCREDITED
Reference Material Producer
Certificate No. 2427.02

phenova® Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ilac-MRA ACCREDITED
Chemical Testing Laboratory
Certificate No. 2427.03

IL111106I3_us

Produced by Phenova
6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at www.phenova.com/documents.

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 25 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number:	**93462**	**Solvent(s):**	**Lot#**	
Lot Number:	092220	Methylene chloride	102669	
Description:	PAH Standard 30 components			
Expiration Date:	092225			
Recommended Storage:	Refrigerate (4 °C)			
Nominal Concentration (µg/mL):	1000			
NIST Test ID#:	23060	5E-05	Balance Uncertainty	
Volume(s) shown below were combined and diluted to (mL):	20.0	0.003	Flask Uncertainty	

		092220
Formulated By:	Benson Chan	DATE
		092220
Reviewed By:	Pedro L. Rentas	DATE

	Compound	Part Number	Lot Number	Dil. Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(ug/mL)	Final Conc.(ug/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	Acenaphthene	10007	060118	0.50	10.00	0.042	2000.1	999.5	9.3	83-32-9	N/A	ipr-rat 600mg/kg
2.	Acenaphthylene	10007	060118	0.50	10.00	0.042	2000.2	999.5	9.4	208-96-8	N/A	N/A
3.	Anthracene	10007	060118	0.50	10.00	0.042	2000.3	999.5	9.3	120-12-7	0.2mg/m3 (8H)	ipr-mus 430mg/kg
4.	Benzo(a)anthracene	10007	060118	0.50	10.00	0.042	2000.9	999.9	9.4	56-55-3	N/A	N/A
5.	Benzo(a)pyrene	10007	060118	0.50	10.00	0.042	2000.3	999.6	9.3	50-32-8	0.2mg/m3 (8H)	scu-rat 50mg/kg
6.	Benzo(b)fluoranthene	10007	060118	0.50	10.00	0.042	2000.7	999.8	9.4	205-99-2	N/A	N/A
7.	Benzo(k)fluoranthene	10007	060118	0.50	10.00	0.042	2000.6	999.7	9.4	207-08-9	N/A	N/A
8.	Benzo(g,h,i)perylene	10007	060118	0.50	10.00	0.042	2000.4	999.6	9.3	191-24-2	N/A	N/A
9.	Carbazole	10007	060118	0.50	10.00	0.042	2000.7	999.7	9.4	86-74-8	N/A	ipr-mus 200mg/kg
10.	Chrysene	10007	060118	0.50	10.00	0.042	2000.4	999.6	9.4	218-01-9	0.2mg/m3	N/A
11.	Dibenzo(a,h)anthracene	10007	060118	0.50	10.00	0.042	2000.5	999.7	9.4	53-70-3	0.2mg/m3	N/A
12.	Fluoranthene	10007	060118	0.50	10.00	0.042	2000.5	999.6	9.4	206-44-0	N/A	orl-rat 2000mg/kg
13.	Fluorene	10007	060118	0.50	10.00	0.042	2000.4	999.6	9.4	86-73-7	N/A	ipr-mus 2 g/kg
14.	Indeno(1,2,3-cd)pyrene	10007	060118	0.50	10.00	0.042	2000.3	999.5	9.4	193-39-5	N/A	N/A
15.	Naphthalene	10007	060118	0.50	10.00	0.042	2000.8	999.8	9.4	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
16.	Phenanthrene	10007	060118	0.50	10.00	0.042	2000.8	999.8	9.4	85-01-8	0.2mg/m3/8H	orl-mus 700mg/kg
17.	Pyrene	10007	060118	0.50	10.00	0.042	2000.0	999.4	9.4	129-00-0	0.2mg/m3/8H	orl-rat 2700mg/kg
18.	Benzo(e)pyrene	94851	021119	0.50	10.00	0.042	2001.6	1000.2	9.4	192-97-2	N/A	N/A
19.	Biphenyl	94851	021119	0.50	10.00	0.042	2003.6	1001.2	9.4	92-52-4	0.2 ppm(1mg/m3/8H)	orl-rat 2400mg/kg
20.	Decalin (49% cis, 51% trans)	94851	021119	0.50	10.00	0.042	2004.1	1001.4	9.4	91-17-8	N/A	N/A
21.	Dibenzofuran	94851	021119	0.50	10.00	0.042	2000.9	999.9	9.4	132-64-9	N/A	N/A
22.	Dibenzothiophene	94851	021119	0.50	10.00	0.042	2002.7	1000.7	9.4	132-65-0	N/A	orl-mus 470 mg/kg
23.	2,6-Dimethylnaphthalene	94851	021119	0.50	10.00	0.042	2000.7	999.8	9.4	581-42-0	N/A	N/A
24.	1-Methylnaphthalene	94851	021119	0.50	10.00	0.042	2001.0	999.9	9.4	90-12-0	N/A	orl-rat 1840mg/kg
25.	2-Methylnaphthalene	94851	021119	0.50	10.00	0.042	2001.6	1000.2	9.4	91-57-6	N/A	orl-rat 1630mg/kg
26.	1-Methylphenanthrene	94851	021119	0.50	10.00	0.042	2003.3	1001.1	13.2	832-69-9	N/A	N/A
27.	Pentachlorophenol	94851	021119	0.50	10.00	0.042	2003.0	1000.9	9.4	87-86-5	0.5mg/m3/8H (skin)	orl-rat 27mg/kg
28.	Perylene	94851	021119	0.50	10.00	0.042	2003.3	1001.0	9.4	198-55-0	N/A	N/A
29.	Thianaphthene	94851	021119	0.50	10.00	0.042	2000.3	999.6	9.4	95-15-8	N/A	N/A
30.	2,3,5-Trimethylnaphthalene	94851	021119	0.50	10.00	0.042	2003.3	1001.0	9.5	2245-38-7	N/A	N/A

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

I009060
SVOA PAH STD-RMP-1000ug/ml
Solvent / Lot: 092220
Prep: 10/3/2020 by VS
Exp: 9/22/2025
Location: Fridge 19

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 70476
Lot Number: 092220
Description: Benzo(j)fluoranthene

Expiration Date: 092225
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 23060

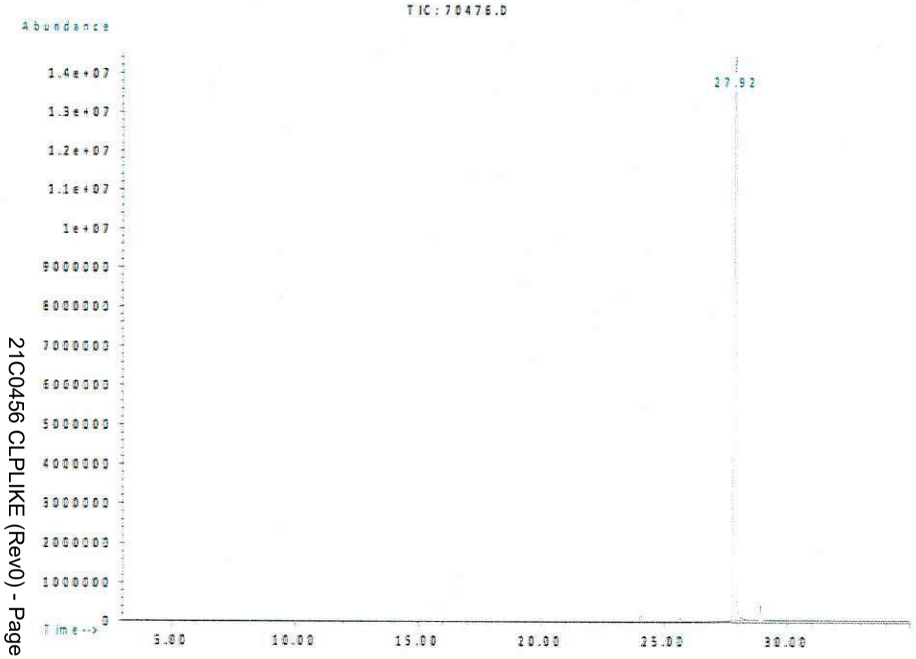
Solvent(s): **Lot#**
Methylene chloride 104929

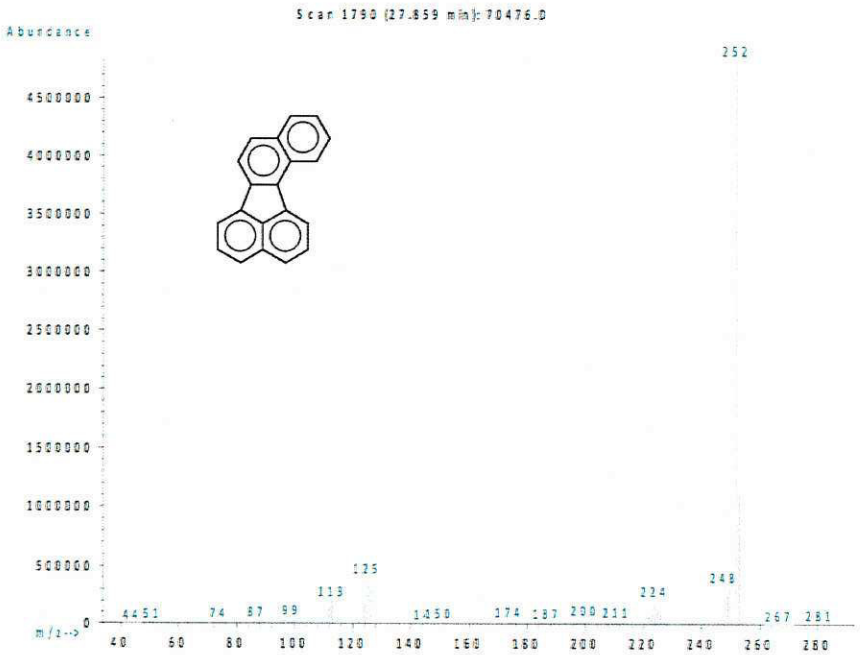
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 25.0 0.001 Flask Uncertainty

		092220
Formulated By:	Benson Chan	DATE
		092220
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Benzo(j)fluoranthene	476	3-CSZ-153-20	1000	98.1	0.2	0.02547	0.02552	1001.8	5.7	205-82-3	0.2mg/m3	N/A

Method GC8MSD1M: Column:SBB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9 min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 290°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

I009061
Benzo(j)fluoranthene 1000ug/mL
Solvent / Lot: 092220
Prep: 10/3/2020 by VS
Exp: 9/22/2025
Location:

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 200.8 UCT-KED

Total Metals

MW-101(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-01 A	SDG:	21C0456
Sampled:	03/30/21 10:30	Prepared:	04/09/21 13:51	File ID:	XDT_m1210409A-092
% Solids:	0.00	Preparation:	REN_EPA 600/4-79-020 4.1.4 HNO3 matrix	Analyzed:	04/09/21 23:22
Batch:	BJD0219	Sequence:	SJD0156	Initial/Final:	25 mL / 25 mL
Instrument:	ICPMS1			Calibration:	ED00035

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	2.70	1	0.0373	0.200	

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 200.8 UCT-KED

Total Metals

MW-201(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-02 A	SDG:	21C0456
Sampled:	03/30/21 10:40	Prepared:	04/09/21 13:51	File ID:	XDT_m1210409A-093
% Solids:	0.00	Preparation:	REN_EPA 600/4-79-020 4.1.4 HNO3 matrix	Analyzed:	04/09/21 23:27
Batch:	BJD0219	Sequence:	SJD0156	Initial/Final:	25 mL / 25 mL
Instrument:	ICPMS1			Calibration:	ED00035

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	3.26	1	0.0373	0.200	

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 200.8 UCT-KED

Total Metals

MW-102(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-03 A	SDG:	21C0456
Sampled:	03/30/21 11:45	Prepared:	04/09/21 13:51	File ID:	XDT_m1210409A-094
% Solids:	0.00	Preparation:	REN_EPA 600/4-79-020 4.1.4 HNO3 matrix	Analyzed:	04/09/21 23:32
Batch:	BJD0219	Sequence:	SJD0156	Initial/Final:	25 mL / 25 mL
Instrument:	ICPMS1			Calibration:	ED00035

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	13.0	1	0.0373	0.200	

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 200.8 UCT-KED

Total Metals

MW-103(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-04 A	SDG:	21C0456
Sampled:	03/30/21 15:50	Prepared:	04/09/21 13:51	File ID:	XDT_m2210409A-102
% Solids:	0.00	Preparation:	REN_EPA 600/4-79-020 4.1.4 HNO3 matrix	Analyzed:	04/10/21 02:36
Batch:	BJD0219	Sequence:	SJD0150	Initial/Final:	25 mL / 25 mL
Instrument:	ICPMS1			Calibration:	ED00033

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	0.978	1	0.0373	0.200	

PREPARATION BATCH SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Batch: BJD0219 Batch Matrix: Water Preparation: REN_EPA 600/4-79-020 4.1.4 HNO3 matrix

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW-101(S)-033021	21C0456-01	XDT_m1210409A-092	04/09/21 13:51	
MW-201(S)-033021	21C0456-02	XDT_m1210409A-093	04/09/21 13:51	
MW-102(S)-033021	21C0456-03	XDT_m1210409A-094	04/09/21 13:51	
MW-103(S)-033021	21C0456-04	XDT_m2210409A-102	04/09/21 13:51	
Blank	BJD0219-BLK1	XDT_m2210409A-029	04/09/21 13:51	
LCS	BJD0219-BS1	XDT_m2210409A-030	04/09/21 13:51	
MW-103(S)-033021	BJD0219-DUP1	XDT_m2210409A-103	04/09/21 13:51	
MW-103(S)-033021	BJD0219-MS1	XDT_m2210409A-104	04/09/21 13:51	

Form I

METHOD BLANK DATA SHEET

EPA 200.8 UCT-KED

Total Metals

Blank

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Batch: BJD0219
Laboratory ID: BJD0219-BLK1
Prepared: 04/09/21 13:51
Matrix: Water
Preparation: REN_EPA 600/4-79-020 4
Analyzed: 04/09/21 18:46
Sequence: SJD0150
Calibration: ED00033
Instrument: ICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic-75a	ND	1	0.0373	0.200	U

LCS / LCS DUPLICATE RECOVERY

EPA 200.8 UCT-KED

Total Metals

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Matrix:	Water	Analyzed:	04/09/21 18:51
Batch:	BJD0219	Laboratory ID:	BJD0219-BS1
Preparation:	REN EPA 600/4-79-020 4.1.4 HNO3 matrix	Sequence Name:	LCS
Initial/Final:	25 mL / 25 mL		

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Arsenic-75a	25.0	24.9		99.7	80 - 120

* Indicates values outside of QC limits

MW-103(S)-033021

DUPLICATES

EPA 200.8 UCT-KED

Total Metals

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Matrix: Water
Laboratory ID: BJD0219-DUP1
Batch: BJD0219
Lab Source ID: 21C0456-04
Preparation: REN EPA 600/4-79-020 4.1.4 HNO3 matrix
Initial/Final: 25 mL / 25 mL
Source Sample Name: MW-103(S)-033021
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Arsenic-75a	20	0.978	1.02	4.40	

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

MS / MS DUPLICATE RECOVERY

EPA 200.8 UCT-KED

Total Metals

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Matrix:	Water	Analyzed:	04/10/21 02:47
Batch:	BJD0219	Laboratory ID:	BJD0219-MS1
Preparation:	REN EPA 600/4-79-020 4.1.4 HNO3 matrix	Sequence Name:	Matrix Spike
Initial/Final:	25 mL / 25 mL	Source Sample:	MW-103(S)-033021

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	Q	MS CONCENTRATION (ug/L)	Q	MS % REC. #	QC LIMITS REC.
Arsenic-75a	25.0	0.978		25.8		99.2	75 - 125

* Values outside of QC limits

INITIAL CALIBRATION DATA

EPA 200.8 UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Calibration:	ED00033	Instrument:	ICPMS1
Calibration Date:	04/09/2021 15:50		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Arsenic-75a	0	0	0.2	280	10	210.1	20	211.2	50	233	100	220.99

INITIAL CALIBRATION DATA

EPA 200.8 UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Calibration:	ED00033	Instrument:	ICPMS1
Calibration Date:	04/09/2021 15:50		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic-75a	192.5483	50.8	0.9990		0.998	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS 02 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 4/9/21 **Analyst:** MB **Sequence:** SJD0150 **Cal:** ED00033

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CAL1	53779		Sc sl. noisy - Intensity OK
		-CAL2	53679		
		-CAL3	53866		Ni62 sl. noisy - R-Value & Qc OK
		-CAL4	53867		
		-CAL5	53776		
		-CAL6	53868		
		-IBL1	—		
	✓	-ICV1	—		Cd, Mo↑ / In↓ noisy
		-ICV1	J1792		
		-ICB1	53779		
		-CCV1	53776		
		-CCB1	53779		
		-CRL1	53679		
		-IFA1	53448		V-1, Cr53↑
	✓	-IFB1	—		↓ / Mo↑ / In↓ noisy
		-IFB1	53777		V-1↑
		-HCV1	53449		Co↑ - Co<100
		-HCV2	53684		
		-IBL2&3	—		
		-CCV2			
		-CCB2			
	✓	-CAL1			
		-CCV3			In↓ sl. noisy 7 RA Analytes OK
		-CCB3			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS 02 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 4/9/21 **Analyst:** MS **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		BJD0081-BLK4	REN		Ag, Ba only
		↓ -BS4	↓		↓
		BJD0219-BLK1			
		↓ -BS1			
		210009Φ-01		2	
		21C0330-09			Ag, Ba, V only
		BJD0081-DUP4			↓
		↓ -MS4			
		↓ -MSD4	↓		↓
		SEQ-IBL4			
		↓ -CCV4			
		↓ -CCB4			
		BJD0199-BLK2	REN		Ag+Ba only
		↓ -BS2	↓		↓
		21C0331-01		10	Ag+V only
		21C0288-14			Ag only
		↓ -17			↓
		↓ -06			↓
BJC		BJD0839-DUP6			
↓		↓ -MS6			
		↓ -MSD6	↓		↓
		SEQ-IBL5			
		↓ -CCV5			
		↓ -CCB5			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 4/9/21 **Analyst:** MS **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted. MS 4/9/21

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		21CΦ33Φ-Φ1	REN		Ag ΦBa only
		-Φ5	↓	↓	↓
		-11			
		-Φ7			
		-Φ3			
		SEQ-IBL6			
		21DΦΦ39-Φ2	REN	20	Al NR / No Cu, Zn / ~~Al NR~~
		SEQ-IBL7			
		BDDΦ253-BLK1	REN		
		-BS1	↓		
		SEQ-CCV6			Cu63, Zn67 ↑
		-CCB6			
		21DΦΦ39-Φ2RE1	REN	20	Al only
		21CΦ288-Φ3	SWN	↓	Ag only
		-Φ4	↓	↓	↓
		-Φ8			
		-Φ9			
		-1Φ			
		-11			
		-12			
		-18			
		SEQ-IBL8			
		-CCV7			Zn67 ↑
		-CCB7			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS 02 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 4/9/21 **Analyst:** MB **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
	✓	SEQ-CAL1			
		↓ -CCV8			
		↓ -CCB8			
		BJD0098-BLK2	FRN	5	Ba, Se only
		↓ -BS2	↓	20	↓
		21D0035-01		5	
		↓ -02		↓	
		↓ -03	↓		↓
		21C0330-09RE1	REN		NR Al/Sb only
		BJD0253-DUP1	↓		↓
		↓ -MS1			
		↓ -MSD1	↓		↓
		SEQ-IBL9			
		↓ -CCV9			Al, Co, Ni, Cu, Zn66 ↑
		↓ -CCB9			Ge NOISY - %R & ANALYTES OK
		21C0437-01	REN	10	
		21C0331-01RE1	↓	↓	Sb only
		SEQ-IBLA			
		21C0403-01	REN	2	Ni only
		21C0330-01RE1			Sb only
		↓ -05RE1			↓
		↓ -11RE1			
		↓ -07RE1			
		↓ -03RE1	↓		↓

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 4/9/21 **Analyst:** MB **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBLB			
		-CCVA			Al, Ni62 ↑
		-CCBA			
		21CΦ456-Φ4	REN		NO Cu, Ni
		BJΦ219-DUP1	↓		↓
		-MS1	↓		Zn %R ↑ ↓
		21DΦΦ64-Φ1	↓		Ag, Ba, Cr, ~~Ni~~ only
		BJDΦ199-DUP2	↓		↓
		-MS2	↓		↓
		21CΦ461-Φ1	SWN	20	Ag only
		-Φ2	↓	↓	↓
		-Φ3	↓	↓	↓
		SEQ-IBLC			
		-CCVB			Co, Ni, Cu ↑
		-CCBB			
		21DΦΦ64-Φ2	REN		In-1 ↓ & NOISY Cr, ~~Ni~~ only
		-Φ3	↓		↓
		-Φ4	↓		↓
		SEQ-IBLD			
		21DΦΦ18-Φ2	REN		NO Cu, Ni
		-Φ5	↓		↓
		-Φ7	↓		
		-10	↓		
		-12	↓		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS 02 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 4/9/21 **Analyst:** MB **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-IBLE			
		↓ -CCVC			
		↓ -CCBC			
		BJDΦΦ56-BLK3	LEN	200	Ag+Bi only
		21CΦ451-Φ2	↓	↓	↓
		BJDΦΦ56-DUP3			
		↓ -MS3			
		SEQ-IBLF			
		↓ -CCVD			Al, Zn67 ↑
		↓ -CCBD			
		Rinse/DI			
			MB 4/9/21		

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Friday, April 09, 2021 12:19:01
Sample Description:
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\STD Performance Check.mth
Dataset File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\DataSet\Default\STD Performance Check.2720
MassCal File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.50

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	3605.3	3605.255	80.997	2.2	Standard
	In	114.9	46803.1	-678584.413	440.149	0.1	Standard
	U	238.1	30105.1	30105.094	459.286	1.5	Standard
⎡	CeO	155.9	676.2	0.013	0.000	2.0	Standard
| >	Ce	139.9	52891.5	52891.468	337.143	0.6	Standard
⎣	Ce++	70.0	550.4	0.010	0.000	1.3	Standard
	Bkgd	220.0	0.2	0.167	0.118	70.7	Standard

Current Conditions File Data

Current Value	Description
1.01	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-11.25	Deflector Voltage
1600.00	ICP RF Power
-1650.00	Analog Stage Voltage
1500.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-8.00	Cell Rod Offset STD [CRO]
12.00	Discriminator Threshold
-4.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.01	DRC Mode NEB
-10.00	DRC Mode QRO
-3.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.00	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-16.50	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-39.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Friday, April 09, 2021 12:30:21
Sample Description:
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\STD Performance Check.mth
Dataset File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\DataSet\Default\STD Performance Check.2726
MassCal File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.50

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	10297.9	10297.911	126.223	1.2	Standard
	In	114.9	93544.0	93544.013	665.762	0.7	Standard
	U	238.1	62262.5	62262.527	487.704	0.8	Standard
⎡	CeO	155.9	2170.5	0.023	0.000	1.8	Standard
⎢>	Ce	139.9	93647.5	93647.500	934.038	1.0	Standard
⎣	Ce++	70.0	2220.3	0.024	0.000	1.2	Standard
	Bkgd	220.0	0.1	0.100	0.149	149.1	Standard

Current Conditions File Data

Current Value	Description
1.07	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-11.25	Deflector Voltage
1600.00	ICP RF Power
-1650.00	Analog Stage Voltage
1500.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-8.00	Cell Rod Offset STD [CRO]
12.00	Discriminator Threshold
-4.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.07	DRC Mode NEB
-10.00	DRC Mode QRO
-3.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.00	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-16.50	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-39.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Start Time: 4/9/2021 12:18:57 PM
End Time: 4/9/2021 12:32:26 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 3605.26
Obtained Intensity (In 115): 46803.08
Obtained Intensity (U 238): 30105.09
Obtained Intensity (Bkgd 220): 0.17
Obtained Formula (Ce++ 70 / Ce 140): 0.010 (=550.41 / 52891.47)
Obtained Formula (CeO 156 / Ce 140): 0.013 (=676.22 / 52891.47)
Obtained RSD (Be 9): 0.0225
Obtained RSD (In 115): 0.0006
Obtained RSD (U 238): 0.0153

Torch Alignment - [Passed]

Vertical	Horizontal	Intensity
0.17 mm	-0.66 mm	46194.57

Nebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 1.07
Obtained Intensity (In 115): 84713.43
Obtained Formula (CeO 156 / Ce 140): 0.0230 (=1841.12 / 80140.16)

Mass Calibration and Resolution - [Passed] Optimum value(s): N/A
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.719)
Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.679)

QID STD/DRC - Optimum value(s): Correlation Coefficient = 1.000; Intercept = -11.84

KED Mode QID - Optimum value(s): Correlation Coefficient = 0.999; Intercept = -12.34

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 10297.91
Obtained Intensity (In 115): 93544.01
Obtained Intensity (U 238): 62262.53
Obtained Intensity (Bkgd 220): 0.10
Obtained Formula (Ce++ 70 / Ce 140): 0.024 (=2220.31 / 93647.50)
Obtained Formula (CeO 156 / Ce 140): 0.023 (=2170.50 / 93647.50)
Obtained RSD (Be 9): 0.0123
Obtained RSD (In 115): 0.0071
Obtained RSD (U 238): 0.0078

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARIdaily_UCT.swz

Optimization Status

Start Time: 4/9/2021 12:18:57 PM

STD Performance Check
- Optimization Settings:
  - Method: STD Performance Check.mth.
  - Intensity Criterion: Be 9 > 2000
  - Intensity Criterion: In 115 > 40000
  - Intensity Criterion: U 238 > 30000
  - Intensity Criterion: Bkgd 220 <= 5
  - Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
  - Formula Criterion: CeO 156 / Ce 140 <= 0.025
  - RSD Criterion: Be 9.0122 < 0.05
  - RSD Criterion: In 114.904 < 0.05
  - RSD Criterion: U 238.05 < 0.05
- Optimization Results:
- Initial Try
  - Obtained Intensity (Be 9): 3605.26
  - Obtained Intensity (In 115): 46803.08
  - Obtained Intensity (U 238): 30105.09
  - Obtained Intensity (Bkgd 220): 0.17
  - Obtained Formula (Ce++ 70 / Ce 140): 0.010 (=550.41 / 52891.47)
  - Obtained Formula (CeO 156 / Ce 140): 0.013 (=676.22 / 52891.47)
  - Obtained RSD (Be 9): 0.0225
  - Obtained RSD (In 115): 0.0006
  - Obtained RSD (U 238): 0.0153

[Passed] Optimum value(s): N/A

Torch Alignment
- Optimization Settings:
  - Method: Torch Alignment.mth.
  - Intensity Criterion: In 115 Maximum
- Optimization Results:

	Vertical	Horizontal	Intensity
[Passed]	0.17 mm	-0.66 mm	46194.57

Nebulizer Gas Flow STD/KED [NEB]
- Optimization Settings:
  - Method: Optimize.mth.
    - Initial Try - Start/End/Step: 0.98/1.1/0.01.
  - Intensity Criterion: In 115 Maximum
  - Formula Criterion: CeO 156 / Ce 140 <= 0.025
- Optimization Results:
- Initial Try
  - Obtained Intensity (In 115): 84713.43
  - Obtained Formula (CeO 156 / Ce 140): 0.0230 (=1841.12 / 80140.16)

[Passed] Optimum value(s): 1.07

Mass Calibration and Resolution
Optimization Settings:
Method: Tuning.mth.
MassCal File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Iterations: 6
Target accuracy (+/- amu): 0.05 for Mass Cal. and 0.03 for Resolution
Peak height (%) for Res. Opt.: 10

Optimization Results:
Initial Try
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.719)
Target/Obtained mass (23.985/23.975), Target/Obtained resolution (0.7/0.705)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.695)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.679)
[Passed] Optimum value(s): N/A

QID STD/DRC
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -16/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 1.000; Intercept = -11.84

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	33	-12	39438.4
Mg	24	33	-12	50336.5
In	115	33	-8.5	93803
Ce	140	33	-7.5	91037.2
Pb	208	33	-6.5	37304.6
U	238	33	-6.5	60102.2

KED Mode QID
Optimization Settings:
Method: QID Calibration.mth.
Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:
Initial Try

Optimum value(s): Correlation Coefficient = 0.999; Intercept = -12.34

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-12.5	31402.5
Mg	24	41	-12.5	31554.8
In	115	41	-9.5	59716.6
Ce	140	41	-8	77658.5
Pb	208	41	-5.5	33579.4
U	238	41	-5	47791.8

STD Performance Check
Optimization Settings:
Method: STD Performance Check.mth.
Intensity Criterion: Be 9 > 2000
Intensity Criterion: In 115 > 40000

```
            Intensity Criterion: U 238 > 30000
            Intensity Criterion: Bkgd 220 <= 1
            Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
            Formula Criterion: CeO 156 / Ce 140 <= 0.025
            RSD Criterion: Be 9.0122 < 0.05
            RSD Criterion: In 114.904 < 0.05
            RSD Criterion: U 238.05 < 0.05

       Optimization Results:
       Initial Try
            Obtained Intensity (Be 9): 10297.91
            Obtained Intensity (In 115): 93544.01
            Obtained Intensity (U 238): 62262.53
            Obtained Intensity (Bkgd 220): 0.10
            Obtained Formula (Ce++ 70 / Ce 140): 0.024 (=2220.31 / 93647.50)
            Obtained Formula (CeO 156 / Ce 140): 0.023 (=2170.50 / 93647.50)
            Obtained RSD (Be 9): 0.0123
            Obtained RSD (In 115): 0.0071
            Obtained RSD (U 238): 0.0078

[Passed]  Optimum value(s): N/A

End Time: 4/9/2021 12:32:26 PM
```

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARISmartTuneDual.swz

Start Time: 4/9/2021 2:15:25 PM
End Time: 4/9/2021 2:33:54 PM

Detector Voltages - [Passed]
	Pulse Stage Voltage - [Passed] Optimum value(s): 1500
	Analog Stage Voltage - [Passed] Optimum value(s): -1650
	Pulse Stage Voltage (Fine-tune) - [Passed] Optimum value(s): 1500

Dual Detector Calibration
	Points Collected: 401
	Calibration unsuccessful for some masses due to insufficient pulse/analog crossover points

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARISmartTuneDual.swz

Optimization Status

Start Time: 4/9/2021 2:15:25 PM

Detector Voltages
	Pulse Stage Voltage Optimization Settings:
		Method: Pulse Stage Optimization.mth.
			Initial Try - Start/End/Step: 600/1300/50.
			Retry 1 - Start/End/Step: 600/1800/50.
		Optimization Criterion (Pulse 76): 0.1

	Analog Stage Voltage Optimization Settings:
		Method: Analog Stage Optimization.mth.
		Initial Try - Start/End: -1500/-1900.
		Retry 1 - Start/End: -1600/-2400.
		Optimization Criterion (Analog 80): Target Gain 10000

	Pulse Stage Voltage Results:
	Initial Try

		[Failed]
	Retry 1

		Intensity Obtained For Criterion (Pulse 76): 69224.31
[Passed] Optimum value(s): 1500
	Analog Stage Voltage Results:
	Initial Try
		Interim Gain Values: 11746.1 (-1700V), 7671.68 (-1600V), 9488.71 (-1650V)
		Analyte: Analog 80
		ACEM(volts): -1650
		Achieved Gain: 9488.71
		Achieved NMax: 1.31942e+009
		Conversion Factor: 0.0970122
		Passes: 3
		Points Collected: 31
		Points Used: 5
		Coefficient: 0.999981
[Passed] Optimum value(s): -1650
	Pulse Stage Voltage (Fine-tune) Results:
	Initial Try

		[Failed]
	Retry 1

		Intensity Obtained For Criterion (Pulse 76): 68221.51
[Passed] Optimum value(s): 1500

Dual Detector Calibration
	Optimization Settings:
		Method: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\DualDetectorNew.mth.
			Initial Try - Start/End/Step: -20/0/0.05.

Optimization Results:
Initial Try
Points Collected: 401
Calibration unsuccessful for some masses due to insufficient pulse/analog crossover points

End Time: 4/9/2021 2:33:54 PM

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Friday, April 09, 2021 14:49:30
Sample Description:
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\STD Performance Check.mth
Dataset File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\DataSet\Default\STD Performance Check.2739
MassCal File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Dual Detector Mode: Pulse
Acq. Dead Time (ns): 35
Current Dead Time (ns): 35
Torch Z position (mm): 0.50

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	9866.0	9866.007	200.527	2.0	Standard
	In	114.9	91799.2	91799.182	1272.823	1.4	Standard
	U	238.1	63010.3	63010.264	584.188	0.9	Standard
⎡	CeO	155.9	2088.1	0.023	0.001	2.6	Standard
⎢>	Ce	139.9	91662.0	91662.038	1262.556	1.4	Standard
⎣	Ce++	70.0	2042.5	0.022	0.000	0.7	Standard
	Bkgd	220.0	0.1	0.067	0.091	136.9	Standard

Current Conditions File Data

Current Value	Description
1.06	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-11.25	Deflector Voltage
1600.00	ICP RF Power
-1650.00	Analog Stage Voltage
1500.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-8.00	Cell Rod Offset STD [CRO]
12.00	Discriminator Threshold
-4.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.07	DRC Mode NEB
-10.00	DRC Mode QRO
-3.00	DRC Mode CRO
-7.00	DRC Mode Cell Entrance/Exit Voltage
0.00	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-16.50	KED Mode CRO
-12.00	KED Mode QRO
-4.00	KED Mode Cell Entrance Voltage
-39.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARISmartTuneDual.swz

Start Time: 4/9/2021 2:49:29 PM
End Time: 4/9/2021 2:51:31 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 9866.01
Obtained Intensity (In 115): 91799.18
Obtained Intensity (U 238): 63010.26
Obtained Intensity (Bkgd 220): 0.07
Obtained Formula (Ce++ 70 / Ce 140): 0.022 (=2042.48 / 91662.04)
Obtained Formula (CeO 156 / Ce 140): 0.023 (=2088.09 / 91662.04)

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Wizard\SmartTune\ARISmartTuneDual.swz

Optimization Status

Start Time: 4/9/2021 2:49:29 PM

STD Performance Check
	Optimization Settings:
		Method: STD Performance Check.mth.
		Intensity Criterion: Be 9 > 2000
		Intensity Criterion: In 115 > 40000
		Intensity Criterion: U 238 > 30000
		Intensity Criterion: Bkgd 220 <= 10
		Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
		Formula Criterion: CeO 156 / Ce 140 <= 0.025

	Optimization Results:
	Initial Try
		Obtained Intensity (Be 9): 9866.01
		Obtained Intensity (In 115): 91799.18
		Obtained Intensity (U 238): 63010.26
		Obtained Intensity (Bkgd 220): 0.07
		Obtained Formula (Ce++ 70 / Ce 140): 0.022 (=2042.48 / 91662.04)
		Obtained Formula (CeO 156 / Ce 140): 0.023 (=2088.09 / 91662.04)

[Passed] Optimum value(s): N/A

End Time: 4/9/2021 2:51:31 PM

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:50:50
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				26127	0	Standard
	Cl	**37**		ug/L				5279753	1	Standard
⌈>	**Sc**	**45**		ug/L				1418706	7	Standard
|	**Al**	**27**		ug/L				28568	1	Standard
|	**V**	**51**		ug/L				7213	1	Standard
|	**V-1**	**51**		ug/L				383	5	Standard
|	**Cr**	**52**		ug/L				22747	1	Standard
|	**Cr**	**53**		ug/L				386	1	Standard
⌊	**Mn**	**55**		ug/L				3181	2	Standard
⌈>	**Ge**	**72**		ug/L				68060	2	KED
|	**Co**	**59**		ug/L				16	17	KED
|	**Ni**	**60**		ug/L				31	40	KED
|	**Ni**	**62**		ug/L				7	66	KED
|	**Cu**	**63**		ug/L				249	5	KED
|	**Cu**	**65**		ug/L				141	5	KED
|	**Zn**	**66**		ug/L				257	5	KED
|	**Zn**	**67**		ug/L				33	14	KED
|	**As**	**75**		ug/L				12	28	KED
⌊	**Se**	**78**		ug/L				13	25	KED
	Y	**89**		ug/L				774130	6	Standard
	Kr	**83**		ug/L				54	14	Standard
⌈>	**In-1**	**115**		ug/L				20795	2	KED
|	**Mo**	**98**		ug/L				11	68	KED
|	**Cd**	**111**		ug/L				1	50	KED
⌊	**Cd**	**114**		ug/L				3	47	KED
⌈>	**In**	**115**		ug/L				1215671	5	Standard
|	**Ag**	**107**		ug/L				343	10	Standard
|	**Sb**	**121**		ug/L				119	16	Standard
|	**Sb**	**123**		ug/L				86	8	Standard
|	**Ba**	**135**		ug/L				246	14	Standard
⌊	**Ba**	**137**		ug/L				428	5	Standard
⌈>	**Tb**	**159**		ug/L				1539046	5	Standard
⌊	**Pb**	**208**		ug/L				1085	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:55:49
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	23279	0	Standard
	Cl	**37**		ug/L			5279753	5226216	1	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1468634	0	Standard
|	**Al**	**27**	**20.000**	ug/L	0.331	1	28568	597238	1	Standard
|	**V**	**51**	**0.200**	ug/L	0.006	2	7213	12765	0	Standard
|	**V-1**	**51**	**0.200**	ug/L	0.006	3	383	5947	2	Standard
|	**Cr**	**52**	**0.500**	ug/L	0.010	2	22747	33752	0	Standard
|	**Cr**	**53**	**0.500**	ug/L	0.012	2	386	1633	1	Standard
⌊	**Mn**	**55**	**0.500**	ug/L	0.013	2	3181	18113	2	Standard
⌈>	**Ge**	**72**		ug/L			68060	69223	0	KED
|	**Co**	**59**	**0.200**	ug/L	0.009	4	16	866	3	KED
|	**Ni**	**60**	**0.500**	ug/L	0.009	1	31	640	1	KED
|	**Ni**	**62**	**0.500**	ug/L	0.083	16	7	100	15	KED
|	**Cu**	**63**	**0.500**	ug/L	0.015	2	249	1812	2	KED
|	**Cu**	**65**	**0.500**	ug/L	0.022	4	141	965	3	KED
|	**Zn**	**66**	**4.000**	ug/L	0.082	2	257	1887	2	KED
|	**Zn**	**67**	**4.000**	ug/L	0.658	16	33	288	13	KED
|	**As**	**75**	**0.200**	ug/L	0.022	10	12	56	7	KED
⌊	**Se**	**78**	**0.500**	ug/L	0.101	20	13	24	7	KED
	Y	**89**		ug/L			774130	818754	1	Standard
	Kr	**83**		ug/L			54	60	9	Standard
⌈>	**In-1**	**115**		ug/L			20795	20605	1	KED
|	**Mo**	**98**	**0.200**	ug/L	0.012	6	11	230	4	KED
|	**Cd**	**111**	**0.100**	ug/L	0.018	18	1	30	16	KED
⌊	**Cd**	**114**	**0.100**	ug/L	0.011	10	3	70	11	KED
⌈>	**In**	**115**		ug/L			1215671	1266885	0	Standard
|	**Ag**	**107**	**0.200**	ug/L	0.007	3	343	3930	4	Standard
|	**Sb**	**121**	**0.200**	ug/L	0.004	2	119	2929	1	Standard
|	**Sb**	**123**	**0.200**	ug/L	0.009	4	86	2169	3	Standard
|	**Ba**	**135**	**0.500**	ug/L	0.008	1	246	2355	2	Standard
⌊	**Ba**	**137**	**0.500**	ug/L	0.009	1	428	4234	2	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1627754	1	Standard
⌊	**Pb**	**208**	**0.100**	ug/L	0.004	4	1085	5179	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:00:49
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	24536	2	Standard
	Cl	**37**		ug/L			5279753	5370125	1	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1524666	1	Standard
|	**Al**	**27**	**999.969**	ug/L	24.272	2	28568	27343680	2	Standard
|	**V**	**51**	**10.000**	ug/L	0.124	1	7213	272417	0	Standard
|	**V-1**	**51**	**10.000**	ug/L	0.155	1	383	269025	0	Standard
|	**Cr**	**52**	**10.002**	ug/L	0.101	1	22747	252721	0	Standard
|	**Cr**	**53**	**10.001**	ug/L	0.223	2	386	27472	1	Standard
⌊	**Mn**	**55**	**10.002**	ug/L	0.295	2	3181	337659	1	Standard
⌈>	**Ge**	**72**		ug/L			68060	69979	2	KED
|	**Co**	**59**	**10.000**	ug/L	0.193	1	16	40079	2	KED
|	**Ni**	**60**	**9.999**	ug/L	0.277	2	31	11656	0	KED
|	**Ni**	**62**	**10.000**	ug/L	0.411	4	7	1913	6	KED
|	**Cu**	**63**	**10.002**	ug/L	0.244	2	249	33868	0	KED
|	**Cu**	**65**	**10.000**	ug/L	0.164	1	141	16903	2	KED
|	**Zn**	**66**	**10.035**	ug/L	0.258	2	257	4476	2	KED
|	**Zn**	**67**	**10.163**	ug/L	0.414	4	33	763	4	KED
|	**As**	**75**	**10.000**	ug/L	0.159	1	12	2101	4	KED
⌊	**Se**	**78**	**10.002**	ug/L	0.076	0	13	247	2	KED
	Y	**89**		ug/L			774130	826734	0	Standard
	Kr	**83**		ug/L			54	55	6	Standard
⌈>	**In-1**	**115**		ug/L			20795	20801	2	KED
|	**Mo**	**98**	**9.999**	ug/L	0.330	3	11	9595	0	KED
|	**Cd**	**111**	**10.000**	ug/L	0.279	2	1	2635	0	KED
⌊	**Cd**	**114**	**10.000**	ug/L	0.317	3	3	6455	0	KED
⌈>	**In**	**115**		ug/L			1215671	1299402	0	Standard
|	**Ag**	**107**	**10.000**	ug/L	0.100	0	343	167956	0	Standard
|	**Sb**	**121**	**10.000**	ug/L	0.195	1	119	136498	1	Standard
|	**Sb**	**123**	**10.000**	ug/L	0.056	0	86	103770	0	Standard
|	**Ba**	**135**	**10.001**	ug/L	0.244	2	246	45200	2	Standard
⌊	**Ba**	**137**	**10.000**	ug/L	0.192	1	428	78226	1	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1658517	1	Standard
⌊	**Pb**	**208**	**10.000**	ug/L	0.137	1	1085	450777	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:06:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	25643	1	Standard
	Cl	**37**		ug/L			5279753	5460794	0	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1520514	1	Standard
|	**Al**	**27**	**2001.871**	ug/L	55.232	2	28568	54751110	1	Standard
|	**V**	**51**	**20.053**	ug/L	0.405	2	7213	542694	2	Standard
|	**V-1**	**51**	**20.030**	ug/L	0.425	2	383	540221	2	Standard
|	**Cr**	**52**	**20.023**	ug/L	0.573	2	22747	482048	0	Standard
|	**Cr**	**53**	**19.949**	ug/L	0.568	2	386	53680	1	Standard
⌊	**Mn**	**55**	**19.908**	ug/L	0.746	3	3181	654691	2	Standard
⌈>	**Ge**	**72**		ug/L			68060	70888	2	KED
|	**Co**	**59**	**19.950**	ug/L	0.751	3	16	80140	0	KED
|	**Ni**	**60**	**19.925**	ug/L	0.607	3	31	23153	0	KED
|	**Ni**	**62**	**20.032**	ug/L	0.949	4	7	3894	4	KED
|	**Cu**	**63**	**20.019**	ug/L	0.629	3	249	68663	1	KED
|	**Cu**	**65**	**19.958**	ug/L	0.409	2	141	33737	1	KED
|	**Zn**	**66**	**20.048**	ug/L	1.017	5	257	8857	3	KED
|	**Zn**	**67**	**19.932**	ug/L	1.236	6	33	1464	3	KED
|	**As**	**75**	**19.983**	ug/L	0.263	1	12	4224	1	KED
⌊	**Se**	**78**	**19.874**	ug/L	0.924	4	13	472	2	KED
	Y	**89**		ug/L			774130	830978	0	Standard
	Kr	**83**		ug/L			54	58	13	Standard
⌈>	**In-1**	**115**		ug/L			20795	20471	2	KED
|	**Mo**	**98**	**20.109**	ug/L	0.439	2	11	19405	0	KED
|	**Cd**	**111**	**20.102**	ug/L	0.599	2	1	5320	0	KED
⌊	**Cd**	**114**	**20.069**	ug/L	0.695	3	3	12925	1	KED
⌈>	**In**	**115**		ug/L			1215671	1302251	1	Standard
|	**Ag**	**107**	**19.970**	ug/L	0.232	1	343	333748	1	Standard
|	**Sb**	**121**	**20.019**	ug/L	0.121	0	119	274777	1	Standard
|	**Sb**	**123**	**20.012**	ug/L	0.359	1	86	208519	0	Standard
|	**Ba**	**135**	**20.001**	ug/L	0.700	3	246	90350	3	Standard
⌊	**Ba**	**137**	**20.009**	ug/L	0.119	0	428	156706	0	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1651117	0	Standard
⌊	**Pb**	**208**	**20.005**	ug/L	0.041	0	1085	897561	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:11:27
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	23107	3	Standard
	Cl	**37**		ug/L			5279753	5449281	0	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1471167	0	Standard
|	**Al**	**27**	**5093.830**	ug/L	109.514	2	28568	148733972	1	Standard
|	**V**	**51**	**50.824**	ug/L	1.017	2	7213	1437137	1	Standard
|	**V-1**	**51**	**50.898**	ug/L	1.050	2	383	1458602	1	Standard
|	**Cr**	**52**	**50.938**	ug/L	1.015	1	22747	1266903	1	Standard
|	**Cr**	**53**	**51.164**	ug/L	1.436	2	386	150024	1	Standard
⌊	**Mn**	**55**	**50.725**	ug/L	0.780	1	3181	1735011	0	Standard
⌈>	**Ge**	**72**		ug/L			68060	68226	1	KED
|	**Co**	**59**	**51.015**	ug/L	0.869	1	16	219613	0	KED
|	**Ni**	**60**	**51.082**	ug/L	0.539	1	31	64032	1	KED
|	**Ni**	**62**	**50.797**	ug/L	1.836	3	7	10314	1	KED
|	**Cu**	**63**	**50.917**	ug/L	1.170	2	249	184653	0	KED
|	**Cu**	**65**	**50.930**	ug/L	0.453	0	141	91121	2	KED
|	**Zn**	**66**	**50.871**	ug/L	1.338	2	257	23179	1	KED
|	**Zn**	**67**	**50.757**	ug/L	0.953	1	33	3821	3	KED
|	**As**	**75**	**51.093**	ug/L	0.761	1	12	11650	1	KED
⌊	**Se**	**78**	**50.935**	ug/L	2.959	5	13	1259	4	KED
	Y	**89**		ug/L			774130	821307	1	Standard
	Kr	**83**		ug/L			54	53	12	Standard
⌈>	**In-1**	**115**		ug/L			20795	20358	2	KED
|	**Mo**	**98**	**50.934**	ug/L	0.482	0	11	53906	2	KED
|	**Cd**	**111**	**50.737**	ug/L	1.391	2	1	14413	0	KED
⌊	**Cd**	**114**	**50.739**	ug/L	0.923	1	3	35091	1	KED
⌈>	**In**	**115**		ug/L			1215671	1249155	0	Standard
|	**Ag**	**107**	**50.752**	ug/L	0.938	1	343	879071	1	Standard
|	**Sb**	**121**	**51.070**	ug/L	0.811	1	119	752674	0	Standard
|	**Sb**	**123**	**51.007**	ug/L	0.850	1	86	566750	0	Standard
|	**Ba**	**135**	**51.054**	ug/L	0.501	0	246	246826	1	Standard
⌊	**Ba**	**137**	**51.074**	ug/L	0.152	0	428	429035	1	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1639977	2	Standard
⌊	**Pb**	**208**	**50.773**	ug/L	1.187	2	1085	2449617	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:18:31
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	25328	1	Standard
	Cl	**37**		ug/L			5279753	5448119	0	Standard
⎡>	**Sc**	**45**		ug/L			1418706	1457271	2	Standard
⎢	**Al**	**27**	**10017.164**	ug/L	168.965	1	28568	291312103	0	Standard
⎢	**V**	**51**	**100.555**	ug/L	2.338	2	7213	2861288	0	Standard
⎢	**V-1**	**51**	**100.275**	ug/L	2.631	2	383	2871571	0	Standard
⎢	**Cr**	**52**	**100.213**	ug/L	1.251	1	22747	2463595	1	Standard
⎢	**Cr**	**53**	**99.319**	ug/L	2.104	2	386	281674	0	Standard
⎣	**Mn**	**55**	**100.179**	ug/L	1.964	1	3181	3410678	0	Standard
⎡>	**Ge**	**72**		ug/L			68060	67174	1	KED
⎢	**Co**	**59**	**99.500**	ug/L	1.068	1	16	414886	1	KED
⎢	**Ni**	**60**	**99.382**	ug/L	2.242	2	31	120158	2	KED
⎢	**Ni**	**62**	**99.560**	ug/L	0.294	0	7	19617	0	KED
⎢	**Cu**	**63**	**99.196**	ug/L	0.813	0	249	344810	1	KED
⎢	**Cu**	**65**	**99.304**	ug/L	2.126	2	141	170859	3	KED
⎢	**Zn**	**66**	**99.384**	ug/L	2.069	2	257	43467	0	KED
⎢	**Zn**	**67**	**99.571**	ug/L	1.219	1	33	7246	2	KED
⎢	**As**	**75**	**99.646**	ug/L	0.900	0	12	22099	0	KED
⎣	**Se**	**78**	**99.813**	ug/L	2.261	2	13	2403	2	KED
	Y	**89**		ug/L			774130	803818	2	Standard
	Kr	**83**		ug/L			54	75	8	Standard
⎡>	**In-1**	**115**		ug/L			20795	19924	0	KED
⎢	**Mo**	**98**	**99.945**	ug/L	2.375	2	11	103326	1	KED
⎢	**Cd**	**111**	**99.345**	ug/L	1.213	1	1	27040	0	KED
⎣	**Cd**	**114**	**99.740**	ug/L	0.970	0	3	66945	0	KED
⎡>	**In**	**115**		ug/L			1215671	1251002	1	Standard
⎢	**Ag**	**107**	**99.250**	ug/L	0.494	0	343	1679428	0	Standard
⎢	**Sb**	**121**	**99.342**	ug/L	1.462	1	119	1434662	0	Standard
⎢	**Sb**	**123**	**99.469**	ug/L	1.439	1	86	1087513	0	Standard
⎢	**Ba**	**135**	**99.879**	ug/L	1.170	1	246	481354	0	Standard
⎣	**Ba**	**137**	**99.949**	ug/L	0.084	0	428	838980	1	Standard
⎡>	**Tb**	**159**		ug/L			1539046	1633303	2	Standard
⎣	**Pb**	**208**	**99.565**	ug/L	2.683	2	1085	4713558	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:26:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	26944	0	Standard
	Cl	**37**		ug/L			5279753	5361972	1	Standard
⎡>	**Sc**	**45**		ug/L			1418706	1475810	0	Standard
⎢	**Al**	**27**	**-0.003**	ug/L	0.005	164	28568	29624	0	Standard
⎢	**V**	**51**	**0.002**	ug/L	0.004	183	7213	7567	1	Standard
⎢	**V-1**	**51**	**-0.001**	ug/L	0.001	73	383	358	8	Standard
⎢	**Cr**	**52**	**0.000**	ug/L	0.014	2868	22747	23674	1	Standard
⎢	**Cr**	**53**	**-0.011**	ug/L	0.003	27	386	369	2	Standard
⎣	**Mn**	**55**	**-0.006**	ug/L	0.003	54	3181	3107	3	Standard
⎡>	**Ge**	**72**		ug/L			68060	68065	2	KED
⎢	**Co**	**59**	**-0.001**	ug/L	0.001	59	16	12	24	KED
⎢	**Ni**	**60**	**0.007**	ug/L	0.006	83	31	40	17	KED
⎢	**Ni**	**62**	**-0.003**	ug/L	0.019	554	7	6	56	KED
⎢	**Cu**	**63**	**0.009**	ug/L	0.010	109	249	281	10	KED
⎢	**Cu**	**65**	**0.010**	ug/L	0.021	201	141	160	25	KED
⎢	**Zn**	**66**	**-0.008**	ug/L	0.045	540	257	253	7	KED
⎢	**Zn**	**67**	**0.080**	ug/L	0.155	194	33	38	27	KED
⎢	**As**	**75**	**0.001**	ug/L	0.008	1049	12	12	13	KED
⎣	**Se**	**78**	**-0.029**	ug/L	0.194	677	13	13	32	KED
	Y	**89**		ug/L			774130	815313	1	Standard
	Kr	**83**		ug/L			54	58	30	Standard
⎡>	**In-1**	**115**		ug/L			20795	20642	1	KED
⎢	**Mo**	**98**	**0.016**	ug/L	0.004	24	11	28	14	KED
⎢	**Cd**	**111**	**0.007**	ug/L	0.006	85	1	3	43	KED
⎣	**Cd**	**114**	**0.003**	ug/L	0.007	200	3	5	81	KED
⎡>	**In**	**115**		ug/L			1215671	1278661	0	Standard
⎢	**Ag**	**107**	**-0.003**	ug/L	0.002	55	343	303	10	Standard
⎢	**Sb**	**121**	**0.078**	ug/L	0.002	2	119	1270	1	Standard
⎢	**Sb**	**123**	**0.077**	ug/L	0.005	6	86	952	5	Standard
⎢	**Ba**	**135**	**-0.001**	ug/L	0.001	38	246	252	1	Standard
⎣	**Ba**	**137**	**0.001**	ug/L	0.005	726	428	457	9	Standard
⎡>	**Tb**	**159**		ug/L			1539046	1628798	0	Standard
⎣	**Pb**	**208**	**-0.000**	ug/L	0.001	655	1085	1144	3	Standard

Sample Information

Sample Date/Time: Friday, April 09, 2021 16:18:31
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED
Mass Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Conditions File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

Calibration

Analyte	Mass	**r Corr Coef**	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Cl	37							
Sc	45							
Al	27	**0.9998**	0.020	20.00	1000	2000	5000	10000
V	51	**0.9998**	0.019	0.20	10	20	50	100
V-1	51	**0.9998**	0.020	0.20	10	20	50	100
Cr	52	**0.9998**	0.017	0.50	10	20	50	100
Cr	53	**0.9996**	0.002	0.50	10	20	50	100
Mn	55	**0.9999**	0.023	0.50	10	20	50	100
Ge	72							
Co	59	**0.9997**	0.062	0.20	10	20	50	100
Ni	60	**0.9997**	0.018	0.50	10	20	50	100
Ni	62	**0.9998**	0.003	0.50	10	20	50	100
Cu	63	**0.9997**	0.052	0.50	10	20	50	100
Cu	65	**0.9997**	0.026	0.50	10	20	50	100
Zn	66	**0.9998**	0.006	4.00	10	20	50	100
Zn	67	**0.9998**	0.001	4.00	10	20	50	100
As	75	**0.9997**	0.003	0.20	10	20	50	100
Se	78	**0.9998**	0.000	0.50	10	20	50	100
Y	89							
Kr	83							
In-1	115							
Mo	98	**0.9998**	0.052	0.20	10	20	50	100
Cd	111	**0.9998**	0.014	0.10	10	20	50	100
Cd	114	**0.9999**	0.034	0.10	10	20	50	100
In	115							
Ag	107	**0.9998**	0.014	0.20	10	20	50	100
Sb	121	**0.9997**	0.012	0.20	10	20	50	100
Sb	123	**0.9997**	0.009	0.20	10	20	50	100
Ba	135	**0.9997**	0.004	0.50	10	20	50	100
Ba	137	**0.9997**	0.007	0.50	10	20	50	100
Tb	159							
Pb	208	**0.9998**	0.029	0.10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:34:58

DEL

Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26127	27523	0	Standard
	Cl	37		ug/L			5279753	5511027	1	Standard
>	Sc	45		ug/L			1418706	1506028	1	Standard
	Al	27	5231.889	ug/L	115.448	2	28568	157277574	1	Standard
	V	51	51.504	ug/L	0.373	0	7213	1518713	0	Standard
	V-1	51	51.849	ug/L	0.315	0	383	1535160	0	Standard
	Cr	52	51.674	ug/L	0.955	1	22747	1324519	0	Standard
	Cr	53	52.783	ug/L	0.597	1	386	154930	0	Standard
	Mn	55	52.519	ug/L	0.697	1	3181	1849960	1	Standard
>	Ge	72		ug/L			68060	67984	0	KED
	Co	59	53.640	ug/L	0.369	0	16	226366	0	KED
	Ni	60	53.144	ug/L	0.172	0	31	65042	0	KED
	Ni	62	53.994	ug/L	0.932	1	7	10771	2	KED
	Cu	63	53.867	ug/L	0.806	1	249	189615	1	KED
	Cu	65	52.878	ug/L	0.372	0	141	92129	0	KED
	Zn	66	51.495	ug/L	0.358	0	257	22921	0	KED
	Zn	67	52.745	ug/L	0.896	1	33	3900	2	KED
	As	75	52.189	ug/L	1.130	2	12	11720	1	KED
	Se	78	80.277	ug/L	1.503	1	13	1959	2	KED
	Y	89		ug/L			774130	837035	1	Standard
	Kr	83		ug/L			54	75	11	Standard
>	In-1	115		ug/L			20795	17604	20	KED
	Mo	98	61.383	ug/L	15.964	26	11	54098	3	KED
	Cd	111	62.494	ug/L	15.749	25	1	14513	2	KED
	Cd	114	61.122	ug/L	15.056	24	3	35026	1	KED
>	In	115		ug/L			1215671	1292398	0	Standard
	Ag	107	52.622	ug/L	0.709	1	343	920073	1	Standard
	Sb	121	50.509	ug/L	1.088	2	119	753619	1	Standard
	Sb	123	50.451	ug/L	0.644	1	86	569915	0	Standard
	Ba	135	51.400	ug/L	1.049	2	246	256036	1	Standard
	Ba	137	51.294	ug/L	1.147	2	428	444991	1	Standard
>	Tb	159		ug/L			1539046	1671416	0	Standard
	Pb	208	52.410	ug/L	0.298	0	1085	2540885	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:41:10
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	27621	1	Standard
	Cl	**37**		ug/L			5279753	5552980	0	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1492374	0	Standard
|	**Al**	**27**	**5111.606**	ug/L	64.439	1	28568	152283059	1	Standard
|	**V**	**51**	**50.688**	ug/L	0.955	1	7213	1481300	1	Standard
|	**V-1**	**51**	**51.217**	ug/L	0.681	1	383	1502784	1	Standard
|	**Cr**	**52**	**50.946**	ug/L	1.099	2	22747	1294511	1	Standard
|	**Cr**	**53**	**52.649**	ug/L	0.244	0	386	153150	1	Standard
⌊	**Mn**	**55**	**52.205**	ug/L	0.797	1	3181	1822335	1	Standard
⌈>	**Ge**	**72**		ug/L			68060	68090	2	KED
|	**Co**	**59**	**53.053**	ug/L	0.684	1	16	224226	2	KED
|	**Ni**	**60**	**53.213**	ug/L	1.160	2	31	65204	0	KED
|	**Ni**	**62**	**53.358**	ug/L	0.147	0	7	10661	2	KED
|	**Cu**	**63**	**52.689**	ug/L	1.292	2	249	185743	2	KED
|	**Cu**	**65**	**53.413**	ug/L	0.921	1	141	93188	1	KED
|	**Zn**	**66**	**50.955**	ug/L	0.813	1	257	22715	2	KED
|	**Zn**	**67**	**51.502**	ug/L	0.425	0	33	3815	2	KED
|	**As**	**75**	**51.911**	ug/L	1.136	2	12	11672	0	KED
⌊	**Se**	**78**	**80.627**	ug/L	1.905	2	13	1969	1	KED
	Y	**89**		ug/L			774130	824652	2	Standard
	Kr	**83**		ug/L			54	61	19	Standard
⌈>	**In-1**	**115**		ug/L			20795	20518	2	KED
|	**Mo**	**98**	**50.157**	ug/L	0.797	1	11	53400	2	KED
|	**Cd**	**111**	**50.802**	ug/L	1.409	2	1	14234	0	KED
⌊	**Cd**	**114**	**50.855**	ug/L	0.668	1	3	35147	1	KED
⌈>	**In**	**115**		ug/L			1215671	1284461	1	Standard
|	**Ag**	**107**	**51.996**	ug/L	0.319	0	343	903530	0	Standard
|	**Sb**	**121**	**49.919**	ug/L	0.344	0	119	740298	0	Standard
|	**Sb**	**123**	**50.347**	ug/L	0.704	1	86	565224	0	Standard
|	**Ba**	**135**	**51.164**	ug/L	0.934	1	246	253289	0	Standard
⌊	**Ba**	**137**	**50.745**	ug/L	0.708	1	428	437537	0	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1650661	2	Standard
⌊	**Pb**	**208**	**52.432**	ug/L	1.182	2	1085	2509402	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:48:54
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	27167	1	Standard
	Cl	**37**		ug/L			5279753	5364907	3	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1456524	0	Standard
|	**Al**	**27**	**-0.013**	ug/L	0.021	162	28568	28963	2	Standard
|	**V**	**51**	**0.006**	ug/L	0.006	97	7213	7576	1	Standard
|	**V-1**	**51**	**-0.001**	ug/L	0.001	219	383	374	10	Standard
|	**Cr**	**52**	**0.017**	ug/L	0.016	91	22747	23766	1	Standard
|	**Cr**	**53**	**-0.005**	ug/L	0.003	59	386	382	1	Standard
⌊	**Mn**	**55**	**-0.003**	ug/L	0.003	74	3181	3151	1	Standard
⌈>	**Ge**	**72**		ug/L			68060	68083	1	KED
|	**Co**	**59**	**-0.001**	ug/L	0.001	50	16	10	26	KED
|	**Ni**	**60**	**0.009**	ug/L	0.007	79	31	42	21	KED
|	**Ni**	**62**	**0.016**	ug/L	0.029	183	7	10	53	KED
|	**Cu**	**63**	**0.011**	ug/L	0.007	63	249	288	7	KED
|	**Cu**	**65**	**0.002**	ug/L	0.006	286	141	145	6	KED
|	**Zn**	**66**	**0.014**	ug/L	0.026	182	257	264	4	KED
|	**Zn**	**67**	**-0.018**	ug/L	0.278	1515	33	31	64	KED
|	**As**	**75**	**-0.000**	ug/L	0.014	12086	12	12	26	KED
⌊	**Se**	**78**	**-0.092**	ug/L	0.153	166	13	11	31	KED
	Y	**89**		ug/L			774130	810095	3	Standard
	Kr	**83**		ug/L			54	62	21	Standard
⌈>	**In-1**	**115**		ug/L			20795	20496	0	KED
|	**Mo**	**98**	**-0.001**	ug/L	0.004	310	11	10	38	KED
|	**Cd**	**111**	**0.003**	ug/L	0.000	2	1	2	0	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.003	90	3	5	38	KED
⌈>	**In**	**115**		ug/L			1215671	1269705	2	Standard
|	**Ag**	**107**	**-0.004**	ug/L	0.002	60	343	290	13	Standard
|	**Sb**	**121**	**0.009**	ug/L	0.001	12	119	259	8	Standard
|	**Sb**	**123**	**0.008**	ug/L	0.003	36	86	183	16	Standard
|	**Ba**	**135**	**0.002**	ug/L	0.007	432	246	265	13	Standard
⌊	**Ba**	**137**	**-0.001**	ug/L	0.005	934	428	442	7	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1620758	1	Standard
⌊	**Pb**	**208**	**-0.000**	ug/L	0.001	406	1085	1133	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:57:46
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	22983	3	Standard
	Cl	**37**		ug/L			5279753	5398325	0	Standard
>	**Sc**	**45**		ug/L			1418706	1496884	2	Standard
	Al	**27**	**5139.196**	ug/L	42.825	0	28568	153554915	1	Standard
	V	**51**	**49.256**	ug/L	0.752	1	7213	1443684	1	Standard
	V-1	**51**	**49.688**	ug/L	0.765	1	383	1462028	1	Standard
	Cr	**52**	**50.030**	ug/L	0.998	1	22747	1275253	1	Standard
	Cr	**53**	**51.406**	ug/L	1.287	2	386	149969	2	Standard
	Mn	**55**	**50.385**	ug/L	0.654	1	3181	1763820	1	Standard
>	**Ge**	**72**		ug/L			68060	67641	1	KED
	Co	**59**	**51.657**	ug/L	1.812	3	16	216882	3	KED
	Ni	**60**	**51.248**	ug/L	0.733	1	31	62396	0	KED
	Ni	**62**	**51.883**	ug/L	1.532	2	7	10293	1	KED
	Cu	**63**	**51.931**	ug/L	1.411	2	249	181850	2	KED
	Cu	**65**	**51.703**	ug/L	1.261	2	141	89605	0	KED
	Zn	**66**	**52.021**	ug/L	1.185	2	257	23029	0	KED
	Zn	**67**	**52.358**	ug/L	0.945	1	33	3851	0	KED
	As	**75**	**51.468**	ug/L	1.036	2	12	11497	0	KED
	Se	**78**	**50.573**	ug/L	1.287	2	13	1232	2	KED
	Y	**89**		ug/L			774130	811784	2	Standard
	Kr	**83**		ug/L			54	60	11	Standard
>	**In-1**	**115**		ug/L			20795	20261	2	KED
	Mo	**98**	**50.791**	ug/L	0.503	0	11	53403	1	KED
	Cd	**111**	**51.137**	ug/L	1.005	1	1	14152	0	KED
	Cd	**114**	**51.303**	ug/L	1.599	3	3	35006	1	KED
>	**In**	**115**		ug/L			1215671	1281806	1	Standard
	Ag	**107**	**52.602**	ug/L	0.464	0	343	912171	0	Standard
	Sb	**121**	**51.816**	ug/L	0.693	1	119	766821	1	Standard
	Sb	**123**	**51.886**	ug/L	0.480	0	86	581305	0	Standard
	Ba	**135**	**51.254**	ug/L	0.987	1	246	253223	1	Standard
	Ba	**137**	**50.480**	ug/L	0.897	1	428	434345	1	Standard
>	**Tb**	**159**		ug/L			1539046	1650273	0	Standard
	Pb	**208**	**51.296**	ug/L	0.399	0	1085	2455477	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:05:11
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	28116	2	Standard
	Cl	**37**		ug/L			5279753	5354458	0	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1474629	2	Standard
|	**Al**	**27**	**-0.020**	ug/L	0.041	204	28568	29088	2	Standard
|	**V**	**51**	**0.001**	ug/L	0.006	811	7213	7515	0	Standard
|	**V-1**	**51**	**-0.002**	ug/L	0.001	30	383	341	3	Standard
|	**Cr**	**52**	**-0.005**	ug/L	0.016	288	22747	23504	0	Standard
|	**Cr**	**53**	**-0.014**	ug/L	0.003	18	386	361	4	Standard
⌊	**Mn**	**55**	**-0.006**	ug/L	0.005	83	3181	3108	3	Standard
⌈>	**Ge**	**72**		ug/L			68060	66203	0	KED
|	**Co**	**59**	**-0.001**	ug/L	0.000	33	16	12	8	KED
|	**Ni**	**60**	**0.004**	ug/L	0.003	78	31	35	12	KED
|	**Ni**	**62**	**0.027**	ug/L	0.038	137	7	12	56	KED
|	**Cu**	**63**	**0.013**	ug/L	0.005	35	249	288	5	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.010	114	141	123	13	KED
|	**Zn**	**66**	**0.013**	ug/L	0.093	716	257	256	16	KED
|	**Zn**	**67**	**0.154**	ug/L	0.133	86	33	43	22	KED
|	**As**	**75**	**-0.009**	ug/L	0.013	147	12	10	28	KED
⌊	**Se**	**78**	**-0.064**	ug/L	0.134	208	13	11	26	KED
	Y	**89**		ug/L			774130	813873	3	Standard
	Kr	**83**		ug/L			54	57	24	Standard
⌈>	**In-1**	**115**		ug/L			20795	20007	3	KED
|	**Mo**	**98**	**0.000**	ug/L	0.003	1458	11	11	26	KED
|	**Cd**	**111**	**0.013**	ug/L	0.008	63	1	5	40	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.003	96	3	5	37	KED
⌈>	**In**	**115**		ug/L			1215671	1297513	1	Standard
|	**Ag**	**107**	**-0.005**	ug/L	0.000	8	343	282	2	Standard
|	**Sb**	**121**	**0.043**	ug/L	0.002	5	119	770	3	Standard
|	**Sb**	**123**	**0.044**	ug/L	0.002	3	86	588	2	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.008	999	246	267	16	Standard
⌊	**Ba**	**137**	**-0.001**	ug/L	0.002	258	428	450	5	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1614301	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	20	1085	1080	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CRL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:10:33
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	22326	2	Standard
	Cl	**37**		ug/L			5279753	5313440	2	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1451869	1	Standard
|	**Al**	**27**	**19.884**	ug/L	1.664	8	28568	605115	6	Standard
|	**V**	**51**	**0.193**	ug/L	0.011	5	7213	12841	1	Standard
|	**V-1**	**51**	**0.198**	ug/L	0.013	6	383	6026	5	Standard
|	**Cr**	**52**	**0.415**	ug/L	0.005	1	22747	33337	1	Standard
|	**Cr**	**53**	**0.423**	ug/L	0.009	2	386	1587	0	Standard
⌊	**Mn**	**55**	**0.437**	ug/L	0.012	2	3181	18078	1	Standard
⌈>	**Ge**	**72**		ug/L			68060	67227	1	KED
|	**Co**	**59**	**0.193**	ug/L	0.007	3	16	819	1	KED
|	**Ni**	**60**	**0.490**	ug/L	0.011	2	31	623	3	KED
|	**Ni**	**62**	**0.526**	ug/L	0.067	12	7	111	10	KED
|	**Cu**	**63**	**0.453**	ug/L	0.015	3	249	1820	4	KED
|	**Cu**	**65**	**0.443**	ug/L	0.030	6	141	902	7	KED
|	**Zn**	**66**	**3.484**	ug/L	0.046	1	257	1770	2	KED
|	**Zn**	**67**	**3.208**	ug/L	0.329	10	33	265	10	KED
|	**As**	**75**	**0.189**	ug/L	0.018	9	12	53	6	KED
⌊	**Se**	**78**	**0.388**	ug/L	0.089	23	13	22	7	KED
	Y	**89**		ug/L			774130	797825	2	Standard
	Kr	**83**		ug/L			54	48	19	Standard
⌈>	**In-1**	**115**		ug/L			20795	20047	1	KED
|	**Mo**	**98**	**0.206**	ug/L	0.018	8	11	225	7	KED
|	**Cd**	**111**	**0.093**	ug/L	0.025	26	1	27	24	KED
⌊	**Cd**	**114**	**0.122**	ug/L	0.019	15	3	85	15	KED
⌈>	**In**	**115**		ug/L			1215671	1278518	0	Standard
|	**Ag**	**107**	**0.205**	ug/L	0.007	3	343	3907	3	Standard
|	**Sb**	**121**	**0.216**	ug/L	0.007	3	119	3308	3	Standard
|	**Sb**	**123**	**0.217**	ug/L	0.010	4	86	2511	5	Standard
|	**Ba**	**135**	**0.453**	ug/L	0.006	1	246	2487	1	Standard
⌊	**Ba**	**137**	**0.441**	ug/L	0.015	3	428	4235	3	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1606194	0	Standard
⌊	**Pb**	**208**	**0.089**	ug/L	0.010	11	1085	5258	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFA1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:16:51
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26127	135474	1	Standard
	Cl	37		ug/L			5279753	13142840	1	Standard
>	Sc	45		ug/L			1418706	1555087	3	Standard
	Al	27	20473.625	ug/L	708.150	3	28568	635065290	1	Standard
	V	51	0.041	ug/L	0.008	19	7213	9132	0	Standard
	V-1	51	1.355	ug/L	0.036	2	383	41807	0	Standard
	Cr	52	0.520	ug/L	0.012	2	22747	38430	2	Standard
	Cr	53	4.755	ug/L	0.101	2	386	14791	0	Standard
	Mn	55	0.008	ug/L	0.003	34	3181	3793	0	Standard
>	Ge	72		ug/L			68060	64470	0	KED
	Co	59	0.038	ug/L	0.003	6	16	166	5	KED
	Ni	60	0.049	ug/L	0.016	32	31	86	21	KED
	Ni	62	0.086	ug/L	0.041	48	7	23	33	KED
	Cu	63	-0.001	ug/L	0.005	587	249	233	7	KED
	Cu	65	0.000	ug/L	0.005	1536	141	134	5	KED
	Zn	66	-0.179	ug/L	0.019	10	257	169	4	KED
	Zn	67	-0.075	ug/L	0.057	75	33	26	15	KED
	As	75	0.006	ug/L	0.006	102	12	12	9	KED
	Se	78	0.122	ug/L	0.133	109	13	15	18	KED
	Y	89		ug/L			774130	784372	1	Standard
	Kr	83		ug/L			54	71	14	Standard
>	In-1	115		ug/L			20795	19534	1	KED
	Mo	98	417.947	ug/L	6.742	1	11	423620	1	KED
	Cd	111	0.080	ug/L	0.021	26	1	23	24	KED
	Cd	114	0.048	ug/L	0.013	26	3	34	23	KED
>	In	115		ug/L			1215671	1230785	1	Standard
	Ag	107	-0.011	ug/L	0.001	12	343	162	12	Standard
	Sb	121	0.012	ug/L	0.002	21	119	286	11	Standard
	Sb	123	0.011	ug/L	0.003	24	86	210	13	Standard
	Ba	135	-0.002	ug/L	0.001	65	246	238	2	Standard
	Ba	137	-0.012	ug/L	0.004	34	428	330	11	Standard
>	Tb	159		ug/L			1539046	1659908	1	Standard
	Pb	208	-0.003	ug/L	0.001	19	1085	1010	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:21:51

DEL

Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26127	137028	1	Standard
	Cl	37		ug/L			5279753	13009863	3	Standard
>	Sc	45		ug/L			1418706	1576123	1	Standard
	Al	27	20589.511	ug/L	172.403	0	28568	647703849	1	Standard
	V	51	-0.203	ug/L	0.012	5	7213	1776	19	Standard
	V-1	51	1.324	ug/L	0.008	0	383	41442	1	Standard
	Cr	52	19.847	ug/L	0.492	2	22747	547924	0	Standard
	Cr	53	24.213	ug/L	0.474	1	386	74600	0	Standard
	Mn	55	19.944	ug/L	0.151	0	3181	737352	0	Standard
>	Ge	72		ug/L			68060	65405	2	KED
	Co	59	21.201	ug/L	0.338	1	16	86068	1	KED
	Ni	60	20.573	ug/L	0.207	1	31	24245	3	KED
	Ni	62	21.283	ug/L	0.493	2	7	4088	1	KED
	Cu	63	20.464	ug/L	0.359	1	249	69436	0	KED
	Cu	65	20.440	ug/L	0.175	0	141	34347	2	KED
	Zn	66	19.443	ug/L	0.352	1	257	8481	3	KED
	Zn	67	17.784	ug/L	1.080	6	33	1285	4	KED
	As	75	19.396	ug/L	0.139	0	12	4197	1	KED
	Se	78	-0.003	ug/L	0.045	1678	13	13	6	KED
	Y	89		ug/L			774130	790795	1	Standard
	Kr	83		ug/L			54	90	6	Standard
>	In-1	115		ug/L			20795	16501	25	KED
	Mo	98	534.469	ug/L	171.022	31	11	432670	1	KED
	Cd	111	23.983	ug/L	8.124	33	1	5095	3	KED
	Cd	114	23.774	ug/L	7.474	31	3	12509	1	KED
>	In	115		ug/L			1215671	1218374	1	Standard
	Ag	107	19.703	ug/L	0.392	1	343	324941	0	Standard
	Sb	121	0.007	ug/L	0.003	45	119	222	20	Standard
	Sb	123	0.006	ug/L	0.003	54	86	152	23	Standard
	Ba	135	-0.000	ug/L	0.004	4194	246	246	7	Standard
	Ba	137	-0.005	ug/L	0.003	64	428	389	6	Standard
>	Tb	159		ug/L			1539046	1676671	2	Standard
	Pb	208	-0.004	ug/L	0.000	12	1085	1003	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:28:39
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26127	132359	1	Standard
	Cl	37		ug/L			5279753	12898862	2	Standard
>	Sc	45		ug/L			1418706	1599791	1	Standard
	Al	27	20016.259	ug/L	135.088	0	28568	639133711	1	Standard
	V	51	-0.161	ug/L	0.137	85	7213	3180	134	Standard
	V-1	51	1.288	ug/L	0.019	1	383	40934	2	Standard
	Cr	52	19.514	ug/L	0.267	1	22747	547290	0	Standard
	Cr	53	23.637	ug/L	0.703	2	386	73917	1	Standard
	Mn	55	19.509	ug/L	0.339	1	3181	732106	1	Standard
>	Ge	72		ug/L			68060	64822	1	KED
	Co	59	21.163	ug/L	0.531	2	16	85154	2	KED
	Ni	60	20.641	ug/L	0.402	1	31	24102	1	KED
	Ni	62	20.987	ug/L	0.644	3	7	3996	3	KED
	Cu	63	20.464	ug/L	0.116	0	249	68830	1	KED
	Cu	65	20.178	ug/L	0.412	2	141	33610	3	KED
	Zn	66	19.295	ug/L	0.416	2	257	8344	3	KED
	Zn	67	17.242	ug/L	0.885	5	33	1236	5	KED
	As	75	19.124	ug/L	0.131	0	12	4102	1	KED
	Se	78	-0.124	ug/L	0.100	80	13	10	21	KED
	Y	89		ug/L			774130	793568	3	Standard
	Kr	83		ug/L			54	78	23	Standard
>	In-1	115		ug/L			20795	18756	0	KED
	Mo	98	423.454	ug/L	6.131	1	11	412099	0	KED
	Cd	111	19.463	ug/L	0.188	0	1	4988	0	KED
	Cd	114	19.082	ug/L	0.319	1	3	12059	1	KED
>	In	115		ug/L			1215671	1210375	1	Standard
	Ag	107	19.697	ug/L	0.211	1	343	322721	0	Standard
	Sb	121	0.004	ug/L	0.001	28	119	177	8	Standard
	Sb	123	0.005	ug/L	0.001	24	86	138	10	Standard
	Ba	135	0.000	ug/L	0.004	3391	246	245	6	Standard
	Ba	137	-0.010	ug/L	0.005	44	428	343	11	Standard
>	Tb	159		ug/L			1539046	1656897	1	Standard
	Pb	208	-0.006	ug/L	0.000	6	1085	869	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:34:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	28911	1	Standard
	Cl	**37**		ug/L			5279753	5540404	1	Standard
>	**Sc**	**45**		ug/L			1418706	1480885	1	Standard
	Al	**27**	**21522.854**	ug/L	466.218	2	28568	636060212	1	Standard
	V	**51**	**206.742**	ug/L	4.886	2	7213	5971260	1	Standard
	V-1	**51**	**206.402**	ug/L	4.309	2	383	6007535	1	Standard
	Cr	**52**	**203.726**	ug/L	5.265	2	22747	5064620	1	Standard
	Cr	**53**	**202.712**	ug/L	2.955	1	386	583902	0	Standard
	Mn	**55**	**209.106**	ug/L	4.321	2	3181	7231998	1	Standard
>	**Ge**	**72**		ug/L			68060	61033	5	KED
	Co	**59**	**221.276**	ug/L	15.703	7	16	836088	1	KED
	Ni	**60**	**218.996**	ug/L	17.114	7	31	239833	1	KED
	Ni	**62**	**214.665**	ug/L	17.862	8	7	38304	2	KED
	Cu	**63**	**212.038**	ug/L	13.365	6	249	667869	0	KED
	Cu	**65**	**212.730**	ug/L	16.808	7	141	331389	2	KED
	Zn	**66**	**207.426**	ug/L	11.057	5	257	82026	0	KED
	Zn	**67**	**207.882**	ug/L	12.351	5	33	13682	1	KED
	As	**75**	**207.328**	ug/L	13.828	6	12	41665	1	KED
	Se	**78**	**198.126**	ug/L	13.036	6	13	4311	0	KED
	Y	**89**		ug/L			774130	777976	1	Standard
	Kr	**83**		ug/L			54	93	15	Standard
>	**In-1**	**115**		ug/L			20795	18107	1	KED
	Mo	**98**	**214.950**	ug/L	7.457	3	11	201879	1	KED
	Cd	**111**	**203.726**	ug/L	5.055	2	1	50381	0	KED
	Cd	**114**	**200.057**	ug/L	2.497	1	3	122018	0	KED
>	**In**	**115**		ug/L			1215671	1189407	1	Standard
	Ag	**107**	**209.083**	ug/L	3.416	1	343	3363116	0	Standard
	Sb	**121**	**211.566**	ug/L	1.244	0	119	2904966	0	Standard
	Sb	**123**	**210.926**	ug/L	2.804	1	86	2192473	0	Standard
	Ba	**135**	**202.932**	ug/L	1.902	0	246	929622	0	Standard
	Ba	**137**	**199.760**	ug/L	1.903	0	428	1593715	0	Standard
>	**Tb**	**159**		ug/L			1539046	1623745	1	Standard
	Pb	**208**	**210.485**	ug/L	4.765	2	1085	9908332	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:39:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	28536	3	Standard
	Cl	**37**		ug/L			5279753	5443908	0	Standard
>	**Sc**	**45**		ug/L			1418706	1425934	0	Standard
	Al	**27**	**30959.251**	ug/L	392.067	1	28568	881130422	1	Standard
	V	**51**	**302.212**	ug/L	6.011	1	7213	8402890	2	Standard
	V-1	**51**	**300.496**	ug/L	5.688	1	383	8422501	2	Standard
	Cr	**52**	**296.508**	ug/L	3.751	1	22747	7088609	1	Standard
	Cr	**53**	**291.122**	ug/L	6.693	2	386	807284	1	Standard
	Mn	**55**	**301.355**	ug/L	5.898	1	3181	10034852	1	Standard
>	**Ge**	**72**		ug/L			68060	58602	0	KED
	Co	**59**	**319.550**	ug/L	1.126	0	16	1162367	0	KED
	Ni	**60**	**312.732**	ug/L	5.305	1	31	329774	1	KED
	Ni	**62**	**317.478**	ug/L	2.457	0	7	54557	0	KED
	Cu	**63**	**302.188**	ug/L	3.162	1	249	915906	0	KED
	Cu	**65**	**301.379**	ug/L	2.830	0	141	452060	1	KED
	Zn	**66**	**294.271**	ug/L	2.280	0	257	111865	1	KED
	Zn	**67**	**294.691**	ug/L	6.372	2	33	18650	1	KED
	As	**75**	**303.479**	ug/L	3.283	1	12	58699	1	KED
	Se	**78**	**288.467**	ug/L	0.211	0	13	6036	0	KED
	Y	**89**		ug/L			774130	741625	1	Standard
	Kr	**83**		ug/L			54	82	13	Standard
>	**In-1**	**115**		ug/L			20795	17443	1	KED
	Mo	**98**	**316.946**	ug/L	5.336	1	11	286847	0	KED
	Cd	**111**	**292.146**	ug/L	5.239	1	1	69611	0	KED
	Cd	**114**	**288.102**	ug/L	5.927	2	3	169273	1	KED
>	**In**	**115**		ug/L			1215671	1146780	1	Standard
	Ag	**107**	**297.523**	ug/L	4.238	1	343	4613926	0	Standard
	Sb	**121**	**308.766**	ug/L	4.653	1	119	4087076	0	Standard
	Sb	**123**	**304.905**	ug/L	5.465	1	86	3055411	0	Standard
	Ba	**135**	**297.946**	ug/L	3.699	1	246	1315788	0	Standard
	Ba	**137**	**308.484**	ug/L	4.118	1	428	2372732	1	Standard
>	**Tb**	**159**		ug/L			1539046	1569807	1	Standard
	Pb	**208**	**303.970**	ug/L	1.740	0	1085	13835154	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:47:41
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			26127	24045	1	Standard
	Cl	37		ug/L			5279753	5485606	1	Standard
>	Sc	45		ug/L			1418706	1540610	1	Standard
	Al	27	-0.499	ug/L	0.005	1	28568	15668	2	Standard
	V	51	-0.005	ug/L	0.004	86	7213	7680	2	Standard
	V-1	51	0.011	ug/L	0.001	11	383	762	6	Standard
	Cr	52	-0.082	ug/L	0.013	16	22747	22583	1	Standard
	Cr	53	-0.027	ug/L	0.002	7	386	339	2	Standard
	Mn	55	-0.070	ug/L	0.000	0	3181	926	1	Standard
>	Ge	72		ug/L			68060	65529	1	KED
	Co	59	0.001	ug/L	0.004	345	16	20	75	KED
	Ni	60	-0.011	ug/L	0.005	41	31	16	33	KED
	Ni	62	-0.005	ug/L	0.015	300	7	6	45	KED
	Cu	63	-0.043	ug/L	0.002	3	249	95	6	KED
	Cu	65	-0.056	ug/L	0.004	7	141	41	18	KED
	Zn	66	-0.428	ug/L	0.038	8	257	66	24	KED
	Zn	67	-0.360	ug/L	0.032	8	33	6	34	KED
	As	75	0.007	ug/L	0.008	115	12	13	14	KED
	Se	78	0.035	ug/L	0.081	232	13	14	14	KED
	Y	89		ug/L			774130	809192	3	Standard
	Kr	83		ug/L			54	58	27	Standard
>	In-1	115		ug/L			20795	18823	2	KED
	Mo	98	0.006	ug/L	0.003	63	11	16	19	KED
	Cd	111	0.006	ug/L	0.002	37	1	3	17	KED
	Cd	114	0.005	ug/L	0.004	89	3	6	46	KED
>	In	115		ug/L			1215671	1294039	0	Standard
	Ag	107	-0.005	ug/L	0.002	41	343	285	12	Standard
	Sb	121	0.155	ug/L	0.007	4	119	2444	4	Standard
	Sb	123	0.156	ug/L	0.007	4	86	1853	4	Standard
	Ba	135	-0.039	ug/L	0.003	7	246	67	20	Standard
	Ba	137	-0.039	ug/L	0.001	3	428	120	10	Standard
>	Tb	159		ug/L			1539046	1640041	1	Standard
	Pb	208	-0.014	ug/L	0.000	2	1085	471	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:54:36
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	23896	4	Standard
	Cl	**37**		ug/L			5279753	5364482	1	Standard
>	**Sc**	**45**		ug/L			1418706	1532540	0	Standard
	Al	**27**	**-0.686**	ug/L	0.010	1	28568	9876	3	Standard
	V	**51**	**-0.006**	ug/L	0.001	25	7213	7624	0	Standard
	V-1	**51**	**0.005**	ug/L	0.001	19	383	571	4	Standard
	Cr	**52**	**-0.081**	ug/L	0.007	8	22747	22509	1	Standard
	Cr	**53**	**-0.043**	ug/L	0.007	16	386	288	8	Standard
	Mn	**55**	**-0.072**	ug/L	0.001	1	3181	845	5	Standard
>	**Ge**	**72**		ug/L			68060	66083	3	KED
	Co	**59**	**-0.002**	ug/L	0.001	36	16	8	32	KED
	Ni	**60**	**-0.013**	ug/L	0.002	17	31	14	15	KED
	Ni	**62**	**-0.012**	ug/L	0.027	220	7	5	108	KED
	Cu	**63**	**-0.050**	ug/L	0.006	12	249	69	27	KED
	Cu	**65**	**-0.060**	ug/L	0.007	11	141	36	34	KED
	Zn	**66**	**-0.432**	ug/L	0.019	4	257	65	13	KED
	Zn	**67**	**-0.333**	ug/L	0.045	13	33	8	35	KED
	As	**75**	**-0.001**	ug/L	0.008	602	12	11	17	KED
	Se	**78**	**-0.053**	ug/L	0.167	316	13	12	30	KED
	Y	**89**		ug/L			774130	803520	0	Standard
	Kr	**83**		ug/L			54	48	28	Standard
>	**In-1**	**115**		ug/L			20795	19088	1	KED
	Mo	**98**	**-0.000**	ug/L	0.007	3146	11	10	67	KED
	Cd	**111**	**0.014**	ug/L	0.009	64	1	5	44	KED
	Cd	**114**	**0.008**	ug/L	0.004	52	3	8	34	KED
>	**In**	**115**		ug/L			1215671	1287941	0	Standard
	Ag	**107**	**-0.010**	ug/L	0.000	1	343	191	1	Standard
	Sb	**121**	**0.052**	ug/L	0.003	6	119	905	5	Standard
	Sb	**123**	**0.049**	ug/L	0.004	7	86	646	6	Standard
	Ba	**135**	**-0.041**	ug/L	0.001	2	246	59	9	Standard
	Ba	**137**	**-0.041**	ug/L	0.001	1	428	97	7	Standard
>	**Tb**	**159**		ug/L			1539046	1651256	0	Standard
	Pb	**208**	**-0.017**	ug/L	0.001	3	1085	333	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:01:29
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	24540	1	Standard
	Cl	**37**		ug/L			5279753	5555575	1	Standard
>	**Sc**	**45**		ug/L			1418706	1555949	1	Standard
	Al	**27**	**5194.774**	ug/L	116.846	2	28568	161318259	0	Standard
	V	**51**	**49.615**	ug/L	0.372	0	7213	1511775	0	Standard
	V-1	**51**	**50.013**	ug/L	0.349	0	383	1529887	0	Standard
	Cr	**52**	**50.159**	ug/L	1.093	2	22747	1328994	1	Standard
	Cr	**53**	**51.431**	ug/L	0.735	1	386	155968	0	Standard
	Mn	**55**	**51.443**	ug/L	0.278	0	3181	1872109	0	Standard
>	**Ge**	**72**		ug/L			68060	65865	0	KED
	Co	**59**	**54.501**	ug/L	0.881	1	16	222837	1	KED
	Ni	**60**	**53.986**	ug/L	1.016	1	31	64013	1	KED
	Ni	**62**	**54.091**	ug/L	1.051	1	7	10453	2	KED
	Cu	**63**	**55.063**	ug/L	0.365	0	249	187782	0	KED
	Cu	**65**	**53.932**	ug/L	1.066	1	141	91034	1	KED
	Zn	**66**	**53.790**	ug/L	0.794	1	257	23185	1	KED
	Zn	**67**	**54.216**	ug/L	0.706	1	33	3883	1	KED
	As	**75**	**52.157**	ug/L	0.644	1	12	11348	1	KED
	Se	**78**	**51.397**	ug/L	2.069	4	13	1219	3	KED
	Y	**89**		ug/L			774130	815520	0	Standard
	Kr	**83**		ug/L			54	55	6	Standard
>	**In-1**	**115**		ug/L			20795	18730	1	KED
	Mo	**98**	**53.417**	ug/L	0.939	1	11	51921	1	KED
	Cd	**111**	**53.183**	ug/L	0.476	0	1	13609	0	KED
	Cd	**114**	**52.639**	ug/L	0.717	1	3	33214	0	KED
>	**In**	**115**		ug/L			1215671	1258107	0	Standard
	Ag	**107**	**53.986**	ug/L	0.611	1	343	918941	1	Standard
	Sb	**121**	**53.174**	ug/L	0.498	0	119	772375	0	Standard
	Sb	**123**	**53.799**	ug/L	0.341	0	86	591633	0	Standard
	Ba	**135**	**52.487**	ug/L	0.143	0	246	254530	0	Standard
	Ba	**137**	**52.036**	ug/L	1.058	2	428	439449	1	Standard
>	**Tb**	**159**		ug/L			1539046	1673892	1	Standard
	Pb	**208**	**53.934**	ug/L	0.956	1	1085	2618194	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:09:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			26127	25021	2	Standard
	Cl	**37**		ug/L			5279753	5371174	1	Standard
⌈>	**Sc**	**45**		ug/L			1418706	1514829	2	Standard
|	**Al**	**27**	**-0.661**	ug/L	0.015	2	28568	10503	2	Standard
|	**V**	**51**	**-0.011**	ug/L	0.005	50	7213	7387	0	Standard
|	**V-1**	**51**	**0.001**	ug/L	0.001	72	383	445	3	Standard
|	**Cr**	**52**	**-0.079**	ug/L	0.019	24	22747	22288	0	Standard
|	**Cr**	**53**	**-0.039**	ug/L	0.004	11	386	298	1	Standard
⌊	**Mn**	**55**	**-0.057**	ug/L	0.001	2	3181	1363	1	Standard
⌈>	**Ge**	**72**		ug/L			68060	64535	1	KED
|	**Co**	**59**	**-0.002**	ug/L	0.001	62	16	8	44	KED
|	**Ni**	**60**	**-0.011**	ug/L	0.005	47	31	16	35	KED
|	**Ni**	**62**	**-0.025**	ug/L	0.006	22	7	2	43	KED
|	**Cu**	**63**	**-0.040**	ug/L	0.007	18	249	102	21	KED
|	**Cu**	**65**	**-0.045**	ug/L	0.005	11	141	60	14	KED
|	**Zn**	**66**	**-0.351**	ug/L	0.054	15	257	97	22	KED
|	**Zn**	**67**	**-0.349**	ug/L	0.059	17	33	6	56	KED
|	**As**	**75**	**0.007**	ug/L	0.008	112	12	13	14	KED
⌊	**Se**	**78**	**-0.162**	ug/L	0.088	54	13	9	23	KED
	Y	**89**		ug/L			774130	793156	2	Standard
	Kr	**83**		ug/L			54	44	34	Standard
⌈>	**In-1**	**115**		ug/L			20795	19007	2	KED
|	**Mo**	**98**	**0.004**	ug/L	0.011	282	11	14	76	KED
|	**Cd**	**111**	**0.004**	ug/L	0.004	89	1	2	33	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.003	1582	3	3	72	KED
⌈>	**In**	**115**		ug/L			1215671	1273236	1	Standard
|	**Ag**	**107**	**-0.010**	ug/L	0.002	21	343	185	21	Standard
|	**Sb**	**121**	**0.051**	ug/L	0.004	8	119	869	6	Standard
|	**Sb**	**123**	**0.051**	ug/L	0.001	2	86	656	1	Standard
|	**Ba**	**135**	**-0.035**	ug/L	0.000	0	246	85	0	Standard
⌊	**Ba**	**137**	**-0.035**	ug/L	0.001	4	428	152	7	Standard
⌈>	**Tb**	**159**		ug/L			1539046	1628238	2	Standard
⌊	**Pb**	**208**	**-0.015**	ug/L	0.000	2	1085	441	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:16:18
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				23799	3	Standard
	Cl	**37**		ug/L				5305004	1	Standard
>	**Sc**	**45**		ug/L				1533668	0	Standard
	Al	**27**		ug/L				5560	0	Standard
	V	**51**		ug/L				7515	1	Standard
	V-1	**51**		ug/L				372	7	Standard
	Cr	**52**		ug/L				22337	1	Standard
	Cr	**53**		ug/L				239	6	Standard
	Mn	**55**		ug/L				884	3	Standard
>	**Ge**	**72**		ug/L				65365	1	KED
	Co	**59**		ug/L				8	26	KED
	Ni	**60**		ug/L				10	36	KED
	Ni	**62**		ug/L				1	100	KED
	Cu	**63**		ug/L				68	20	KED
	Cu	**65**		ug/L				33	17	KED
	Zn	**66**		ug/L				49	16	KED
	Zn	**67**		ug/L				10	10	KED
	As	**75**		ug/L				12	11	KED
	Se	**78**		ug/L				10	26	KED
	Y	**89**		ug/L				785403	1	Standard
	Kr	**83**		ug/L				58	16	Standard
>	**In-1**	**115**		ug/L				18742	3	KED
	Mo	**98**		ug/L				4	68	KED
	Cd	**111**		ug/L				1	114	KED
	Cd	**114**		ug/L				3	53	KED
>	**In**	**115**		ug/L				1254184	1	Standard
	Ag	**107**		ug/L				169	14	Standard
	Sb	**121**		ug/L				381	4	Standard
	Sb	**123**		ug/L				302	8	Standard
	Ba	**135**		ug/L				67	9	Standard
	Ba	**137**		ug/L				96	14	Standard
>	**Tb**	**159**		ug/L				1639230	0	Standard
	Pb	**208**		ug/L				224	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:21:19
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24129	1	Standard
	Cl	**37**		ug/L			5305004	5528977	1	Standard
>	**Sc**	**45**		ug/L			1533668	1540408	2	Standard
	Al	**27**	**5110.438**	ug/L	90.905	1	5560	157072289	1	Standard
	V	**51**	**48.960**	ug/L	2.103	4	7515	1475690	1	Standard
	V-1	**51**	**49.397**	ug/L	1.920	3	372	1494936	1	Standard
	Cr	**52**	**49.630**	ug/L	2.496	5	22337	1298931	2	Standard
	Cr	**53**	**51.023**	ug/L	1.756	3	239	152933	0	Standard
	Mn	**55**	**50.381**	ug/L	1.254	2	884	1811903	0	Standard
>	**Ge**	**72**		ug/L			65365	65065	1	KED
	Co	**59**	**53.271**	ug/L	1.096	2	8	215127	1	KED
	Ni	**60**	**53.108**	ug/L	1.265	2	10	62180	1	KED
	Ni	**62**	**53.429**	ug/L	1.433	2	1	10194	2	KED
	Cu	**63**	**54.685**	ug/L	1.062	1	68	184038	0	KED
	Cu	**65**	**53.225**	ug/L	1.441	2	33	88636	1	KED
	Zn	**66**	**53.929**	ug/L	1.592	2	49	22762	2	KED
	Zn	**67**	**54.668**	ug/L	1.910	3	10	3846	3	KED
	As	**75**	**51.005**	ug/L	1.126	2	12	10962	1	KED
	Se	**78**	**51.221**	ug/L	0.662	1	10	1198	0	KED
	Y	**89**		ug/L			785403	796189	3	Standard
	Kr	**83**		ug/L			58	65	21	Standard
>	**In-1**	**115**		ug/L			18742	18364	6	KED
	Mo	**98**	**54.126**	ug/L	4.192	7	4	51414	1	KED
	Cd	**111**	**53.821**	ug/L	4.190	7	1	13460	1	KED
	Cd	**114**	**53.227**	ug/L	4.347	8	3	32824	2	KED
>	**In**	**115**		ug/L			1254184	1250771	2	Standard
	Ag	**107**	**53.305**	ug/L	1.166	2	169	901565	0	Standard
	Sb	**121**	**52.237**	ug/L	1.149	2	381	754381	0	Standard
	Sb	**123**	**52.380**	ug/L	1.328	2	302	572680	0	Standard
	Ba	**135**	**51.412**	ug/L	1.188	2	67	247600	0	Standard
	Ba	**137**	**51.618**	ug/L	1.258	2	96	432917	0	Standard
>	**Tb**	**159**		ug/L			1639230	1660376	2	Standard
	Pb	**208**	**52.736**	ug/L	1.380	2	224	2537903	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:29:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24150	3	Standard
	Cl	**37**		ug/L			5305004	5368508	1	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1516907	1	Standard
|	**Al**	**27**	**-0.001**	ug/L	0.006	572	5560	5468	4	Standard
|	**V**	**51**	**0.003**	ug/L	0.004	127	7515	7526	0	Standard
|	**V-1**	**51**	**-0.001**	ug/L	0.000	66	372	348	2	Standard
|	**Cr**	**52**	**0.012**	ug/L	0.012	103	22337	22395	1	Standard
|	**Cr**	**53**	**-0.001**	ug/L	0.005	605	239	234	7	Standard
⌊	**Mn**	**55**	**0.000**	ug/L	0.000	92	884	890	3	Standard
⌈>	**Ge**	**72**		ug/L			65365	65557	1	KED
|	**Co**	**59**	**-0.001**	ug/L	0.000	33	8	5	21	KED
|	**Ni**	**60**	**0.003**	ug/L	0.002	51	10	14	15	KED
|	**Ni**	**62**	**0.013**	ug/L	0.015	115	1	4	65	KED
|	**Cu**	**63**	**0.003**	ug/L	0.001	23	68	78	2	KED
|	**Cu**	**65**	**0.001**	ug/L	0.004	246	33	36	15	KED
|	**Zn**	**66**	**-0.003**	ug/L	0.012	342	49	48	12	KED
|	**Zn**	**67**	**-0.018**	ug/L	0.029	157	10	9	20	KED
|	**As**	**75**	**-0.021**	ug/L	0.006	26	12	7	14	KED
⌊	**Se**	**78**	**-0.080**	ug/L	0.123	153	10	8	31	KED
	Y	**89**		ug/L			785403	807513	2	Standard
	Kr	**83**		ug/L			58	69	12	Standard
⌈>	**In-1**	**115**		ug/L			18742	19106	0	KED
|	**Mo**	**98**	**0.005**	ug/L	0.005	105	4	9	55	KED
|	**Cd**	**111**	**0.004**	ug/L	0.002	61	1	2	24	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.007	171	3	6	69	KED
⌈>	**In**	**115**		ug/L			1254184	1273036	2	Standard
|	**Ag**	**107**	**0.000**	ug/L	0.001	457	169	174	8	Standard
|	**Sb**	**121**	**0.026**	ug/L	0.001	5	381	767	0	Standard
|	**Sb**	**123**	**0.027**	ug/L	0.001	3	302	603	2	Standard
|	**Ba**	**135**	**0.000**	ug/L	0.000	96	67	71	4	Standard
⌊	**Ba**	**137**	**-0.003**	ug/L	0.001	26	96	73	10	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1634887	2	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	22	224	272	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0081-BLK4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:36:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	37052	2	Standard
	Cl	37		ug/L			5305004	5313795	1	Standard
>	Sc	45		ug/L			1533668	1528113	2	Standard
	Al	27	0.756	ug/L	0.027	3	5560	28591	1	Standard
	V	51	0.008	ug/L	0.009	108	7515	7722	3	Standard
	V-1	51	0.004	ug/L	0.001	34	372	479	7	Standard
	Cr	52	0.074	ug/L	0.027	37	22337	24138	3	Standard
	Cr	53	0.058	ug/L	0.007	12	239	411	7	Standard
	Mn	55	0.016	ug/L	0.001	3	884	1437	2	Standard
>	Ge	72		ug/L			65365	64331	0	KED
	Co	59	-0.000	ug/L	0.001	349	8	6	56	KED
	Ni	60	0.000	ug/L	0.002	1722	10	10	26	KED
	Ni	62	0.010	ug/L	0.017	170	1	3	86	KED
	Cu	63	0.017	ug/L	0.001	4	68	123	2	KED
	Cu	65	0.014	ug/L	0.006	42	33	55	16	KED
	Zn	66	0.099	ug/L	0.015	14	49	90	6	KED
	Zn	67	-0.007	ug/L	0.057	844	10	10	39	KED
	As	75	-0.012	ug/L	0.008	64	12	9	17	KED
	Se	78	-0.032	ug/L	0.084	259	10	9	20	KED
	Y	89		ug/L			785403	798220	2	Standard
	Kr	83		ug/L			58	43	7	Standard
>	In-1	115		ug/L			18742	18999	1	KED
	Mo	98	0.013	ug/L	0.006	44	4	16	32	KED
	Cd	111	0.008	ug/L	0.004	47	1	3	31	KED
	Cd	114	-0.002	ug/L	0.002	87	3	2	50	KED
>	In	115		ug/L			1254184	1255169	0	Standard
	Ag	107	0.009	ug/L	0.000	4	169	318	2	Standard
	Sb	121	-0.002	ug/L	0.001	22	381	346	1	Standard
	Sb	123	-0.005	ug/L	0.004	97	302	252	19	Standard
	Ba	135	0.043	ug/L	0.003	7	67	274	6	Standard
	Ba	137	0.044	ug/L	0.008	17	96	468	14	Standard
>	Tb	159		ug/L			1639230	1646891	1	Standard
	Pb	208	0.005	ug/L	0.000	5	224	478	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0081-BS4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:41:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	38948	1	Standard
	Cl	37		ug/L			5305004	5355181	0	Standard
>	Sc	45		ug/L			1533668	1528719	2	Standard
	Al	27	9.255	ug/L	13.921	150	5560	292446	148	Standard
	V	51	25.011	ug/L	0.386	1	7515	752206	0	Standard
	V-1	51	25.148	ug/L	0.301	1	372	755876	0	Standard
	Cr	52	25.570	ug/L	0.895	3	22337	675206	1	Standard
	Cr	53	25.997	ug/L	0.608	2	239	77471	0	Standard
	Mn	55	26.771	ug/L	0.477	1	884	956127	0	Standard
>	Ge	72		ug/L			65365	63105	5	KED
	Co	59	28.463	ug/L	1.440	5	8	111286	0	KED
	Ni	60	28.575	ug/L	1.927	6	10	32376	0	KED
	Ni	62	29.289	ug/L	1.516	5	1	5412	3	KED
	Cu	63	29.492	ug/L	1.591	5	68	96111	0	KED
	Cu	65	28.697	ug/L	1.783	6	33	46265	0	KED
	Zn	66	91.894	ug/L	3.730	4	49	37533	1	KED
	Zn	67	85.070	ug/L	5.193	6	10	5787	1	KED
	As	75	26.482	ug/L	1.793	6	12	5512	1	KED
	Se	78	84.261	ug/L	5.300	6	10	1901	2	KED
	Y	89		ug/L			785403	805624	0	Standard
	Kr	83		ug/L			58	63	7	Standard
>	In-1	115		ug/L			18742	19043	1	KED
	Mo	98	33.129	ug/L	0.208	0	4	32739	1	KED
	Cd	111	26.711	ug/L	0.240	0	1	6949	0	KED
	Cd	114	26.303	ug/L	0.364	1	3	16876	1	KED
>	In	115		ug/L			1254184	1266762	1	Standard
	Ag	107	27.310	ug/L	0.509	1	169	467949	0	Standard
	Sb	121	33.283	ug/L	0.519	1	381	487032	0	Standard
	Sb	123	33.295	ug/L	0.873	2	302	368846	1	Standard
	Ba	135	26.062	ug/L	0.632	2	67	127166	1	Standard
	Ba	137	26.106	ug/L	0.295	1	96	221851	0	Standard
>	Tb	159		ug/L			1639230	1638867	0	Standard
	Pb	208	28.115	ug/L	0.357	1	224	1336154	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0219-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:46:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	33357	1	Standard
	Cl	37		ug/L			5305004	5278335	1	Standard
>	Sc	45		ug/L			1533668	1532599	1	Standard
	Al	27	0.569	ug/L	0.028	4	5560	22969	2	Standard
	V	51	0.008	ug/L	0.006	71	7515	7758	0	Standard
	V-1	51	0.005	ug/L	0.001	12	372	529	3	Standard
	Cr	52	0.081	ug/L	0.022	27	22337	24388	1	Standard
	Cr	53	0.069	ug/L	0.013	18	239	443	9	Standard
	Mn	55	0.013	ug/L	0.001	7	884	1331	2	Standard
>	Ge	72		ug/L			65365	65604	1	KED
	Co	59	0.001	ug/L	0.001	101	8	12	34	KED
	Ni	60	0.003	ug/L	0.001	28	10	14	7	KED
	Ni	62	0.017	ug/L	0.015	92	1	5	57	KED
	Cu	63	0.010	ug/L	0.007	68	68	101	21	KED
	Cu	65	0.010	ug/L	0.003	27	33	50	9	KED
	Zn	66	0.032	ug/L	0.001	2	49	63	1	KED
	Zn	67	0.017	ug/L	0.013	75	10	12	9	KED
	As	75	-0.007	ug/L	0.008	120	12	10	17	KED
	Se	78	0.029	ug/L	0.092	317	10	11	17	KED
	Y	89		ug/L			785403	796661	1	Standard
	Kr	83		ug/L			58	46	11	Standard
>	In-1	115		ug/L			18742	18457	2	KED
	Mo	98	0.009	ug/L	0.002	23	4	13	14	KED
	Cd	111	0.005	ug/L	0.006	112	1	2	57	KED
	Cd	114	0.005	ug/L	0.005	88	3	6	41	KED
>	In	115		ug/L			1254184	1244743	0	Standard
	Ag	107	0.011	ug/L	0.001	12	169	361	6	Standard
	Sb	121	-0.016	ug/L	0.001	4	381	154	6	Standard
	Sb	123	-0.016	ug/L	0.001	6	302	121	8	Standard
	Ba	135	0.013	ug/L	0.005	39	67	127	18	Standard
	Ba	137	0.016	ug/L	0.004	25	96	232	14	Standard
>	Tb	159		ug/L			1639230	1637343	2	Standard
	Pb	208	0.000	ug/L	0.000	451	224	229	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0219-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:51:13
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	35504	0	Standard
	Cl	37		ug/L			5305004	5347113	0	Standard
>	Sc	45		ug/L			1533668	1534316	1	Standard
	Al	27	0.614	ug/L	0.010	1	5560	24359	1	Standard
	V	51	24.646	ug/L	0.484	1	7515	744038	0	Standard
	V-1	51	24.730	ug/L	0.556	2	372	745958	0	Standard
	Cr	52	25.283	ug/L	0.529	2	22337	670507	0	Standard
	Cr	53	25.537	ug/L	0.740	2	239	76381	1	Standard
	Mn	55	26.221	ug/L	0.555	2	884	939894	0	Standard
>	Ge	72		ug/L			65365	65751	2	KED
	Co	59	26.784	ug/L	0.864	3	8	109253	0	KED
	Ni	60	26.702	ug/L	0.972	3	10	31584	1	KED
	Ni	62	27.210	ug/L	0.338	1	1	5247	3	KED
	Cu	63	27.873	ug/L	0.808	2	68	94785	0	KED
	Cu	65	27.738	ug/L	1.069	3	33	46669	1	KED
	Zn	66	85.587	ug/L	3.787	4	49	36452	1	KED
	Zn	67	79.537	ug/L	2.866	3	10	5646	0	KED
	As	75	24.927	ug/L	0.827	3	12	5417	1	KED
	Se	78	80.104	ug/L	2.913	3	10	1886	1	KED
	Y	89		ug/L			785403	793454	0	Standard
	Kr	83		ug/L			58	59	25	Standard
>	In-1	115		ug/L			18742	19127	1	KED
	Mo	98	0.007	ug/L	0.005	61	4	11	38	KED
	Cd	111	26.457	ug/L	0.418	1	1	6913	0	KED
	Cd	114	25.454	ug/L	0.220	0	3	16404	1	KED
>	In	115		ug/L			1254184	1257871	1	Standard
	Ag	107	27.510	ug/L	0.583	2	169	468079	1	Standard
	Sb	121	-0.017	ug/L	0.001	7	381	142	10	Standard
	Sb	123	-0.019	ug/L	0.001	3	302	91	7	Standard
	Ba	135	25.708	ug/L	0.290	1	67	124580	0	Standard
	Ba	137	25.355	ug/L	0.129	0	96	213974	0	Standard
>	Tb	159		ug/L			1639230	1637005	0	Standard
	Pb	208	27.920	ug/L	0.537	1	224	1325246	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0090-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Friday, April 09, 2021 18:59:24
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	359883	1	Standard
	Cl	37		ug/L			5305004	5273529	1	Standard
>	Sc	45		ug/L			1533668	1576909	2	Standard
	Al	27	24.444	ug/L	0.506	2	5560	775268	4	Standard
	V	51	-0.526	ug/L	0.115	21	7515	-8461	42	Standard
	V-1	51	0.138	ug/L	0.004	2	372	4651	2	Standard
	Cr	52	103.070	ug/L	2.984	2	22337	2738210	1	Standard
	Cr	53	102.258	ug/L	2.603	2	239	313611	1	Standard
	Mn	55	67.493	ug/L	1.790	2	884	2484712	0	Standard
>	Ge	72		ug/L			65365	61136	1	KED
	Co	59	0.767	ug/L	0.016	2	8	2917	1	KED
	Ni	60	10.558	ug/L	0.109	1	10	11625	1	KED
	Ni	62	10.753	ug/L	0.177	1	1	1929	2	KED
	Cu	63	2.750	ug/L	0.037	1	68	8757	0	KED
	Cu	65	2.770	ug/L	0.104	3	33	4363	2	KED
	Zn	66	124.696	ug/L	1.522	1	49	49398	1	KED
	Zn	67	112.543	ug/L	3.094	2	10	7429	2	KED
	As	75	0.784	ug/L	0.066	8	12	169	7	KED
	Se	78	0.111	ug/L	0.090	81	10	12	15	KED
	Y	89		ug/L			785403	800367	0	Standard
	Kr	83		ug/L			58	57	28	Standard
>	In-1	115		ug/L			18742	17083	2	KED
	Mo	98	2.169	ug/L	0.044	2	4	1926	0	KED
	Cd	111	0.503	ug/L	0.082	16	1	118	17	KED
	Cd	114	0.538	ug/L	0.029	5	3	313	7	KED
>	In	115		ug/L			1254184	1169884	1	Standard
	Ag	107	0.055	ug/L	0.006	10	169	1030	8	Standard
	Sb	121	0.219	ug/L	0.005	2	381	3316	1	Standard
	Sb	123	0.216	ug/L	0.005	2	302	2486	1	Standard
	Ba	135	11.400	ug/L	0.032	0	67	51420	1	Standard
	Ba	137	11.302	ug/L	0.146	1	96	88756	0	Standard
>	Tb	159		ug/L			1639230	1637881	3	Standard
	Pb	208	0.186	ug/L	0.005	2	224	9049	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-09
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:07:48
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	46198	1	Standard
	Cl	37		ug/L			5305004	4838301	2	Standard
>	Sc	45		ug/L			1533668	1499149	3	Standard
	Al	27	10.707	ug/L	0.211	1	5560	325680	1	Standard
	V	51	0.050	ug/L	0.007	14	7515	8797	0	Standard
	V-1	51	0.071	ug/L	0.003	4	372	2467	0	Standard
	Cr	52	0.068	ug/L	0.023	33	22337	23519	0	Standard
	Cr	53	0.137	ug/L	0.009	6	239	633	1	Standard
	Mn	55	96.386	ug/L	2.182	2	884	3372875	1	Standard
>	Ge	72		ug/L			65365	55660	1	KED
	Co	59	0.619	ug/L	0.025	4	8	2146	4	KED
	Ni	60	3.366	ug/L	0.014	0	10	3380	1	KED
	Ni	62	3.161	ug/L	0.095	3	1	517	3	KED
	Cu	63	0.991	ug/L	0.021	2	68	2911	1	KED
	Cu	65	0.934	ug/L	0.017	1	33	1358	1	KED
	Zn	66	24.381	ug/L	0.683	2	49	8826	2	KED
	Zn	67	23.356	ug/L	0.718	3	10	1410	2	KED
	As	75	0.658	ug/L	0.059	8	12	131	6	KED
	Se	78	0.087	ug/L	0.188	216	10	10	34	KED
	Y	89		ug/L			785403	747383	1	Standard
	Kr	83		ug/L			58	73	28	Standard
>	In-1	115		ug/L			18742	16029	1	KED
	Mo	98	37.483	ug/L	0.416	1	4	31177	0	KED
	Cd	111	0.023	ug/L	0.007	31	1	6	24	KED
	Cd	114	0.009	ug/L	0.005	58	3	7	36	KED
>	In	115		ug/L			1254184	1080995	1	Standard
	Ag	107	0.003	ug/L	0.001	25	169	192	6	Standard
	Sb	121	0.272	ug/L	0.006	2	381	3726	2	Standard
	Sb	123	0.265	ug/L	0.005	1	302	2765	0	Standard
	Ba	135	29.099	ug/L	0.528	1	67	121156	0	Standard
	Ba	137	29.126	ug/L	0.592	2	96	211179	0	Standard
>	Tb	159		ug/L			1639230	1527697	2	Standard
	Pb	208	0.140	ug/L	0.008	5	224	6421	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0081-DUP4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:12:47
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	44843	0	Standard
	Cl	37		ug/L			5305004	4903280	1	Standard
>	Sc	45		ug/L			1533668	1529463	1	Standard
	Al	27	18.104	ug/L	0.591	3	5560	557950	1	Standard
	V	51	0.055	ug/L	0.005	9	7515	9118	0	Standard
	V-1	51	0.072	ug/L	0.003	3	372	2524	1	Standard
	Cr	52	0.072	ug/L	0.004	5	22337	24116	1	Standard
	Cr	53	0.127	ug/L	0.006	5	239	616	5	Standard
	Mn	55	91.958	ug/L	2.111	2	884	3283517	0	Standard
>	Ge	72		ug/L			65365	55670	0	KED
	Co	59	0.582	ug/L	0.017	2	8	2019	2	KED
	Ni	60	3.232	ug/L	0.022	0	10	3246	0	KED
	Ni	62	3.312	ug/L	0.230	6	1	542	6	KED
	Cu	63	0.923	ug/L	0.021	2	68	2716	2	KED
	Cu	65	0.902	ug/L	0.034	3	33	1313	3	KED
	Zn	66	23.596	ug/L	0.143	0	49	8546	0	KED
	Zn	67	22.936	ug/L	0.682	2	10	1386	2	KED
	As	75	0.665	ug/L	0.026	3	12	132	3	KED
	Se	78	0.127	ug/L	0.137	108	10	11	23	KED
	Y	89		ug/L			785403	735915	0	Standard
	Kr	83		ug/L			58	74	27	Standard
>	In-1	115		ug/L			18742	16443	0	KED
	Mo	98	35.754	ug/L	0.360	1	4	30507	0	KED
	Cd	111	0.013	ug/L	0.005	37	1	4	26	KED
	Cd	114	0.013	ug/L	0.005	39	3	10	27	KED
>	In	115		ug/L			1254184	1085857	1	Standard
	Ag	107	0.005	ug/L	0.001	23	169	218	8	Standard
	Sb	121	0.268	ug/L	0.003	1	381	3695	2	Standard
	Sb	123	0.280	ug/L	0.009	3	302	2921	1	Standard
	Ba	135	28.037	ug/L	0.386	1	67	117275	0	Standard
	Ba	137	28.202	ug/L	0.347	1	96	205440	0	Standard
>	Tb	159		ug/L			1639230	1552760	0	Standard
	Pb	208	0.137	ug/L	0.002	1	224	6373	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0081-MS4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:18:11
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	45937	1	Standard
	Cl	37		ug/L			5305004	4849006	0	Standard
>	Sc	45		ug/L			1533668	1516870	1	Standard
	Al	27	18.932	ug/L	0.654	3	5560	578443	2	Standard
	V	51	24.264	ug/L	0.082	0	7515	724450	1	Standard
	V-1	51	24.371	ug/L	0.151	0	372	726932	1	Standard
	Cr	52	23.363	ug/L	0.166	0	22337	614309	1	Standard
	Cr	53	23.734	ug/L	0.381	1	239	70210	0	Standard
	Mn	55	117.725	ug/L	2.434	2	884	4169274	1	Standard
>	Ge	72		ug/L			65365	55917	0	KED
	Co	59	29.456	ug/L	0.645	2	8	102239	1	KED
	Ni	60	31.207	ug/L	0.357	1	10	31409	1	KED
	Ni	62	30.804	ug/L	0.763	2	1	5052	2	KED
	Cu	63	28.064	ug/L	0.219	0	68	81205	0	KED
	Cu	65	27.951	ug/L	0.046	0	33	40023	0	KED
	Zn	66	101.954	ug/L	1.373	1	49	36948	1	KED
	Zn	67	96.454	ug/L	3.256	3	10	5825	3	KED
	As	75	26.920	ug/L	0.011	0	12	4978	0	KED
	Se	78	79.924	ug/L	1.516	1	10	1601	2	KED
	Y	89		ug/L			785403	756199	2	Standard
	Kr	83		ug/L			58	70	15	Standard
>	In-1	115		ug/L			18742	16538	1	KED
	Mo	98	70.365	ug/L	1.827	2	4	60375	1	KED
	Cd	111	24.521	ug/L	0.415	1	1	5540	1	KED
	Cd	114	24.282	ug/L	0.155	0	3	13531	1	KED
>	In	115		ug/L			1254184	1097084	1	Standard
	Ag	107	25.097	ug/L	0.314	1	169	372456	0	Standard
	Sb	121	32.876	ug/L	0.387	1	381	416655	0	Standard
	Sb	123	33.073	ug/L	0.389	1	302	317339	0	Standard
	Ba	135	54.684	ug/L	0.263	0	67	231062	1	Standard
	Ba	137	54.151	ug/L	0.747	1	96	398455	1	Standard
>	Tb	159		ug/L			1639230	1548614	2	Standard
	Pb	208	26.777	ug/L	0.686	2	224	1202028	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0081-MSD4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:24:35
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	46537	2	Standard
	Cl	37		ug/L			5305004	4886394	0	Standard
>	Sc	45		ug/L			1533668	1546589	1	Standard
	Al	27	24.888	ug/L	1.256	5	5560	773408	3	Standard
	V	51	24.073	ug/L	0.333	1	7515	732880	1	Standard
	V-1	51	24.171	ug/L	0.430	1	372	735051	1	Standard
	Cr	52	23.501	ug/L	0.195	0	22337	629912	1	Standard
	Cr	53	23.833	ug/L	0.622	2	239	71874	0	Standard
	Mn	55	117.447	ug/L	2.090	1	884	4240765	0	Standard
>	Ge	72		ug/L			65365	56641	1	KED
	Co	59	29.833	ug/L	0.211	0	8	104883	1	KED
	Ni	60	31.307	ug/L	1.029	3	10	31906	1	KED
	Ni	62	31.046	ug/L	0.441	1	1	5157	0	KED
	Cu	63	28.079	ug/L	1.054	3	68	82268	1	KED
	Cu	65	27.760	ug/L	0.840	3	33	40253	2	KED
	Zn	66	103.163	ug/L	3.122	3	49	37858	1	KED
	Zn	67	95.359	ug/L	5.230	5	10	5831	3	KED
	As	75	26.893	ug/L	0.839	3	12	5035	1	KED
	Se	78	78.139	ug/L	2.975	3	10	1585	2	KED
	Y	89		ug/L			785403	756851	1	Standard
	Kr	83		ug/L			58	71	19	Standard
>	In-1	115		ug/L			18742	16368	2	KED
	Mo	98	70.119	ug/L	1.464	2	4	59535	1	KED
	Cd	111	25.075	ug/L	0.618	2	1	5605	1	KED
	Cd	114	24.889	ug/L	1.160	4	3	13715	2	KED
>	In	115		ug/L			1254184	1108565	0	Standard
	Ag	107	25.616	ug/L	0.432	1	169	384155	1	Standard
	Sb	121	30.505	ug/L	0.315	1	381	390706	0	Standard
	Sb	123	30.567	ug/L	0.282	0	302	296397	0	Standard
	Ba	135	55.910	ug/L	0.431	0	67	238723	0	Standard
	Ba	137	55.305	ug/L	0.800	1	96	411270	2	Standard
>	Tb	159		ug/L			1639230	1583402	1	Standard
	Pb	208	27.022	ug/L	0.335	1	224	1240603	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:33:00
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24732	2	Standard
	Cl	**37**		ug/L			5305004	5395716	1	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1480760	1	Standard
|	**Al**	**27**	**-0.005**	ug/L	0.002	30	5560	5210	2	Standard
|	**V**	**51**	**0.003**	ug/L	0.003	125	7515	7333	1	Standard
|	**V-1**	**51**	**0.000**	ug/L	0.001	606	372	362	6	Standard
|	**Cr**	**52**	**0.010**	ug/L	0.013	129	22337	21802	1	Standard
|	**Cr**	**53**	**0.001**	ug/L	0.005	404	239	234	3	Standard
⌊	**Mn**	**55**	**-0.001**	ug/L	0.002	208	884	814	10	Standard
⌈>	**Ge**	**72**		ug/L			65365	63359	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.001	332	8	9	52	KED
|	**Ni**	**60**	**-0.000**	ug/L	0.004	1814	10	10	47	KED
|	**Ni**	**62**	**0.014**	ug/L	0.006	40	1	4	24	KED
|	**Cu**	**63**	**0.004**	ug/L	0.002	39	68	80	5	KED
|	**Cu**	**65**	**0.007**	ug/L	0.005	64	33	44	16	KED
|	**Zn**	**66**	**0.109**	ug/L	0.027	24	49	92	11	KED
|	**Zn**	**67**	**-0.033**	ug/L	0.069	208	10	8	58	KED
|	**As**	**75**	**-0.006**	ug/L	0.007	127	12	10	15	KED
⌊	**Se**	**78**	**-0.035**	ug/L	0.101	291	10	9	23	KED
	Y	**89**		ug/L			785403	764357	0	Standard
	Kr	**83**		ug/L			58	55	12	Standard
⌈>	**In-1**	**115**		ug/L			18742	18566	1	KED
|	**Mo**	**98**	**0.002**	ug/L	0.004	230	4	5	65	KED
|	**Cd**	**111**	**0.011**	ug/L	0.011	95	1	4	66	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.011	4778	3	3	189	KED
⌈>	**In**	**115**		ug/L			1254184	1225533	0	Standard
|	**Ag**	**107**	**0.001**	ug/L	0.001	35	169	190	5	Standard
|	**Sb**	**121**	**-0.021**	ug/L	0.001	4	381	76	15	Standard
|	**Sb**	**123**	**-0.021**	ug/L	0.002	8	302	73	24	Standard
|	**Ba**	**135**	**-0.001**	ug/L	0.002	333	67	63	15	Standard
⌊	**Ba**	**137**	**0.002**	ug/L	0.001	57	96	113	9	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1598793	0	Standard
⌊	**Pb**	**208**	**0.005**	ug/L	0.001	10	224	450	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:39:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24255	4	Standard
	Cl	**37**		ug/L			5305004	5408207	0	Standard
>	**Sc**	**45**		ug/L			1533668	1518252	2	Standard
	Al	**27**	**5275.337**	ug/L	68.192	1	5560	159856023	2	Standard
	V	**51**	**48.993**	ug/L	0.840	1	7515	1456254	0	Standard
	V-1	**51**	**49.318**	ug/L	0.772	1	372	1471799	0	Standard
	Cr	**52**	**49.454**	ug/L	0.751	1	22337	1276730	1	Standard
	Cr	**53**	**50.490**	ug/L	0.475	0	239	149241	1	Standard
	Mn	**55**	**50.583**	ug/L	1.693	3	884	1793022	1	Standard
>	**Ge**	**72**		ug/L			65365	64018	0	KED
	Co	**59**	**53.943**	ug/L	1.172	2	8	214344	1	KED
	Ni	**60**	**54.227**	ug/L	1.216	2	10	62479	2	KED
	Ni	**62**	**55.247**	ug/L	0.938	1	1	10372	1	KED
	Cu	**63**	**54.748**	ug/L	0.223	0	68	181312	1	KED
	Cu	**65**	**54.471**	ug/L	0.136	0	33	89265	0	KED
	Zn	**66**	**54.169**	ug/L	1.253	2	49	22498	2	KED
	Zn	**67**	**54.044**	ug/L	1.447	2	10	3741	2	KED
	As	**75**	**51.363**	ug/L	0.414	0	12	10863	1	KED
	Se	**78**	**50.033**	ug/L	0.231	0	10	1152	0	KED
	Y	**89**		ug/L			785403	796736	1	Standard
	Kr	**83**		ug/L			58	68	19	Standard
>	**In-1**	**115**		ug/L			18742	18428	0	KED
	Mo	**98**	**53.083**	ug/L	0.964	1	4	50761	1	KED
	Cd	**111**	**53.385**	ug/L	0.368	0	1	13440	0	KED
	Cd	**114**	**53.025**	ug/L	0.559	1	3	32920	0	KED
>	**In**	**115**		ug/L			1254184	1240998	0	Standard
	Ag	**107**	**52.281**	ug/L	0.790	1	169	877562	1	Standard
	Sb	**121**	**52.545**	ug/L	0.168	0	381	753156	0	Standard
	Sb	**123**	**52.708**	ug/L	0.507	0	302	571954	0	Standard
	Ba	**135**	**51.301**	ug/L	0.540	1	67	245215	0	Standard
	Ba	**137**	**51.461**	ug/L	0.947	1	96	428401	2	Standard
>	**Tb**	**159**		ug/L			1639230	1662986	1	Standard
	Pb	**208**	**53.018**	ug/L	1.222	2	224	2555821	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:47:30
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24928	0	Standard
	Cl	**37**		ug/L			5305004	5299191	1	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1509725	1	Standard
|	**Al**	**27**	**0.031**	ug/L	0.003	10	5560	6413	0	Standard
|	**V**	**51**	**0.004**	ug/L	0.003	61	7515	7523	0	Standard
|	**V-1**	**51**	**0.000**	ug/L	0.001	389	372	374	7	Standard
|	**Cr**	**52**	**0.020**	ug/L	0.007	37	22337	22488	1	Standard
|	**Cr**	**53**	**0.006**	ug/L	0.003	45	239	254	4	Standard
⌊	**Mn**	**55**	**0.001**	ug/L	0.001	66	884	904	1	Standard
⌈>	**Ge**	**72**		ug/L			65365	64109	3	KED
|	**Co**	**59**	**0.009**	ug/L	0.016	189	8	43	154	KED
|	**Ni**	**60**	**0.014**	ug/L	0.017	125	10	26	77	KED
|	**Ni**	**62**	**0.027**	ug/L	0.032	120	1	6	87	KED
|	**Cu**	**63**	**0.013**	ug/L	0.013	102	68	109	41	KED
|	**Cu**	**65**	**0.013**	ug/L	0.011	78	33	55	33	KED
|	**Zn**	**66**	**0.053**	ug/L	0.028	52	49	70	16	KED
|	**Zn**	**67**	**0.037**	ug/L	0.116	311	10	13	62	KED
|	**As**	**75**	**0.007**	ug/L	0.025	362	12	13	40	KED
⌊	**Se**	**78**	**0.046**	ug/L	0.095	205	10	11	20	KED
	Y	**89**		ug/L			785403	780097	1	Standard
	Kr	**83**		ug/L			58	57	35	Standard
⌈>	**In-1**	**115**		ug/L			18742	18451	3	KED
|	**Mo**	**98**	**0.002**	ug/L	0.002	116	4	6	38	KED
|	**Cd**	**111**	**0.014**	ug/L	0.010	70	1	4	52	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.002	54	3	6	18	KED
⌈>	**In**	**115**		ug/L			1254184	1250085	1	Standard
|	**Ag**	**107**	**-0.000**	ug/L	0.001	1263	169	168	5	Standard
|	**Sb**	**121**	**0.018**	ug/L	0.004	21	381	635	7	Standard
|	**Sb**	**123**	**0.015**	ug/L	0.005	32	302	466	10	Standard
|	**Ba**	**135**	**-0.000**	ug/L	0.002	1653	67	67	13	Standard
⌊	**Ba**	**137**	**0.003**	ug/L	0.002	44	96	124	11	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1624063	0	Standard
⌊	**Pb**	**208**	**0.008**	ug/L	0.000	5	224	600	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0199-BLK2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:56:43
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	35502	0	Standard
	Cl	37		ug/L			5305004	5334651	2	Standard
>	Sc	45		ug/L			1533668	1506939	1	Standard
	Al	27	0.945	ug/L	0.013	1	5560	33901	1	Standard
	V	51	0.011	ug/L	0.004	38	7515	7706	1	Standard
	V-1	51	0.004	ug/L	0.001	28	372	498	6	Standard
	Cr	52	0.088	ug/L	0.010	10	22337	24159	1	Standard
	Cr	53	0.065	ug/L	0.004	5	239	424	1	Standard
	Mn	55	0.029	ug/L	0.002	5	884	1899	2	Standard
>	Ge	72		ug/L			65365	64808	1	KED
	Co	59	-0.000	ug/L	0.001	691	8	7	50	KED
	Ni	60	0.004	ug/L	0.011	277	10	15	81	KED
	Ni	62	0.000	ug/L	0.010	14122	1	1	100	KED
	Cu	63	0.069	ug/L	0.012	17	68	300	12	KED
	Cu	65	0.071	ug/L	0.012	17	33	150	12	KED
	Zn	66	1.862	ug/L	0.048	2	49	830	2	KED
	Zn	67	1.737	ug/L	0.118	6	10	132	5	KED
	As	75	-0.009	ug/L	0.007	73	12	10	13	KED
	Se	78	-0.056	ug/L	0.065	115	10	9	15	KED
	Y	89		ug/L			785403	789181	1	Standard
	Kr	83		ug/L			58	43	20	Standard
>	In-1	115		ug/L			18742	19009	0	KED
	Mo	98	0.003	ug/L	0.004	132	4	7	54	KED
	Cd	111	0.007	ug/L	0.002	29	1	3	17	KED
	Cd	114	-0.002	ug/L	0.002	82	3	2	47	KED
>	In	115		ug/L			1254184	1278066	1	Standard
	Ag	107	0.005	ug/L	0.001	16	169	251	5	Standard
	Sb	121	-0.008	ug/L	0.002	28	381	267	11	Standard
	Sb	123	-0.010	ug/L	0.001	11	302	193	6	Standard
	Ba	135	0.009	ug/L	0.001	12	67	113	3	Standard
	Ba	137	0.011	ug/L	0.002	21	96	191	9	Standard
>	Tb	159		ug/L			1639230	1642539	1	Standard
	Pb	208	0.010	ug/L	0.001	11	224	679	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0199-BS2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:01:43
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	37181	0	Standard
	Cl	37		ug/L			5305004	5361079	2	Standard
>	Sc	45		ug/L			1533668	1489292	1	Standard
	Al	27	0.839	ug/L	0.005	0	5560	30347	1	Standard
	V	51	24.681	ug/L	0.475	1	7515	723279	1	Standard
	V-1	51	24.671	ug/L	0.359	1	372	722439	0	Standard
	Cr	52	25.206	ug/L	0.654	2	22337	648887	1	Standard
	Cr	53	25.158	ug/L	0.360	1	239	73055	0	Standard
	Mn	55	25.849	ug/L	0.191	0	884	899563	1	Standard
>	Ge	72		ug/L			65365	65112	1	KED
	Co	59	26.342	ug/L	0.251	0	8	106459	0	KED
	Ni	60	26.488	ug/L	0.871	3	10	31033	1	KED
	Ni	62	27.268	ug/L	0.706	2	1	5206	1	KED
	Cu	63	27.514	ug/L	0.491	1	68	92696	1	KED
	Cu	65	27.508	ug/L	0.377	1	33	45861	0	KED
	Zn	66	86.738	ug/L	1.687	1	49	36604	0	KED
	Zn	67	81.349	ug/L	1.927	2	10	5721	1	KED
	As	75	24.897	ug/L	0.222	0	12	5361	0	KED
	Se	78	78.644	ug/L	1.858	2	10	1835	1	KED
	Y	89		ug/L			785403	786285	3	Standard
	Kr	83		ug/L			58	53	15	Standard
>	In-1	115		ug/L			18742	18807	3	KED
	Mo	98	26.328	ug/L	0.841	3	4	25676	0	KED
	Cd	111	26.056	ug/L	0.501	1	1	6692	1	KED
	Cd	114	25.673	ug/L	0.326	1	3	16264	2	KED
>	In	115		ug/L			1254184	1272868	0	Standard
	Ag	107	26.723	ug/L	0.068	0	169	460170	0	Standard
	Sb	121	27.043	ug/L	0.170	0	381	397773	1	Standard
	Sb	123	27.080	ug/L	0.123	0	302	301565	1	Standard
	Ba	135	25.285	ug/L	0.484	1	67	124012	2	Standard
	Ba	137	25.141	ug/L	0.230	0	96	214713	1	Standard
>	Tb	159		ug/L			1639230	1642857	1	Standard
	Pb	208	27.121	ug/L	0.319	1	224	1291927	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0331-01
Sample Dil Factor: 10
Comments:
Sample Date/Time: Friday, April 09, 2021 20:07:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	205111	1	Standard
	Cl	37		ug/L			5305004	13053731	3	Standard
>	Sc	45		ug/L			1533668	1366105	0	Standard
	Al	27	62.974	ug/L	0.454	0	5560	1721937	0	Standard
	V	51	12.164	ug/L	0.254	2	7515	330460	2	Standard
	V-1	51	14.444	ug/L	0.088	0	372	388190	1	Standard
	Cr	52	21.923	ug/L	0.159	0	22337	520402	1	Standard
	Cr	53	29.018	ug/L	0.522	1	239	77267	0	Standard
	Mn	55	85.644	ug/L	1.047	1	884	2732445	1	Standard
>	Ge	72		ug/L			65365	53025	0	KED
	Co	59	4.715	ug/L	0.109	2	8	15523	1	KED
	Ni	60	22.521	ug/L	0.571	2	10	21494	1	KED
	Ni	62	23.218	ug/L	0.445	1	1	3611	1	KED
	Cu	63	1.501	ug/L	0.046	3	68	4171	2	KED
	Cu	65	1.471	ug/L	0.047	3	33	2023	2	KED
	Zn	66	6.905	ug/L	0.205	2	49	2410	2	KED
	Zn	67	15.208	ug/L	1.613	10	10	878	10	KED
	As	75	11.823	ug/L	0.133	1	12	2078	0	KED
	Se	78	0.449	ug/L	0.249	55	10	17	28	KED
	Y	89		ug/L			785403	722359	2	Standard
	Kr	83		ug/L			58	87	13	Standard
>	In-1	115		ug/L			18742	16162	2	KED
	Mo	98	1.880	ug/L	0.031	1	4	1579	1	KED
	Cd	111	0.034	ug/L	0.007	20	1	8	19	KED
	Cd	114	0.020	ug/L	0.015	73	3	14	58	KED
>	In	115		ug/L			1254184	1088313	2	Standard
	Ag	107	0.028	ug/L	0.002	8	169	555	7	Standard
	Sb	121	0.702	ug/L	0.012	1	381	9151	2	Standard
	Sb	123	0.724	ug/L	0.019	2	302	7141	0	Standard
	Ba	135	106.284	ug/L	1.476	1	67	445374	0	Standard
	Ba	137	104.928	ug/L	1.455	1	96	765751	1	Standard
>	Tb	159		ug/L			1639230	1513074	1	Standard
	Pb	208	0.311	ug/L	0.005	1	224	13858	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-14
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:16:00
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	63933	2	Standard
	Cl	37		ug/L			5305004	12461480	0	Standard
>	Sc	45		ug/L			1533668	1564323	1	Standard
	Al	27	217.635	ug/L	4.690	2	5560	6799270	0	Standard
	V	51	12.289	ug/L	0.122	0	7515	382173	1	Standard
	V-1	51	14.402	ug/L	0.120	0	372	443204	1	Standard
	Cr	52	1.511	ug/L	0.060	3	22337	62273	1	Standard
	Cr	53	8.653	ug/L	0.150	1	239	26554	0	Standard
	Mn	55	41.883	ug/L	0.149	0	884	1530533	1	Standard
>	Ge	72		ug/L			65365	56040	0	KED
	Co	59	1.529	ug/L	0.024	1	8	5324	2	KED
	Ni	60	2.871	ug/L	0.057	1	10	2904	2	KED
	Ni	62	2.788	ug/L	0.328	11	1	459	11	KED
	Cu	63	6.012	ug/L	0.095	1	68	17480	1	KED
	Cu	65	5.911	ug/L	0.086	1	33	8504	0	KED
	Zn	66	1.761	ug/L	0.086	4	49	681	4	KED
	Zn	67	2.496	ug/L	0.503	20	10	160	18	KED
	As	75	4.045	ug/L	0.138	3	12	758	3	KED
	Se	78	0.487	ug/L	0.139	28	10	18	13	KED
	Y	89		ug/L			785403	766645	1	Standard
	Kr	83		ug/L			58	78	19	Standard
>	In-1	115		ug/L			18742	16329	1	KED
	Mo	98	5.765	ug/L	0.121	2	4	4887	0	KED
	Cd	111	0.049	ug/L	0.011	22	1	12	19	KED
	Cd	114	0.024	ug/L	0.007	30	3	16	23	KED
>	In	115		ug/L			1254184	1107200	0	Standard
	Ag	107	0.004	ug/L	0.003	78	169	205	21	Standard
	Sb	121	0.190	ug/L	0.005	2	381	2759	1	Standard
	Sb	123	0.181	ug/L	0.012	6	302	2020	5	Standard
	Ba	135	10.407	ug/L	0.240	2	67	44430	2	Standard
	Ba	137	10.324	ug/L	0.136	1	96	76747	1	Standard
>	Tb	159		ug/L			1639230	1529807	1	Standard
	Pb	208	0.095	ug/L	0.002	2	224	4424	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-17
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:21:24
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	57566	2	Standard
	Cl	37		ug/L			5305004	14368827	1	Standard
>	Sc	45		ug/L			1533668	1501425	3	Standard
	Al	27	14.450	ug/L	0.860	5	5560	437831	2	Standard
	V	51	3.024	ug/L	0.140	4	7515	95717	0	Standard
	V-1	51	6.553	ug/L	0.276	4	372	193547	0	Standard
	Cr	52	0.585	ug/L	0.037	6	22337	36533	1	Standard
	Cr	53	12.065	ug/L	0.478	3	239	35413	0	Standard
	Mn	55	25.201	ug/L	0.896	3	884	883522	1	Standard
>	Ge	72		ug/L			65365	56676	0	KED
	Co	59	0.284	ug/L	0.011	3	8	1005	4	KED
	Ni	60	1.431	ug/L	0.026	1	10	1468	2	KED
	Ni	62	1.577	ug/L	0.225	14	1	263	13	KED
	Cu	63	2.640	ug/L	0.012	0	68	7798	1	KED
	Cu	65	2.678	ug/L	0.064	2	33	3913	2	KED
	Zn	66	1.716	ug/L	0.047	2	49	672	2	KED
	Zn	67	2.786	ug/L	0.306	10	10	179	11	KED
	As	75	2.597	ug/L	0.041	1	12	496	1	KED
	Se	78	0.329	ug/L	0.160	48	10	15	20	KED
	Y	89		ug/L			785403	727960	3	Standard
	Kr	83		ug/L			58	70	18	Standard
>	In-1	115		ug/L			18742	16644	1	KED
	Mo	98	2.406	ug/L	0.097	4	4	2081	4	KED
	Cd	111	0.031	ug/L	0.006	18	1	8	17	KED
	Cd	114	0.033	ug/L	0.010	28	3	22	25	KED
>	In	115		ug/L			1254184	1087480	4	Standard
	Ag	107	-0.005	ug/L	0.000	10	169	76	5	Standard
	Sb	121	0.182	ug/L	0.012	6	381	2607	2	Standard
	Sb	123	0.182	ug/L	0.020	10	302	1988	4	Standard
	Ba	135	8.455	ug/L	0.515	6	67	35403	1	Standard
	Ba	137	8.496	ug/L	0.451	5	96	61946	1	Standard
>	Tb	159		ug/L			1639230	1501223	4	Standard
	Pb	208	0.049	ug/L	0.003	6	224	2325	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-06
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:28:39
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	57032	0	Standard
	Cl	37		ug/L			5305004	5887004	0	Standard
>	Sc	45		ug/L			1533668	1669274	2	Standard
	Al	27	64.670	ug/L	0.463	0	5560	2160709	2	Standard
	V	51	4.587	ug/L	0.071	1	7515	157374	3	Standard
	V-1	51	4.745	ug/L	0.067	1	372	156105	3	Standard
	Cr	52	0.475	ug/L	0.019	4	22337	37575	2	Standard
	Cr	53	1.103	ug/L	0.022	1	239	3840	1	Standard
	Mn	55	16.231	ug/L	0.351	2	884	633312	0	Standard
>	Ge	72		ug/L			65365	63823	0	KED
	Co	59	1.334	ug/L	0.037	2	8	5294	3	KED
	Ni	60	4.652	ug/L	0.011	0	10	5353	0	KED
	Ni	62	4.828	ug/L	0.147	3	1	905	3	KED
	Cu	63	3.540	ug/L	0.067	1	68	11750	1	KED
	Cu	65	3.546	ug/L	0.169	4	33	5824	4	KED
	Zn	66	2.189	ug/L	0.124	5	49	953	5	KED
	Zn	67	2.218	ug/L	0.428	19	10	163	18	KED
	As	75	1.004	ug/L	0.045	4	12	223	3	KED
	Se	78	0.765	ug/L	0.079	10	10	27	6	KED
	Y	89		ug/L			785403	795859	1	Standard
	Kr	83		ug/L			58	55	11	Standard
>	In-1	115		ug/L			18742	18791	1	KED
	Mo	98	3.627	ug/L	0.117	3	4	3540	2	KED
	Cd	111	0.030	ug/L	0.011	37	1	8	32	KED
	Cd	114	0.022	ug/L	0.002	9	3	17	6	KED
>	In	115		ug/L			1254184	1237925	2	Standard
	Ag	107	-0.002	ug/L	0.000	17	169	135	4	Standard
	Sb	121	0.097	ug/L	0.006	6	381	1763	3	Standard
	Sb	123	0.096	ug/L	0.008	7	302	1335	4	Standard
	Ba	135	3.222	ug/L	0.081	2	67	15417	0	Standard
	Ba	137	3.213	ug/L	0.060	1	96	26760	0	Standard
>	Tb	159		ug/L			1639230	1650502	2	Standard
	Pb	208	0.052	ug/L	0.000	0	224	2714	2	Standard

BJC0839 **ICP-MS Quantitative Analysis - Summary Report**

Sample ID: ~~BJD0839~~-DUP6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:34:02 MB 4/9/21
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	58173	1	Standard
	Cl	**37**		ug/L			5305004	5788721	1	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1663756	0	Standard
|	**Al**	**27**	**64.252**	ug/L	0.480	0	5560	2139672	1	Standard
|	**V**	**51**	**4.468**	ug/L	0.024	0	7515	152986	0	Standard
|	**V-1**	**51**	**4.600**	ug/L	0.027	0	372	150837	0	Standard
|	**Cr**	**52**	**0.437**	ug/L	0.012	2	22337	36395	1	Standard
|	**Cr**	**53**	**0.979**	ug/L	0.012	1	239	3425	0	Standard
⌊	**Mn**	**55**	**15.878**	ug/L	0.230	1	884	617687	0	Standard
⌈>	**Ge**	**72**		ug/L			65365	62746	1	KED
|	**Co**	**59**	**1.253**	ug/L	0.044	3	8	4889	3	KED
|	**Ni**	**60**	**4.501**	ug/L	0.105	2	10	5092	3	KED
|	**Ni**	**62**	**4.703**	ug/L	0.209	4	1	866	3	KED
|	**Cu**	**63**	**3.469**	ug/L	0.041	1	68	11320	0	KED
|	**Cu**	**65**	**3.414**	ug/L	0.098	2	33	5512	1	KED
|	**Zn**	**66**	**2.936**	ug/L	0.026	0	49	1240	2	KED
|	**Zn**	**67**	**2.699**	ug/L	0.117	4	10	193	4	KED
|	**As**	**75**	**0.894**	ug/L	0.065	7	12	196	6	KED
⌊	**Se**	**78**	**0.760**	ug/L	0.143	18	10	27	12	KED
	Y	**89**		ug/L			785403	813847	0	Standard
	Kr	**83**		ug/L			58	64	22	Standard
⌈>	**In-1**	**115**		ug/L			18742	18529	0	KED
|	**Mo**	**98**	**3.551**	ug/L	0.068	1	4	3417	1	KED
|	**Cd**	**111**	**0.023**	ug/L	0.004	18	1	6	15	KED
⌊	**Cd**	**114**	**0.023**	ug/L	0.012	52	3	17	42	KED
⌈>	**In**	**115**		ug/L			1254184	1247488	0	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.001	49	169	128	15	Standard
|	**Sb**	**121**	**0.086**	ug/L	0.003	3	381	1621	2	Standard
|	**Sb**	**123**	**0.088**	ug/L	0.004	4	302	1259	3	Standard
|	**Ba**	**135**	**3.072**	ug/L	0.051	1	67	14824	1	Standard
⌊	**Ba**	**137**	**3.053**	ug/L	0.040	1	96	25637	0	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1657292	0	Standard
⌊	**Pb**	**208**	**0.056**	ug/L	0.001	1	224	2908	1	Standard

BJC0839 **ICP-MS Quantitative Analysis - Summary Report**

Sample ID: ~~BJD0839~~-MS6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:39:26
MB 4/9/21
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	58777	1	Standard
	Cl	**37**		ug/L			5305004	5818920	1	Standard
>	**Sc**	**45**		ug/L			1533668	1670419	0	Standard
	Al	**27**	**64.911**	ug/L	1.058	1	5560	2170128	1	Standard
	V	**51**	**27.577**	ug/L	0.279	1	7515	905627	1	Standard
	V-1	**51**	**27.698**	ug/L	0.132	0	372	909804	0	Standard
	Cr	**52**	**23.525**	ug/L	0.376	1	22337	681019	1	Standard
	Cr	**53**	**24.031**	ug/L	0.560	2	239	78290	1	Standard
	Mn	**55**	**39.209**	ug/L	0.206	0	884	1530015	0	Standard
>	**Ge**	**72**		ug/L			65365	64298	2	KED
	Co	**59**	**28.752**	ug/L	0.605	2	8	114715	1	KED
	Ni	**60**	**31.347**	ug/L	1.213	3	10	36251	1	KED
	Ni	**62**	**32.121**	ug/L	0.889	2	1	6055	1	KED
	Cu	**63**	**30.565**	ug/L	0.310	1	68	101675	1	KED
	Cu	**65**	**30.423**	ug/L	0.636	2	33	50068	0	KED
	Zn	**66**	**84.768**	ug/L	2.292	2	49	35319	2	KED
	Zn	**67**	**80.421**	ug/L	0.980	1	10	5586	2	KED
	As	**75**	**26.274**	ug/L	0.396	1	12	5586	2	KED
	Se	**78**	**78.379**	ug/L	1.262	1	10	1806	1	KED
	Y	**89**		ug/L			785403	813212	1	Standard
	Kr	**83**		ug/L			58	59	9	Standard
>	**In-1**	**115**		ug/L			18742	18922	0	KED
	Mo	**98**	**3.546**	ug/L	0.039	1	4	3485	1	KED
	Cd	**111**	**25.538**	ug/L	0.117	0	1	6603	1	KED
	Cd	**114**	**25.415**	ug/L	0.433	1	3	16203	1	KED
>	**In**	**115**		ug/L			1254184	1254755	0	Standard
	Ag	**107**	**25.966**	ug/L	0.379	1	169	440794	1	Standard
	Sb	**121**	**0.090**	ug/L	0.008	8	381	1688	6	Standard
	Sb	**123**	**0.090**	ug/L	0.002	1	302	1284	1	Standard
	Ba	**135**	**29.311**	ug/L	0.447	1	67	141680	0	Standard
	Ba	**137**	**29.911**	ug/L	0.481	1	96	251771	0	Standard
>	**Tb**	**159**		ug/L			1639230	1689525	0	Standard
	Pb	**208**	**26.053**	ug/L	0.167	0	224	1276412	0	Standard

BJC0839 **ICP-MS Quantitative Analysis - Summary Report**

Sample ID: ~~BJD0839~~-MSD6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:45:50

MB 4/9/21

Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	59670	1	Standard
	Cl	**37**		ug/L			5305004	5971974	2	Standard
>	**Sc**	**45**		ug/L			1533668	1694032	1	Standard
	Al	**27**	**65.295**	ug/L	0.321	0	5560	2213714	1	Standard
	V	**51**	**27.932**	ug/L	0.308	1	7515	930038	0	Standard
	V-1	**51**	**28.064**	ug/L	0.233	0	372	934774	0	Standard
	Cr	**52**	**23.849**	ug/L	0.384	1	22337	699740	0	Standard
	Cr	**53**	**24.392**	ug/L	0.138	0	239	80585	1	Standard
	Mn	**55**	**39.290**	ug/L	0.847	2	884	1554505	0	Standard
>	**Ge**	**72**		ug/L			65365	65289	1	KED
	Co	**59**	**28.925**	ug/L	0.563	1	8	117210	0	KED
	Ni	**60**	**31.144**	ug/L	0.307	0	10	36596	0	KED
	Ni	**62**	**31.277**	ug/L	0.360	1	1	5989	2	KED
	Cu	**63**	**31.058**	ug/L	0.110	0	68	104925	1	KED
	Cu	**65**	**30.722**	ug/L	0.522	1	33	51364	2	KED
	Zn	**66**	**85.824**	ug/L	0.787	0	49	36323	1	KED
	Zn	**67**	**80.002**	ug/L	0.569	0	10	5643	1	KED
	As	**75**	**26.344**	ug/L	0.957	3	12	5687	2	KED
	Se	**78**	**79.476**	ug/L	1.542	1	10	1859	1	KED
	Y	**89**		ug/L			785403	823216	0	Standard
	Kr	**83**		ug/L			58	57	3	Standard
>	**In-1**	**115**		ug/L			18742	19238	1	KED
	Mo	**98**	**3.583**	ug/L	0.077	2	4	3581	3	KED
	Cd	**111**	**25.603**	ug/L	0.558	2	1	6730	2	KED
	Cd	**114**	**25.585**	ug/L	0.206	0	3	16585	1	KED
>	**In**	**115**		ug/L			1254184	1263301	1	Standard
	Ag	**107**	**26.039**	ug/L	0.329	1	169	444990	0	Standard
	Sb	**121**	**0.092**	ug/L	0.001	1	381	1726	0	Standard
	Sb	**123**	**0.091**	ug/L	0.009	9	302	1312	6	Standard
	Ba	**135**	**29.722**	ug/L	0.393	1	67	144640	0	Standard
	Ba	**137**	**29.838**	ug/L	0.326	1	96	252873	1	Standard
>	**Tb**	**159**		ug/L			1639230	1664353	2	Standard
	Pb	**208**	**26.846**	ug/L	0.738	2	224	1295151	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:54:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24729	0	Standard
	Cl	**37**		ug/L			5305004	5338975	0	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1464592	0	Standard
|	**Al**	**27**	**-0.013**	ug/L	0.004	30	5560	4944	2	Standard
|	**V**	**51**	**0.015**	ug/L	0.002	13	7515	7610	0	Standard
|	**V-1**	**51**	**0.014**	ug/L	0.002	11	372	771	5	Standard
|	**Cr**	**52**	**0.041**	ug/L	0.005	13	22337	22337	0	Standard
|	**Cr**	**53**	**0.038**	ug/L	0.005	13	239	337	4	Standard
⌊	**Mn**	**55**	**-0.001**	ug/L	0.001	118	884	803	6	Standard
⌈>	**Ge**	**72**		ug/L			65365	64982	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.000	52	8	10	10	KED
|	**Ni**	**60**	**0.000**	ug/L	0.002	3780	10	10	20	KED
|	**Ni**	**62**	**0.004**	ug/L	0.016	441	1	2	114	KED
|	**Cu**	**63**	**0.005**	ug/L	0.003	60	68	85	13	KED
|	**Cu**	**65**	**0.005**	ug/L	0.002	44	33	42	10	KED
|	**Zn**	**66**	**0.082**	ug/L	0.012	14	49	83	4	KED
|	**Zn**	**67**	**-0.009**	ug/L	0.086	1007	10	10	60	KED
|	**As**	**75**	**-0.012**	ug/L	0.011	87	12	9	24	KED
⌊	**Se**	**78**	**0.031**	ug/L	0.209	684	10	11	42	KED
	Y	**89**		ug/L			785403	782926	0	Standard
	Kr	**83**		ug/L			58	52	5	Standard
⌈>	**In-1**	**115**		ug/L			18742	19048	1	KED
|	**Mo**	**98**	**0.004**	ug/L	0.003	75	4	8	37	KED
|	**Cd**	**111**	**0.005**	ug/L	0.006	117	1	2	57	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.010	285	3	6	111	KED
⌈>	**In**	**115**		ug/L			1254184	1265969	0	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.001	69	169	141	14	Standard
|	**Sb**	**121**	**-0.023**	ug/L	0.001	2	381	53	14	Standard
|	**Sb**	**123**	**-0.024**	ug/L	0.002	7	302	35	56	Standard
|	**Ba**	**135**	**0.000**	ug/L	0.003	2734	67	69	24	Standard
⌊	**Ba**	**137**	**0.003**	ug/L	0.001	39	96	119	7	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1626125	0	Standard
⌊	**Pb**	**208**	**0.005**	ug/L	0.001	13	224	445	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:00:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	24667	2	Standard
	Cl	**37**		ug/L			5305004	5544601	1	Standard
>	**Sc**	**45**		ug/L			1533668	1479657	1	Standard
	Al	**27**	**5310.773**	ug/L	70.998	1	5560	156836704	1	Standard
	V	**51**	**49.130**	ug/L	1.363	2	7515	1423270	2	Standard
	V-1	**51**	**49.478**	ug/L	1.274	2	372	1439128	1	Standard
	Cr	**52**	**50.606**	ug/L	0.956	1	22337	1272975	2	Standard
	Cr	**53**	**51.691**	ug/L	0.502	0	239	148917	1	Standard
	Mn	**55**	**50.655**	ug/L	0.522	1	884	1750711	1	Standard
>	**Ge**	**72**		ug/L			65365	64124	0	KED
	Co	**59**	**54.218**	ug/L	0.215	0	8	215805	0	KED
	Ni	**60**	**53.040**	ug/L	0.869	1	10	61208	1	KED
	Ni	**62**	**53.953**	ug/L	0.635	1	1	10145	0	KED
	Cu	**63**	**53.859**	ug/L	0.421	0	68	178654	0	KED
	Cu	**65**	**53.905**	ug/L	0.515	0	33	88487	1	KED
	Zn	**66**	**53.218**	ug/L	1.378	2	49	22139	2	KED
	Zn	**67**	**53.774**	ug/L	0.627	1	10	3729	1	KED
	As	**75**	**52.229**	ug/L	0.468	0	12	11063	0	KED
	Se	**78**	**52.011**	ug/L	1.625	3	10	1199	3	KED
	Y	**89**		ug/L			785403	787402	2	Standard
	Kr	**83**		ug/L			58	54	7	Standard
>	**In-1**	**115**		ug/L			18742	18885	0	KED
	Mo	**98**	**51.903**	ug/L	1.101	2	4	50871	2	KED
	Cd	**111**	**52.341**	ug/L	0.134	0	1	13505	0	KED
	Cd	**114**	**52.149**	ug/L	0.197	0	3	33182	1	KED
>	**In**	**115**		ug/L			1254184	1257797	2	Standard
	Ag	**107**	**52.126**	ug/L	0.342	0	169	886788	1	Standard
	Sb	**121**	**51.605**	ug/L	1.542	2	381	749373	0	Standard
	Sb	**123**	**51.758**	ug/L	1.357	2	302	569058	0	Standard
	Ba	**135**	**51.608**	ug/L	0.969	1	67	249958	0	Standard
	Ba	**137**	**51.511**	ug/L	0.868	1	96	434501	0	Standard
>	**Tb**	**159**		ug/L			1639230	1661890	1	Standard
	Pb	**208**	**51.873**	ug/L	1.160	2	224	2499202	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:08:22
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	26169	0	Standard
	Cl	**37**		ug/L			5305004	5423137	1	Standard
>	**Sc**	**45**		ug/L			1533668	1480342	0	Standard
	Al	**27**	**0.038**	ug/L	0.004	9	5560	6490	1	Standard
	V	**51**	**0.010**	ug/L	0.009	87	7515	7539	2	Standard
	V-1	**51**	**0.008**	ug/L	0.001	15	372	585	6	Standard
	Cr	**52**	**0.037**	ug/L	0.019	50	22337	22478	1	Standard
	Cr	**53**	**0.029**	ug/L	0.010	33	239	316	9	Standard
	Mn	**55**	**0.002**	ug/L	0.001	30	884	939	3	Standard
>	**Ge**	**72**		ug/L			65365	64915	0	KED
	Co	**59**	**-0.001**	ug/L	0.001	87	8	3	100	KED
	Ni	**60**	**-0.005**	ug/L	0.002	38	10	5	43	KED
	Ni	**62**	**0.020**	ug/L	0.035	172	1	5	115	KED
	Cu	**63**	**0.007**	ug/L	0.002	33	68	90	8	KED
	Cu	**65**	**0.000**	ug/L	0.003	2173	33	33	14	KED
	Zn	**66**	**0.078**	ug/L	0.078	100	49	81	40	KED
	Zn	**67**	**0.019**	ug/L	0.017	88	10	12	9	KED
	As	**75**	**-0.006**	ug/L	0.012	224	12	11	23	KED
	Se	**78**	**0.119**	ug/L	0.130	109	10	13	23	KED
	Y	**89**		ug/L			785403	791782	3	Standard
	Kr	**83**		ug/L			58	51	23	Standard
>	**In-1**	**115**		ug/L			18742	19122	2	KED
	Mo	**98**	**0.003**	ug/L	0.004	125	4	7	50	KED
	Cd	**111**	**0.008**	ug/L	0.004	47	1	3	31	KED
	Cd	**114**	**-0.000**	ug/L	0.003	3129	3	3	52	KED
>	**In**	**115**		ug/L			1254184	1281086	0	Standard
	Ag	**107**	**-0.002**	ug/L	0.001	28	169	135	7	Standard
	Sb	**121**	**0.015**	ug/L	0.004	30	381	610	11	Standard
	Sb	**123**	**0.011**	ug/L	0.001	10	302	430	3	Standard
	Ba	**135**	**-0.000**	ug/L	0.003	19450	67	69	23	Standard
	Ba	**137**	**0.004**	ug/L	0.000	11	96	132	3	Standard
>	**Tb**	**159**		ug/L			1639230	1632536	1	Standard
	Pb	**208**	**0.009**	ug/L	0.000	3	224	641	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-01
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:16:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	48477	0	Standard
	Cl	37		ug/L			5305004	5486414	1	Standard
>	Sc	45		ug/L			1533668	1589557	0	Standard
	Al	27	1.311	ug/L	0.046	3	5560	47364	4	Standard
	V	51	1.146	ug/L	0.021	1	7515	43269	2	Standard
	V-1	51	1.195	ug/L	0.019	1	372	37731	2	Standard
	Cr	52	0.749	ug/L	0.016	2	22337	43048	0	Standard
	Cr	53	0.921	ug/L	0.023	2	239	3093	1	Standard
	Mn	55	0.133	ug/L	0.003	1	884	5844	0	Standard
>	Ge	72		ug/L			65365	57347	1	KED
	Co	59	0.049	ug/L	0.003	6	8	180	5	KED
	Ni	60	1.191	ug/L	0.014	1	10	1238	0	KED
	Ni	62	1.063	ug/L	0.099	9	1	180	8	KED
	Cu	63	4.652	ug/L	0.038	0	68	13856	1	KED
	Cu	65	4.713	ug/L	0.062	1	33	6947	2	KED
	Zn	66	10.057	ug/L	0.110	1	49	3777	1	KED
	Zn	67	13.434	ug/L	0.793	5	10	840	6	KED
	As	75	1.194	ug/L	0.023	1	12	236	2	KED
	Se	78	3.253	ug/L	0.392	12	10	75	10	KED
	Y	89		ug/L			785403	768739	2	Standard
	Kr	83		ug/L			58	73	8	Standard
>	In-1	115		ug/L			18742	16771	1	KED
	Mo	98	2.436	ug/L	0.067	2	4	2123	2	KED
	Cd	111	0.082	ug/L	0.022	26	1	20	25	KED
	Cd	114	0.066	ug/L	0.015	21	3	40	19	KED
>	In	115		ug/L			1254184	1124252	0	Standard
	Ag	107	0.009	ug/L	0.001	8	169	289	4	Standard
	Sb	121	0.069	ug/L	0.002	2	381	1238	1	Standard
	Sb	123	0.070	ug/L	0.008	12	302	961	7	Standard
	Ba	135	69.389	ug/L	0.403	0	67	300461	1	Standard
	Ba	137	68.886	ug/L	0.211	0	96	519455	0	Standard
>	Tb	159		ug/L			1639230	1577965	1	Standard
	Pb	208	1.855	ug/L	0.024	1	224	85083	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-05
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:22:22
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	47950	1	Standard
	Cl	37		ug/L			5305004	5234269	1	Standard
>	Sc	45		ug/L			1533668	1570464	1	Standard
	Al	27	13.829	ug/L	0.198	1	5560	439095	0	Standard
	V	51	0.872	ug/L	0.043	4	7515	34374	2	Standard
	V-1	51	0.874	ug/L	0.013	1	372	27357	1	Standard
	Cr	52	0.493	ug/L	0.111	22	22337	35777	6	Standard
	Cr	53	0.509	ug/L	0.019	3	239	1798	1	Standard
	Mn	55	1.743	ug/L	0.015	0	884	64804	1	Standard
>	Ge	72		ug/L			65365	58013	2	KED
	Co	59	0.078	ug/L	0.037	46	8	288	44	KED
	Ni	60	0.634	ug/L	0.026	4	10	671	6	KED
	Ni	62	0.610	ug/L	0.026	4	1	105	2	KED
	Cu	63	3.757	ug/L	0.041	1	68	11329	1	KED
	Cu	65	3.812	ug/L	0.059	1	33	5688	1	KED
	Zn	66	7.415	ug/L	0.312	4	49	2827	3	KED
	Zn	67	9.100	ug/L	0.205	2	10	579	4	KED
	As	75	1.165	ug/L	0.006	0	12	233	2	KED
	Se	78	4.311	ug/L	0.217	5	10	98	2	KED
	Y	89		ug/L			785403	751043	2	Standard
	Kr	83		ug/L			58	72	18	Standard
>	In-1	115		ug/L			18742	16332	0	KED
	Mo	98	11.054	ug/L	0.138	1	4	9371	1	KED
	Cd	111	0.033	ug/L	0.015	46	1	8	40	KED
	Cd	114	0.022	ug/L	0.003	14	3	15	11	KED
>	In	115		ug/L			1254184	1116028	0	Standard
	Ag	107	0.033	ug/L	0.005	15	169	644	11	Standard
	Sb	121	0.071	ug/L	0.002	2	381	1250	1	Standard
	Sb	123	0.066	ug/L	0.006	9	302	916	6	Standard
	Ba	135	38.194	ug/L	0.293	0	67	164199	1	Standard
	Ba	137	38.282	ug/L	0.728	1	96	286584	1	Standard
>	Tb	159		ug/L			1639230	1569726	1	Standard
	Pb	208	0.568	ug/L	0.012	2	224	26079	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-11
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:27:46
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	50364	0	Standard
	Cl	37		ug/L			5305004	5191579	0	Standard
>	Sc	45		ug/L			1533668	1564389	1	Standard
	Al	27	2.582	ug/L	0.066	2	5560	86279	1	Standard
	V	51	1.134	ug/L	0.021	1	7515	42225	0	Standard
	V-1	51	1.194	ug/L	0.009	0	372	37079	0	Standard
	Cr	52	0.624	ug/L	0.037	5	22337	39101	1	Standard
	Cr	53	0.831	ug/L	0.013	1	239	2772	2	Standard
	Mn	55	0.111	ug/L	0.002	1	884	4962	0	Standard
>	Ge	72		ug/L			65365	54814	1	KED
	Co	59	0.050	ug/L	0.003	5	8	175	4	KED
	Ni	60	1.258	ug/L	0.023	1	10	1250	3	KED
	Ni	62	1.289	ug/L	0.093	7	1	208	8	KED
	Cu	63	4.662	ug/L	0.039	0	68	13270	1	KED
	Cu	65	4.584	ug/L	0.184	4	33	6456	2	KED
	Zn	66	9.958	ug/L	0.309	3	49	3573	1	KED
	Zn	67	14.229	ug/L	0.306	2	10	850	2	KED
	As	75	1.190	ug/L	0.095	8	12	225	6	KED
	Se	78	3.440	ug/L	0.217	6	10	76	5	KED
	Y	89		ug/L			785403	742816	2	Standard
	Kr	83		ug/L			58	64	20	Standard
>	In-1	115		ug/L			18742	16252	3	KED
	Mo	98	2.530	ug/L	0.050	1	4	2137	4	KED
	Cd	111	0.107	ug/L	0.020	18	1	24	17	KED
	Cd	114	0.088	ug/L	0.016	18	3	51	14	KED
>	In	115		ug/L			1254184	1101884	0	Standard
	Ag	107	0.006	ug/L	0.001	21	169	240	7	Standard
	Sb	121	0.058	ug/L	0.002	3	381	1070	2	Standard
	Sb	123	0.057	ug/L	0.007	11	302	815	8	Standard
	Ba	135	69.683	ug/L	0.531	0	67	295723	0	Standard
	Ba	137	68.990	ug/L	0.482	0	96	509890	0	Standard
>	Tb	159		ug/L			1639230	1554063	1	Standard
	Pb	208	1.855	ug/L	0.027	1	224	83785	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-07
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:33:10
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	50520	1	Standard
	Cl	37		ug/L			5305004	4922520	1	Standard
>	Sc	45		ug/L			1533668	1482909	0	Standard
	Al	27	18.517	ug/L	0.609	3	5560	553408	3	Standard
	V	51	0.129	ug/L	0.021	16	7515	11007	5	Standard
	V-1	51	0.150	ug/L	0.007	4	372	4737	4	Standard
	Cr	52	0.320	ug/L	0.029	9	22337	29525	2	Standard
	Cr	53	0.382	ug/L	0.061	16	239	1331	12	Standard
	Mn	55	421.893	ug/L	10.883	2	884	14606821	2	Standard
>	Ge	72		ug/L			65365	54522	0	KED
	Co	59	0.610	ug/L	0.030	4	8	2071	3	KED
	Ni	60	3.899	ug/L	0.084	2	10	3834	2	KED
	Ni	62	3.516	ug/L	0.162	4	1	563	5	KED
	Cu	63	0.842	ug/L	0.033	3	68	2430	2	KED
	Cu	65	0.812	ug/L	0.034	4	33	1161	4	KED
	Zn	66	3.264	ug/L	0.213	6	49	1193	5	KED
	Zn	67	5.303	ug/L	0.466	8	10	320	7	KED
	As	75	0.561	ug/L	0.056	10	12	111	8	KED
	Se	78	0.008	ug/L	0.062	767	10	9	12	KED
	Y	89		ug/L			785403	726555	2	Standard
	Kr	83		ug/L			58	69	7	Standard
>	In-1	115		ug/L			18742	15822	1	KED
	Mo	98	21.230	ug/L	0.708	3	4	17426	1	KED
	Cd	111	0.109	ug/L	0.017	15	1	24	16	KED
	Cd	114	0.086	ug/L	0.017	19	3	49	19	KED
>	In	115		ug/L			1254184	1065036	1	Standard
	Ag	107	0.034	ug/L	0.004	11	169	633	9	Standard
	Sb	121	0.041	ug/L	0.004	9	381	824	4	Standard
	Sb	123	0.046	ug/L	0.002	3	302	686	2	Standard
	Ba	135	31.454	ug/L	0.123	0	67	129053	1	Standard
	Ba	137	31.292	ug/L	0.175	0	96	223587	1	Standard
>	Tb	159		ug/L			1639230	1511800	1	Standard
	Pb	208	0.152	ug/L	0.003	2	224	6854	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-03
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:39:34
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	51992	2	Standard
	Cl	37		ug/L			5305004	5218744	1	Standard
>	Sc	45		ug/L			1533668	1552076	5	Standard
	Al	27	4.306	ug/L	0.254	5	5560	138822	4	Standard
	V	51	2.278	ug/L	0.124	5	7515	76366	0	Standard
	V-1	51	2.300	ug/L	0.116	5	372	70418	0	Standard
	Cr	52	0.738	ug/L	0.075	10	22337	41670	1	Standard
	Cr	53	0.852	ug/L	0.053	6	239	2806	2	Standard
	Mn	55	848.122	ug/L	50.040	5	884	30668278	0	Standard
>	Ge	72		ug/L			65365	55808	1	KED
	Co	59	6.879	ug/L	0.115	1	8	23834	0	KED
	Ni	60	24.763	ug/L	0.969	3	10	24873	3	KED
	Ni	62	24.697	ug/L	0.069	0	1	4043	1	KED
	Cu	63	6.061	ug/L	0.093	1	68	17548	0	KED
	Cu	65	6.140	ug/L	0.102	1	33	8795	0	KED
	Zn	66	7.337	ug/L	0.297	4	49	2692	3	KED
	Zn	67	11.531	ug/L	1.014	8	10	702	7	KED
	As	75	1.893	ug/L	0.128	6	12	359	5	KED
	Se	78	33.232	ug/L	1.703	5	10	669	4	KED
	Y	89		ug/L			785403	738503	6	Standard
	Kr	83		ug/L			58	73	28	Standard
>	In-1	115		ug/L			18742	16557	1	KED
	Mo	98	8.240	ug/L	0.181	2	4	7081	0	KED
	Cd	111	0.971	ug/L	0.111	11	1	220	12	KED
	Cd	114	0.914	ug/L	0.009	1	3	513	2	KED
>	In	115		ug/L			1254184	1079265	5	Standard
	Ag	107	0.009	ug/L	0.001	13	169	279	0	Standard
	Sb	121	0.516	ug/L	0.038	7	381	6740	1	Standard
	Sb	123	0.517	ug/L	0.035	6	302	5119	0	Standard
	Ba	135	69.022	ug/L	5.303	7	67	286081	1	Standard
	Ba	137	69.636	ug/L	4.644	6	96	502839	0	Standard
>	Tb	159		ug/L			1639230	1526137	6	Standard
	Pb	208	0.033	ug/L	0.005	14	224	1670	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:47:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	25891	0	Standard
	Cl	**37**		ug/L			5305004	5703709	2	Standard
>	**Sc**	**45**		ug/L			1533668	1509417	1	Standard
	Al	**27**	**-0.003**	ug/L	0.003	106	5560	5392	2	Standard
	V	**51**	**0.012**	ug/L	0.003	24	7515	7743	1	Standard
	V-1	**51**	**0.002**	ug/L	0.000	16	372	410	2	Standard
	Cr	**52**	**0.032**	ug/L	0.010	30	22337	22787	0	Standard
	Cr	**53**	**-0.002**	ug/L	0.010	527	239	230	11	Standard
	Mn	**55**	**0.000**	ug/L	0.002	726	884	877	5	Standard
>	**Ge**	**72**		ug/L			65365	64249	2	KED
	Co	**59**	**0.000**	ug/L	0.001	416	8	9	60	KED
	Ni	**60**	**0.006**	ug/L	0.004	62	10	17	22	KED
	Ni	**62**	**0.010**	ug/L	0.010	98	1	3	50	KED
	Cu	**63**	**0.008**	ug/L	0.004	53	68	93	12	KED
	Cu	**65**	**0.003**	ug/L	0.003	97	33	38	13	KED
	Zn	**66**	**0.079**	ug/L	0.069	88	49	81	38	KED
	Zn	**67**	**0.011**	ug/L	0.054	470	10	11	33	KED
	As	**75**	**-0.003**	ug/L	0.009	272	12	11	15	KED
	Se	**78**	**0.202**	ug/L	0.058	28	10	15	11	KED
	Y	**89**		ug/L			785403	777302	0	Standard
	Kr	**83**		ug/L			58	45	4	Standard
>	**In-1**	**115**		ug/L			18742	18554	2	KED
	Mo	**98**	**0.001**	ug/L	0.005	789	4	4	97	KED
	Cd	**111**	**0.002**	ug/L	0.007	300	1	1	100	KED
	Cd	**114**	**0.002**	ug/L	0.004	180	3	4	47	KED
>	**In**	**115**		ug/L			1254184	1261525	1	Standard
	Ag	**107**	**-0.004**	ug/L	0.000	6	169	96	4	Standard
	Sb	**121**	**-0.022**	ug/L	0.001	2	381	66	11	Standard
	Sb	**123**	**-0.024**	ug/L	0.001	4	302	42	31	Standard
	Ba	**135**	**0.002**	ug/L	0.002	72	67	78	9	Standard
	Ba	**137**	**0.004**	ug/L	0.001	16	96	127	5	Standard
>	**Tb**	**159**		ug/L			1639230	1643701	2	Standard
	Pb	**208**	**0.004**	ug/L	0.001	24	224	427	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0039-02
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 21:53:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	51543	0	Standard
	Cl	37		ug/L			5305004	5159465	0	Standard
>	Sc	45		ug/L			1533668	1356644	1	Standard
	Al	27	79.797	ug/L	1.912	2	5560	2165305	1	Standard
	V	51	0.081	ug/L	0.005	5	7515	8787	2	Standard
	V-1	51	0.072	ug/L	0.003	4	372	2260	4	Standard
	Cr	52	1.183	ug/L	0.025	2	22337	46580	0	Standard
	Cr	53	1.124	ug/L	0.027	2	239	3176	0	Standard
	Mn	55	1.013	ug/L	0.019	1	884	32853	0	Standard
>	Ge	72		ug/L			65365	54104	2	KED
	Co	59	0.081	ug/L	0.014	17	8	277	15	KED
	Ni	60	1.238	ug/L	0.021	1	10	1214	2	KED
	Ni	62	1.354	ug/L	0.159	11	1	216	13	KED
	Cu	63	15.176	ug/L	0.188	1	68	42510	1	KED
	Cu	65	15.051	ug/L	0.460	3	33	20857	1	KED
	Zn	66	17.506	ug/L	0.240	1	49	6172	1	KED
	Zn	67	16.466	ug/L	0.772	4	10	970	6	KED
	As	75	0.049	ug/L	0.004	8	12	19	2	KED
	Se	78	0.139	ug/L	0.123	87	10	11	18	KED
	Y	89		ug/L			785403	705103	1	Standard
	Kr	83		ug/L			58	52	7	Standard
>	In-1	115		ug/L			18742	15801	0	KED
	Mo	98	0.311	ug/L	0.032	10	4	258	9	KED
	Cd	111	0.027	ug/L	0.011	40	1	6	34	KED
	Cd	114	0.014	ug/L	0.002	14	3	10	10	KED
>	In	115		ug/L			1254184	1075870	0	Standard
	Ag	107	0.005	ug/L	0.000	4	169	222	1	Standard
	Sb	121	-0.005	ug/L	0.002	41	381	264	9	Standard
	Sb	123	-0.008	ug/L	0.003	32	302	184	13	Standard
	Ba	135	0.608	ug/L	0.013	2	67	2578	2	Standard
	Ba	137	0.605	ug/L	0.003	0	96	4444	0	Standard
>	Tb	159		ug/L			1639230	1476931	0	Standard
	Pb	208	0.475	ug/L	0.007	1	224	20549	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL7
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:02:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	25430	2	Standard
	Cl	**37**		ug/L			5305004	5648286	2	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1490468	2	Standard
|	**Al**	**27**	**-0.006**	ug/L	0.003	46	5560	5211	1	Standard
|	**V**	**51**	**0.011**	ug/L	0.010	88	7515	7611	1	Standard
|	**V-1**	**51**	**-0.001**	ug/L	0.001	124	372	346	6	Standard
|	**Cr**	**52**	**0.033**	ug/L	0.042	125	22337	22516	2	Standard
|	**Cr**	**53**	**-0.004**	ug/L	0.009	216	239	220	8	Standard
⌊	**Mn**	**55**	**-0.002**	ug/L	0.001	71	884	803	4	Standard
⌈>	**Ge**	**72**		ug/L			65365	64456	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.001	386	8	8	32	KED
|	**Ni**	**60**	**0.003**	ug/L	0.006	180	10	14	49	KED
|	**Ni**	**62**	**0.024**	ug/L	0.016	66	1	6	45	KED
|	**Cu**	**63**	**0.002**	ug/L	0.007	301	68	74	29	KED
|	**Cu**	**65**	**0.002**	ug/L	0.005	271	33	36	22	KED
|	**Zn**	**66**	**0.091**	ug/L	0.055	60	49	86	27	KED
|	**Zn**	**67**	**0.002**	ug/L	0.043	1791	10	10	26	KED
|	**As**	**75**	**-0.015**	ug/L	0.007	45	12	9	15	KED
⌊	**Se**	**78**	**0.019**	ug/L	0.164	858	10	10	34	KED
	Y	**89**		ug/L			785403	777366	2	Standard
	Kr	**83**		ug/L			58	46	11	Standard
⌈>	**In-1**	**115**		ug/L			18742	19216	1	KED
|	**Mo**	**98**	**-0.000**	ug/L	0.003	1183	4	4	65	KED
|	**Cd**	**111**	**0.007**	ug/L	0.006	78	1	3	45	KED
⌊	**Cd**	**114**	**-0.004**	ug/L	0.002	41	3	1	108	KED
⌈>	**In**	**115**		ug/L			1254184	1273731	1	Standard
|	**Ag**	**107**	**-0.004**	ug/L	0.000	7	169	97	5	Standard
|	**Sb**	**121**	**-0.022**	ug/L	0.001	3	381	59	18	Standard
|	**Sb**	**123**	**-0.023**	ug/L	0.001	3	302	49	18	Standard
|	**Ba**	**135**	**0.000**	ug/L	0.002	423	67	71	13	Standard
⌊	**Ba**	**137**	**0.002**	ug/L	0.001	51	96	118	7	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1648449	0	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.000	6	224	415	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0253-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:08:27
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	41178	1	Standard
	Cl	37		ug/L			5305004	5691756	0	Standard
>	Sc	45		ug/L			1533668	1504411	1	Standard
	Al	27	1.049	ug/L	0.033	3	5560	36954	3	Standard
	V	51	0.036	ug/L	0.005	14	7515	8418	0	Standard
	V-1	51	0.010	ug/L	0.001	14	372	660	5	Standard
	Cr	52	0.169	ug/L	0.018	10	22337	26158	0	Standard
	Cr	53	0.082	ug/L	0.003	4	239	474	0	Standard
	Mn	55	0.032	ug/L	0.001	2	884	1982	2	Standard
>	Ge	72		ug/L			65365	62902	0	KED
	Co	59	0.001	ug/L	0.002	161	8	12	55	KED
	Ni	60	0.011	ug/L	0.008	75	10	22	41	KED
	Ni	62	0.021	ug/L	0.011	50	1	5	33	KED
	Cu	63	0.134	ug/L	0.010	7	68	500	6	KED
	Cu	65	0.132	ug/L	0.016	12	33	245	11	KED
	Zn	66	0.366	ug/L	0.029	8	49	196	5	KED
	Zn	67	0.268	ug/L	0.047	17	10	28	11	KED
	As	75	-0.008	ug/L	0.009	118	12	10	19	KED
	Se	78	0.069	ug/L	0.089	129	10	11	17	KED
	Y	89		ug/L			785403	786870	1	Standard
	Kr	83		ug/L			58	40	15	Standard
>	In-1	115		ug/L			18742	18980	0	KED
	Mo	98	0.012	ug/L	0.001	8	4	16	5	KED
	Cd	111	0.005	ug/L	0.002	45	1	2	21	KED
	Cd	114	0.008	ug/L	0.011	143	3	8	82	KED
>	In	115		ug/L			1254184	1284987	0	Standard
	Ag	107	0.003	ug/L	0.000	7	169	230	1	Standard
	Sb	121	-0.018	ug/L	0.001	4	381	123	8	Standard
	Sb	123	-0.019	ug/L	0.001	2	302	93	6	Standard
	Ba	135	0.023	ug/L	0.001	5	67	182	3	Standard
	Ba	137	0.026	ug/L	0.002	7	96	321	4	Standard
>	Tb	159		ug/L			1639230	1648047	1	Standard
	Pb	208	0.006	ug/L	0.000	0	224	533	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0253-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:13:27
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	45464	0	Standard
	Cl	37		ug/L			5305004	5696832	1	Standard
>	Sc	45		ug/L			1533668	1489442	1	Standard
	Al	27	5408.442	ug/L	134.866	2	5560	160762076	1	Standard
	V	51	25.258	ug/L	0.255	1	7515	740264	2	Standard
	V-1	51	25.162	ug/L	0.179	0	372	737047	1	Standard
	Cr	52	25.794	ug/L	0.199	0	22337	663773	1	Standard
	Cr	53	25.470	ug/L	0.208	0	239	73977	1	Standard
	Mn	55	26.245	ug/L	0.210	0	884	913519	1	Standard
>	Ge	72		ug/L			65365	64620	1	KED
	Co	59	26.833	ug/L	0.131	0	8	107630	0	KED
	Ni	60	26.331	ug/L	0.793	3	10	30629	3	KED
	Ni	62	27.529	ug/L	1.140	4	1	5216	2	KED
	Cu	63	27.649	ug/L	0.157	0	68	92454	0	KED
	Cu	65	26.992	ug/L	0.214	0	33	44664	1	KED
	Zn	66	86.437	ug/L	0.886	1	49	36210	2	KED
	Zn	67	79.200	ug/L	1.759	2	10	5529	1	KED
	As	75	25.773	ug/L	0.363	1	12	5508	1	KED
	Se	78	81.471	ug/L	1.408	1	10	1886	2	KED
	Y	89		ug/L			785403	795049	1	Standard
	Kr	83		ug/L			58	57	16	Standard
>	In-1	115		ug/L			18742	19036	0	KED
	Mo	98	25.967	ug/L	0.281	1	4	25653	1	KED
	Cd	111	26.324	ug/L	0.178	0	1	6847	0	KED
	Cd	114	25.724	ug/L	0.556	2	3	16499	2	KED
>	In	115		ug/L			1254184	1280480	1	Standard
	Ag	107	25.588	ug/L	0.356	1	169	443228	0	Standard
	Sb	121	25.838	ug/L	0.124	0	381	382324	1	Standard
	Sb	123	25.836	ug/L	0.321	1	302	289409	0	Standard
	Ba	135	25.792	ug/L	0.354	1	67	127230	0	Standard
	Ba	137	25.960	ug/L	0.346	1	96	222996	0	Standard
>	Tb	159		ug/L			1639230	1680339	1	Standard
	Pb	208	26.333	ug/L	0.369	1	224	1282992	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:19:31
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	25177	0	Standard
	Cl	37		ug/L			5305004	5593261	1	Standard
>	Sc	45		ug/L			1533668	1486058	0	Standard
	Al	27	5440.856	ug/L	149.342	2	5560	161397497	3	Standard
	V	51	49.896	ug/L	0.343	0	7515	1451860	1	Standard
	V-1	51	50.211	ug/L	0.553	1	372	1467012	1	Standard
	Cr	52	50.485	ug/L	1.296	2	22337	1275350	2	Standard
	Cr	53	51.486	ug/L	0.701	1	239	148960	0	Standard
	Mn	55	51.771	ug/L	0.528	1	884	1796928	0	Standard
>	Ge	72		ug/L			65365	63784	1	KED
	Co	59	54.375	ug/L	1.632	3	8	215205	1	KED
	Ni	60	54.593	ug/L	1.540	2	10	62649	1	KED
	Ni	62	53.597	ug/L	0.900	1	1	10025	2	KED
	Cu	63	55.644	ug/L	0.397	0	68	183589	1	KED
	Cu	65	54.496	ug/L	1.293	2	33	88959	1	KED
	Zn	66	54.682	ug/L	1.335	2	49	22621	1	KED
	Zn	67	55.275	ug/L	3.482	6	10	3811	5	KED
	As	75	53.041	ug/L	0.894	1	12	11174	0	KED
	Se	78	52.615	ug/L	0.759	1	10	1206	1	KED
	Y	89		ug/L			785403	789946	1	Standard
	Kr	83		ug/L			58	60	10	Standard
>	In-1	115		ug/L			18742	19072	0	KED
	Mo	98	51.056	ug/L	0.998	1	4	50529	1	KED
	Cd	111	52.530	ug/L	1.294	2	1	13689	3	KED
	Cd	114	52.416	ug/L	0.845	1	3	33679	0	KED
>	In	115		ug/L			1254184	1274252	1	Standard
	Ag	107	51.396	ug/L	0.453	0	169	885812	0	Standard
	Sb	121	52.067	ug/L	0.852	1	381	766236	1	Standard
	Sb	123	52.374	ug/L	0.524	0	302	583530	0	Standard
	Ba	135	52.094	ug/L	0.267	0	67	255675	0	Standard
	Ba	137	51.512	ug/L	0.617	1	96	440270	0	Standard
>	Tb	159		ug/L			1639230	1661339	1	Standard
	Pb	208	52.593	ug/L	0.334	0	224	2533424	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:27:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	26976	1	Standard
	Cl	**37**		ug/L			5305004	5536931	0	Standard
⌈>	**Sc**	**45**		ug/L			1533668	1502881	1	Standard
|	**Al**	**27**	**0.035**	ug/L	0.005	15	5560	6500	2	Standard
|	**V**	**51**	**0.011**	ug/L	0.006	56	7515	7691	1	Standard
|	**V-1**	**51**	**-0.001**	ug/L	0.001	90	372	333	9	Standard
|	**Cr**	**52**	**0.040**	ug/L	0.025	62	22337	22883	1	Standard
|	**Cr**	**53**	**-0.001**	ug/L	0.004	540	239	232	3	Standard
⌊	**Mn**	**55**	**0.002**	ug/L	0.002	79	884	940	6	Standard
⌈>	**Ge**	**72**		ug/L			65365	64958	1	KED
|	**Co**	**59**	**-0.001**	ug/L	0.000	34	8	5	21	KED
|	**Ni**	**60**	**0.001**	ug/L	0.003	466	10	11	28	KED
|	**Ni**	**62**	**0.040**	ug/L	0.018	44	1	9	34	KED
|	**Cu**	**63**	**0.001**	ug/L	0.001	62	68	71	4	KED
|	**Cu**	**65**	**0.004**	ug/L	0.003	79	33	39	12	KED
|	**Zn**	**66**	**0.023**	ug/L	0.012	49	49	59	9	KED
|	**Zn**	**67**	**0.027**	ug/L	0.099	366	10	12	56	KED
|	**As**	**75**	**-0.013**	ug/L	0.010	73	12	9	21	KED
⌊	**Se**	**78**	**0.071**	ug/L	0.095	133	10	12	17	KED
	Y	**89**		ug/L			785403	802962	0	Standard
	Kr	**83**		ug/L			58	49	16	Standard
⌈>	**In-1**	**115**		ug/L			18742	18915	0	KED
|	**Mo**	**98**	**0.005**	ug/L	0.004	78	4	9	44	KED
|	**Cd**	**111**	**0.004**	ug/L	0.004	117	1	2	49	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.007	184	3	6	75	KED
⌈>	**In**	**115**		ug/L			1254184	1295242	1	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.001	44	169	145	7	Standard
|	**Sb**	**121**	**0.019**	ug/L	0.002	11	381	683	5	Standard
|	**Sb**	**123**	**0.014**	ug/L	0.002	16	302	474	6	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.002	158	67	77	13	Standard
⌊	**Ba**	**137**	**0.005**	ug/L	0.002	35	96	139	9	Standard
⌈>	**Tb**	**159**		ug/L			1639230	1656470	1	Standard
⌊	**Pb**	**208**	**0.009**	ug/L	0.002	22	224	649	14	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0039-02RE1
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 22:34:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	48013	1	Standard
	Cl	37		ug/L			5305004	4952818	0	Standard
>	Sc	45		ug/L			1533668	1313801	2	Standard
	Al	27	104.124	ug/L	1.847	1	5560	2734575	1	Standard
	V	51	0.095	ug/L	0.009	9	7515	8875	4	Standard
	V-1	51	0.086	ug/L	0.002	2	372	2540	4	Standard
	Cr	52	1.003	ug/L	0.026	2	22337	41142	1	Standard
	Cr	53	0.947	ug/L	0.033	3	239	2623	1	Standard
	Mn	55	1.293	ug/L	0.020	1	884	40423	2	Standard
>	Ge	72		ug/L			65365	52094	1	KED
	Co	59	0.095	ug/L	0.006	6	8	314	8	KED
	Ni	60	1.515	ug/L	0.026	1	10	1428	3	KED
	Ni	62	1.682	ug/L	0.119	7	1	258	7	KED
	Cu	63	18.857	ug/L	0.340	1	68	50842	0	KED
	Cu	65	19.110	ug/L	0.224	1	33	25498	0	KED
	Zn	66	21.263	ug/L	0.123	0	49	7210	1	KED
	Zn	67	18.858	ug/L	0.217	1	10	1067	1	KED
	As	75	0.085	ug/L	0.015	17	12	24	9	KED
	Se	78	0.253	ug/L	0.055	21	10	13	7	KED
	Y	89		ug/L			785403	701765	2	Standard
	Kr	83		ug/L			58	48	12	Standard
>	In-1	115		ug/L			18742	15736	1	KED
	Mo	98	0.356	ug/L	0.009	2	4	294	3	KED
	Cd	111	0.035	ug/L	0.011	32	1	8	29	KED
	Cd	114	0.034	ug/L	0.021	63	3	21	54	KED
>	In	115		ug/L			1254184	1073632	0	Standard
	Ag	107	-0.002	ug/L	0.001	47	169	111	13	Standard
	Sb	121	0.031	ug/L	0.004	11	381	709	5	Standard
	Sb	123	0.029	ug/L	0.003	9	302	531	4	Standard
	Ba	135	0.733	ug/L	0.032	4	67	3088	4	Standard
	Ba	137	0.773	ug/L	0.016	2	96	5647	1	Standard
>	Tb	159		ug/L			1639230	1451565	2	Standard
	Pb	208	0.504	ug/L	0.011	2	224	21382	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 22:43:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	29678	1	Standard
	Cl	37		ug/L			5305004	5538108	2	Standard
>	Sc	45		ug/L			1533668	1536595	0	Standard
	Al	27	6116.181	ug/L	48.674	0	5560	187575608	0	Standard
	V	51	24.797	ug/L	0.333	1	7515	749830	0	Standard
	V-1	51	24.682	ug/L	0.315	1	372	745799	0	Standard
	Cr	52	8.338	ug/L	0.157	1	22337	236481	1	Standard
	Cr	53	8.434	ug/L	0.033	0	239	25433	0	Standard
	Mn	55	54.684	ug/L	1.011	1	884	1962726	2	Standard
>	Ge	72		ug/L			65365	65512	1	KED
	Co	59	2.842	ug/L	0.040	1	8	11563	2	KED
	Ni	60	5.669	ug/L	0.151	2	10	6692	1	KED
	Ni	62	5.749	ug/L	0.145	2	1	1106	1	KED
	Cu	63	9.028	ug/L	0.124	1	68	30653	1	KED
	Cu	65	9.068	ug/L	0.335	3	33	15230	2	KED
	Zn	66	18.848	ug/L	0.320	1	49	8044	2	KED
	Zn	67	19.662	ug/L	1.081	5	10	1399	4	KED
	As	75	1.997	ug/L	0.060	3	12	443	2	KED
	Se	78	0.910	ug/L	0.167	18	10	31	10	KED
	Y	89		ug/L			785403	1001890	0	Standard
	Kr	83		ug/L			58	92	12	Standard
>	In-1	115		ug/L			18742	19618	1	KED
	Mo	98	0.145	ug/L	0.007	4	4	151	3	KED
	Cd	111	0.037	ug/L	0.010	26	1	11	21	KED
	Cd	114	0.017	ug/L	0.005	31	3	15	24	KED
>	In	115		ug/L			1254184	1319511	1	Standard
	Ag	107	0.025	ug/L	0.003	13	169	630	9	Standard
	Sb	121	-0.010	ug/L	0.001	11	381	251	7	Standard
	Sb	123	-0.010	ug/L	0.002	19	302	205	11	Standard
	Ba	135	21.151	ug/L	0.063	0	67	107538	1	Standard
	Ba	137	20.954	ug/L	0.038	0	96	185526	0	Standard
>	Tb	159		ug/L			1639230	1713390	0	Standard
	Pb	208	1.079	ug/L	0.011	1	224	53848	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-04
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 22:49:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	34024	1	Standard
	Cl	37		ug/L			5305004	5620681	0	Standard
>	Sc	45		ug/L			1533668	1631868	1	Standard
	Al	27	12465.625	ug/L	315.773	2	5560	405900775	1	Standard
	V	51	30.539	ug/L	0.512	1	7515	978707	0	Standard
	V-1	51	30.346	ug/L	0.553	1	372	973555	0	Standard
	Cr	52	12.813	ug/L	0.078	0	22337	373178	1	Standard
	Cr	53	12.695	ug/L	0.216	1	239	40521	0	Standard
	Mn	55	99.848	ug/L	0.900	0	884	3804667	0	Standard
>	Ge	72		ug/L			65365	64755	0	KED
	Co	59	4.314	ug/L	0.081	1	8	17345	1	KED
	Ni	60	9.536	ug/L	0.159	1	10	11123	2	KED
	Ni	62	9.996	ug/L	0.145	1	1	1899	1	KED
	Cu	63	17.063	ug/L	0.297	1	68	57202	1	KED
	Cu	65	16.952	ug/L	0.189	1	33	28122	0	KED
	Zn	66	25.600	ug/L	0.602	2	49	10781	2	KED
	Zn	67	29.370	ug/L	0.065	0	10	2061	0	KED
	As	75	2.883	ug/L	0.060	2	12	628	1	KED
	Se	78	1.209	ug/L	0.164	13	10	38	10	KED
	Y	89		ug/L			785403	1035463	2	Standard
	Kr	83		ug/L			58	71	17	Standard
>	In-1	115		ug/L			18742	19437	2	KED
	Mo	98	0.248	ug/L	0.012	4	4	254	2	KED
	Cd	111	0.042	ug/L	0.007	16	1	12	13	KED
	Cd	114	0.041	ug/L	0.020	49	3	30	42	KED
>	In	115		ug/L			1254184	1297766	2	Standard
	Ag	107	0.042	ug/L	0.001	2	169	919	4	Standard
	Sb	121	-0.010	ug/L	0.001	12	381	249	4	Standard
	Sb	123	-0.007	ug/L	0.002	27	302	227	11	Standard
	Ba	135	52.968	ug/L	1.786	3	67	264613	1	Standard
	Ba	137	53.024	ug/L	1.340	2	96	461370	0	Standard
>	Tb	159		ug/L			1639230	1701718	2	Standard
	Pb	208	4.618	ug/L	0.142	3	224	227961	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-08
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 22:54:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	31130	2	Standard
	Cl	37		ug/L			5305004	5542687	2	Standard
>	Sc	45		ug/L			1533668	1616863	1	Standard
	Al	27	8877.127	ug/L	14.871	0	5560	286476101	1	Standard
	V	51	31.803	ug/L	0.402	1	7515	1009692	2	Standard
	V-1	51	31.601	ug/L	0.408	1	372	1004684	2	Standard
	Cr	52	9.882	ug/L	0.230	2	22337	290521	1	Standard
	Cr	53	9.857	ug/L	0.204	2	239	31227	0	Standard
	Mn	55	65.329	ug/L	1.464	2	884	2466413	1	Standard
>	Ge	72		ug/L			65365	66454	1	KED
	Co	59	3.646	ug/L	0.047	1	8	15047	0	KED
	Ni	60	8.173	ug/L	0.245	2	10	9782	2	KED
	Ni	62	8.127	ug/L	0.400	4	1	1585	4	KED
	Cu	63	13.969	ug/L	0.296	2	68	48066	1	KED
	Cu	65	13.911	ug/L	0.420	3	33	23686	2	KED
	Zn	66	21.202	ug/L	0.678	3	49	9169	2	KED
	Zn	67	23.822	ug/L	1.277	5	10	1717	4	KED
	As	75	1.660	ug/L	0.055	3	12	376	2	KED
	Se	78	0.951	ug/L	0.275	28	10	33	20	KED
	Y	89		ug/L			785403	1056366	2	Standard
	Kr	83		ug/L			58	88	9	Standard
>	In-1	115		ug/L			18742	18854	5	KED
	Mo	98	0.139	ug/L	0.012	8	4	139	5	KED
	Cd	111	0.032	ug/L	0.014	42	1	9	40	KED
	Cd	114	0.037	ug/L	0.021	57	3	27	51	KED
>	In	115		ug/L			1254184	1321581	0	Standard
	Ag	107	0.042	ug/L	0.001	1	169	922	1	Standard
	Sb	121	-0.012	ug/L	0.002	13	381	218	10	Standard
	Sb	123	-0.012	ug/L	0.002	18	302	174	15	Standard
	Ba	135	34.573	ug/L	0.418	1	67	176010	0	Standard
	Ba	137	34.488	ug/L	0.434	1	96	305762	1	Standard
>	Tb	159		ug/L			1639230	1738483	0	Standard
	Pb	208	1.745	ug/L	0.017	0	224	88169	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-09
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 22:59:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	30411	3	Standard
	Cl	**37**		ug/L			5305004	5563813	0	Standard
>	**Sc**	**45**		ug/L			1533668	1592647	1	Standard
	Al	**27**	**6617.984**	ug/L	130.002	1	5560	210341939	1	Standard
	V	**51**	**35.834**	ug/L	0.867	2	7515	1119399	1	Standard
	V-1	**51**	**35.604**	ug/L	0.828	2	372	1114709	1	Standard
	Cr	**52**	**9.578**	ug/L	0.201	2	22337	278081	1	Standard
	Cr	**53**	**9.586**	ug/L	0.168	1	239	29923	1	Standard
	Mn	**55**	**58.138**	ug/L	0.627	1	884	2162453	0	Standard
>	**Ge**	**72**		ug/L			65365	64126	6	KED
	Co	**59**	**4.383**	ug/L	0.389	8	8	17390	2	KED
	Ni	**60**	**7.623**	ug/L	0.511	6	10	8783	1	KED
	Ni	**62**	**8.017**	ug/L	1.029	12	1	1501	6	KED
	Cu	**63**	**9.929**	ug/L	0.695	7	68	32899	0	KED
	Cu	**65**	**9.831**	ug/L	0.682	6	33	16120	0	KED
	Zn	**66**	**18.798**	ug/L	0.766	4	49	7840	2	KED
	Zn	**67**	**19.931**	ug/L	1.374	6	10	1386	6	KED
	As	**75**	**2.240**	ug/L	0.084	3	12	485	2	KED
	Se	**78**	**0.959**	ug/L	0.119	12	10	32	2	KED
	Y	**89**		ug/L			785403	1007425	1	Standard
	Kr	**83**		ug/L			58	74	6	Standard
>	**In-1**	**115**		ug/L			18742	19731	0	KED
	Mo	**98**	**0.169**	ug/L	0.015	8	4	177	8	KED
	Cd	**111**	**0.022**	ug/L	0.006	24	1	7	19	KED
	Cd	**114**	**0.034**	ug/L	0.012	34	3	26	28	KED
>	**In**	**115**		ug/L			1254184	1323111	1	Standard
	Ag	**107**	**0.031**	ug/L	0.002	5	169	733	6	Standard
	Sb	**121**	**-0.013**	ug/L	0.001	6	381	199	6	Standard
	Sb	**123**	**-0.013**	ug/L	0.000	0	302	173	1	Standard
	Ba	**135**	**22.268**	ug/L	0.357	1	67	113502	0	Standard
	Ba	**137**	**22.358**	ug/L	0.388	1	96	198448	0	Standard
>	**Tb**	**159**		ug/L			1639230	1736801	1	Standard
	Pb	**208**	**1.173**	ug/L	0.023	1	224	59305	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-10
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 23:04:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	31440	1	Standard
	Cl	37		ug/L			5305004	5645564	1	Standard
>	Sc	45		ug/L			1533668	1566238	1	Standard
	Al	27	7122.923	ug/L	233.934	3	5560	222589395	1	Standard
	V	51	24.794	ug/L	1.053	4	7515	763837	2	Standard
	V-1	51	24.665	ug/L	1.013	4	372	759333	2	Standard
	Cr	52	7.864	ug/L	0.265	3	22337	228576	1	Standard
	Cr	53	7.931	ug/L	0.150	1	239	24388	0	Standard
	Mn	55	51.495	ug/L	1.048	2	884	1883414	0	Standard
>	Ge	72		ug/L			65365	65045	0	KED
	Co	59	2.657	ug/L	0.029	1	8	10734	0	KED
	Ni	60	5.178	ug/L	0.213	4	10	6071	4	KED
	Ni	62	5.080	ug/L	0.189	3	1	970	4	KED
	Cu	63	11.477	ug/L	0.129	1	68	38670	0	KED
	Cu	65	11.442	ug/L	0.198	1	33	19076	1	KED
	Zn	66	18.426	ug/L	0.552	2	49	7808	3	KED
	Zn	67	17.056	ug/L	0.541	3	10	1207	2	KED
	As	75	1.226	ug/L	0.050	4	12	275	4	KED
	Se	78	0.817	ug/L	0.158	19	10	29	12	KED
	Y	89		ug/L			785403	990558	0	Standard
	Kr	83		ug/L			58	75	16	Standard
>	In-1	115		ug/L			18742	19419	2	KED
	Mo	98	0.091	ug/L	0.009	10	4	96	11	KED
	Cd	111	0.023	ug/L	0.012	53	1	7	41	KED
	Cd	114	0.016	ug/L	0.008	51	3	14	36	KED
>	In	115		ug/L			1254184	1312454	0	Standard
	Ag	107	0.032	ug/L	0.001	1	169	742	1	Standard
	Sb	121	-0.014	ug/L	0.001	4	381	184	4	Standard
	Sb	123	-0.015	ug/L	0.001	9	302	146	11	Standard
	Ba	135	14.035	ug/L	0.137	0	67	71000	0	Standard
	Ba	137	14.105	ug/L	0.088	0	96	124250	0	Standard
>	Tb	159		ug/L			1639230	1712932	1	Standard
	Pb	208	1.333	ug/L	0.028	2	224	66432	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-11
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 23:09:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	31208	1	Standard
	Cl	**37**		ug/L			5305004	5500691	1	Standard
>	**Sc**	**45**		ug/L			1533668	1552538	2	Standard
	Al	**27**	**5250.450**	ug/L	122.557	2	5560	162647702	1	Standard
	V	**51**	**31.409**	ug/L	0.446	1	7515	957379	1	Standard
	V-1	**51**	**31.226**	ug/L	0.435	1	372	953052	1	Standard
	Cr	**52**	**10.470**	ug/L	0.196	1	22337	294187	1	Standard
	Cr	**53**	**10.478**	ug/L	0.153	1	239	31859	1	Standard
	Mn	**55**	**74.896**	ug/L	1.585	2	884	2714588	0	Standard
>	**Ge**	**72**		ug/L			65365	65102	0	KED
	Co	**59**	**3.156**	ug/L	0.060	1	8	12762	2	KED
	Ni	**60**	**6.509**	ug/L	0.206	3	10	7634	2	KED
	Ni	**62**	**6.555**	ug/L	0.306	4	1	1253	5	KED
	Cu	**63**	**6.459**	ug/L	0.140	2	68	21811	1	KED
	Cu	**65**	**6.442**	ug/L	0.128	1	33	10764	1	KED
	Zn	**66**	**15.160**	ug/L	0.215	1	49	6438	1	KED
	Zn	**67**	**16.008**	ug/L	0.070	0	10	1134	0	KED
	As	**75**	**1.260**	ug/L	0.059	4	12	283	4	KED
	Se	**78**	**0.825**	ug/L	0.210	25	10	29	16	KED
	Y	**89**		ug/L			785403	994867	1	Standard
	Kr	**83**		ug/L			58	72	30	Standard
>	**In-1**	**115**		ug/L			18742	19222	0	KED
	Mo	**98**	**0.184**	ug/L	0.030	16	4	187	16	KED
	Cd	**111**	**0.024**	ug/L	0.011	44	1	7	37	KED
	Cd	**114**	**0.016**	ug/L	0.014	83	3	14	61	KED
>	**In**	**115**		ug/L			1254184	1316753	1	Standard
	Ag	**107**	**0.020**	ug/L	0.003	15	169	536	8	Standard
	Sb	**121**	**-0.013**	ug/L	0.002	13	381	195	14	Standard
	Sb	**123**	**-0.014**	ug/L	0.001	7	302	154	7	Standard
	Ba	**135**	**14.153**	ug/L	0.316	2	67	71814	1	Standard
	Ba	**137**	**14.172**	ug/L	0.275	1	96	125220	0	Standard
>	**Tb**	**159**		ug/L			1639230	1694689	1	Standard
	Pb	**208**	**1.053**	ug/L	0.027	2	224	51969	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-12
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 23:14:26
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	30847	1	Standard
	Cl	37		ug/L			5305004	5485152	2	Standard
>	Sc	45		ug/L			1533668	1575652	3	Standard
	Al	27	5623.383	ug/L	134.560	2	5560	176762338	0	Standard
	V	51	25.025	ug/L	1.079	4	7515	775317	2	Standard
	V-1	51	24.869	ug/L	1.056	4	372	769994	2	Standard
	Cr	52	6.355	ug/L	0.198	3	22337	190200	1	Standard
	Cr	53	6.384	ug/L	0.168	2	239	19790	0	Standard
	Mn	55	62.419	ug/L	1.407	2	884	2296062	1	Standard
>	Ge	72		ug/L			65365	65329	1	KED
	Co	59	2.927	ug/L	0.042	1	8	11877	1	KED
	Ni	60	5.861	ug/L	0.201	3	10	6900	3	KED
	Ni	62	6.176	ug/L	0.385	6	1	1184	5	KED
	Cu	63	8.067	ug/L	0.140	1	68	27316	0	KED
	Cu	65	8.054	ug/L	0.059	0	33	13497	1	KED
	Zn	66	14.339	ug/L	0.219	1	49	6113	0	KED
	Zn	67	14.311	ug/L	0.416	2	10	1019	3	KED
	As	75	0.895	ug/L	0.050	5	12	205	5	KED
	Se	78	0.898	ug/L	0.087	9	10	31	7	KED
	Y	89		ug/L			785403	988884	1	Standard
	Kr	83		ug/L			58	82	7	Standard
>	In-1	115		ug/L			18742	19435	1	KED
	Mo	98	0.094	ug/L	0.020	20	4	99	21	KED
	Cd	111	0.025	ug/L	0.009	36	1	7	30	KED
	Cd	114	0.028	ug/L	0.011	38	3	22	31	KED
>	In	115		ug/L			1254184	1315645	2	Standard
	Ag	107	0.018	ug/L	0.002	13	169	504	6	Standard
	Sb	121	-0.009	ug/L	0.001	13	381	260	6	Standard
	Sb	123	-0.010	ug/L	0.002	24	302	203	16	Standard
	Ba	135	15.431	ug/L	0.436	2	67	78209	0	Standard
	Ba	137	15.306	ug/L	0.265	1	96	135108	1	Standard
>	Tb	159		ug/L			1639230	1709818	2	Standard
	Pb	208	0.955	ug/L	0.018	1	224	47549	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-18
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 23:20:49
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			23799	31254	0	Standard
	Cl	37		ug/L			5305004	5443738	1	Standard
>	Sc	45		ug/L			1533668	1563016	0	Standard
	Al	27	6575.137	ug/L	93.568	1	5560	205112646	0	Standard
	V	51	26.241	ug/L	0.315	1	7515	806669	0	Standard
	V-1	51	26.063	ug/L	0.287	1	372	801053	0	Standard
	Cr	52	7.006	ug/L	0.095	1	22337	205764	0	Standard
	Cr	53	6.981	ug/L	0.062	0	239	21455	1	Standard
	Mn	55	70.074	ug/L	0.718	1	884	2557992	1	Standard
>	Ge	72		ug/L			65365	65331	3	KED
	Co	59	2.867	ug/L	0.069	2	8	11627	1	KED
	Ni	60	5.027	ug/L	0.105	2	10	5918	1	KED
	Ni	62	5.328	ug/L	0.253	4	1	1021	1	KED
	Cu	63	9.886	ug/L	0.322	3	68	33446	0	KED
	Cu	65	9.692	ug/L	0.352	3	33	16228	2	KED
	Zn	66	16.238	ug/L	0.545	3	49	6912	0	KED
	Zn	67	16.058	ug/L	0.501	3	10	1141	2	KED
	As	75	1.545	ug/L	0.152	9	12	344	6	KED
	Se	78	0.726	ug/L	0.205	28	10	27	19	KED
	Y	89		ug/L			785403	984147	1	Standard
	Kr	83		ug/L			58	71	22	Standard
>	In-1	115		ug/L			18742	19270	2	KED
	Mo	98	0.119	ug/L	0.011	8	4	123	6	KED
	Cd	111	0.020	ug/L	0.007	33	1	6	24	KED
	Cd	114	0.013	ug/L	0.004	34	3	11	23	KED
>	In	115		ug/L			1254184	1314186	2	Standard
	Ag	107	0.022	ug/L	0.002	11	169	566	5	Standard
	Sb	121	-0.015	ug/L	0.002	10	381	172	16	Standard
	Sb	123	-0.016	ug/L	0.002	11	302	130	17	Standard
	Ba	135	11.741	ug/L	0.497	4	67	59442	1	Standard
	Ba	137	11.757	ug/L	0.151	1	96	103697	1	Standard
>	Tb	159		ug/L			1639230	1696464	1	Standard
	Pb	208	1.208	ug/L	0.036	3	224	59613	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL8
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:29:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	22905	0	Standard
	Cl	**37**		ug/L			5305004	5308804	1	Standard
>	**Sc**	**45**		ug/L			1533668	1453137	1	Standard
	Al	**27**	**-0.048**	ug/L	0.001	1	5560	3870	1	Standard
	V	**51**	**0.003**	ug/L	0.001	19	7515	7213	1	Standard
	V-1	**51**	**-0.003**	ug/L	0.000	12	372	262	2	Standard
	Cr	**52**	**0.007**	ug/L	0.004	60	22337	21324	1	Standard
	Cr	**53**	**-0.014**	ug/L	0.002	17	239	186	3	Standard
	Mn	**55**	**-0.005**	ug/L	0.001	15	884	658	3	Standard
>	**Ge**	**72**		ug/L			65365	63022	1	KED
	Co	**59**	**-0.001**	ug/L	0.001	80	8	4	65	KED
	Ni	**60**	**-0.003**	ug/L	0.002	81	10	6	41	KED
	Ni	**62**	**0.031**	ug/L	0.027	86	1	7	66	KED
	Cu	**63**	**-0.004**	ug/L	0.002	46	68	53	12	KED
	Cu	**65**	**-0.005**	ug/L	0.004	73	33	24	24	KED
	Zn	**66**	**-0.041**	ug/L	0.016	39	49	31	19	KED
	Zn	**67**	**-0.088**	ug/L	0.017	19	10	4	24	KED
	As	**75**	**-0.012**	ug/L	0.011	86	12	9	25	KED
	Se	**78**	**0.054**	ug/L	0.125	230	10	11	23	KED
	Y	**89**		ug/L			785403	793372	2	Standard
	Kr	**83**		ug/L			58	50	33	Standard
>	**In-1**	**115**		ug/L			18742	18950	1	KED
	Mo	**98**	**-0.002**	ug/L	0.002	117	4	2	103	KED
	Cd	**111**	**0.005**	ug/L	0.008	175	1	2	86	KED
	Cd	**114**	**0.001**	ug/L	0.002	172	3	4	25	KED
>	**In**	**115**		ug/L			1254184	1289327	1	Standard
	Ag	**107**	**-0.005**	ug/L	0.000	1	169	83	1	Standard
	Sb	**121**	**-0.024**	ug/L	0.000	0	381	38	5	Standard
	Sb	**123**	**-0.025**	ug/L	0.000	1	302	31	13	Standard
	Ba	**135**	**-0.007**	ug/L	0.001	15	67	34	13	Standard
	Ba	**137**	**-0.003**	ug/L	0.003	95	96	74	33	Standard
>	**Tb**	**159**		ug/L			1639230	1635435	1	Standard
	Pb	**208**	**-0.000**	ug/L	0.000	364	224	219	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:35:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	23721	1	Standard
	Cl	**37**		ug/L			5305004	5644727	1	Standard
>	**Sc**	**45**		ug/L			1533668	1457596	0	Standard
	Al	**27**	**5250.787**	ug/L	106.658	2	5560	152751528	1	Standard
	V	**51**	**49.870**	ug/L	0.349	0	7515	1423279	0	Standard
	V-1	**51**	**50.091**	ug/L	0.316	0	372	1435429	0	Standard
	Cr	**52**	**50.492**	ug/L	0.487	0	22337	1251137	0	Standard
	Cr	**53**	**51.188**	ug/L	0.807	1	239	145264	1	Standard
	Mn	**55**	**50.045**	ug/L	0.572	1	884	1703788	0	Standard
>	**Ge**	**72**		ug/L			65365	61962	1	KED
	Co	**59**	**54.276**	ug/L	0.987	1	8	208727	1	KED
	Ni	**60**	**53.549**	ug/L	1.758	3	10	59697	2	KED
	Ni	**62**	**55.269**	ug/L	1.470	2	1	10042	2	KED
	Cu	**63**	**53.732**	ug/L	0.468	0	68	172212	0	KED
	Cu	**65**	**54.119**	ug/L	1.156	2	33	85821	0	KED
	Zn	**66**	**53.810**	ug/L	0.801	1	49	21629	1	KED
	Zn	**67**	**56.563**	ug/L	1.804	3	10	3790	4	KED
	As	**75**	**52.689**	ug/L	1.111	2	12	10783	1	KED
	Se	**78**	**51.354**	ug/L	1.793	3	10	1143	2	KED
	Y	**89**		ug/L			785403	786156	0	Standard
	Kr	**83**		ug/L			58	50	40	Standard
>	**In-1**	**115**		ug/L			18742	18823	0	KED
	Mo	**98**	**50.537**	ug/L	0.372	0	4	49362	0	KED
	Cd	**111**	**51.911**	ug/L	0.269	0	1	13350	0	KED
	Cd	**114**	**50.709**	ug/L	1.117	2	3	32156	1	KED
>	**In**	**115**		ug/L			1254184	1264483	0	Standard
	Ag	**107**	**51.382**	ug/L	0.235	0	169	878820	0	Standard
	Sb	**121**	**51.217**	ug/L	0.410	0	381	748009	0	Standard
	Sb	**123**	**51.489**	ug/L	0.302	0	302	569313	0	Standard
	Ba	**135**	**51.580**	ug/L	0.266	0	67	251218	0	Standard
	Ba	**137**	**51.178**	ug/L	0.398	0	96	434091	0	Standard
>	**Tb**	**159**		ug/L			1639230	1644255	1	Standard
	Pb	**208**	**51.319**	ug/L	0.407	0	224	2446741	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:43:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			23799	25231	1	Standard
	Cl	**37**		ug/L			5305004	5489363	2	Standard
>	**Sc**	**45**		ug/L			1533668	1430698	1	Standard
	Al	**27**	**-0.002**	ug/L	0.000	22	5560	5131	1	Standard
	V	**51**	**0.017**	ug/L	0.005	29	7515	7491	1	Standard
	V-1	**51**	**-0.003**	ug/L	0.001	40	372	263	12	Standard
	Cr	**52**	**0.058**	ug/L	0.013	22	22337	22220	1	Standard
	Cr	**53**	**-0.009**	ug/L	0.003	31	239	199	5	Standard
	Mn	**55**	**-0.001**	ug/L	0.000	19	884	779	0	Standard
>	**Ge**	**72**		ug/L			65365	62768	2	KED
	Co	**59**	**0.000**	ug/L	0.000	286	8	8	13	KED
	Ni	**60**	**0.002**	ug/L	0.001	59	10	12	8	KED
	Ni	**62**	**0.000**	ug/L	0.000	68	1	1		KED
	Cu	**63**	**0.002**	ug/L	0.002	146	68	71	12	KED
	Cu	**65**	**-0.001**	ug/L	0.004	515	33	31	21	KED
	Zn	**66**	**0.058**	ug/L	0.033	57	49	71	17	KED
	Zn	**67**	**-0.032**	ug/L	0.079	244	10	8	66	KED
	As	**75**	**-0.016**	ug/L	0.009	57	12	8	19	KED
	Se	**78**	**-0.036**	ug/L	0.034	95	10	9	5	KED
	Y	**89**		ug/L			785403	778992	2	Standard
	Kr	**83**		ug/L			58	52	35	Standard
>	**In-1**	**115**		ug/L			18742	18680	1	KED
	Mo	**98**	**0.000**	ug/L	0.005	951	4	4	97	KED
	Cd	**111**	**0.009**	ug/L	0.006	64	1	3	41	KED
	Cd	**114**	**0.001**	ug/L	0.005	438	3	4	68	KED
>	**In**	**115**		ug/L			1254184	1276133	1	Standard
	Ag	**107**	**-0.004**	ug/L	0.001	13	169	102	9	Standard
	Sb	**121**	**0.012**	ug/L	0.002	15	381	570	4	Standard
	Sb	**123**	**0.013**	ug/L	0.001	7	302	455	1	Standard
	Ba	**135**	**-0.003**	ug/L	0.002	57	67	54	16	Standard
	Ba	**137**	**-0.000**	ug/L	0.002	355	96	94	15	Standard
>	**Tb**	**159**		ug/L			1639230	1614501	1	Standard
	Pb	**208**	**0.002**	ug/L	0.001	24	224	329	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:48:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				25425	1	Standard
	Cl	**37**		ug/L				5469584	1	Standard
>	**Sc**	**45**		ug/L				1431133	1	Standard
	Al	**27**		ug/L				4783	2	Standard
	V	**51**		ug/L				7571	0	Standard
	V-1	**51**		ug/L				252	3	Standard
	Cr	**52**		ug/L				22548	0	Standard
	Cr	**53**		ug/L				207	1	Standard
	Mn	**55**		ug/L				777	4	Standard
>	**Ge**	**72**		ug/L				62323	0	KED
	Co	**59**		ug/L				8	53	KED
	Ni	**60**		ug/L				10	75	KED
	Ni	**62**		ug/L				3	91	KED
	Cu	**63**		ug/L				67	11	KED
	Cu	**65**		ug/L				43	16	KED
	Zn	**66**		ug/L				60	25	KED
	Zn	**67**		ug/L				11	44	KED
	As	**75**		ug/L				9	15	KED
	Se	**78**		ug/L				10	32	KED
	Y	**89**		ug/L				782831	2	Standard
	Kr	**83**		ug/L				50	5	Standard
>	**In-1**	**115**		ug/L				18394	5	KED
	Mo	**98**		ug/L				2	40	KED
	Cd	**111**		ug/L				2	33	KED
	Cd	**114**		ug/L				5	33	KED
>	**In**	**115**		ug/L				1290822	2	Standard
	Ag	**107**		ug/L				99	2	Standard
	Sb	**121**		ug/L				202	4	Standard
	Sb	**123**		ug/L				164	3	Standard
	Ba	**135**		ug/L				59	24	Standard
	Ba	**137**		ug/L				107	12	Standard
>	**Tb**	**159**		ug/L				1611407	2	Standard
	Pb	**208**		ug/L				356	14	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:53:23
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	23934	2	Standard
	Cl	**37**		ug/L			5469584	5646854	2	Standard
>	**Sc**	**45**		ug/L			1431133	1448818	1	Standard
	Al	**27**	**5364.494**	ug/L	27.122	0	4783	155132542	1	Standard
	V	**51**	**50.330**	ug/L	0.260	0	7571	1428272	1	Standard
	V-1	**51**	**50.558**	ug/L	0.360	0	252	1440031	1	Standard
	Cr	**52**	**51.043**	ug/L	0.799	1	22548	1258585	0	Standard
	Cr	**53**	**51.760**	ug/L	0.382	0	207	145980	0	Standard
	Mn	**55**	**51.497**	ug/L	0.808	1	777	1742512	1	Standard
>	**Ge**	**72**		ug/L			62323	62589	3	KED
	Co	**59**	**53.110**	ug/L	2.358	4	8	206130	1	KED
	Ni	**60**	**53.338**	ug/L	2.337	4	10	60018	0	KED
	Ni	**62**	**54.382**	ug/L	2.600	4	3	9972	1	KED
	Cu	**63**	**54.144**	ug/L	2.200	4	67	175159	1	KED
	Cu	**65**	**53.614**	ug/L	1.807	3	43	85845	0	KED
	Zn	**66**	**53.293**	ug/L	1.660	3	60	21639	1	KED
	Zn	**67**	**54.970**	ug/L	1.585	2	11	3719	2	KED
	As	**75**	**52.334**	ug/L	2.337	4	9	10807	0	KED
	Se	**78**	**51.723**	ug/L	2.337	4	10	1163	1	KED
	Y	**89**		ug/L			782831	801453	2	Standard
	Kr	**83**		ug/L			50	48	16	Standard
>	**In-1**	**115**		ug/L			18394	18735	1	KED
	Mo	**98**	**50.384**	ug/L	1.329	2	2	48966	0	KED
	Cd	**111**	**50.646**	ug/L	1.450	2	2	12961	1	KED
	Cd	**114**	**51.556**	ug/L	0.899	1	5	32540	1	KED
>	**In**	**115**		ug/L			1290822	1269473	0	Standard
	Ag	**107**	**51.230**	ug/L	1.463	2	99	879643	3	Standard
	Sb	**121**	**51.217**	ug/L	0.093	0	202	750781	0	Standard
	Sb	**123**	**51.166**	ug/L	0.713	1	164	567820	1	Standard
	Ba	**135**	**51.762**	ug/L	0.564	1	59	253082	0	Standard
	Ba	**137**	**51.528**	ug/L	0.879	1	107	438769	1	Standard
>	**Tb**	**159**		ug/L			1611407	1663085	2	Standard
	Pb	**208**	**51.354**	ug/L	1.001	1	356	2475963	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:01:08
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	24586	2	Standard
	Cl	**37**		ug/L			5469584	5508291	0	Standard
>	**Sc**	**45**		ug/L			1431133	1422509	2	Standard
	Al	**27**	**0.009**	ug/L	0.004	48	4783	5005	4	Standard
	V	**51**	**0.002**	ug/L	0.007	387	7571	7576	2	Standard
	V-1	**51**	**0.001**	ug/L	0.001	72	252	272	8	Standard
	Cr	**52**	**0.000**	ug/L	0.032	3563843	22548	22401	2	Standard
	Cr	**53**	**-0.004**	ug/L	0.006	167	207	195	5	Standard
	Mn	**55**	**0.000**	ug/L	0.001	434	777	777	1	Standard
>	**Ge**	**72**		ug/L			62323	63292	1	KED
	Co	**59**	**-0.001**	ug/L	0.001	107	8	4	107	KED
	Ni	**60**	**-0.001**	ug/L	0.003	522	10	9	40	KED
	Ni	**62**	**0.007**	ug/L	0.012	180	3	4	49	KED
	Cu	**63**	**0.002**	ug/L	0.003	172	67	75	14	KED
	Cu	**65**	**-0.006**	ug/L	0.007	111	43	34	30	KED
	Zn	**66**	**0.035**	ug/L	0.007	19	60	76	5	KED
	Zn	**67**	**-0.049**	ug/L	0.070	141	11	8	58	KED
	As	**75**	**0.002**	ug/L	0.008	509	9	10	16	KED
	Se	**78**	**0.022**	ug/L	0.096	442	10	11	19	KED
	Y	**89**		ug/L			782831	763299	1	Standard
	Kr	**83**		ug/L			50	51	11	Standard
>	**In-1**	**115**		ug/L			18394	18712	0	KED
	Mo	**98**	**0.007**	ug/L	0.008	109	2	9	82	KED
	Cd	**111**	**0.001**	ug/L	0.006	544	2	3	45	KED
	Cd	**114**	**0.001**	ug/L	0.005	412	5	6	45	KED
>	**In**	**115**		ug/L			1290822	1277841	1	Standard
	Ag	**107**	**0.001**	ug/L	0.001	158	99	111	19	Standard
	Sb	**121**	**0.028**	ug/L	0.002	8	202	606	7	Standard
	Sb	**123**	**0.030**	ug/L	0.005	18	164	493	13	Standard
	Ba	**135**	**-0.001**	ug/L	0.002	196	59	55	11	Standard
	Ba	**137**	**0.001**	ug/L	0.001	53	107	116	5	Standard
>	**Tb**	**159**		ug/L			1611407	1600835	2	Standard
	Pb	**208**	**-0.000**	ug/L	0.001	121	356	333	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0098-BLK2
Sample Dil Factor: 5
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:06:08
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	81311	1	Standard
	Cl	**37**		ug/L			5469584	5672176	2	Standard
>	**Sc**	**45**		ug/L			1431133	1635438	1	Standard
	Al	**27**	**13.464**	ug/L	0.217	1	4783	444928	1	Standard
	V	**51**	**0.034**	ug/L	0.006	16	7571	9746	0	Standard
	V-1	**51**	**0.001**	ug/L	0.000	29	252	318	3	Standard
	Cr	**52**	**0.155**	ug/L	0.019	12	22548	30006	0	Standard
	Cr	**53**	**0.044**	ug/L	0.000	1	207	375	1	Standard
	Mn	**55**	**0.114**	ug/L	0.003	2	777	5256	3	Standard
>	**Ge**	**72**		ug/L			62323	66665	1	KED
	Co	**59**	**0.002**	ug/L	0.002	111	8	16	48	KED
	Ni	**60**	**0.013**	ug/L	0.004	33	10	26	18	KED
	Ni	**62**	**-0.004**	ug/L	0.006	128	3	2	43	KED
	Cu	**63**	**0.035**	ug/L	0.000	1	67	193	1	KED
	Cu	**65**	**0.026**	ug/L	0.001	2	43	90	2	KED
	Zn	**66**	**0.208**	ug/L	0.043	20	60	154	10	KED
	Zn	**67**	**0.243**	ug/L	0.169	69	11	29	42	KED
	As	**75**	**-0.001**	ug/L	0.012	1301	9	10	25	KED
	Se	**78**	**-0.043**	ug/L	0.060	139	10	10	11	KED
	Y	**89**		ug/L			782831	876576	1	Standard
	Kr	**83**		ug/L			50	61	9	Standard
>	**In-1**	**115**		ug/L			18394	20825	0	KED
	Mo	**98**	**0.009**	ug/L	0.010	104	2	12	83	KED
	Cd	**111**	**-0.007**	ug/L	0.002	28	2	1	43	KED
	Cd	**114**	**-0.000**	ug/L	0.003	7097	5	6	36	KED
>	**In**	**115**		ug/L			1290822	1348508	0	Standard
	Ag	**107**	**0.002**	ug/L	0.001	59	99	145	17	Standard
	Sb	**121**	**0.005**	ug/L	0.000	6	202	296	2	Standard
	Sb	**123**	**0.006**	ug/L	0.002	36	164	244	10	Standard
	Ba	**135**	**0.023**	ug/L	0.003	15	59	181	8	Standard
	Ba	**137**	**0.022**	ug/L	0.002	8	107	309	4	Standard
>	**Tb**	**159**		ug/L			1611407	1748040	1	Standard
	Pb	**208**	**-0.001**	ug/L	0.001	38	356	311	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0098-BS2
Sample Dil Factor: 20
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:11:32
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	41436	1	Standard
	Cl	37		ug/L			5469584	5483210	2	Standard
>	Sc	45		ug/L			1431133	1507083	1	Standard
	Al	27	2.899	ug/L	0.015	0	4783	92240	1	Standard
	V	51	24.544	ug/L	0.015	0	7571	728597	1	Standard
	V-1	51	24.554	ug/L	0.070	0	252	727594	1	Standard
	Cr	52	25.468	ug/L	0.220	0	22548	665114	1	Standard
	Cr	53	25.475	ug/L	0.458	1	207	74837	0	Standard
	Mn	55	25.967	ug/L	0.478	1	777	914280	0	Standard
>	Ge	72		ug/L			62323	64384	1	KED
	Co	59	26.302	ug/L	0.506	1	8	105095	0	KED
	Ni	60	26.184	ug/L	0.711	2	10	30336	1	KED
	Ni	62	26.304	ug/L	0.545	2	3	4969	3	KED
	Cu	63	26.743	ug/L	0.604	2	67	89096	2	KED
	Cu	65	26.664	ug/L	0.197	0	43	43972	1	KED
	Zn	66	78.015	ug/L	1.457	1	60	32576	1	KED
	Zn	67	73.189	ug/L	2.214	3	11	5091	1	KED
	As	75	24.360	ug/L	0.523	2	9	5184	0	KED
	Se	78	75.547	ug/L	0.637	0	10	1745	2	KED
	Y	89		ug/L			782831	808627	0	Standard
	Kr	83		ug/L			50	50	26	Standard
>	In-1	115		ug/L			18394	19197	0	KED
	Mo	98	0.003	ug/L	0.005	164	2	5	95	KED
	Cd	111	24.634	ug/L	0.201	0	2	6463	0	KED
	Cd	114	24.673	ug/L	0.172	0	5	15962	0	KED
>	In	115		ug/L			1290822	1301894	0	Standard
	Ag	107	26.210	ug/L	0.209	0	99	461573	1	Standard
	Sb	121	-0.003	ug/L	0.000	2	202	152	1	Standard
	Sb	123	-0.005	ug/L	0.002	40	164	105	23	Standard
	Ba	135	25.330	ug/L	0.525	2	59	127054	2	Standard
	Ba	137	24.942	ug/L	0.240	0	107	217876	1	Standard
>	Tb	159		ug/L			1611407	1651369	1	Standard
	Pb	208	26.428	ug/L	0.508	1	356	1265462	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0035-01
Sample Dil Factor: 5
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:16:56
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	1105852	1	Standard
	Cl	**37**		ug/L			5469584	5676898	1	Standard
>	**Sc**	**45**		ug/L			1431133	1719607	0	Standard
	Al	**27**	**35.420**	ug/L	0.694	1	4783	1221290	1	Standard
	V	**51**	**0.828**	ug/L	0.003	0	7571	36836	0	Standard
	V-1	**51**	**0.095**	ug/L	0.002	2	252	3529	2	Standard
	Cr	**52**	**2.814**	ug/L	0.020	0	22548	107976	0	Standard
	Cr	**53**	**0.389**	ug/L	0.015	3	207	1549	3	Standard
	Mn	**55**	**12.551**	ug/L	0.151	1	777	504774	0	Standard
>	**Ge**	**72**		ug/L			62323	64502	2	KED
	Co	**59**	**9.667**	ug/L	0.146	1	8	38707	2	KED
	Ni	**60**	**0.249**	ug/L	0.016	6	10	299	4	KED
	Ni	**62**	**0.281**	ug/L	0.017	6	3	56	8	KED
	Cu	**63**	**15.317**	ug/L	0.639	4	67	51119	1	KED
	Cu	**65**	**15.351**	ug/L	0.635	4	43	25362	1	KED
	Zn	**66**	**186.536**	ug/L	7.024	3	60	77900	1	KED
	Zn	**67**	**166.024**	ug/L	7.686	4	11	11550	1	KED
	As	**75**	**21.996**	ug/L	0.801	3	9	4688	1	KED
	Se	**78**	**3.245**	ug/L	0.440	13	10	85	8	KED
	Y	**89**		ug/L			782831	889829	1	Standard
	Kr	**83**		ug/L			50	64	23	Standard
>	**In-1**	**115**		ug/L			18394	19428	0	KED
	Mo	**98**	**0.801**	ug/L	0.048	5	2	809	5	KED
	Cd	**111**	**2.314**	ug/L	0.090	3	2	617	3	KED
	Cd	**114**	**2.277**	ug/L	0.062	2	5	1496	1	KED
>	**In**	**115**		ug/L			1290822	1354999	0	Standard
	Ag	**107**	**0.025**	ug/L	0.001	2	99	554	1	Standard
	Sb	**121**	**0.012**	ug/L	0.002	21	202	393	9	Standard
	Sb	**123**	**0.009**	ug/L	0.002	17	164	285	6	Standard
	Ba	**135**	**3.295**	ug/L	0.031	0	59	17255	1	Standard
	Ba	**137**	**3.311**	ug/L	0.057	1	107	30195	1	Standard
>	**Tb**	**159**		ug/L			1611407	1780405	1	Standard
	Pb	**208**	**0.729**	ug/L	0.015	2	356	38003	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0035-02
Sample Dil Factor: 5
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:22:20
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	1073947	1	Standard
	Cl	37		ug/L			5469584	5591091	2	Standard
>	Sc	45		ug/L			1431133	1738093	3	Standard
	Al	27	1247.977	ug/L	50.555	4	4783	43259853	0	Standard
	V	51	3.827	ug/L	0.073	1	7571	138724	1	Standard
	V-1	51	3.129	ug/L	0.063	2	252	107155	1	Standard
	Cr	52	3.652	ug/L	0.076	2	22548	133403	1	Standard
	Cr	53	1.400	ug/L	0.063	4	207	4979	2	Standard
	Mn	55	27.665	ug/L	0.442	1	777	1123155	1	Standard
>	Ge	72		ug/L			62323	66092	1	KED
	Co	59	11.094	ug/L	0.155	1	8	45514	0	KED
	Ni	60	1.557	ug/L	0.041	2	10	1861	2	KED
	Ni	62	1.745	ug/L	0.162	9	3	341	10	KED
	Cu	63	17.581	ug/L	0.104	0	67	60156	1	KED
	Cu	65	17.532	ug/L	0.111	0	43	29694	1	KED
	Zn	66	173.485	ug/L	0.631	0	60	74295	2	KED
	Zn	67	158.204	ug/L	1.698	1	11	11287	1	KED
	As	75	31.682	ug/L	0.563	1	9	6918	0	KED
	Se	78	4.585	ug/L	0.139	3	10	119	3	KED
	Y	89		ug/L			782831	927024	1	Standard
	Kr	83		ug/L			50	60	9	Standard
>	In-1	115		ug/L			18394	19438	1	KED
	Mo	98	1.091	ug/L	0.042	3	2	1102	3	KED
	Cd	111	3.246	ug/L	0.089	2	2	864	2	KED
	Cd	114	3.198	ug/L	0.038	1	5	2099	0	KED
>	In	115		ug/L			1290822	1311933	1	Standard
	Ag	107	0.369	ug/L	0.006	1	99	6647	0	Standard
	Sb	121	0.092	ug/L	0.006	6	202	1596	4	Standard
	Sb	123	0.096	ug/L	0.005	4	164	1266	3	Standard
	Ba	135	16.008	ug/L	0.166	1	59	80922	1	Standard
	Ba	137	15.911	ug/L	0.445	2	107	140057	1	Standard
>	Tb	159		ug/L			1611407	1775852	2	Standard
	Pb	208	4.439	ug/L	0.167	3	356	228766	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0035-03
Sample Dil Factor: 5
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:28:44
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	1162131	0	Standard
	Cl	**37**		ug/L			5469584	5495956	1	Standard
>	**Sc**	**45**		ug/L			1431133	1672829	2	Standard
	Al	**27**	**459.682**	ug/L	3.938	0	4783	15351101	1	Standard
	V	**51**	**1.026**	ug/L	0.032	3	7571	42276	1	Standard
	V-1	**51**	**0.255**	ug/L	0.002	0	252	8683	2	Standard
	Cr	**52**	**3.205**	ug/L	0.112	3	22548	115900	0	Standard
	Cr	**53**	**0.650**	ug/L	0.026	3	207	2353	2	Standard
	Mn	**55**	**10.233**	ug/L	0.202	1	777	400472	1	Standard
>	**Ge**	**72**		ug/L			62323	64949	0	KED
	Co	**59**	**10.325**	ug/L	0.188	1	8	41630	1	KED
	Ni	**60**	**0.356**	ug/L	0.031	8	10	426	8	KED
	Ni	**62**	**0.446**	ug/L	0.081	18	3	88	17	KED
	Cu	**63**	**15.390**	ug/L	0.194	1	67	51757	0	KED
	Cu	**65**	**15.427**	ug/L	0.099	0	43	25685	1	KED
	Zn	**66**	**189.299**	ug/L	2.998	1	60	79658	1	KED
	Zn	**67**	**172.331**	ug/L	2.469	1	11	12082	1	KED
	As	**75**	**32.608**	ug/L	0.630	1	9	6998	1	KED
	Se	**78**	**5.054**	ug/L	0.244	4	10	128	4	KED
	Y	**89**		ug/L			782831	852983	3	Standard
	Kr	**83**		ug/L			50	62	11	Standard
>	**In-1**	**115**		ug/L			18394	19126	0	KED
	Mo	**98**	**0.907**	ug/L	0.026	2	2	902	2	KED
	Cd	**111**	**2.810**	ug/L	0.113	4	2	737	3	KED
	Cd	**114**	**2.794**	ug/L	0.046	1	5	1806	2	KED
>	**In**	**115**		ug/L			1290822	1293982	1	Standard
	Ag	**107**	**0.039**	ug/L	0.003	6	99	776	4	Standard
	Sb	**121**	**0.005**	ug/L	0.001	19	202	279	5	Standard
	Sb	**123**	**0.003**	ug/L	0.001	24	164	196	5	Standard
	Ba	**135**	**4.515**	ug/L	0.069	1	59	22554	0	Standard
	Ba	**137**	**4.451**	ug/L	0.093	2	107	38722	0	Standard
>	**Tb**	**159**		ug/L			1611407	1748823	1	Standard
	Pb	**208**	**0.582**	ug/L	0.015	2	356	29877	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-09RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:38:08
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	48878	0	Standard
	Cl	**37**		ug/L			5469584	5074240	0	Standard
>	**Sc**	**45**		ug/L			1431133	1495708	0	Standard
	Al	**27**	**20.036**	ug/L	0.417	2	4783	603172	2	Standard
	V	**51**	**0.061**	ug/L	0.004	5	7571	9696	0	Standard
	V-1	**51**	**0.085**	ug/L	0.002	2	252	2773	3	Standard
	Cr	**52**	**0.108**	ug/L	0.017	16	22548	26270	0	Standard
	Cr	**53**	**0.185**	ug/L	0.001	0	207	754	1	Standard
	Mn	**55**	**96.944**	ug/L	1.072	1	777	3386003	1	Standard
>	**Ge**	**72**		ug/L			62323	53801	1	KED
	Co	**59**	**0.594**	ug/L	0.016	2	8	1991	3	KED
	Ni	**60**	**3.392**	ug/L	0.160	4	10	3292	4	KED
	Ni	**62**	**3.395**	ug/L	0.147	4	3	538	5	KED
	Cu	**63**	**1.062**	ug/L	0.022	2	67	3014	3	KED
	Cu	**65**	**1.042**	ug/L	0.003	0	43	1471	0	KED
	Zn	**66**	**24.732**	ug/L	0.317	1	60	8666	0	KED
	Zn	**67**	**24.916**	ug/L	1.125	4	11	1455	4	KED
	As	**75**	**0.706**	ug/L	0.046	6	9	133	6	KED
	Se	**78**	**0.036**	ug/L	0.154	425	10	10	28	KED
	Y	**89**		ug/L			782831	723722	1	Standard
	Kr	**83**		ug/L			50	67	14	Standard
>	**In-1**	**115**		ug/L			18394	15643	4	KED
	Mo	**98**	**37.330**	ug/L	2.080	5	2	30257	1	KED
	Cd	**111**	**0.006**	ug/L	0.004	68	2	3	25	KED
	Cd	**114**	**0.012**	ug/L	0.004	28	5	11	15	KED
>	**In**	**115**		ug/L			1290822	1089470	0	Standard
	Ag	**107**	**0.002**	ug/L	0.000	21	99	117	5	Standard
	Sb	**121**	**0.332**	ug/L	0.005	1	202	4347	1	Standard
	Sb	**123**	**0.330**	ug/L	0.011	3	164	3278	2	Standard
	Ba	**135**	**28.644**	ug/L	0.376	1	59	120213	0	Standard
	Ba	**137**	**28.325**	ug/L	0.172	0	107	207042	0	Standard
>	**Tb**	**159**		ug/L			1611407	1504438	0	Standard
	Pb	**208**	**0.145**	ug/L	0.001	0	356	6638	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0253-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:43:31
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	47217	0	Standard
	Cl	**37**		ug/L			5469584	4990986	1	Standard
>	**Sc**	**45**		ug/L			1431133	1461103	1	Standard
	Al	**27**	**20.147**	ug/L	0.004	0	4783	592419	1	Standard
	V	**51**	**0.073**	ug/L	0.035	48	7571	9805	11	Standard
	V-1	**51**	**0.081**	ug/L	0.003	4	252	2595	2	Standard
	Cr	**52**	**0.120**	ug/L	0.125	104	22548	25960	12	Standard
	Cr	**53**	**0.146**	ug/L	0.009	6	207	627	4	Standard
	Mn	**55**	**96.863**	ug/L	0.164	0	777	3304951	1	Standard
>	**Ge**	**72**		ug/L			62323	53723	0	KED
	Co	**59**	**0.578**	ug/L	0.011	1	8	1936	2	KED
	Ni	**60**	**3.322**	ug/L	0.022	0	10	3220	0	KED
	Ni	**62**	**3.123**	ug/L	0.211	6	3	494	6	KED
	Cu	**63**	**1.063**	ug/L	0.031	2	67	3010	2	KED
	Cu	**65**	**1.037**	ug/L	0.020	1	43	1462	1	KED
	Zn	**66**	**24.243**	ug/L	0.330	1	60	8484	1	KED
	Zn	**67**	**24.558**	ug/L	1.087	4	11	1432	3	KED
	As	**75**	**0.712**	ug/L	0.009	1	9	134	1	KED
	Se	**78**	**0.245**	ug/L	0.216	87	10	14	28	KED
	Y	**89**		ug/L			782831	713497	0	Standard
	Kr	**83**		ug/L			50	62	5	Standard
>	**In-1**	**115**		ug/L			18394	15351	2	KED
	Mo	**98**	**36.843**	ug/L	1.841	4	2	29326	2	KED
	Cd	**111**	**0.011**	ug/L	0.012	105	2	4	52	KED
	Cd	**114**	**0.013**	ug/L	0.013	103	5	11	61	KED
>	**In**	**115**		ug/L			1290822	1063402	0	Standard
	Ag	**107**	**0.005**	ug/L	0.000	4	99	147	1	Standard
	Sb	**121**	**0.322**	ug/L	0.007	2	202	4117	2	Standard
	Sb	**123**	**0.332**	ug/L	0.011	3	164	3219	2	Standard
	Ba	**135**	**28.175**	ug/L	0.136	0	59	115418	0	Standard
	Ba	**137**	**28.301**	ug/L	0.432	1	107	201905	0	Standard
>	**Tb**	**159**		ug/L			1611407	1517447	0	Standard
	Pb	**208**	**0.141**	ug/L	0.001	0	356	6548	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0253-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:48:55
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	46147	2	Standard
	Cl	37		ug/L			5469584	4866218	1	Standard
>	Sc	45		ug/L			1431133	1441362	1	Standard
	Al	27	5208.554	ug/L	29.081	0	4783	149838896	1	Standard
	V	51	24.311	ug/L	0.157	0	7571	690297	1	Standard
	V-1	51	24.404	ug/L	0.062	0	252	691631	1	Standard
	Cr	52	23.751	ug/L	0.057	0	22548	594824	1	Standard
	Cr	53	24.068	ug/L	0.314	1	207	67641	1	Standard
	Mn	55	122.253	ug/L	0.709	0	777	4114462	1	Standard
>	Ge	72		ug/L			62323	52761	2	KED
	Co	59	28.905	ug/L	0.505	1	8	94647	1	KED
	Ni	60	30.277	ug/L	0.723	2	10	28743	0	KED
	Ni	62	29.990	ug/L	1.341	4	3	4639	2	KED
	Cu	63	27.428	ug/L	0.518	1	67	74880	2	KED
	Cu	65	27.271	ug/L	0.546	2	43	36850	2	KED
	Zn	66	100.593	ug/L	3.958	3	60	34393	2	KED
	Zn	67	95.873	ug/L	1.242	1	11	5465	3	KED
	As	75	26.606	ug/L	0.536	2	9	4639	1	KED
	Se	78	78.095	ug/L	0.684	0	10	1477	1	KED
	Y	89		ug/L			782831	730180	0	Standard
	Kr	83		ug/L			50	73	10	Standard
>	In-1	115		ug/L			18394	15117	0	KED
	Mo	98	65.382	ug/L	0.591	0	2	51287	0	KED
	Cd	111	24.876	ug/L	0.049	0	2	5139	0	KED
	Cd	114	24.497	ug/L	0.423	1	5	12479	1	KED
>	In	115		ug/L			1290822	1042753	0	Standard
	Ag	107	25.248	ug/L	0.119	0	99	356135	0	Standard
	Sb	121	26.827	ug/L	0.013	0	202	323102	0	Standard
	Sb	123	26.907	ug/L	0.033	0	164	245347	0	Standard
	Ba	135	56.333	ug/L	0.536	0	59	226246	1	Standard
	Ba	137	55.983	ug/L	0.221	0	107	391580	0	Standard
>	Tb	159		ug/L			1611407	1502960	1	Standard
	Pb	208	26.761	ug/L	0.490	1	356	1166192	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0253-MSD1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 00:55:19
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	44967	2	Standard
	Cl	**37**		ug/L			5469584	4818579	0	Standard
>	**Sc**	**45**		ug/L			1431133	1421001	0	Standard
	Al	**27**	**5247.525**	ug/L	122.271	2	4783	148811213	1	Standard
	V	**51**	**23.794**	ug/L	0.341	1	7571	666159	0	Standard
	V-1	**51**	**23.931**	ug/L	0.306	1	252	668610	0	Standard
	Cr	**52**	**23.139**	ug/L	0.064	0	22548	571880	0	Standard
	Cr	**53**	**23.602**	ug/L	0.219	0	207	65406	1	Standard
	Mn	**55**	**122.333**	ug/L	0.554	0	777	4059121	0	Standard
>	**Ge**	**72**		ug/L			62323	51503	0	KED
	Co	**59**	**29.471**	ug/L	0.163	0	8	94220	1	KED
	Ni	**60**	**31.157**	ug/L	0.406	1	10	28881	0	KED
	Ni	**62**	**30.396**	ug/L	0.589	1	3	4593	2	KED
	Cu	**63**	**27.946**	ug/L	0.263	0	67	74478	0	KED
	Cu	**65**	**27.500**	ug/L	0.384	1	43	36279	1	KED
	Zn	**66**	**102.454**	ug/L	1.202	1	60	34208	0	KED
	Zn	**67**	**96.179**	ug/L	0.279	0	11	5351	1	KED
	As	**75**	**26.365**	ug/L	0.155	0	9	4489	1	KED
	Se	**78**	**76.508**	ug/L	1.518	1	10	1413	2	KED
	Y	**89**		ug/L			782831	705328	1	Standard
	Kr	**83**		ug/L			50	73	9	Standard
>	**In-1**	**115**		ug/L			18394	14895	1	KED
	Mo	**98**	**66.095**	ug/L	0.715	1	2	51081	0	KED
	Cd	**111**	**24.662**	ug/L	0.391	1	2	5020	0	KED
	Cd	**114**	**24.329**	ug/L	0.123	0	5	12211	0	KED
>	**In**	**115**		ug/L			1290822	1041212	0	Standard
	Ag	**107**	**24.701**	ug/L	0.311	1	99	347910	1	Standard
	Sb	**121**	**26.535**	ug/L	0.458	1	202	319103	1	Standard
	Sb	**123**	**26.559**	ug/L	0.211	0	164	241814	0	Standard
	Ba	**135**	**55.664**	ug/L	0.823	1	59	223220	1	Standard
	Ba	**137**	**55.797**	ug/L	0.769	1	107	389701	1	Standard
>	**Tb**	**159**		ug/L			1611407	1500094	0	Standard
	Pb	**208**	**26.414**	ug/L	0.122	0	356	1149137	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL9
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:03:43
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	24783	1	Standard
	Cl	**37**		ug/L			5469584	5370238	0	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1462743	1	Standard
|	**Al**	**27**	**-0.033**	ug/L	0.004	12	4783	3914	2	Standard
|	**V**	**51**	**-0.008**	ug/L	0.001	16	7571	7522	1	Standard
|	**V-1**	**51**	**-0.001**	ug/L	0.001	54	252	231	5	Standard
|	**Cr**	**52**	**-0.032**	ug/L	0.004	12	22548	22271	1	Standard
|	**Cr**	**53**	**-0.010**	ug/L	0.007	75	207	184	11	Standard
⌊	**Mn**	**55**	**-0.004**	ug/L	0.001	16	777	668	4	Standard
⌈>	**Ge**	**72**		ug/L			62323	61131	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.002	5963	8	8	75	KED
|	**Ni**	**60**	**0.000**	ug/L	0.004	2000	10	10	39	KED
|	**Ni**	**62**	**0.014**	ug/L	0.018	126	3	5	57	KED
|	**Cu**	**63**	**-0.007**	ug/L	0.004	61	67	45	29	KED
|	**Cu**	**65**	**-0.015**	ug/L	0.001	7	43	19	10	KED
|	**Zn**	**66**	**-0.051**	ug/L	0.045	88	60	39	44	KED
|	**Zn**	**67**	**-0.035**	ug/L	0.061	173	11	8	44	KED
|	**As**	**75**	**-0.010**	ug/L	0.010	99	9	7	28	KED
⌊	**Se**	**78**	**0.011**	ug/L	0.041	371	10	10	8	KED
	Y	**89**		ug/L			782831	743365	2	Standard
	Kr	**83**		ug/L			50	46	28	Standard
⌈>	**In-1**	**115**		ug/L			18394	17361	0	KED
|	**Mo**	**98**	**0.010**	ug/L	0.001	12	2	10	9	KED
|	**Cd**	**111**	**-0.001**	ug/L	0.005	663	2	2	43	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.008	278	5	6	69	KED
⌈>	**In**	**115**		ug/L			1290822	1202526	0	Standard
|	**Ag**	**107**	**0.001**	ug/L	0.004	556	99	104	63	Standard
|	**Sb**	**121**	**-0.010**	ug/L	0.001	5	202	52	13	Standard
|	**Sb**	**123**	**-0.011**	ug/L	0.001	4	164	38	15	Standard
|	**Ba**	**135**	**-0.003**	ug/L	0.001	32	59	43	8	Standard
⌊	**Ba**	**137**	**-0.005**	ug/L	0.001	26	107	56	20	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1553253	1	Standard
⌊	**Pb**	**208**	**-0.002**	ug/L	0.000	11	356	235	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:10:08
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	25324	1	Standard
	Cl	37		ug/L			5469584	5474419	1	Standard
>	Sc	45		ug/L			1431133	1467721	3	Standard
	Al	27	5540.739	ug/L	189.823	3	4783	162168243	0	Standard
	V	51	49.480	ug/L	1.730	3	7571	1421313	0	Standard
	V-1	51	49.808	ug/L	1.642	3	252	1435928	0	Standard
	Cr	52	50.163	ug/L	1.732	3	22548	1252441	0	Standard
	Cr	53	51.206	ug/L	1.685	3	207	146199	1	Standard
	Mn	55	52.489	ug/L	2.712	5	777	1796980	1	Standard
>	Ge	72		ug/L			62323	60384	1	KED
	Co	59	56.110	ug/L	1.601	2	8	210259	1	KED
	Ni	60	55.389	ug/L	1.350	2	10	60178	1	KED
	Ni	62	56.269	ug/L	0.742	1	3	9964	0	KED
	Cu	63	56.645	ug/L	0.446	0	67	176932	0	KED
	Cu	65	56.035	ug/L	1.335	2	43	86607	1	KED
	Zn	66	55.736	ug/L	1.574	2	60	21841	1	KED
	Zn	67	54.721	ug/L	2.267	4	11	3573	2	KED
	As	75	51.814	ug/L	1.396	2	9	10331	1	KED
	Se	78	51.502	ug/L	0.717	1	10	1119	2	KED
	Y	89		ug/L			782831	765239	1	Standard
	Kr	83		ug/L			50	42	54	Standard
>	In-1	115		ug/L			18394	17307	1	KED
	Mo	98	53.297	ug/L	0.496	0	2	47862	0	KED
	Cd	111	53.978	ug/L	1.143	2	2	12762	0	KED
	Cd	114	52.387	ug/L	0.746	1	5	30545	0	KED
>	In	115		ug/L			1290822	1210467	1	Standard
	Ag	107	52.331	ug/L	0.377	0	99	856698	0	Standard
	Sb	121	52.237	ug/L	1.025	1	202	730020	0	Standard
	Sb	123	52.579	ug/L	0.972	1	164	556315	0	Standard
	Ba	135	51.102	ug/L	1.009	1	59	238212	0	Standard
	Ba	137	51.850	ug/L	0.654	1	107	420969	0	Standard
>	Tb	159		ug/L			1611407	1606232	2	Standard
	Pb	208	54.404	ug/L	1.647	3	356	2532732	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:17:52
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	27291	3	Standard
	Cl	37		ug/L			5469584	5434777	2	Standard
>	Sc	45		ug/L			1431133	1482979	3	Standard
	Al	27	0.017	ug/L	0.004	24	4783	5456	1	Standard
	V	51	-0.015	ug/L	0.005	36	7571	7421	1	Standard
	V-1	51	-0.001	ug/L	0.001	108	252	241	6	Standard
	Cr	52	-0.054	ug/L	0.018	32	22548	22015	1	Standard
	Cr	53	-0.008	ug/L	0.002	21	207	191	0	Standard
	Mn	55	-0.000	ug/L	0.002	562	777	792	6	Standard
>	Ge	72		ug/L			62323	58271	9	KED
	Co	59	-0.000	ug/L	0.001	287	8	6	68	KED
	Ni	60	0.002	ug/L	0.011	536	10	12	105	KED
	Ni	62	-0.006	ug/L	0.011	179	3	1	100	KED
	Cu	63	0.001	ug/L	0.003	301	67	66	15	KED
	Cu	65	-0.003	ug/L	0.007	220	43	35	32	KED
	Zn	66	0.011	ug/L	0.014	121	60	61	17	KED
	Zn	67	0.055	ug/L	0.041	74	11	13	7	KED
	As	75	0.004	ug/L	0.010	296	9	9	20	KED
	Se	78	-0.018	ug/L	0.012	68	10	9	9	KED
	Y	89		ug/L			782831	765289	1	Standard
	Kr	83		ug/L			50	42	14	Standard
>	In-1	115		ug/L			18394	17655	1	KED
	Mo	98	0.009	ug/L	0.004	38	2	10	29	KED
	Cd	111	0.008	ug/L	0.004	45	2	4	20	KED
	Cd	114	-0.001	ug/L	0.002	278	5	4	19	KED
>	In	115		ug/L			1290822	1241654	0	Standard
	Ag	107	0.001	ug/L	0.001	187	99	105	16	Standard
	Sb	121	0.030	ug/L	0.001	2	202	627	2	Standard
	Sb	123	0.029	ug/L	0.003	9	164	474	7	Standard
	Ba	135	-0.001	ug/L	0.002	173	59	51	20	Standard
	Ba	137	-0.000	ug/L	0.000	32	107	99	1	Standard
>	Tb	159		ug/L			1611407	1585897	2	Standard
	Pb	208	-0.000	ug/L	0.000	2037	356	349	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0437-01
Sample Dil Factor: 10
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:22:53
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	128678	3	Standard
	Cl	37		ug/L			5469584	5440633	0	Standard
>	Sc	45		ug/L			1431133	1487981	0	Standard
	Al	27	61.620	ug/L	1.076	1	4783	1834800	0	Standard
	V	51	0.611	ug/L	0.342	56	7571	25557	38	Standard
	V-1	51	0.238	ug/L	0.002	0	252	7231	0	Standard
	Cr	52	140.863	ug/L	1.428	1	22548	3526121	0	Standard
	Cr	53	135.654	ug/L	1.018	0	207	392591	0	Standard
	Mn	55	53.884	ug/L	0.539	1	777	1872637	1	Standard
>	Ge	72		ug/L			62323	62144	2	KED
	Co	59	0.169	ug/L	0.003	1	8	659	0	KED
	Ni	60	1.904	ug/L	0.055	2	10	2138	0	KED
	Ni	62	1.920	ug/L	0.049	2	3	353	2	KED
	Cu	63	3.864	ug/L	0.056	1	67	12485	3	KED
	Cu	65	3.868	ug/L	0.118	3	43	6191	0	KED
	Zn	66	264.292	ug/L	7.717	2	60	106333	0	KED
	Zn	67	239.162	ug/L	6.123	2	11	16032	0	KED
	As	75	0.518	ug/L	0.031	5	9	116	8	KED
	Se	78	0.026	ug/L	0.165	627	10	11	30	KED
	Y	89		ug/L			782831	769441	2	Standard
	Kr	83		ug/L			50	46	9	Standard
>	In-1	115		ug/L			18394	18015	1	KED
	Mo	98	0.255	ug/L	0.040	15	2	240	15	KED
	Cd	111	0.688	ug/L	0.068	9	2	172	8	KED
	Cd	114	0.718	ug/L	0.023	3	5	440	4	KED
>	In	115		ug/L			1290822	1233259	2	Standard
	Ag	107	0.045	ug/L	0.003	5	99	851	3	Standard
	Sb	121	0.138	ug/L	0.002	1	202	2155	1	Standard
	Sb	123	0.141	ug/L	0.007	5	164	1673	3	Standard
	Ba	135	5.491	ug/L	0.089	1	59	26127	1	Standard
	Ba	137	5.474	ug/L	0.073	1	107	45375	2	Standard
>	Tb	159		ug/L			1611407	1625758	2	Standard
	Pb	208	0.482	ug/L	0.009	1	356	23073	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0331-01RE1
Sample Dil Factor: 10
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:28:17
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	210775	2	Standard
	Cl	37		ug/L			5469584	12927984	4	Standard
>	Sc	45		ug/L			1431133	1328445	0	Standard
	Al	27	71.005	ug/L	1.573	2	4783	1886988	1	Standard
	V	51	12.198	ug/L	0.086	0	7571	322737	1	Standard
	V-1	51	14.231	ug/L	0.127	0	252	371820	0	Standard
	Cr	52	22.413	ug/L	0.374	1	22548	518531	2	Standard
	Cr	53	28.693	ug/L	0.195	0	207	74290	0	Standard
	Mn	55	86.765	ug/L	0.893	1	777	2691691	1	Standard
>	Ge	72		ug/L			62323	50742	1	KED
	Co	59	4.747	ug/L	0.050	1	8	14958	1	KED
	Ni	60	22.720	ug/L	0.464	2	10	20756	3	KED
	Ni	62	22.693	ug/L	0.421	1	3	3379	3	KED
	Cu	63	1.628	ug/L	0.019	1	67	4327	0	KED
	Cu	65	1.608	ug/L	0.029	1	43	2123	0	KED
	Zn	66	7.590	ug/L	0.113	1	60	2542	0	KED
	Zn	67	15.796	ug/L	0.532	3	11	873	3	KED
	As	75	11.926	ug/L	0.294	2	9	2004	1	KED
	Se	78	0.637	ug/L	0.084	13	10	20	7	KED
	Y	89		ug/L			782831	701841	2	Standard
	Kr	83		ug/L			50	118	20	Standard
>	In-1	115		ug/L			18394	15009	1	KED
	Mo	98	2.012	ug/L	0.027	1	2	1568	2	KED
	Cd	111	0.032	ug/L	0.019	60	2	8	43	KED
	Cd	114	0.017	ug/L	0.007	44	5	12	28	KED
>	In	115		ug/L			1290822	1058270	0	Standard
	Ag	107	0.028	ug/L	0.001	5	99	480	3	Standard
	Sb	121	0.694	ug/L	0.009	1	202	8640	0	Standard
	Sb	123	0.704	ug/L	0.013	1	164	6649	1	Standard
	Ba	135	104.028	ug/L	0.653	0	59	423973	1	Standard
	Ba	137	102.650	ug/L	0.473	0	107	728620	1	Standard
>	Tb	159		ug/L			1611407	1467890	1	Standard
	Pb	208	0.323	ug/L	0.007	2	356	14060	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLA
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:34:42
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	23629	1	Standard
	Cl	**37**		ug/L			5469584	5440689	2	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1417365	0	Standard
|	**Al**	**27**	**-0.068**	ug/L	0.006	8	4783	2821	5	Standard
|	**V**	**51**	**-0.004**	ug/L	0.002	58	7571	7393	1	Standard
|	**V-1**	**51**	**0.046**	ug/L	0.001	2	252	1533	2	Standard
|	**Cr**	**52**	**-0.025**	ug/L	0.009	37	22548	21744	0	Standard
|	**Cr**	**53**	**0.137**	ug/L	0.010	7	207	583	4	Standard
⌊	**Mn**	**55**	**0.000**	ug/L	0.001	219	777	780	3	Standard
⌈>	**Ge**	**72**		ug/L			62323	59772	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.001	1004	8	8	44	KED
|	**Ni**	**60**	**-0.006**	ug/L	0.002	31	10	3	50	KED
|	**Ni**	**62**	**0.001**	ug/L	0.016	2857	3	3	91	KED
|	**Cu**	**63**	**-0.005**	ug/L	0.002	32	67	50	11	KED
|	**Cu**	**65**	**-0.009**	ug/L	0.007	82	43	27	41	KED
|	**Zn**	**66**	**-0.059**	ug/L	0.001	2	60	35	3	KED
|	**Zn**	**67**	**-0.101**	ug/L	0.035	34	11	4	49	KED
|	**As**	**75**	**-0.003**	ug/L	0.006	220	9	8	13	KED
⌊	**Se**	**78**	**-0.027**	ug/L	0.102	375	10	9	22	KED
	Y	**89**		ug/L			782831	757161	1	Standard
	Kr	**83**		ug/L			50	55	15	Standard
⌈>	**In-1**	**115**		ug/L			18394	17494	1	KED
|	**Mo**	**98**	**0.003**	ug/L	0.002	70	2	4	39	KED
|	**Cd**	**111**	**0.003**	ug/L	0.005	148	2	3	31	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.002	57	5	6	15	KED
⌈>	**In**	**115**		ug/L			1290822	1226132	0	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.001	63	99	69	23	Standard
|	**Sb**	**121**	**-0.008**	ug/L	0.001	10	202	81	14	Standard
|	**Sb**	**123**	**-0.009**	ug/L	0.001	6	164	55	11	Standard
|	**Ba**	**135**	**-0.005**	ug/L	0.000	8	59	31	7	Standard
⌊	**Ba**	**137**	**-0.006**	ug/L	0.001	21	107	52	20	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1559402	1	Standard
⌊	**Pb**	**208**	**-0.003**	ug/L	0.000	6	356	222	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0403-01
Sample Dil Factor: 2
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:41:06
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	123739	0	Standard
	Cl	**37**		ug/L			5469584	5538249	0	Standard
>	**Sc**	**45**		ug/L			1431133	1560268	1	Standard
	Al	**27**	**73.208**	ug/L	1.401	1	4783	2285016	2	Standard
	V	**51**	**0.539**	ug/L	0.053	9	7571	24634	5	Standard
	V-1	**51**	**0.798**	ug/L	0.006	0	252	24731	0	Standard
	Cr	**52**	**18.942**	ug/L	0.187	0	22548	518459	0	Standard
	Cr	**53**	**19.252**	ug/L	0.062	0	207	58616	0	Standard
	Mn	**55**	**37.193**	ug/L	0.537	1	777	1355526	0	Standard
>	**Ge**	**72**		ug/L			62323	61140	0	KED
	Co	**59**	**0.935**	ug/L	0.066	7	8	3557	7	KED
	Ni	**60**	**8.668**	ug/L	0.237	2	10	9546	3	KED
	Ni	**62**	**8.976**	ug/L	0.088	0	3	1612	0	KED
	Cu	**63**	**21.220**	ug/L	0.427	2	67	67148	1	KED
	Cu	**65**	**21.000**	ug/L	0.157	0	43	32898	1	KED
	Zn	**66**	**208.622**	ug/L	2.513	1	60	82638	1	KED
	Zn	**67**	**187.146**	ug/L	0.873	0	11	12350	0	KED
	As	**75**	**0.455**	ug/L	0.045	9	9	101	9	KED
	Se	**78**	**0.056**	ug/L	0.162	288	10	11	29	KED
	Y	**89**		ug/L			782831	790521	2	Standard
	Kr	**83**		ug/L			50	58	3	Standard
>	**In-1**	**115**		ug/L			18394	17806	0	KED
	Mo	**98**	**2.567**	ug/L	0.037	1	2	2373	1	KED
	Cd	**111**	**7.338**	ug/L	0.195	2	2	1787	2	KED
	Cd	**114**	**7.335**	ug/L	0.282	3	5	4404	3	KED
>	**In**	**115**		ug/L			1290822	1223261	0	Standard
	Ag	**107**	**0.039**	ug/L	0.001	1	99	737	2	Standard
	Sb	**121**	**1.445**	ug/L	0.025	1	202	20595	0	Standard
	Sb	**123**	**1.452**	ug/L	0.022	1	164	15682	0	Standard
	Ba	**135**	**13.297**	ug/L	0.301	2	59	62681	1	Standard
	Ba	**137**	**13.415**	ug/L	0.211	1	107	110141	0	Standard
>	**Tb**	**159**		ug/L			1611407	1650937	2	Standard
	Pb	**208**	**0.946**	ug/L	0.018	1	356	45624	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-01RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:46:30
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	46736	0	Standard
	Cl	**37**		ug/L			5469584	5248462	0	Standard
>	**Sc**	**45**		ug/L			1431133	1512547	0	Standard
	Al	**27**	**1.340**	ug/L	0.014	1	4783	45508	1	Standard
	V	**51**	**1.140**	ug/L	0.014	1	7571	41586	1	Standard
	V-1	**51**	**1.221**	ug/L	0.009	0	252	36573	1	Standard
	Cr	**52**	**0.549**	ug/L	0.011	2	22548	37718	1	Standard
	Cr	**53**	**0.830**	ug/L	0.010	1	207	2658	1	Standard
	Mn	**55**	**0.132**	ug/L	0.003	2	777	5494	2	Standard
>	**Ge**	**72**		ug/L			62323	53510	0	KED
	Co	**59**	**0.049**	ug/L	0.004	7	8	168	7	KED
	Ni	**60**	**1.276**	ug/L	0.067	5	10	1236	5	KED
	Ni	**62**	**1.184**	ug/L	0.121	10	3	188	10	KED
	Cu	**63**	**4.831**	ug/L	0.111	2	67	13425	2	KED
	Cu	**65**	**4.869**	ug/L	0.128	2	43	6703	2	KED
	Zn	**66**	**10.829**	ug/L	0.155	1	60	3803	1	KED
	Zn	**67**	**15.619**	ug/L	0.443	2	11	911	2	KED
	As	**75**	**1.265**	ug/L	0.056	4	9	231	4	KED
	Se	**78**	**3.517**	ug/L	0.335	9	10	76	7	KED
	Y	**89**		ug/L			782831	726862	0	Standard
	Kr	**83**		ug/L			50	57	14	Standard
>	**In-1**	**115**		ug/L			18394	15677	0	KED
	Mo	**98**	**2.604**	ug/L	0.028	1	2	2120	0	KED
	Cd	**111**	**0.060**	ug/L	0.013	22	2	15	18	KED
	Cd	**114**	**0.081**	ug/L	0.025	30	5	47	27	KED
>	**In**	**115**		ug/L			1290822	1076670	0	Standard
	Ag	**107**	**0.011**	ug/L	0.001	6	99	249	3	Standard
	Sb	**121**	**0.155**	ug/L	0.004	2	202	2095	2	Standard
	Sb	**123**	**0.151**	ug/L	0.006	4	164	1556	4	Standard
	Ba	**135**	**70.424**	ug/L	1.016	1	59	292033	1	Standard
	Ba	**137**	**70.502**	ug/L	0.298	0	107	509153	1	Standard
>	**Tb**	**159**		ug/L			1611407	1529246	0	Standard
	Pb	**208**	**1.905**	ug/L	0.030	1	356	84798	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-05RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:51:54
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	44529	0	Standard
	Cl	**37**		ug/L			5469584	5084321	1	Standard
>	**Sc**	**45**		ug/L			1431133	1492233	0	Standard
	Al	**27**	**9.577**	ug/L	0.301	3	4783	290209	2	Standard
	V	**51**	**0.842**	ug/L	0.003	0	7571	32364	0	Standard
	V-1	**51**	**0.884**	ug/L	0.006	0	252	26189	1	Standard
	Cr	**52**	**0.410**	ug/L	0.007	1	22548	33744	0	Standard
	Cr	**53**	**0.559**	ug/L	0.020	3	207	1838	3	Standard
	Mn	**55**	**1.714**	ug/L	0.007	0	777	60518	0	Standard
>	**Ge**	**72**		ug/L			62323	54508	0	KED
	Co	**59**	**0.055**	ug/L	0.006	11	8	193	11	KED
	Ni	**60**	**0.670**	ug/L	0.036	5	10	666	4	KED
	Ni	**62**	**0.559**	ug/L	0.058	10	3	92	9	KED
	Cu	**63**	**3.808**	ug/L	0.068	1	67	10792	1	KED
	Cu	**65**	**3.742**	ug/L	0.084	2	43	5256	1	KED
	Zn	**66**	**7.609**	ug/L	0.274	3	60	2738	4	KED
	Zn	**67**	**9.878**	ug/L	0.593	6	11	590	5	KED
	As	**75**	**1.138**	ug/L	0.009	0	9	213	1	KED
	Se	**78**	**4.511**	ug/L	0.375	8	10	97	6	KED
	Y	**89**		ug/L			782831	727237	2	Standard
	Kr	**83**		ug/L			50	67	13	Standard
>	**In-1**	**115**		ug/L			18394	15626	2	KED
	Mo	**98**	**11.047**	ug/L	0.473	4	2	8952	1	KED
	Cd	**111**	**0.027**	ug/L	0.016	58	2	8	43	KED
	Cd	**114**	**0.022**	ug/L	0.017	79	5	16	57	KED
>	**In**	**115**		ug/L			1290822	1082392	0	Standard
	Ag	**107**	**0.036**	ug/L	0.003	8	99	603	7	Standard
	Sb	**121**	**0.072**	ug/L	0.004	5	202	1066	5	Standard
	Sb	**123**	**0.077**	ug/L	0.003	4	164	870	3	Standard
	Ba	**135**	**37.596**	ug/L	0.195	0	59	156746	0	Standard
	Ba	**137**	**37.610**	ug/L	0.234	0	107	273100	1	Standard
>	**Tb**	**159**		ug/L			1611407	1507726	2	Standard
	Pb	**208**	**0.564**	ug/L	0.014	2	356	24962	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-11RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 01:57:18
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	46443	2	Standard
	Cl	37		ug/L			5469584	5139502	1	Standard
>	Sc	45		ug/L			1431133	1510068	1	Standard
	Al	27	1.445	ug/L	0.022	1	4783	48593	2	Standard
	V	51	1.157	ug/L	0.016	1	7571	42034	2	Standard
	V-1	51	1.227	ug/L	0.016	1	252	36687	2	Standard
	Cr	52	0.535	ug/L	0.015	2	22548	37307	1	Standard
	Cr	53	0.779	ug/L	0.016	2	207	2505	2	Standard
	Mn	55	0.105	ug/L	0.001	0	777	4529	1	Standard
>	Ge	72		ug/L			62323	52821	3	KED
	Co	59	0.054	ug/L	0.013	23	8	184	19	KED
	Ni	60	1.236	ug/L	0.009	0	10	1183	2	KED
	Ni	62	1.207	ug/L	0.094	7	3	189	10	KED
	Cu	63	4.524	ug/L	0.023	0	67	12413	2	KED
	Cu	65	4.515	ug/L	0.088	1	43	6137	2	KED
	Zn	66	9.152	ug/L	0.380	4	60	3179	3	KED
	Zn	67	13.310	ug/L	0.704	5	11	767	1	KED
	As	75	1.220	ug/L	0.153	12	9	220	9	KED
	Se	78	3.457	ug/L	0.316	9	10	74	4	KED
	Y	89		ug/L			782831	726070	2	Standard
	Kr	83		ug/L			50	71	21	Standard
>	In-1	115		ug/L			18394	15128	0	KED
	Mo	98	2.574	ug/L	0.158	6	2	2021	5	KED
	Cd	111	0.095	ug/L	0.009	9	2	21	8	KED
	Cd	114	0.066	ug/L	0.005	7	5	37	6	KED
>	In	115		ug/L			1290822	1072101	2	Standard
	Ag	107	0.008	ug/L	0.003	33	99	201	17	Standard
	Sb	121	0.065	ug/L	0.001	1	202	972	0	Standard
	Sb	123	0.068	ug/L	0.006	8	164	771	8	Standard
	Ba	135	70.566	ug/L	0.825	1	59	291324	0	Standard
	Ba	137	70.326	ug/L	1.771	2	107	505542	0	Standard
>	Tb	159		ug/L			1611407	1512458	3	Standard
	Pb	208	1.840	ug/L	0.063	3	356	80965	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-07RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:02:42
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	44922	2	Standard
	Cl	**37**		ug/L			5469584	4868756	1	Standard
>	**Sc**	**45**		ug/L			1431133	1453360	2	Standard
	Al	**27**	**13.875**	ug/L	0.347	2	4783	407186	0	Standard
	V	**51**	**0.114**	ug/L	0.006	4	7571	10928	1	Standard
	V-1	**51**	**0.146**	ug/L	0.005	3	252	4414	2	Standard
	Cr	**52**	**0.179**	ug/L	0.012	6	22548	27244	1	Standard
	Cr	**53**	**0.278**	ug/L	0.012	4	207	995	1	Standard
	Mn	**55**	**420.913**	ug/L	5.371	1	777	14280281	0	Standard
>	**Ge**	**72**		ug/L			62323	52092	0	KED
	Co	**59**	**0.590**	ug/L	0.012	1	8	1913	1	KED
	Ni	**60**	**3.911**	ug/L	0.113	2	10	3674	2	KED
	Ni	**62**	**4.019**	ug/L	0.081	2	3	616	2	KED
	Cu	**63**	**1.232**	ug/L	0.055	4	67	3376	4	KED
	Cu	**65**	**1.250**	ug/L	0.041	3	43	1702	3	KED
	Zn	**66**	**3.746**	ug/L	0.078	2	60	1314	1	KED
	Zn	**67**	**5.515**	ug/L	0.292	5	11	319	4	KED
	As	**75**	**0.597**	ug/L	0.019	3	9	110	3	KED
	Se	**78**	**0.192**	ug/L	0.091	47	10	12	13	KED
	Y	**89**		ug/L			782831	711251	0	Standard
	Kr	**83**		ug/L			50	69	4	Standard
>	**In-1**	**115**		ug/L			18394	15112	1	KED
	Mo	**98**	**21.308**	ug/L	0.474	2	2	16706	0	KED
	Cd	**111**	**0.096**	ug/L	0.021	21	2	22	21	KED
	Cd	**114**	**0.092**	ug/L	0.039	42	5	51	40	KED
>	**In**	**115**		ug/L			1290822	1039502	0	Standard
	Ag	**107**	**0.037**	ug/L	0.003	8	99	602	7	Standard
	Sb	**121**	**0.048**	ug/L	0.001	3	202	735	1	Standard
	Sb	**123**	**0.048**	ug/L	0.004	8	164	569	6	Standard
	Ba	**135**	**31.428**	ug/L	0.289	0	59	125846	0	Standard
	Ba	**137**	**31.166**	ug/L	0.572	1	107	217338	1	Standard
>	**Tb**	**159**		ug/L			1611407	1475751	1	Standard
	Pb	**208**	**0.153**	ug/L	0.003	2	356	6890	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0330-03RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:09:06
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	46273	1	Standard
	Cl	**37**		ug/L			5469584	5063366	1	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1504654	1	Standard
|	**Al**	**27**	**3.659**	ug/L	0.029	0	4783	114895	1	Standard
|	**V**	**51**	**2.171**	ug/L	0.028	1	7571	71585	1	Standard
|	**V-1**	**51**	**2.221**	ug/L	0.030	1	252	65941	1	Standard
|	**Cr**	**52**	**0.685**	ug/L	0.005	0	22548	40930	1	Standard
|	**Cr**	**53**	**0.890**	ug/L	0.016	1	207	2820	2	Standard
⌊	**Mn**	**55**	**808.985**	ug/L	14.065	1	777	28414068	0	Standard
⌈>	**Ge**	**72**		ug/L			62323	51778	1	KED
|	**Co**	**59**	**6.608**	ug/L	0.162	2	8	21240	1	KED
|	**Ni**	**60**	**25.829**	ug/L	0.127	0	10	24071	1	KED
|	**Ni**	**62**	**26.146**	ug/L	0.166	0	3	3971	1	KED
|	**Cu**	**63**	**6.256**	ug/L	0.109	1	67	16805	1	KED
|	**Cu**	**65**	**6.179**	ug/L	0.188	3	43	8220	1	KED
|	**Zn**	**66**	**7.420**	ug/L	0.146	1	60	2537	0	KED
|	**Zn**	**67**	**11.596**	ug/L	0.278	2	11	657	4	KED
|	**As**	**75**	**1.983**	ug/L	0.033	1	9	346	2	KED
⌊	**Se**	**78**	**33.690**	ug/L	0.871	2	10	630	3	KED
	Y	**89**		ug/L			782831	722789	1	Standard
	Kr	**83**		ug/L			50	71	28	Standard
⌈>	**In-1**	**115**		ug/L			18394	15085	0	KED
|	**Mo**	**98**	**7.713**	ug/L	0.130	1	2	6038	1	KED
|	**Cd**	**111**	**0.886**	ug/L	0.058	6	2	185	7	KED
⌊	**Cd**	**114**	**0.950**	ug/L	0.092	9	5	487	8	KED
⌈>	**In**	**115**		ug/L			1290822	1062646	0	Standard
|	**Ag**	**107**	**0.011**	ug/L	0.002	18	99	234	12	Standard
|	**Sb**	**121**	**0.514**	ug/L	0.010	2	202	6470	2	Standard
|	**Sb**	**123**	**0.510**	ug/L	0.005	1	164	4872	0	Standard
|	**Ba**	**135**	**66.867**	ug/L	0.123	0	59	273667	0	Standard
⌊	**Ba**	**137**	**66.493**	ug/L	0.723	1	107	473923	0	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1516335	0	Standard
⌊	**Pb**	**208**	**0.027**	ug/L	0.001	2	356	1506	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLB
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:17:31
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	24117	1	Standard
	Cl	**37**		ug/L			5469584	5523944	1	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1422919	5	Standard
|	**Al**	**27**	**-0.067**	ug/L	0.004	6	4783	2855	3	Standard
|	**V**	**51**	**-0.006**	ug/L	0.017	283	7571	7350	3	Standard
|	**V-1**	**51**	**0.004**	ug/L	0.001	29	252	364	4	Standard
|	**Cr**	**52**	**-0.027**	ug/L	0.059	216	22548	21721	2	Standard
|	**Cr**	**53**	**0.006**	ug/L	0.009	152	207	220	5	Standard
⌊	**Mn**	**55**	**-0.000**	ug/L	0.001	607	777	764	1	Standard
⌈>	**Ge**	**72**		ug/L			62323	60205	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.000	192	8	9	20	KED
|	**Ni**	**60**	**-0.002**	ug/L	0.005	239	10	7	66	KED
|	**Ni**	**62**	**0.008**	ug/L	0.022	289	3	4	89	KED
|	**Cu**	**63**	**-0.006**	ug/L	0.005	81	67	46	30	KED
|	**Cu**	**65**	**-0.010**	ug/L	0.002	16	43	26	8	KED
|	**Zn**	**66**	**-0.056**	ug/L	0.023	40	60	36	23	KED
|	**Zn**	**67**	**-0.121**	ug/L	0.035	28	11	3	69	KED
|	**As**	**75**	**-0.010**	ug/L	0.014	139	9	7	37	KED
⌊	**Se**	**78**	**0.057**	ug/L	0.119	207	10	11	21	KED
	Y	**89**		ug/L			782831	725616	6	Standard
	Kr	**83**		ug/L			50	40	33	Standard
⌈>	**In-1**	**115**		ug/L			18394	17352	0	KED
|	**Mo**	**98**	**0.001**	ug/L	0.004	686	2	2	125	KED
|	**Cd**	**111**	**-0.001**	ug/L	0.002	337	2	2	21	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.003	130	5	3	51	KED
⌈>	**In**	**115**		ug/L			1290822	1176055	4	Standard
|	**Ag**	**107**	**-0.001**	ug/L	0.001	92	99	73	17	Standard
|	**Sb**	**121**	**-0.011**	ug/L	0.000	1	202	38		Standard
|	**Sb**	**123**	**-0.012**	ug/L	0.001	6	164	27	27	Standard
|	**Ba**	**135**	**-0.004**	ug/L	0.002	46	59	36	18	Standard
⌊	**Ba**	**137**	**-0.004**	ug/L	0.002	59	107	69	26	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1549288	6	Standard
⌊	**Pb**	**208**	**-0.003**	ug/L	0.001	21	356	210	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVA
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:23:55
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	25242	1	Standard
	Cl	37		ug/L			5469584	5468620	0	Standard
>	Sc	45		ug/L			1431133	1452394	1	Standard
	Al	27	5590.708	ug/L	91.690	1	4783	162036875	0	Standard
	V	51	49.893	ug/L	1.138	2	7571	1419083	1	Standard
	V-1	51	50.220	ug/L	1.227	2	252	1433524	1	Standard
	Cr	52	50.265	ug/L	1.101	2	22548	1242663	1	Standard
	Cr	53	51.311	ug/L	1.381	2	207	145039	1	Standard
	Mn	55	52.331	ug/L	0.770	1	777	1775016	1	Standard
>	Ge	72		ug/L			62323	60457	2	KED
	Co	59	55.192	ug/L	1.259	2	8	207048	0	KED
	Ni	60	54.406	ug/L	0.346	0	10	59195	2	KED
	Ni	62	55.421	ug/L	0.454	0	3	9826	1	KED
	Cu	63	55.101	ug/L	0.655	1	67	172308	1	KED
	Cu	65	54.829	ug/L	0.841	1	43	84848	1	KED
	Zn	66	53.935	ug/L	1.436	2	60	21161	1	KED
	Zn	67	53.711	ug/L	1.385	2	11	3511	0	KED
	As	75	52.300	ug/L	1.087	2	9	10440	0	KED
	Se	78	52.221	ug/L	1.531	2	10	1135	2	KED
	Y	89		ug/L			782831	762385	2	Standard
	Kr	83		ug/L			50	64	9	Standard
>	In-1	115		ug/L			18394	17566	0	KED
	Mo	98	52.901	ug/L	0.953	1	2	48225	2	KED
	Cd	111	53.077	ug/L	0.107	0	2	12740	0	KED
	Cd	114	52.896	ug/L	0.637	1	5	31307	0	KED
>	In	115		ug/L			1290822	1217723	1	Standard
	Ag	107	51.707	ug/L	1.248	2	99	851358	0	Standard
	Sb	121	52.351	ug/L	0.891	1	202	735958	0	Standard
	Sb	123	52.521	ug/L	1.581	3	164	558899	1	Standard
	Ba	135	51.880	ug/L	1.322	2	59	243249	0	Standard
	Ba	137	51.756	ug/L	0.526	1	107	422713	0	Standard
>	Tb	159		ug/L			1611407	1617866	1	Standard
	Pb	208	54.428	ug/L	1.204	2	356	2552722	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBA
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:31:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	27322	2	Standard
	Cl	**37**		ug/L			5469584	5443369	2	Standard
>	**Sc**	**45**		ug/L			1431133	1457406	1	Standard
	Al	**27**	**0.016**	ug/L	0.005	33	4783	5336	4	Standard
	V	**51**	**-0.005**	ug/L	0.003	73	7571	7575	0	Standard
	V-1	**51**	**0.003**	ug/L	0.001	21	252	351	4	Standard
	Cr	**52**	**-0.021**	ug/L	0.007	31	22548	22444	1	Standard
	Cr	**53**	**0.005**	ug/L	0.008	155	207	226	11	Standard
	Mn	**55**	**0.002**	ug/L	0.001	54	777	862	3	Standard
>	**Ge**	**72**		ug/L			62323	61269	4	KED
	Co	**59**	**0.000**	ug/L	0.001	243	8	9	20	KED
	Ni	**60**	**0.003**	ug/L	0.003	100	10	13	28	KED
	Ni	**62**	**0.015**	ug/L	0.029	196	3	5	88	KED
	Cu	**63**	**0.001**	ug/L	0.002	230	67	69	12	KED
	Cu	**65**	**-0.006**	ug/L	0.010	171	43	33	43	KED
	Zn	**66**	**0.050**	ug/L	0.045	90	60	80	24	KED
	Zn	**67**	**-0.047**	ug/L	0.084	178	11	8	70	KED
	As	**75**	**-0.002**	ug/L	0.010	552	9	9	26	KED
	Se	**78**	**0.230**	ug/L	0.063	27	10	15	12	KED
	Y	**89**		ug/L			782831	754768	1	Standard
	Kr	**83**		ug/L			50	48	2	Standard
>	**In-1**	**115**		ug/L			18394	17287	3	KED
	Mo	**98**	**0.005**	ug/L	0.006	116	2	6	75	KED
	Cd	**111**	**-0.003**	ug/L	0.004	119	2	1	50	KED
	Cd	**114**	**-0.003**	ug/L	0.003	120	5	3	49	KED
>	**In**	**115**		ug/L			1290822	1241156	0	Standard
	Ag	**107**	**0.000**	ug/L	0.000	114	99	100	4	Standard
	Sb	**121**	**0.029**	ug/L	0.001	3	202	603	1	Standard
	Sb	**123**	**0.028**	ug/L	0.001	5	164	459	2	Standard
	Ba	**135**	**0.002**	ug/L	0.000	17	59	66	2	Standard
	Ba	**137**	**-0.000**	ug/L	0.002	657	107	100	18	Standard
>	**Tb**	**159**		ug/L			1611407	1595230	0	Standard
	Pb	**208**	**-0.001**	ug/L	0.001	76	356	321	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0456-04
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:36:41
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	50409	1	Standard
	Cl	37		ug/L			5469584	5331985	1	Standard
>	Sc	45		ug/L			1431133	1531239	1	Standard
	Al	27	403.633	ug/L	8.308	2	4783	12340346	2	Standard
	V	51	1.543	ug/L	0.057	3	7571	54145	4	Standard
	V-1	51	1.911	ug/L	0.013	0	252	57789	1	Standard
	Cr	52	25.288	ug/L	0.133	0	22548	671207	1	Standard
	Cr	53	25.801	ug/L	0.339	1	207	77011	0	Standard
	Mn	55	10.235	ug/L	0.204	1	777	366621	0	Standard
>	Ge	72		ug/L			62323	60529	1	KED
	Co	59	0.214	ug/L	0.027	12	8	810	10	KED
	Ni	60	3.496	ug/L	0.149	4	10	3815	2	KED
	Ni	62	3.630	ug/L	0.396	10	3	646	10	KED
	Cu	63	4.726	ug/L	0.095	2	67	14855	1	KED
	Cu	65	4.653	ug/L	0.050	1	43	7249	2	KED
	Zn	66	14.418	ug/L	0.762	5	60	5705	3	KED
	Zn	67	14.661	ug/L	1.285	8	11	967	6	KED
	As	75	0.978	ug/L	0.049	4	9	204	2	KED
	Se	78	0.133	ug/L	0.065	49	10	13	12	KED
	Y	89		ug/L			782831	777777	1	Standard
	Kr	83		ug/L			50	48	18	Standard
>	In-1	115		ug/L			18394	17387	1	KED
	Mo	98	1.633	ug/L	0.029	1	2	1475	3	KED
	Cd	111	0.230	ug/L	0.030	12	2	57	13	KED
	Cd	114	0.198	ug/L	0.042	21	5	120	18	KED
>	In	115		ug/L			1290822	1219791	1	Standard
	Ag	107	0.004	ug/L	0.001	21	99	161	9	Standard
	Sb	121	2.260	ug/L	0.049	2	202	32012	1	Standard
	Sb	123	2.284	ug/L	0.052	2	164	24496	1	Standard
	Ba	135	19.517	ug/L	0.224	1	59	91723	1	Standard
	Ba	137	19.835	ug/L	0.213	1	107	162356	1	Standard
>	Tb	159		ug/L			1611407	1608086	1	Standard
	Pb	208	0.380	ug/L	0.004	0	356	18073	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0219-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:41:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	50391	0	Standard
	Cl	37		ug/L			5469584	5277796	1	Standard
>	Sc	45		ug/L			1431133	1519894	2	Standard
	Al	27	412.915	ug/L	6.776	1	4783	12528537	1	Standard
	V	51	1.383	ug/L	0.070	5	7571	48976	2	Standard
	V-1	51	1.929	ug/L	0.042	2	252	57885	0	Standard
	Cr	52	26.135	ug/L	0.609	2	22548	687602	1	Standard
	Cr	53	27.194	ug/L	0.623	2	207	80548	1	Standard
	Mn	55	12.071	ug/L	0.319	2	777	429022	1	Standard
>	Ge	72		ug/L			62323	59693	1	KED
	Co	59	0.223	ug/L	0.005	2	8	836	3	KED
	Ni	60	3.560	ug/L	0.040	1	10	3834	2	KED
	Ni	62	3.452	ug/L	0.154	4	3	606	3	KED
	Cu	63	4.962	ug/L	0.006	0	67	15382	1	KED
	Cu	65	4.926	ug/L	0.053	1	43	7565	0	KED
	Zn	66	14.799	ug/L	0.060	0	60	5777	1	KED
	Zn	67	15.349	ug/L	0.552	3	11	998	2	KED
	As	75	1.022	ug/L	0.074	7	9	210	5	KED
	Se	78	0.069	ug/L	0.069	100	10	11	12	KED
	Y	89		ug/L			782831	763200	1	Standard
	Kr	83		ug/L			50	41	10	Standard
>	In-1	115		ug/L			18394	17328	1	KED
	Mo	98	1.723	ug/L	0.122	7	2	1550	6	KED
	Cd	111	0.213	ug/L	0.011	5	2	53	5	KED
	Cd	114	0.191	ug/L	0.017	8	5	116	9	KED
>	In	115		ug/L			1290822	1196950	0	Standard
	Ag	107	0.005	ug/L	0.001	15	99	177	7	Standard
	Sb	121	2.290	ug/L	0.035	1	202	31822	1	Standard
	Sb	123	2.295	ug/L	0.016	0	164	24160	0	Standard
	Ba	135	19.889	ug/L	0.168	0	59	91726	0	Standard
	Ba	137	20.004	ug/L	0.171	0	107	160675	1	Standard
>	Tb	159		ug/L			1611407	1596917	1	Standard
	Pb	208	0.456	ug/L	0.002	0	356	21454	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0219-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:47:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	49851	1	Standard
	Cl	37		ug/L			5469584	5320161	1	Standard
>	Sc	45		ug/L			1431133	1530517	1	Standard
	Al	27	429.540	ug/L	7.872	1	4783	13127103	2	Standard
	V	51	24.679	ug/L	0.399	1	7571	743923	1	Standard
	V-1	51	25.071	ug/L	0.191	0	252	754448	0	Standard
	Cr	52	47.022	ug/L	0.646	1	22548	1226764	1	Standard
	Cr	53	47.649	ug/L	0.099	0	207	141990	1	Standard
	Mn	55	34.008	ug/L	0.083	0	777	1216037	1	Standard
>	Ge	72		ug/L			62323	59869	1	KED
	Co	59	26.957	ug/L	0.645	2	8	100158	0	KED
	Ni	60	29.871	ug/L	0.475	1	10	32184	0	KED
	Ni	62	30.629	ug/L	1.187	3	3	5378	2	KED
	Cu	63	32.007	ug/L	0.836	2	67	99132	1	KED
	Cu	65	31.304	ug/L	0.933	2	43	47985	1	KED
	Zn	66	139.921	ug/L	3.081	2	60	54278	1	KED
	Zn	67	129.362	ug/L	0.734	0	11	8363	1	KED
	As	75	25.788	ug/L	0.170	0	9	5103	1	KED
	Se	78	77.102	ug/L	0.813	1	10	1655	1	KED
	Y	89		ug/L			782831	759238	2	Standard
	Kr	83		ug/L			50	53	11	Standard
>	In-1	115		ug/L			18394	17289	2	KED
	Mo	98	1.493	ug/L	0.041	2	2	1342	5	KED
	Cd	111	25.939	ug/L	0.187	0	2	6128	2	KED
	Cd	114	25.678	ug/L	0.655	2	5	14954	0	KED
>	In	115		ug/L			1290822	1197094	0	Standard
	Ag	107	25.835	ug/L	0.174	0	99	418352	1	Standard
	Sb	121	2.229	ug/L	0.016	0	202	30991	0	Standard
	Sb	123	2.225	ug/L	0.040	1	164	23431	0	Standard
	Ba	135	45.359	ug/L	0.226	0	59	209149	1	Standard
	Ba	137	45.490	ug/L	0.411	0	107	365315	1	Standard
>	Tb	159		ug/L			1611407	1600942	1	Standard
	Pb	208	27.009	ug/L	0.360	1	356	1253867	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0064-01
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:53:28
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	64586	0	Standard
	Cl	37		ug/L			5469584	5030543	2	Standard
>	Sc	45		ug/L			1431133	1328764	7	Standard
	Al	27	272.943	ug/L	21.086	7	4783	7216261	0	Standard
	V	51	0.395	ug/L	0.098	24	7571	17303	18	Standard
	V-1	51	0.981	ug/L	0.069	7	252	25771	0	Standard
	Cr	52	34.905	ug/L	2.178	6	22548	793733	1	Standard
	Cr	53	35.813	ug/L	2.438	6	207	92400	0	Standard
	Mn	55	7.475	ug/L	0.574	7	777	231749	0	Standard
>	Ge	72		ug/L			62323	48097	1	KED
	Co	59	0.123	ug/L	0.008	6	8	374	6	KED
	Ni	60	1.409	ug/L	0.065	4	10	1226	3	KED
	Ni	62	1.585	ug/L	0.066	4	3	226	4	KED
	Cu	63	8.913	ug/L	0.225	2	67	22214	1	KED
	Cu	65	8.780	ug/L	0.059	0	43	10840	1	KED
	Zn	66	5.851	ug/L	0.260	4	60	1868	2	KED
	Zn	67	5.328	ug/L	0.284	5	11	285	4	KED
	As	75	0.077	ug/L	0.012	15	9	19	10	KED
	Se	78	0.342	ug/L	0.272	79	10	14	33	KED
	Y	89		ug/L			782831	661097	6	Standard
	Kr	83		ug/L			50	67	10	Standard
>	In-1	115		ug/L			18394	13764	1	KED
	Mo	98	16.648	ug/L	0.147	0	2	11891	1	KED
	Cd	111	0.016	ug/L	0.003	17	2	5	10	KED
	Cd	114	0.005	ug/L	0.004	71	5	6	26	KED
>	In	115		ug/L			1290822	936623	5	Standard
	Ag	107	0.005	ug/L	0.001	12	99	136	2	Standard
	Sb	121	0.280	ug/L	0.018	6	202	3172	2	Standard
	Sb	123	0.274	ug/L	0.024	8	164	2356	3	Standard
	Ba	135	1.615	ug/L	0.091	5	59	5856	0	Standard
	Ba	137	1.650	ug/L	0.093	5	107	10424	0	Standard
>	Tb	159		ug/L			1611407	1367051	5	Standard
	Pb	208	0.031	ug/L	0.002	7	356	1513	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0199-DUP2
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 02:59:52
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	62976	1	Standard
	Cl	37		ug/L			5469584	5044069	0	Standard
>	Sc	45		ug/L			1431133	1351166	2	Standard
	Al	27	270.586	ug/L	7.215	2	4783	7298702	0	Standard
	V	51	0.548	ug/L	0.132	24	7571	21509	13	Standard
	V-1	51	0.957	ug/L	0.022	2	252	25633	1	Standard
	Cr	52	34.500	ug/L	0.635	1	22548	800122	0	Standard
	Cr	53	34.853	ug/L	0.323	0	207	91732	1	Standard
	Mn	55	7.255	ug/L	0.079	1	777	229568	1	Standard
>	Ge	72		ug/L			62323	46514	1	KED
	Co	59	0.116	ug/L	0.012	10	8	341	9	KED
	Ni	60	1.460	ug/L	0.023	1	10	1229	1	KED
	Ni	62	1.463	ug/L	0.080	5	3	201	4	KED
	Cu	63	9.092	ug/L	0.136	1	67	21918	1	KED
	Cu	65	9.196	ug/L	0.109	1	43	10977	0	KED
	Zn	66	5.956	ug/L	0.283	4	60	1838	4	KED
	Zn	67	5.136	ug/L	0.385	7	11	266	6	KED
	As	75	0.094	ug/L	0.034	36	9	21	23	KED
	Se	78	0.525	ug/L	0.220	41	10	16	22	KED
	Y	89		ug/L			782831	676143	1	Standard
	Kr	83		ug/L			50	61	14	Standard
>	In-1	115		ug/L			18394	13691	1	KED
	Mo	98	17.213	ug/L	0.194	1	2	12229	1	KED
	Cd	111	0.000	ug/L	0.013	2980	2	2	107	KED
	Cd	114	0.008	ug/L	0.007	91	5	7	41	KED
>	In	115		ug/L			1290822	949271	0	Standard
	Ag	107	0.003	ug/L	0.001	29	99	106	8	Standard
	Sb	121	0.276	ug/L	0.007	2	202	3176	1	Standard
	Sb	123	0.280	ug/L	0.008	2	164	2447	1	Standard
	Ba	135	1.610	ug/L	0.028	1	59	5930	2	Standard
	Ba	137	1.604	ug/L	0.018	1	107	10291	1	Standard
>	Tb	159		ug/L			1611407	1396787	1	Standard
	Pb	208	0.026	ug/L	0.001	4	356	1375	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0199-MS2
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:06:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	61482	0	Standard
	Cl	37		ug/L			5469584	5056943	0	Standard
>	Sc	45		ug/L			1431133	1358631	1	Standard
	Al	27	268.665	ug/L	5.889	2	4783	7288742	1	Standard
	V	51	24.703	ug/L	0.214	0	7571	660998	0	Standard
	V-1	51	25.338	ug/L	0.177	0	252	676834	0	Standard
	Cr	52	57.385	ug/L	0.147	0	22548	1324339	1	Standard
	Cr	53	58.505	ug/L	0.203	0	207	154714	1	Standard
	Mn	55	30.835	ug/L	0.222	0	777	978786	1	Standard
>	Ge	72		ug/L			62323	48190	1	KED
	Co	59	29.782	ug/L	0.351	1	8	89084	0	KED
	Ni	60	29.004	ug/L	0.307	1	10	25156	0	KED
	Ni	62	28.247	ug/L	0.422	1	3	3993	0	KED
	Cu	63	36.075	ug/L	0.297	0	67	89947	0	KED
	Cu	65	35.627	ug/L	0.398	1	43	43965	0	KED
	Zn	66	81.262	ug/L	0.660	0	60	25397	0	KED
	Zn	67	74.361	ug/L	1.924	2	11	3873	2	KED
	As	75	25.452	ug/L	0.456	1	9	4054	1	KED
	Se	78	78.237	ug/L	0.922	1	10	1352	0	KED
	Y	89		ug/L			782831	695923	0	Standard
	Kr	83		ug/L			50	69	19	Standard
>	In-1	115		ug/L			18394	13812	2	KED
	Mo	98	48.528	ug/L	1.750	3	2	34761	1	KED
	Cd	111	24.019	ug/L	0.467	1	2	4533	1	KED
	Cd	114	23.455	ug/L	0.741	3	5	10913	1	KED
>	In	115		ug/L			1290822	966506	0	Standard
	Ag	107	24.375	ug/L	0.137	0	99	318669	0	Standard
	Sb	121	28.275	ug/L	0.090	0	202	315630	0	Standard
	Sb	123	28.387	ug/L	0.161	0	164	239908	0	Standard
	Ba	135	28.939	ug/L	0.464	1	59	107750	1	Standard
	Ba	137	28.862	ug/L	0.180	0	107	187157	0	Standard
>	Tb	159		ug/L			1611407	1409028	2	Standard
	Pb	208	25.812	ug/L	0.588	2	356	1054405	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0461-01
Sample Dil Factor: 20
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:14:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	55972	0	Standard
	Cl	**37**		ug/L			5469584	5307315	0	Standard
>	**Sc**	**45**		ug/L			1431133	1658190	1	Standard
	Al	**27**	**8254.482**	ug/L	123.658	1	4783	273156143	0	Standard
	V	**51**	**23.886**	ug/L	0.334	1	7571	780339	0	Standard
	V-1	**51**	**23.942**	ug/L	0.313	1	252	780545	0	Standard
	Cr	**52**	**22.270**	ug/L	0.328	1	22548	643242	1	Standard
	Cr	**53**	**22.498**	ug/L	0.319	1	207	72752	0	Standard
	Mn	**55**	**302.023**	ug/L	5.505	1	777	11691392	0	Standard
>	**Ge**	**72**		ug/L			62323	61224	0	KED
	Co	**59**	**8.689**	ug/L	0.115	1	8	33027	1	KED
	Ni	**60**	**27.506**	ug/L	0.535	1	10	30310	1	KED
	Ni	**62**	**27.399**	ug/L	0.662	2	3	4922	2	KED
	Cu	**63**	**47.447**	ug/L	1.262	2	67	150287	2	KED
	Cu	**65**	**47.360**	ug/L	0.154	0	43	74241	0	KED
	Zn	**66**	**191.325**	ug/L	2.334	1	60	75889	0	KED
	Zn	**67**	**180.107**	ug/L	2.914	1	11	11902	1	KED
	As	**75**	**3.895**	ug/L	0.098	2	9	796	2	KED
	Se	**78**	**0.607**	ug/L	0.098	16	10	23	8	KED
	Y	**89**		ug/L			782831	944953	1	Standard
	Kr	**83**		ug/L			50	79	26	Standard
>	**In-1**	**115**		ug/L			18394	17590	3	KED
	Mo	**98**	**0.899**	ug/L	0.041	4	2	822	5	KED
	Cd	**111**	**0.164**	ug/L	0.039	23	2	41	20	KED
	Cd	**114**	**0.155**	ug/L	0.003	1	5	97	2	KED
>	**In**	**115**		ug/L			1290822	1242697	0	Standard
	Ag	**107**	**0.099**	ug/L	0.002	2	99	1754	1	Standard
	Sb	**121**	**0.128**	ug/L	0.006	4	202	2028	3	Standard
	Sb	**123**	**0.130**	ug/L	0.010	7	164	1575	6	Standard
	Ba	**135**	**75.281**	ug/L	0.269	0	59	360300	0	Standard
	Ba	**137**	**75.291**	ug/L	0.432	0	107	627560	0	Standard
>	**Tb**	**159**		ug/L			1611407	1650125	1	Standard
	Pb	**208**	**18.947**	ug/L	0.200	1	356	906760	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0461-02
Sample Dil Factor: 20
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:19:40
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	46180	1	Standard
	Cl	**37**		ug/L			5469584	5342023	2	Standard
>	**Sc**	**45**		ug/L			1431133	1644952	3	Standard
	Al	**27**	**8834.168**	ug/L	184.230	2	4783	289921173	1	Standard
	V	**51**	**25.318**	ug/L	0.910	3	7571	819481	0	Standard
	V-1	**51**	**25.354**	ug/L	0.805	3	252	819520	0	Standard
	Cr	**52**	**21.512**	ug/L	0.958	4	22548	616755	1	Standard
	Cr	**53**	**21.737**	ug/L	0.677	3	207	69705	0	Standard
	Mn	**55**	**250.542**	ug/L	6.747	2	777	9617456	0	Standard
>	**Ge**	**72**		ug/L			62323	61333	1	KED
	Co	**59**	**6.838**	ug/L	0.130	1	8	26034	0	KED
	Ni	**60**	**25.971**	ug/L	0.164	0	10	28670	1	KED
	Ni	**62**	**26.798**	ug/L	0.199	0	3	4822	1	KED
	Cu	**63**	**41.740**	ug/L	0.245	0	67	132440	1	KED
	Cu	**65**	**41.480**	ug/L	0.201	0	43	65142	1	KED
	Zn	**66**	**95.087**	ug/L	0.906	0	60	37811	1	KED
	Zn	**67**	**90.737**	ug/L	3.408	3	11	6010	2	KED
	As	**75**	**7.588**	ug/L	0.112	1	9	1545	0	KED
	Se	**78**	**0.726**	ug/L	0.153	21	10	26	10	KED
	Y	**89**		ug/L			782831	955915	1	Standard
	Kr	**83**		ug/L			50	82	12	Standard
>	**In-1**	**115**		ug/L			18394	17679	2	KED
	Mo	**98**	**0.657**	ug/L	0.025	3	2	604	1	KED
	Cd	**111**	**0.135**	ug/L	0.017	12	2	35	9	KED
	Cd	**114**	**0.156**	ug/L	0.006	4	5	98	5	KED
>	**In**	**115**		ug/L			1290822	1222525	1	Standard
	Ag	**107**	**0.068**	ug/L	0.005	7	99	1210	6	Standard
	Sb	**121**	**0.045**	ug/L	0.002	3	202	822	1	Standard
	Sb	**123**	**0.042**	ug/L	0.003	7	164	605	6	Standard
	Ba	**135**	**26.644**	ug/L	0.287	1	59	125474	0	Standard
	Ba	**137**	**26.850**	ug/L	0.084	0	107	220230	0	Standard
>	**Tb**	**159**		ug/L			1611407	1676256	1	Standard
	Pb	**208**	**16.809**	ug/L	0.293	1	356	817128	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0461-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:25:04
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	52805	1	Standard
	Cl	37		ug/L			5469584	5542815	0	Standard
>	Sc	45		ug/L			1431133	1638255	1	Standard
	Al	27	8255.415	ug/L	95.593	1	4783	269907458	0	Standard
	V	51	22.613	ug/L	0.191	0	7571	730372	1	Standard
	V-1	51	22.746	ug/L	0.073	0	252	732713	1	Standard
	Cr	52	20.220	ug/L	0.421	2	22548	579296	0	Standard
	Cr	53	20.717	ug/L	0.324	1	207	66209	1	Standard
	Mn	55	315.925	ug/L	5.057	1	777	12082631	0	Standard
>	Ge	72		ug/L			62323	61701	1	KED
	Co	59	8.609	ug/L	0.232	2	8	32973	1	KED
	Ni	60	25.954	ug/L	0.298	1	10	28823	0	KED
	Ni	62	27.411	ug/L	0.122	0	3	4962	0	KED
	Cu	63	63.717	ug/L	0.459	0	67	203367	1	KED
	Cu	65	63.877	ug/L	0.888	1	43	100899	1	KED
	Zn	66	309.009	ug/L	3.508	1	60	123495	1	KED
	Zn	67	279.288	ug/L	6.513	2	11	18591	1	KED
	As	75	5.262	ug/L	0.062	1	9	1081	2	KED
	Se	78	0.679	ug/L	0.100	14	10	25	9	KED
	Y	89		ug/L			782831	965621	0	Standard
	Kr	83		ug/L			50	86	20	Standard
>	In-1	115		ug/L			18394	18140	1	KED
	Mo	98	0.633	ug/L	0.007	1	2	597	2	KED
	Cd	111	0.168	ug/L	0.015	9	2	44	9	KED
	Cd	114	0.154	ug/L	0.043	27	5	99	24	KED
>	In	115		ug/L			1290822	1245913	0	Standard
	Ag	107	0.216	ug/L	0.009	4	99	3734	4	Standard
	Sb	121	0.176	ug/L	0.006	3	202	2724	4	Standard
	Sb	123	0.171	ug/L	0.003	1	164	2017	0	Standard
	Ba	135	74.025	ug/L	0.060	0	59	355203	0	Standard
	Ba	137	74.643	ug/L	0.579	0	107	623758	0	Standard
>	Tb	159		ug/L			1611407	1670543	0	Standard
	Pb	208	14.477	ug/L	0.084	0	356	701570	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLC
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:31:29
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	23695	2	Standard
	Cl	**37**		ug/L			5469584	5212293	2	Standard
>	**Sc**	**45**		ug/L			1431133	1475657	2	Standard
	Al	**27**	**0.009**	ug/L	0.008	84	4783	5206	3	Standard
	V	**51**	**-0.017**	ug/L	0.010	55	7571	7306	1	Standard
	V-1	**51**	**-0.001**	ug/L	0.001	164	252	244	8	Standard
	Cr	**52**	**-0.071**	ug/L	0.025	35	22548	21492	0	Standard
	Cr	**53**	**-0.015**	ug/L	0.009	59	207	170	15	Standard
	Mn	**55**	**-0.001**	ug/L	0.000	12	777	768	2	Standard
>	**Ge**	**72**		ug/L			62323	59708	5	KED
	Co	**59**	**-0.000**	ug/L	0.001	189	8	6	31	KED
	Ni	**60**	**0.003**	ug/L	0.008	234	10	13	65	KED
	Ni	**62**	**0.006**	ug/L	0.031	552	3	3	132	KED
	Cu	**63**	**-0.003**	ug/L	0.001	33	67	54	12	KED
	Cu	**65**	**-0.005**	ug/L	0.008	146	43	33	37	KED
	Zn	**66**	**-0.034**	ug/L	0.012	35	60	45	6	KED
	Zn	**67**	**-0.013**	ug/L	0.026	196	11	10	21	KED
	As	**75**	**-0.013**	ug/L	0.008	59	9	6	21	KED
	Se	**78**	**-0.018**	ug/L	0.086	477	10	10	11	KED
	Y	**89**		ug/L			782831	781945	1	Standard
	Kr	**83**		ug/L			50	41	12	Standard
>	**In-1**	**115**		ug/L			18394	18072	2	KED
	Mo	**98**	**0.006**	ug/L	0.004	63	2	7	44	KED
	Cd	**111**	**0.002**	ug/L	0.006	391	2	3	45	KED
	Cd	**114**	**-0.000**	ug/L	0.012	2585	5	5	143	KED
>	**In**	**115**		ug/L			1290822	1234003	2	Standard
	Ag	**107**	**-0.001**	ug/L	0.001	226	99	86	22	Standard
	Sb	**121**	**-0.011**	ug/L	0.000	3	202	36	13	Standard
	Sb	**123**	**-0.012**	ug/L	0.000	4	164	30	18	Standard
	Ba	**135**	**-0.006**	ug/L	0.001	16	59	29	14	Standard
	Ba	**137**	**-0.004**	ug/L	0.002	43	107	68	19	Standard
>	**Tb**	**159**		ug/L			1611407	1608469	2	Standard
	Pb	**208**	**-0.003**	ug/L	0.001	26	356	227	12	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVB
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:36:53
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	25295	0	Standard
	Cl	37		ug/L			5469584	5425278	0	Standard
>	Sc	45		ug/L			1431133	1516683	0	Standard
	Al	27	5486.667	ug/L	8.002	0	4783	166093296	0	Standard
	V	51	49.451	ug/L	0.475	0	7571	1469263	1	Standard
	V-1	51	49.667	ug/L	0.481	0	252	1480966	1	Standard
	Cr	52	49.898	ug/L	0.145	0	22548	1288667	0	Standard
	Cr	53	50.583	ug/L	0.631	1	207	149361	1	Standard
	Mn	55	51.043	ug/L	0.216	0	777	1808193	0	Standard
>	Ge	72		ug/L			62323	61814	1	KED
	Co	59	55.670	ug/L	1.175	2	8	213574	1	KED
	Ni	60	55.288	ug/L	0.200	0	10	61506	2	KED
	Ni	62	55.407	ug/L	1.724	3	3	10042	2	KED
	Cu	63	56.130	ug/L	0.748	1	67	179459	0	KED
	Cu	65	55.570	ug/L	0.962	1	43	87928	1	KED
	Zn	66	54.377	ug/L	0.688	1	60	21817	0	KED
	Zn	67	54.814	ug/L	0.940	1	11	3664	0	KED
	As	75	52.306	ug/L	1.160	2	9	10676	0	KED
	Se	78	51.071	ug/L	0.739	1	10	1136	2	KED
	Y	89		ug/L			782831	790741	2	Standard
	Kr	83		ug/L			50	60	10	Standard
>	In-1	115		ug/L			18394	17806	1	KED
	Mo	98	53.815	ug/L	0.805	1	2	49715	0	KED
	Cd	111	53.464	ug/L	0.341	0	2	13008	1	KED
	Cd	114	52.793	ug/L	0.722	1	5	31671	1	KED
>	In	115		ug/L			1290822	1246032	0	Standard
	Ag	107	53.133	ug/L	0.720	1	99	895420	1	Standard
	Sb	121	52.222	ug/L	0.740	1	202	751337	0	Standard
	Sb	123	52.430	ug/L	0.562	1	164	571098	0	Standard
	Ba	135	51.740	ug/L	0.872	1	59	248295	1	Standard
	Ba	137	51.449	ug/L	0.620	1	107	430048	1	Standard
>	Tb	159		ug/L			1611407	1652979	1	Standard
	Pb	208	53.036	ug/L	0.635	1	356	2541927	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBB
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:44:38
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	27442	3	Standard
	Cl	**37**		ug/L			5469584	5315468	1	Standard
>	**Sc**	**45**		ug/L			1431133	1495240	1	Standard
	Al	**27**	**0.041**	ug/L	0.002	6	4783	6213	1	Standard
	V	**51**	**-0.019**	ug/L	0.003	17	7571	7368	0	Standard
	V-1	**51**	**-0.001**	ug/L	0.000	16	252	236	2	Standard
	Cr	**52**	**-0.063**	ug/L	0.012	19	22548	21976	1	Standard
	Cr	**53**	**-0.005**	ug/L	0.008	162	207	202	11	Standard
	Mn	**55**	**0.001**	ug/L	0.000	45	777	832	1	Standard
>	**Ge**	**72**		ug/L			62323	61622	3	KED
	Co	**59**	**0.000**	ug/L	0.001	1924	8	8	24	KED
	Ni	**60**	**0.002**	ug/L	0.003	187	10	12	32	KED
	Ni	**62**	**0.004**	ug/L	0.010	278	3	3	50	KED
	Cu	**63**	**0.000**	ug/L	0.002	761	67	67	10	KED
	Cu	**65**	**-0.004**	ug/L	0.006	137	43	36	22	KED
	Zn	**66**	**-0.011**	ug/L	0.016	144	60	55	12	KED
	Zn	**67**	**-0.076**	ug/L	0.057	76	11	6	62	KED
	As	**75**	**-0.002**	ug/L	0.008	496	9	9	14	KED
	Se	**78**	**-0.006**	ug/L	0.018	322	10	10	2	KED
	Y	**89**		ug/L			782831	787336	4	Standard
	Kr	**83**		ug/L			50	39	5	Standard
>	**In-1**	**115**		ug/L			18394	17943	1	KED
	Mo	**98**	**0.005**	ug/L	0.003	66	2	6	45	KED
	Cd	**111**	**0.000**	ug/L	0.007	2727	2	2	57	KED
	Cd	**114**	**-0.001**	ug/L	0.009	1240	5	4	110	KED
>	**In**	**115**		ug/L			1290822	1282248	2	Standard
	Ag	**107**	**0.000**	ug/L	0.001	339	99	105	21	Standard
	Sb	**121**	**0.028**	ug/L	0.003	11	202	613	7	Standard
	Sb	**123**	**0.027**	ug/L	0.004	16	164	462	9	Standard
	Ba	**135**	**-0.002**	ug/L	0.002	69	59	48	17	Standard
	Ba	**137**	**-0.002**	ug/L	0.002	119	107	89	20	Standard
>	**Tb**	**159**		ug/L			1611407	1626427	2	Standard
	Pb	**208**	**-0.000**	ug/L	0.000	143	356	344	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0064-02
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:49:39
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	72441	0	Standard
	Cl	37		ug/L			5469584	5097407	0	Standard
>	Sc	45		ug/L			1431133	1445847	1	Standard
	Al	27	170.428	ug/L	3.823	2	4783	4921845	0	Standard
	V	51	0.968	ug/L	0.039	3	7571	34925	4	Standard
	V-1	51	1.171	ug/L	0.013	1	252	33520	0	Standard
	Cr	52	15.085	ug/L	0.299	1	22548	387231	1	Standard
	Cr	53	15.337	ug/L	0.377	2	207	43307	1	Standard
	Mn	55	9.750	ug/L	0.104	1	777	329869	0	Standard
>	Ge	72		ug/L			62323	50199	0	KED
	Co	59	0.197	ug/L	0.003	1	8	621	1	KED
	Ni	60	1.376	ug/L	0.040	2	10	1250	2	KED
	Ni	62	1.513	ug/L	0.342	22	3	225	23	KED
	Cu	63	10.277	ug/L	0.133	1	67	26732	1	KED
	Cu	65	10.198	ug/L	0.285	2	43	13134	2	KED
	Zn	66	6.422	ug/L	0.245	3	60	2136	3	KED
	Zn	67	5.861	ug/L	0.536	9	11	326	8	KED
	As	75	0.087	ug/L	0.022	25	9	22	16	KED
	Se	78	0.355	ug/L	0.055	15	10	15	6	KED
	Y	89		ug/L			782831	717934	1	Standard
	Kr	83		ug/L			50	61	19	Standard
>	In-1	115		ug/L			18394	12852	18	KED
	Mo	98	20.951	ug/L	4.830	23	2	13578	3	KED
	Cd	111	0.009	ug/L	0.019	209	2	3	75	KED
	Cd	114	0.012	ug/L	0.016	131	5	8	60	KED
>	In	115		ug/L			1290822	1007763	1	Standard
	Ag	107	0.004	ug/L	0.001	20	99	128	7	Standard
	Sb	121	0.267	ug/L	0.005	1	202	3263	0	Standard
	Sb	123	0.253	ug/L	0.011	4	164	2356	2	Standard
	Ba	135	1.465	ug/L	0.012	0	59	5732	0	Standard
	Ba	137	1.488	ug/L	0.017	1	107	10140	1	Standard
>	Tb	159		ug/L			1611407	1470621	1	Standard
	Pb	208	0.025	ug/L	0.001	2	356	1390	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0064-03
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 03:56:02
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	71465	0	Standard
	Cl	**37**		ug/L			5469584	5053994	0	Standard
>	**Sc**	**45**		ug/L			1431133	1432863	1	Standard
	Al	**27**	**170.364**	ug/L	3.354	1	4783	4876185	0	Standard
	V	**51**	**1.179**	ug/L	0.058	4	7571	40481	3	Standard
	V-1	**51**	**1.391**	ug/L	0.021	1	252	39426	0	Standard
	Cr	**52**	**14.966**	ug/L	0.214	1	22548	380917	0	Standard
	Cr	**53**	**15.259**	ug/L	0.322	2	207	42706	1	Standard
	Mn	**55**	**12.955**	ug/L	0.238	1	777	434087	1	Standard
>	**Ge**	**72**		ug/L			62323	49714	0	KED
	Co	**59**	**0.387**	ug/L	0.020	5	8	1200	5	KED
	Ni	**60**	**2.104**	ug/L	0.035	1	10	1890	1	KED
	Ni	**62**	**2.453**	ug/L	0.213	8	3	360	8	KED
	Cu	**63**	**15.987**	ug/L	0.123	0	67	41153	0	KED
	Cu	**65**	**15.608**	ug/L	0.459	2	43	19890	2	KED
	Zn	**66**	**10.959**	ug/L	0.336	3	60	3575	2	KED
	Zn	**67**	**9.707**	ug/L	0.455	4	11	529	4	KED
	As	**75**	**0.119**	ug/L	0.023	19	9	27	14	KED
	Se	**78**	**0.271**	ug/L	0.159	58	10	13	20	KED
	Y	**89**		ug/L			782831	706719	0	Standard
	Kr	**83**		ug/L			50	53	7	Standard
>	**In-1**	**115**		ug/L			18394	14518	0	KED
	Mo	**98**	**16.875**	ug/L	0.206	1	2	12713	0	KED
	Cd	**111**	**0.016**	ug/L	0.003	16	2	5	10	KED
	Cd	**114**	**0.010**	ug/L	0.009	88	5	9	46	KED
>	**In**	**115**		ug/L			1290822	998710	1	Standard
	Ag	**107**	**0.004**	ug/L	0.001	34	99	129	13	Standard
	Sb	**121**	**0.263**	ug/L	0.001	0	202	3194	1	Standard
	Sb	**123**	**0.262**	ug/L	0.009	3	164	2412	2	Standard
	Ba	**135**	**1.380**	ug/L	0.033	2	59	5353	3	Standard
	Ba	**137**	**1.367**	ug/L	0.013	0	107	9239	0	Standard
>	**Tb**	**159**		ug/L			1611407	1454440	1	Standard
	Pb	**208**	**0.049**	ug/L	0.002	3	356	2381	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0064-04
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:02:26
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	63990	2	Standard
	Cl	**37**		ug/L			5469584	5064429	0	Standard
>	**Sc**	**45**		ug/L			1431133	1402833	0	Standard
	Al	**27**	**176.847**	ug/L	1.018	0	4783	4956065	0	Standard
	V	**51**	**1.299**	ug/L	0.115	8	7571	42910	6	Standard
	V-1	**51**	**1.639**	ug/L	0.005	0	252	45437	0	Standard
	Cr	**52**	**24.877**	ug/L	0.250	1	22548	605301	0	Standard
	Cr	**53**	**25.303**	ug/L	0.140	0	207	69206	1	Standard
	Mn	**55**	**9.702**	ug/L	0.098	1	777	318484	0	Standard
>	**Ge**	**72**		ug/L			62323	50510	0	KED
	Co	**59**	**0.334**	ug/L	0.029	8	8	1054	8	KED
	Ni	**60**	**2.498**	ug/L	0.105	4	10	2278	3	KED
	Ni	**62**	**2.580**	ug/L	0.198	7	3	384	8	KED
	Cu	**63**	**14.274**	ug/L	0.279	1	67	37335	1	KED
	Cu	**65**	**13.991**	ug/L	0.393	2	43	18116	2	KED
	Zn	**66**	**8.969**	ug/L	0.219	2	60	2981	1	KED
	Zn	**67**	**8.130**	ug/L	0.695	8	11	452	8	KED
	As	**75**	**0.124**	ug/L	0.026	20	9	28	14	KED
	Se	**78**	**0.195**	ug/L	0.035	18	10	12	4	KED
	Y	**89**		ug/L			782831	708836	1	Standard
	Kr	**83**		ug/L			50	53	13	Standard
>	**In-1**	**115**		ug/L			18394	14615	0	KED
	Mo	**98**	**13.882**	ug/L	0.393	2	2	10528	2	KED
	Cd	**111**	**0.024**	ug/L	0.005	22	2	6	15	KED
	Cd	**114**	**0.017**	ug/L	0.006	35	5	12	23	KED
>	**In**	**115**		ug/L			1290822	1009283	1	Standard
	Ag	**107**	**0.001**	ug/L	0.002	131	99	96	26	Standard
	Sb	**121**	**0.254**	ug/L	0.005	2	202	3119	2	Standard
	Sb	**123**	**0.260**	ug/L	0.009	3	164	2421	4	Standard
	Ba	**135**	**1.287**	ug/L	0.008	0	59	5048	1	Standard
	Ba	**137**	**1.289**	ug/L	0.006	0	107	8805	2	Standard
>	**Tb**	**159**		ug/L			1611407	1459466	1	Standard
	Pb	**208**	**0.044**	ug/L	0.001	1	356	2191	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLD
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:10:51
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	25277	1	Standard
	Cl	**37**		ug/L			5469584	5358498	1	Standard
>	**Sc**	**45**		ug/L			1431133	1472167	0	Standard
	Al	**27**	**-0.052**	ug/L	0.002	4	4783	3378	2	Standard
	V	**51**	**0.006**	ug/L	0.004	59	7571	7965	0	Standard
	V-1	**51**	**0.000**	ug/L	0.002	675	252	266	16	Standard
	Cr	**52**	**0.026**	ug/L	0.009	35	22548	23827	0	Standard
	Cr	**53**	**0.006**	ug/L	0.003	50	207	230	3	Standard
	Mn	**55**	**-0.002**	ug/L	0.001	41	777	730	3	Standard
>	**Ge**	**72**		ug/L			62323	60681	1	KED
	Co	**59**	**0.006**	ug/L	0.012	195	8	31	141	KED
	Ni	**60**	**0.001**	ug/L	0.008	948	10	10	83	KED
	Ni	**62**	**0.018**	ug/L	0.032	179	3	6	91	KED
	Cu	**63**	**0.008**	ug/L	0.022	264	67	91	73	KED
	Cu	**65**	**-0.001**	ug/L	0.016	1393	43	40	61	KED
	Zn	**66**	**-0.049**	ug/L	0.018	37	60	40	16	KED
	Zn	**67**	**0.044**	ug/L	0.074	169	11	13	34	KED
	As	**75**	**0.001**	ug/L	0.011	1935	9	9	21	KED
	Se	**78**	**-0.043**	ug/L	0.201	466	10	9	44	KED
	Y	**89**		ug/L			782831	746785	1	Standard
	Kr	**83**		ug/L			50	45	12	Standard
>	**In-1**	**115**		ug/L			18394	17493	0	KED
	Mo	**98**	**0.001**	ug/L	0.003	517	2	2	106	KED
	Cd	**111**	**0.009**	ug/L	0.004	46	2	4	20	KED
	Cd	**114**	**-0.000**	ug/L	0.004	801	5	4	43	KED
>	**In**	**115**		ug/L			1290822	1201335	1	Standard
	Ag	**107**	**-0.001**	ug/L	0.001	70	99	69	24	Standard
	Sb	**121**	**-0.010**	ug/L	0.001	13	202	52	34	Standard
	Sb	**123**	**-0.010**	ug/L	0.001	9	164	51	19	Standard
	Ba	**135**	**-0.005**	ug/L	0.000	4	59	31	3	Standard
	Ba	**137**	**-0.006**	ug/L	0.001	20	107	52	18	Standard
>	**Tb**	**159**		ug/L			1611407	1583575	1	Standard
	Pb	**208**	**-0.003**	ug/L	0.001	24	356	217	13	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0018-02
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:17:15
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	43212	0	Standard
	Cl	37		ug/L			5469584	27061780	1	Standard
>	Sc	45		ug/L			1431133	1360085	2	Standard
	Al	27	114.100	ug/L	1.964	1	4783	3100987	1	Standard
	V	51	1.170	ug/L	0.068	5	7571	38165	2	Standard
	V-1	51	7.309	ug/L	0.236	3	252	195535	0	Standard
	Cr	52	0.816	ug/L	0.068	8	22548	39963	1	Standard
	Cr	53	20.678	ug/L	0.612	2	207	54841	0	Standard
	Mn	55	3.049	ug/L	0.105	3	777	97489	1	Standard
>	Ge	72		ug/L			62323	47473	1	KED
	Co	59	0.172	ug/L	0.009	5	8	512	4	KED
	Ni	60	0.410	ug/L	0.015	3	10	357	2	KED
	Ni	62	0.434	ug/L	0.041	9	3	62	8	KED
	Cu	63	2.288	ug/L	0.039	1	67	5667	1	KED
	Cu	65	2.294	ug/L	0.056	2	43	2818	1	KED
	Zn	66	1.849	ug/L	0.030	1	60	614	1	KED
	Zn	67	2.288	ug/L	0.255	11	11	125	9	KED
	As	75	0.666	ug/L	0.105	15	9	111	13	KED
	Se	78	0.456	ug/L	0.048	10	10	16	5	KED
	Y	89		ug/L			782831	677978	2	Standard
	Kr	83		ug/L			50	105	16	Standard
>	In-1	115		ug/L			18394	13844	2	KED
	Mo	98	0.746	ug/L	0.043	5	2	537	4	KED
	Cd	111	0.014	ug/L	0.005	35	2	4	20	KED
	Cd	114	0.007	ug/L	0.005	62	5	7	27	KED
>	In	115		ug/L			1290822	1001325	2	Standard
	Ag	107	-0.001	ug/L	0.001	183	99	70	19	Standard
	Sb	121	0.098	ug/L	0.003	3	202	1294	4	Standard
	Sb	123	0.105	ug/L	0.004	4	164	1047	4	Standard
	Ba	135	7.412	ug/L	0.184	2	59	28615	0	Standard
	Ba	137	7.483	ug/L	0.135	1	107	50327	1	Standard
>	Tb	159		ug/L			1611407	1412161	2	Standard
	Pb	208	0.924	ug/L	0.025	2	356	38144	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0018-05
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:22:15
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	49361	1	Standard
	Cl	37		ug/L			5469584	5362497	1	Standard
>	Sc	45		ug/L			1431133	1585124	0	Standard
	Al	27	23.830	ug/L	0.138	0	4783	759221	1	Standard
	V	51	0.376	ug/L	0.013	3	7571	20003	1	Standard
	V-1	51	0.548	ug/L	0.007	1	252	17348	1	Standard
	Cr	52	0.444	ug/L	0.007	1	22548	36728	0	Standard
	Cr	53	0.997	ug/L	0.050	5	207	3301	5	Standard
	Mn	55	1.681	ug/L	0.010	0	777	63071	1	Standard
>	Ge	72		ug/L			62323	60589	1	KED
	Co	59	0.133	ug/L	0.004	2	8	507	1	KED
	Ni	60	0.445	ug/L	0.019	4	10	495	5	KED
	Ni	62	0.469	ug/L	0.023	4	3	86	5	KED
	Cu	63	3.102	ug/L	0.091	2	67	9781	2	KED
	Cu	65	3.094	ug/L	0.032	1	43	4838	0	KED
	Zn	66	6.007	ug/L	0.053	0	60	2415	1	KED
	Zn	67	5.426	ug/L	0.137	2	11	365	3	KED
	As	75	0.267	ug/L	0.019	7	9	62	4	KED
	Se	78	0.043	ug/L	0.139	326	10	11	27	KED
	Y	89		ug/L			782831	753058	1	Standard
	Kr	83		ug/L			50	53	12	Standard
>	In-1	115		ug/L			18394	17503	1	KED
	Mo	98	1.126	ug/L	0.019	1	2	1025	2	KED
	Cd	111	0.016	ug/L	0.008	47	2	6	28	KED
	Cd	114	0.020	ug/L	0.004	17	5	16	12	KED
>	In	115		ug/L			1290822	1202631	0	Standard
	Ag	107	-0.001	ug/L	0.001	160	99	82	20	Standard
	Sb	121	1.045	ug/L	0.015	1	202	14698	1	Standard
	Sb	123	1.016	ug/L	0.007	0	164	10835	0	Standard
	Ba	135	1.498	ug/L	0.006	0	59	6991	0	Standard
	Ba	137	1.510	ug/L	0.019	1	107	12280	1	Standard
>	Tb	159		ug/L			1611407	1597905	2	Standard
	Pb	208	0.130	ug/L	0.003	2	356	6352	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0018-07
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:27:39
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	47001	0	Standard
	Cl	37		ug/L			5469584	32178655	3	Standard
>	Sc	45		ug/L			1431133	1331908	0	Standard
	Al	27	324.105	ug/L	4.191	1	4783	8619900	0	Standard
	V	51	1.441	ug/L	0.106	7	7571	44428	6	Standard
	V-1	51	8.672	ug/L	0.138	1	252	227252	1	Standard
	Cr	52	1.026	ug/L	0.021	2	22548	43817	0	Standard
	Cr	53	24.419	ug/L	0.138	0	207	63417	0	Standard
	Mn	55	8.891	ug/L	0.151	1	777	277186	1	Standard
>	Ge	72		ug/L			62323	45595	0	KED
	Co	59	0.294	ug/L	0.019	6	8	838	6	KED
	Ni	60	0.917	ug/L	0.044	4	10	760	4	KED
	Ni	62	0.971	ug/L	0.068	7	3	132	6	KED
	Cu	63	3.443	ug/L	0.046	1	67	8166	0	KED
	Cu	65	3.360	ug/L	0.053	1	43	3952	1	KED
	Zn	66	2.520	ug/L	0.088	3	60	788	3	KED
	Zn	67	3.366	ug/L	0.378	11	11	173	11	KED
	As	75	0.734	ug/L	0.012	1	9	117	1	KED
	Se	78	0.522	ug/L	0.198	37	10	16	18	KED
	Y	89		ug/L			782831	659293	0	Standard
	Kr	83		ug/L			50	138	8	Standard
>	In-1	115		ug/L			18394	13838	1	KED
	Mo	98	1.978	ug/L	0.059	2	2	1422	3	KED
	Cd	111	0.036	ug/L	0.022	61	2	8	44	KED
	Cd	114	0.016	ug/L	0.011	68	5	11	44	KED
>	In	115		ug/L			1290822	974594	0	Standard
	Ag	107	0.001	ug/L	0.001	70	99	93	13	Standard
	Sb	121	0.108	ug/L	0.002	1	202	1369	2	Standard
	Sb	123	0.110	ug/L	0.007	6	164	1062	6	Standard
	Ba	135	11.486	ug/L	0.101	0	59	43148	0	Standard
	Ba	137	11.414	ug/L	0.115	1	107	74676	0	Standard
>	Tb	159		ug/L			1611407	1377922	1	Standard
	Pb	208	0.505	ug/L	0.007	1	356	20488	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0018-10
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:33:03
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	50524	1	Standard
	Cl	37		ug/L			5469584	5494538	0	Standard
>	Sc	45		ug/L			1431133	1612198	1	Standard
	Al	27	352.288	ug/L	10.907	3	4783	11338576	2	Standard
	V	51	2.178	ug/L	0.047	2	7571	76935	1	Standard
	V-1	51	2.457	ug/L	0.046	1	252	78143	0	Standard
	Cr	52	0.769	ug/L	0.032	4	22548	46102	0	Standard
	Cr	53	1.711	ug/L	0.058	3	207	5596	2	Standard
	Mn	55	213.190	ug/L	2.241	1	777	8025621	1	Standard
>	Ge	72		ug/L			62323	61150	0	KED
	Co	59	60.052	ug/L	1.390	2	8	227924	1	KED
	Ni	60	2.611	ug/L	0.049	1	10	2882	2	KED
	Ni	62	2.641	ug/L	0.184	6	3	476	7	KED
	Cu	63	9.916	ug/L	0.132	1	67	31420	0	KED
	Cu	65	9.714	ug/L	0.243	2	43	15241	2	KED
	Zn	66	13.834	ug/L	0.462	3	60	5535	2	KED
	Zn	67	13.936	ug/L	0.849	6	11	930	5	KED
	As	75	0.832	ug/L	0.036	4	9	177	3	KED
	Se	78	0.109	ug/L	0.127	116	10	13	21	KED
	Y	89		ug/L			782831	773381	1	Standard
	Kr	83		ug/L			50	57	14	Standard
>	In-1	115		ug/L			18394	17680	3	KED
	Mo	98	8.350	ug/L	0.252	3	2	7658	0	KED
	Cd	111	0.083	ug/L	0.015	17	2	22	15	KED
	Cd	114	0.066	ug/L	0.005	7	5	44	8	KED
>	In	115		ug/L			1290822	1208000	1	Standard
	Ag	107	0.039	ug/L	0.003	6	99	728	4	Standard
	Sb	121	0.285	ug/L	0.004	1	202	4163	2	Standard
	Sb	123	0.276	ug/L	0.009	3	164	3068	1	Standard
	Ba	135	21.525	ug/L	0.187	0	59	100173	0	Standard
	Ba	137	21.221	ug/L	0.503	2	107	171976	1	Standard
>	Tb	159		ug/L			1611407	1621709	0	Standard
	Pb	208	4.672	ug/L	0.014	0	356	220038	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21D0018-12
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:39:27
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	60301	1	Standard
	Cl	37		ug/L			5469584	5586795	0	Standard
>	Sc	45		ug/L			1431133	1554646	1	Standard
	Al	27	94.626	ug/L	0.886	0	4783	2941493	2	Standard
	V	51	8.963	ug/L	0.067	0	7571	279678	0	Standard
	V-1	51	9.069	ug/L	0.064	0	252	277392	0	Standard
	Cr	52	0.342	ug/L	0.010	2	22548	33381	0	Standard
	Cr	53	0.932	ug/L	0.020	2	207	3041	1	Standard
	Mn	55	7.219	ug/L	0.050	0	777	262870	1	Standard
>	Ge	72		ug/L			62323	52365	0	KED
	Co	59	2.625	ug/L	0.039	1	8	8540	1	KED
	Ni	60	7.349	ug/L	0.161	2	10	6933	2	KED
	Ni	62	7.298	ug/L	0.120	1	3	1123	1	KED
	Cu	63	10.883	ug/L	0.108	0	67	29525	0	KED
	Cu	65	10.758	ug/L	0.200	1	43	14452	2	KED
	Zn	66	5.655	ug/L	0.182	3	60	1968	3	KED
	Zn	67	7.305	ug/L	0.290	3	11	422	4	KED
	As	75	0.765	ug/L	0.020	2	9	140	3	KED
	Se	78	0.491	ug/L	0.197	40	10	18	20	KED
	Y	89		ug/L			782831	729389	0	Standard
	Kr	83		ug/L			50	64	7	Standard
>	In-1	115		ug/L			18394	15640	3	KED
	Mo	98	3.664	ug/L	0.124	3	2	2973	1	KED
	Cd	111	0.104	ug/L	0.010	9	2	24	11	KED
	Cd	114	0.099	ug/L	0.014	13	5	56	10	KED
>	In	115		ug/L			1290822	1067008	0	Standard
	Ag	107	0.003	ug/L	0.001	58	99	118	17	Standard
	Sb	121	0.559	ug/L	0.001	0	202	7056	0	Standard
	Sb	123	0.556	ug/L	0.003	0	164	5325	1	Standard
	Ba	135	32.061	ug/L	0.208	0	59	131778	0	Standard
	Ba	137	31.988	ug/L	0.194	0	107	228992	1	Standard
>	Tb	159		ug/L			1611407	1506080	0	Standard
	Pb	208	0.163	ug/L	0.001	0	356	7464	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLE
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:47:52
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	24899	0	Standard
	Cl	**37**		ug/L			5469584	5689148	1	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1462558	0	Standard
|	**Al**	**27**	**-0.063**	ug/L	0.009	13	4783	3054	7	Standard
|	**V**	**51**	**-0.020**	ug/L	0.002	8	7571	7177	0	Standard
|	**V-1**	**51**	**0.048**	ug/L	0.003	5	252	1636	4	Standard
|	**Cr**	**52**	**-0.066**	ug/L	0.012	18	22548	21436	1	Standard
|	**Cr**	**53**	**0.154**	ug/L	0.010	6	207	650	4	Standard
⌊	**Mn**	**55**	**-0.002**	ug/L	0.001	23	777	716	2	Standard
⌈>	**Ge**	**72**		ug/L			62323	60184	1	KED
|	**Co**	**59**	**0.000**	ug/L	0.002	391	8	10	60	KED
|	**Ni**	**60**	**0.000**	ug/L	0.004	1412	10	10	47	KED
|	**Ni**	**62**	**0.001**	ug/L	0.006	1059	3	3	34	KED
|	**Cu**	**63**	**-0.004**	ug/L	0.003	77	67	54	14	KED
|	**Cu**	**65**	**-0.013**	ug/L	0.003	22	43	21	22	KED
|	**Zn**	**66**	**-0.042**	ug/L	0.024	56	60	42	20	KED
|	**Zn**	**67**	**-0.013**	ug/L	0.036	271	11	10	21	KED
|	**As**	**75**	**-0.005**	ug/L	0.006	123	9	8	14	KED
⌊	**Se**	**78**	**0.121**	ug/L	0.181	149	10	13	31	KED
	Y	**89**		ug/L			782831	744561	2	Standard
	Kr	**83**		ug/L			50	52	17	Standard
⌈>	**In-1**	**115**		ug/L			18394	17317	2	KED
|	**Mo**	**98**	**0.006**	ug/L	0.006	97	2	7	70	KED
|	**Cd**	**111**	**-0.005**	ug/L	0.005	97	2	1	69	KED
⌊	**Cd**	**114**	**-0.001**	ug/L	0.002	149	5	4	24	KED
⌈>	**In**	**115**		ug/L			1290822	1205982	1	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.000	18	99	61	9	Standard
|	**Sb**	**121**	**-0.011**	ug/L	0.000	2	202	40	7	Standard
|	**Sb**	**123**	**-0.012**	ug/L	0.000	3	164	26	19	Standard
|	**Ba**	**135**	**-0.004**	ug/L	0.002	48	59	38	20	Standard
⌊	**Ba**	**137**	**-0.005**	ug/L	0.001	14	107	59	11	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1557832	0	Standard
⌊	**Pb**	**208**	**-0.002**	ug/L	0.000	11	356	232	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVC
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 04:54:16
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	24590	2	Standard
	Cl	37		ug/L			5469584	5558949	1	Standard
>	Sc	45		ug/L			1431133	1444594	1	Standard
	Al	27	5495.862	ug/L	139.422	2	4783	158427447	1	Standard
	V	51	48.705	ug/L	1.192	2	7571	1378074	1	Standard
	V-1	51	49.157	ug/L	0.877	1	252	1395799	0	Standard
	Cr	52	49.541	ug/L	1.057	2	22548	1218595	1	Standard
	Cr	53	50.978	ug/L	0.041	0	207	143369	1	Standard
	Mn	55	51.091	ug/L	0.144	0	777	1723920	1	Standard
>	Ge	72		ug/L			62323	60647	0	KED
	Co	59	54.051	ug/L	0.635	1	8	203479	1	KED
	Ni	60	53.835	ug/L	0.671	1	10	58756	0	KED
	Ni	62	54.135	ug/L	0.918	1	3	9630	2	KED
	Cu	63	54.815	ug/L	1.167	2	67	171971	2	KED
	Cu	65	54.911	ug/L	0.838	1	43	85254	0	KED
	Zn	66	54.280	ug/L	1.463	2	60	21368	2	KED
	Zn	67	53.931	ug/L	1.457	2	11	3538	2	KED
	As	75	52.145	ug/L	1.044	2	9	10445	1	KED
	Se	78	52.533	ug/L	1.037	1	10	1146	1	KED
	Y	89		ug/L			782831	747901	1	Standard
	Kr	83		ug/L			50	55	10	Standard
>	In-1	115		ug/L			18394	17519	0	KED
	Mo	98	52.429	ug/L	0.517	0	2	47664	1	KED
	Cd	111	53.383	ug/L	1.055	1	2	12779	1	KED
	Cd	114	53.010	ug/L	0.985	1	5	31291	1	KED
>	In	115		ug/L			1290822	1219397	0	Standard
	Ag	107	50.760	ug/L	0.619	1	99	837198	1	Standard
	Sb	121	51.826	ug/L	0.950	1	202	729671	1	Standard
	Sb	123	51.920	ug/L	0.352	0	164	553459	0	Standard
	Ba	135	51.689	ug/L	0.788	1	59	242749	0	Standard
	Ba	137	51.883	ug/L	0.468	0	107	424400	1	Standard
>	Tb	159		ug/L			1611407	1606642	2	Standard
	Pb	208	53.649	ug/L	1.618	3	356	2498084	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBC
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:02:01
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	27795	3	Standard
	Cl	**37**		ug/L			5469584	5504576	2	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1436320	0	Standard
|	**Al**	**27**	**0.018**	ug/L	0.003	17	4783	5316	1	Standard
|	**V**	**51**	**-0.014**	ug/L	0.005	36	7571	7206	1	Standard
|	**V-1**	**51**	**0.030**	ug/L	0.002	7	252	1106	5	Standard
|	**Cr**	**52**	**-0.043**	ug/L	0.012	28	22548	21598	0	Standard
|	**Cr**	**53**	**0.101**	ug/L	0.008	7	207	489	4	Standard
⌊	**Mn**	**55**	**0.001**	ug/L	0.001	77	777	816	3	Standard
⌈>	**Ge**	**72**		ug/L			62323	59680	1	KED
|	**Co**	**59**	**-0.001**	ug/L	0.001	176	8	5	88	KED
|	**Ni**	**60**	**0.003**	ug/L	0.002	66	10	12	17	KED
|	**Ni**	**62**	**0.015**	ug/L	0.011	73	3	5	33	KED
|	**Cu**	**63**	**-0.001**	ug/L	0.003	314	67	62	13	KED
|	**Cu**	**65**	**-0.005**	ug/L	0.009	199	43	34	38	KED
|	**Zn**	**66**	**0.074**	ug/L	0.023	31	60	86	8	KED
|	**Zn**	**67**	**0.027**	ug/L	0.035	129	11	12	17	KED
|	**As**	**75**	**-0.000**	ug/L	0.015	5738	9	9	31	KED
⌊	**Se**	**78**	**0.008**	ug/L	0.056	692	10	10	9	KED
	Y	**89**		ug/L			782831	755188	2	Standard
	Kr	**83**		ug/L			50	52	13	Standard
⌈>	**In-1**	**115**		ug/L			18394	17767	0	KED
|	**Mo**	**98**	**0.006**	ug/L	0.004	70	2	7	51	KED
|	**Cd**	**111**	**0.000**	ug/L	0.008	1980	2	2	66	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.004	220	5	6	34	KED
⌈>	**In**	**115**		ug/L			1290822	1225881	1	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.001	48	99	69	18	Standard
|	**Sb**	**121**	**0.027**	ug/L	0.003	10	202	581	7	Standard
|	**Sb**	**123**	**0.025**	ug/L	0.001	5	164	427	4	Standard
|	**Ba**	**135**	**-0.001**	ug/L	0.000	38	59	50	5	Standard
⌊	**Ba**	**137**	**-0.003**	ug/L	0.001	21	107	79	7	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1602854	2	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.000	70	356	327	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0056-BLK3
Sample Dil Factor: 200
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:07:01
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	42391	2	Standard
	Cl	37		ug/L			5469584	9426784	2	Standard
>	Sc	45		ug/L			1431133	1451141	0	Standard
	Al	27	0.183	ug/L	0.012	6	4783	10148	2	Standard
	V	51	-0.040	ug/L	0.020	50	7571	6548	9	Standard
	V-1	51	1.182	ug/L	0.022	1	252	33974	1	Standard
	Cr	52	0.081	ug/L	0.020	24	22548	24826	1	Standard
	Cr	53	4.029	ug/L	0.083	2	207	11576	1	Standard
	Mn	55	0.006	ug/L	0.001	20	777	979	3	Standard
>	Ge	72		ug/L			62323	60554	0	KED
	Co	59	-0.001	ug/L	0.001	81	8	5	57	KED
	Ni	60	0.102	ug/L	0.012	11	10	121	10	KED
	Ni	62	0.115	ug/L	0.016	13	3	23	12	KED
	Cu	63	0.007	ug/L	0.002	20	67	88	4	KED
	Cu	65	0.001	ug/L	0.003	368	43	43	10	KED
	Zn	66	0.008	ug/L	0.030	401	60	62	19	KED
	Zn	67	0.005	ug/L	0.076	1617	11	11	44	KED
	As	75	-0.003	ug/L	0.008	246	9	8	19	KED
	Se	78	0.009	ug/L	0.042	490	10	10	7	KED
	Y	89		ug/L			782831	773448	0	Standard
	Kr	83		ug/L			50	48	23	Standard
>	In-1	115		ug/L			18394	17575	2	KED
	Mo	98	0.004	ug/L	0.004	101	2	6	65	KED
	Cd	111	0.004	ug/L	0.008	172	2	3	50	KED
	Cd	114	0.001	ug/L	0.006	793	5	5	59	KED
>	In	115		ug/L			1290822	1246151	1	Standard
	Ag	107	0.001	ug/L	0.000	31	99	116	4	Standard
	Sb	121	0.001	ug/L	0.001	82	202	210	4	Standard
	Sb	123	-0.001	ug/L	0.000	26	164	149	0	Standard
	Ba	135	0.136	ug/L	0.002	1	59	711	2	Standard
	Ba	137	0.141	ug/L	0.008	5	107	1285	3	Standard
>	Tb	159		ug/L			1611407	1600905	1	Standard
	Pb	208	-0.002	ug/L	0.001	27	356	241	11	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0451-02
Sample Dil Factor: 200
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:12:01
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	43438	1	Standard
	Cl	37		ug/L			5469584	9405290	1	Standard
>	Sc	45		ug/L			1431133	1464010	0	Standard
	Al	27	2.884	ug/L	0.023	0	4783	89151	1	Standard
	V	51	-0.057	ug/L	0.025	43	7571	6118	11	Standard
	V-1	51	1.244	ug/L	0.018	1	252	36060	0	Standard
	Cr	52	0.076	ug/L	0.015	19	22548	24915	1	Standard
	Cr	53	4.279	ug/L	0.088	2	207	12390	2	Standard
	Mn	55	9.900	ug/L	0.261	2	777	339133	1	Standard
>	Ge	72		ug/L			62323	60697	2	KED
	Co	59	0.186	ug/L	0.005	2	8	709	5	KED
	Ni	60	0.252	ug/L	0.020	7	10	285	7	KED
	Ni	62	0.168	ug/L	0.011	6	3	33	8	KED
	Cu	63	0.110	ug/L	0.005	4	67	412	5	KED
	Cu	65	0.094	ug/L	0.025	26	43	187	17	KED
	Zn	66	0.232	ug/L	0.023	9	60	150	4	KED
	Zn	67	0.354	ug/L	0.030	8	11	34	5	KED
	As	75	0.031	ug/L	0.014	43	9	15	19	KED
	Se	78	0.096	ug/L	0.115	119	10	12	16	KED
	Y	89		ug/L			782831	764636	0	Standard
	Kr	83		ug/L			50	42	33	Standard
>	In-1	115		ug/L			18394	17723	1	KED
	Mo	98	0.005	ug/L	0.001	26	2	6	18	KED
	Cd	111	0.008	ug/L	0.020	246	2	4	103	KED
	Cd	114	0.008	ug/L	0.007	84	5	10	39	KED
>	In	115		ug/L			1290822	1245232	0	Standard
	Ag	107	-0.003	ug/L	0.000	15	99	43	18	Standard
	Sb	121	-0.005	ug/L	0.001	25	202	123	14	Standard
	Sb	123	-0.006	ug/L	0.001	24	164	93	16	Standard
	Ba	135	1.324	ug/L	0.025	1	59	6403	1	Standard
	Ba	137	1.301	ug/L	0.025	1	107	10969	1	Standard
>	Tb	159		ug/L			1611407	1630311	0	Standard
	Pb	208	-0.000	ug/L	0.001	591	356	355	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0056-DUP3
Sample Dil Factor: 200
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:17:01
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	42375	0	Standard
	Cl	37		ug/L			5469584	9457508	3	Standard
>	Sc	45		ug/L			1431133	1454241	0	Standard
	Al	27	2.811	ug/L	0.077	2	4783	86436	2	Standard
	V	51	-0.066	ug/L	0.037	56	7571	5825	18	Standard
	V-1	51	1.271	ug/L	0.012	0	252	36596	0	Standard
	Cr	52	0.071	ug/L	0.023	32	22548	24633	1	Standard
	Cr	53	4.391	ug/L	0.131	2	207	12623	2	Standard
	Mn	55	9.821	ug/L	0.077	0	777	334217	0	Standard
>	Ge	72		ug/L			62323	60818	0	KED
	Co	59	0.167	ug/L	0.005	2	8	638	2	KED
	Ni	60	0.247	ug/L	0.024	9	10	280	9	KED
	Ni	62	0.267	ug/L	0.096	36	3	50	34	KED
	Cu	63	0.111	ug/L	0.005	4	67	413	4	KED
	Cu	65	0.105	ug/L	0.001	1	43	205	1	KED
	Zn	66	0.284	ug/L	0.080	28	60	171	18	KED
	Zn	67	0.362	ug/L	0.121	33	11	34	22	KED
	As	75	0.022	ug/L	0.009	38	9	13	12	KED
	Se	78	0.023	ug/L	0.207	918	10	11	40	KED
	Y	89		ug/L			782831	763749	2	Standard
	Kr	83		ug/L			50	49	21	Standard
>	In-1	115		ug/L			18394	17855	2	KED
	Mo	98	0.005	ug/L	0.004	84	2	6	55	KED
	Cd	111	0.007	ug/L	0.012	176	2	4	65	KED
	Cd	114	0.001	ug/L	0.006	1095	5	5	66	KED
>	In	115		ug/L			1290822	1251183	0	Standard
	Ag	107	-0.003	ug/L	0.000	10	99	43	11	Standard
	Sb	121	-0.007	ug/L	0.002	22	202	95	22	Standard
	Sb	123	-0.008	ug/L	0.001	8	164	76	10	Standard
	Ba	135	1.298	ug/L	0.039	3	59	6310	3	Standard
	Ba	137	1.294	ug/L	0.025	1	107	10964	1	Standard
>	Tb	159		ug/L			1611407	1600919	2	Standard
	Pb	208	0.001	ug/L	0.001	73	356	403	6	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0056-MS3
Sample Dil Factor: 200
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:22:25
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	42276	1	Standard
	Cl	37		ug/L			5469584	9483695	0	Standard
>	Sc	45		ug/L			1431133	1462159	0	Standard
	Al	27	24.866	ug/L	0.119	0	4783	730525	0	Standard
	V	51	5.037	ug/L	0.061	1	7571	151200	1	Standard
	V-1	51	6.323	ug/L	0.043	0	252	181972	1	Standard
	Cr	52	5.291	ug/L	0.099	1	22548	152316	0	Standard
	Cr	53	9.443	ug/L	0.076	0	207	27052	1	Standard
	Mn	55	15.205	ug/L	0.108	0	777	519810	0	Standard
>	Ge	72		ug/L			62323	61831	1	KED
	Co	59	5.516	ug/L	0.055	0	8	21178	0	KED
	Ni	60	5.678	ug/L	0.093	1	10	6326	0	KED
	Ni	62	5.498	ug/L	0.218	3	3	1000	4	KED
	Cu	63	5.804	ug/L	0.125	2	67	18622	1	KED
	Cu	65	5.659	ug/L	0.030	0	43	8995	0	KED
	Zn	66	5.691	ug/L	0.197	3	60	2337	2	KED
	Zn	67	7.447	ug/L	0.100	1	11	507	2	KED
	As	75	20.666	ug/L	0.337	1	9	4226	1	KED
	Se	78	20.879	ug/L	0.735	3	10	470	2	KED
	Y	89		ug/L			782831	757113	0	Standard
	Kr	83		ug/L			50	57	10	Standard
>	In-1	115		ug/L			18394	17790	0	KED
	Mo	98	0.004	ug/L	0.003	78	2	6	50	KED
	Cd	111	5.398	ug/L	0.185	3	2	1314	3	KED
	Cd	114	5.439	ug/L	0.133	2	5	3264	2	KED
>	In	115		ug/L			1290822	1235718	1	Standard
	Ag	107	5.272	ug/L	0.109	2	99	88179	0	Standard
	Sb	121	-0.007	ug/L	0.001	15	202	89	18	Standard
	Sb	123	-0.008	ug/L	0.000	1	164	69	3	Standard
	Ba	135	22.223	ug/L	0.207	0	59	105798	0	Standard
	Ba	137	22.281	ug/L	0.457	2	107	184731	1	Standard
>	Tb	159		ug/L			1611407	1604401	0	Standard
	Pb	208	22.408	ug/L	0.283	1	356	1042617	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBLF
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:27:50
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	23962	2	Standard
	Cl	**37**		ug/L			5469584	5599513	1	Standard
>	**Sc**	**45**		ug/L			1431133	1426285	0	Standard
	Al	**27**	**-0.069**	ug/L	0.002	3	4783	2816	2	Standard
	V	**51**	**-0.017**	ug/L	0.005	31	7571	7082	1	Standard
	V-1	**51**	**0.073**	ug/L	0.003	4	252	2296	3	Standard
	Cr	**52**	**-0.052**	ug/L	0.018	34	22548	21231	1	Standard
	Cr	**53**	**0.239**	ug/L	0.003	1	207	868	0	Standard
	Mn	**55**	**-0.001**	ug/L	0.001	64	777	735	3	Standard
>	**Ge**	**72**		ug/L			62323	59920	1	KED
	Co	**59**	**0.000**	ug/L	0.001	877	8	8	32	KED
	Ni	**60**	**-0.001**	ug/L	0.001	74	10	8	13	KED
	Ni	**62**	**0.001**	ug/L	0.016	2619	3	3	91	KED
	Cu	**63**	**-0.003**	ug/L	0.001	36	67	55	6	KED
	Cu	**65**	**-0.010**	ug/L	0.002	17	43	26	11	KED
	Zn	**66**	**-0.043**	ug/L	0.014	32	60	41	12	KED
	Zn	**67**	**-0.022**	ug/L	0.107	481	11	9	72	KED
	As	**75**	**0.020**	ug/L	0.009	47	9	13	12	KED
	Se	**78**	**0.140**	ug/L	0.261	185	10	13	41	KED
	Y	**89**		ug/L			782831	753163	1	Standard
	Kr	**83**		ug/L			50	52	7	Standard
>	**In-1**	**115**		ug/L			18394	17844	2	KED
	Mo	**98**	**0.003**	ug/L	0.003	92	2	4	51	KED
	Cd	**111**	**-0.001**	ug/L	0.004	430	2	2	43	KED
	Cd	**114**	**0.003**	ug/L	0.010	374	5	6	83	KED
>	**In**	**115**		ug/L			1290822	1246069	0	Standard
	Ag	**107**	**-0.002**	ug/L	0.000	6	99	56	3	Standard
	Sb	**121**	**-0.010**	ug/L	0.001	7	202	50	22	Standard
	Sb	**123**	**-0.011**	ug/L	0.000	3	164	38	11	Standard
	Ba	**135**	**-0.005**	ug/L	0.001	25	59	35	16	Standard
	Ba	**137**	**-0.005**	ug/L	0.000	8	107	61	6	Standard
>	**Tb**	**159**		ug/L			1611407	1598565	2	Standard
	Pb	**208**	**-0.003**	ug/L	0.000	10	356	222	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCVD
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:34:14
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			25425	25265	1	Standard
	Cl	37		ug/L			5469584	5591559	0	Standard
>	Sc	45		ug/L			1431133	1368715	3	Standard
	Al	27	5746.879	ug/L	268.454	4	4783	156808065	1	Standard
	V	51	51.424	ug/L	2.252	4	7571	1376983	1	Standard
	V-1	51	51.706	ug/L	2.308	4	252	1389733	1	Standard
	Cr	52	51.836	ug/L	2.369	4	22548	1205863	0	Standard
	Cr	53	52.735	ug/L	2.515	4	207	140339	1	Standard
	Mn	55	53.074	ug/L	2.270	4	777	1694882	1	Standard
>	Ge	72		ug/L			62323	60161	0	KED
	Co	59	53.596	ug/L	1.229	2	8	200135	1	KED
	Ni	60	53.817	ug/L	1.308	2	10	58266	2	KED
	Ni	62	55.094	ug/L	0.409	0	3	9722	0	KED
	Cu	63	54.645	ug/L	0.754	1	67	170060	0	KED
	Cu	65	53.538	ug/L	0.553	1	43	82461	0	KED
	Zn	66	53.831	ug/L	0.806	1	60	21023	1	KED
	Zn	67	55.665	ug/L	1.406	2	11	3622	2	KED
	As	75	51.977	ug/L	1.061	2	9	10328	1	KED
	Se	78	51.767	ug/L	1.020	1	10	1120	2	KED
	Y	89		ug/L			782831	726251	3	Standard
	Kr	83		ug/L			50	59	4	Standard
>	In-1	115		ug/L			18394	17669	2	KED
	Mo	98	52.411	ug/L	1.059	2	2	48041	1	KED
	Cd	111	52.911	ug/L	1.330	2	2	12769	0	KED
	Cd	114	52.318	ug/L	0.970	1	5	31137	0	KED
>	In	115		ug/L			1290822	1177796	2	Standard
	Ag	107	52.719	ug/L	1.814	3	99	839316	1	Standard
	Sb	121	54.107	ug/L	1.740	3	202	735447	0	Standard
	Sb	123	53.660	ug/L	1.360	2	164	552262	0	Standard
	Ba	135	53.592	ug/L	1.713	3	59	242995	1	Standard
	Ba	137	54.092	ug/L	2.255	4	107	427047	1	Standard
>	Tb	159		ug/L			1611407	1564095	3	Standard
	Pb	208	54.304	ug/L	1.885	3	356	2461132	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCBD
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:41:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	27787	1	Standard
	Cl	**37**		ug/L			5469584	5476503	1	Standard
>	**Sc**	**45**		ug/L			1431133	1404574	1	Standard
	Al	**27**	**0.039**	ug/L	0.003	7	4783	5781	2	Standard
	V	**51**	**-0.016**	ug/L	0.004	22	7571	6989	1	Standard
	V-1	**51**	**0.030**	ug/L	0.002	5	252	1072	3	Standard
	Cr	**52**	**-0.050**	ug/L	0.002	3	22548	20955	1	Standard
	Cr	**53**	**0.100**	ug/L	0.008	8	207	475	4	Standard
	Mn	**55**	**0.001**	ug/L	0.001	137	777	790	4	Standard
>	**Ge**	**72**		ug/L			62323	59475	1	KED
	Co	**59**	**0.000**	ug/L	0.000	240	8	8	12	KED
	Ni	**60**	**0.005**	ug/L	0.004	92	10	14	30	KED
	Ni	**62**	**-0.017**	ug/L	0.000	0	3	0		KED
	Cu	**63**	**-0.002**	ug/L	0.001	53	67	59	3	KED
	Cu	**65**	**-0.001**	ug/L	0.004	356	43	39	13	KED
	Zn	**66**	**0.001**	ug/L	0.036	5714	60	58	24	KED
	Zn	**67**	**0.048**	ug/L	0.049	102	11	13	20	KED
	As	**75**	**-0.001**	ug/L	0.009	1020	9	9	18	KED
	Se	**78**	**0.033**	ug/L	0.133	404	10	11	25	KED
	Y	**89**		ug/L			782831	749144	0	Standard
	Kr	**83**		ug/L			50	45	4	Standard
>	**In-1**	**115**		ug/L			18394	17669	0	KED
	Mo	**98**	**0.008**	ug/L	0.002	30	2	9	23	KED
	Cd	**111**	**-0.001**	ug/L	0.002	268	2	2	21	KED
	Cd	**114**	**0.003**	ug/L	0.004	141	5	6	32	KED
>	**In**	**115**		ug/L			1290822	1216341	0	Standard
	Ag	**107**	**-0.001**	ug/L	0.000	19	99	74	4	Standard
	Sb	**121**	**0.026**	ug/L	0.003	13	202	552	8	Standard
	Sb	**123**	**0.023**	ug/L	0.002	10	164	403	6	Standard
	Ba	**135**	**-0.003**	ug/L	0.002	68	59	44	17	Standard
	Ba	**137**	**-0.001**	ug/L	0.001	134	107	93	10	Standard
>	**Tb**	**159**		ug/L			1611407	1552420	1	Standard
	Pb	**208**	**-0.000**	ug/L	0.001	3645	356	342	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:46:58
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	44932	1	Standard
	Cl	**37**		ug/L			5469584	5652894	1	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1656392	1	Standard
|	**Al**	**27**	**0.711**	ug/L	0.012	1	4783	29039	3	Standard
|	**V**	**51**	**0.003**	ug/L	0.007	193	7571	8871	2	Standard
|	**V-1**	**51**	**0.024**	ug/L	0.000	1	252	1063	2	Standard
|	**Cr**	**52**	**0.022**	ug/L	0.015	67	22548	26717	1	Standard
|	**Cr**	**53**	**0.088**	ug/L	0.006	6	207	521	4	Standard
⌊	**Mn**	**55**	**0.079**	ug/L	0.001	1	777	3946	0	Standard
⌈>	**Ge**	**72**		ug/L			62323	65082	1	KED
|	**Co**	**59**	**0.001**	ug/L	0.000	6	8	13	0	KED
|	**Ni**	**60**	**0.040**	ug/L	0.003	6	10	57	5	KED
|	**Ni**	**62**	**0.065**	ug/L	0.034	51	3	15	42	KED
|	**Cu**	**63**	**0.051**	ug/L	0.012	24	67	241	15	KED
|	**Cu**	**65**	**0.035**	ug/L	0.021	60	43	102	31	KED
|	**Zn**	**66**	**1.137**	ug/L	0.102	8	60	542	8	KED
|	**Zn**	**67**	**0.998**	ug/L	0.088	8	11	81	6	KED
|	**As**	**75**	**-0.004**	ug/L	0.010	280	9	9	24	KED
⌊	**Se**	**78**	**0.061**	ug/L	0.114	187	10	12	22	KED
	Y	**89**		ug/L			782831	860792	0	Standard
	Kr	**83**		ug/L			50	57	11	Standard
⌈>	**In-1**	**115**		ug/L			18394	19571	0	KED
|	**Mo**	**98**	**0.008**	ug/L	0.006	71	2	10	55	KED
|	**Cd**	**111**	**-0.004**	ug/L	0.006	147	2	1	86	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.003	396	5	6	33	KED
⌈>	**In**	**115**		ug/L			1290822	1324521	1	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.000	11	99	153	5	Standard
|	**Sb**	**121**	**0.013**	ug/L	0.001	6	202	411	4	Standard
|	**Sb**	**123**	**0.011**	ug/L	0.005	42	164	299	17	Standard
|	**Ba**	**135**	**0.064**	ug/L	0.006	9	59	387	7	Standard
⌊	**Ba**	**137**	**0.062**	ug/L	0.000	0	107	663	1	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1735759	1	Standard
⌊	**Pb**	**208**	**0.016**	ug/L	0.000	2	356	1177	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:51:59
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	45578	1	Standard
	Cl	**37**		ug/L			5469584	5489746	1	Standard
>	**Sc**	**45**		ug/L			1431133	1634660	2	Standard
	Al	**27**	**0.709**	ug/L	0.026	3	4783	28596	2	Standard
	V	**51**	**0.002**	ug/L	0.001	72	7571	8704	2	Standard
	V-1	**51**	**0.020**	ug/L	0.001	6	252	942	4	Standard
	Cr	**52**	**0.020**	ug/L	0.002	9	22548	26313	2	Standard
	Cr	**53**	**0.080**	ug/L	0.007	8	207	491	4	Standard
	Mn	**55**	**0.078**	ug/L	0.002	2	777	3864	2	Standard
>	**Ge**	**72**		ug/L			62323	63967	1	KED
	Co	**59**	**0.002**	ug/L	0.001	68	8	15	30	KED
	Ni	**60**	**0.053**	ug/L	0.006	11	10	71	11	KED
	Ni	**62**	**0.061**	ug/L	0.016	27	3	14	19	KED
	Cu	**63**	**0.055**	ug/L	0.007	12	67	253	9	KED
	Cu	**65**	**0.052**	ug/L	0.008	14	43	129	10	KED
	Zn	**66**	**1.087**	ug/L	0.063	5	60	512	4	KED
	Zn	**67**	**1.027**	ug/L	0.072	6	11	82	4	KED
	As	**75**	**0.002**	ug/L	0.004	219	9	10	7	KED
	Se	**78**	**-0.010**	ug/L	0.070	674	10	10	13	KED
	Y	**89**		ug/L			782831	862449	0	Standard
	Kr	**83**		ug/L			50	48	37	Standard
>	**In-1**	**115**		ug/L			18394	19495	1	KED
	Mo	**98**	**0.011**	ug/L	0.005	46	2	13	36	KED
	Cd	**111**	**-0.003**	ug/L	0.012	392	2	2	137	KED
	Cd	**114**	**-0.002**	ug/L	0.008	386	5	4	121	KED
>	**In**	**115**		ug/L			1290822	1324206	1	Standard
	Ag	**107**	**0.002**	ug/L	0.001	32	99	136	9	Standard
	Sb	**121**	**0.001**	ug/L	0.002	188	202	220	11	Standard
	Sb	**123**	**-0.001**	ug/L	0.001	83	164	161	4	Standard
	Ba	**135**	**0.068**	ug/L	0.004	6	59	405	6	Standard
	Ba	**137**	**0.057**	ug/L	0.007	11	107	619	8	Standard
>	**Tb**	**159**		ug/L			1611407	1732751	1	Standard
	Pb	**208**	**0.015**	ug/L	0.001	7	356	1116	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 05:56:59
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	45766	1	Standard
	Cl	**37**		ug/L			5469584	5560679	1	Standard
>	**Sc**	**45**		ug/L			1431133	1617143	2	Standard
	Al	**27**	**0.702**	ug/L	0.029	4	4783	28037	0	Standard
	V	**51**	**0.005**	ug/L	0.005	106	7571	8712	2	Standard
	V-1	**51**	**0.019**	ug/L	0.001	4	252	874	1	Standard
	Cr	**52**	**0.025**	ug/L	0.024	94	22548	26147	1	Standard
	Cr	**53**	**0.068**	ug/L	0.011	16	207	448	4	Standard
	Mn	**55**	**0.079**	ug/L	0.005	5	777	3868	2	Standard
>	**Ge**	**72**		ug/L			62323	63718	1	KED
	Co	**59**	**0.000**	ug/L	0.001	369	8	10	39	KED
	Ni	**60**	**0.041**	ug/L	0.008	19	10	57	15	KED
	Ni	**62**	**0.087**	ug/L	0.057	65	3	19	56	KED
	Cu	**63**	**0.059**	ug/L	0.007	11	67	262	9	KED
	Cu	**65**	**0.056**	ug/L	0.011	19	43	135	13	KED
	Zn	**66**	**1.149**	ug/L	0.060	5	60	536	5	KED
	Zn	**67**	**1.141**	ug/L	0.144	12	11	90	11	KED
	As	**75**	**0.009**	ug/L	0.015	164	9	11	24	KED
	Se	**78**	**0.110**	ug/L	0.014	12	10	13	0	KED
	Y	**89**		ug/L			782831	848289	4	Standard
	Kr	**83**		ug/L			50	45	21	Standard
>	**In-1**	**115**		ug/L			18394	19133	5	KED
	Mo	**98**	**0.006**	ug/L	0.004	67	2	8	48	KED
	Cd	**111**	**-0.000**	ug/L	0.007	4233	2	2	57	KED
	Cd	**114**	**0.003**	ug/L	0.011	398	5	7	97	KED
>	**In**	**115**		ug/L			1290822	1329146	2	Standard
	Ag	**107**	**0.001**	ug/L	0.001	48	99	125	6	Standard
	Sb	**121**	**-0.001**	ug/L	0.001	81	202	188	6	Standard
	Sb	**123**	**-0.001**	ug/L	0.001	92	164	153	9	Standard
	Ba	**135**	**0.059**	ug/L	0.006	10	59	366	10	Standard
	Ba	**137**	**0.057**	ug/L	0.001	2	107	622	4	Standard
>	**Tb**	**159**		ug/L			1611407	1716062	2	Standard
	Pb	**208**	**0.015**	ug/L	0.001	9	356	1119	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 06:01:59
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	25042	1	Standard
	Cl	**37**		ug/L			5469584	5326300	0	Standard
>	**Sc**	**45**		ug/L			1431133	1242806	7	Standard
	Al	**27**	**0.026**	ug/L	0.020	75	4783	4784	2	Standard
	V	**51**	**-0.005**	ug/L	0.017	365	7571	6443	1	Standard
	V-1	**51**	**0.023**	ug/L	0.004	18	252	776	4	Standard
	Cr	**52**	**-0.023**	ug/L	0.054	233	22548	19048	2	Standard
	Cr	**53**	**0.067**	ug/L	0.014	20	207	340	5	Standard
	Mn	**55**	**0.019**	ug/L	0.005	25	777	1213	3	Standard
>	**Ge**	**72**		ug/L			62323	57696	2	KED
	Co	**59**	**0.001**	ug/L	0.001	61	8	12	22	KED
	Ni	**60**	**-0.001**	ug/L	0.002	175	10	8	26	KED
	Ni	**62**	**0.001**	ug/L	0.013	1001	3	3	69	KED
	Cu	**63**	**0.008**	ug/L	0.002	23	67	88	8	KED
	Cu	**65**	**0.004**	ug/L	0.004	99	43	46	12	KED
	Zn	**66**	**0.108**	ug/L	0.030	28	60	96	10	KED
	Zn	**67**	**0.115**	ug/L	0.058	50	11	17	22	KED
	As	**75**	**0.007**	ug/L	0.001	8	9	10	2	KED
	Se	**78**	**0.107**	ug/L	0.097	90	10	12	17	KED
	Y	**89**		ug/L			782831	672205	6	Standard
	Kr	**83**		ug/L			50	50	15	Standard
>	**In-1**	**115**		ug/L			18394	16631	1	KED
	Mo	**98**	**0.004**	ug/L	0.002	56	2	5	34	KED
	Cd	**111**	**0.003**	ug/L	0.005	189	2	3	34	KED
	Cd	**114**	**0.001**	ug/L	0.004	314	5	5	35	KED
>	**In**	**115**		ug/L			1290822	1114173	8	Standard
	Ag	**107**	**-0.002**	ug/L	0.000	16	99	50	5	Standard
	Sb	**121**	**-0.009**	ug/L	0.001	9	202	52	18	Standard
	Sb	**123**	**-0.010**	ug/L	0.001	11	164	42	19	Standard
	Ba	**135**	**0.005**	ug/L	0.004	75	59	72	27	Standard
	Ba	**137**	**0.006**	ug/L	0.001	10	107	140	10	Standard
>	**Tb**	**159**		ug/L			1611407	1427720	8	Standard
	Pb	**208**	**-0.000**	ug/L	0.001	1118	356	309	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 06:06:59
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	23967	1	Standard
	Cl	**37**		ug/L			5469584	5325463	2	Standard
⌈>	**Sc**	**45**		ug/L			1431133	1288890	0	Standard
|	**Al**	**27**	**0.058**	ug/L	0.036	63	4783	5791	15	Standard
|	**V**	**51**	**-0.010**	ug/L	0.008	81	7571	6564	3	Standard
|	**V-1**	**51**	**0.020**	ug/L	0.002	9	252	728	5	Standard
|	**Cr**	**52**	**-0.037**	ug/L	0.022	59	22548	19510	3	Standard
|	**Cr**	**53**	**0.061**	ug/L	0.010	16	207	338	7	Standard
⌊	**Mn**	**55**	**0.015**	ug/L	0.001	7	777	1152	3	Standard
⌈>	**Ge**	**72**		ug/L			62323	58206	1	KED
|	**Co**	**59**	**0.012**	ug/L	0.022	187	8	50	156	KED
|	**Ni**	**60**	**0.011**	ug/L	0.024	216	10	20	118	KED
|	**Ni**	**62**	**0.027**	ug/L	0.022	82	3	7	50	KED
|	**Cu**	**63**	**0.019**	ug/L	0.023	115	67	121	55	KED
|	**Cu**	**65**	**0.013**	ug/L	0.029	214	43	60	70	KED
|	**Zn**	**66**	**0.117**	ug/L	0.068	58	60	100	25	KED
|	**Zn**	**67**	**0.043**	ug/L	0.140	324	11	13	65	KED
|	**As**	**75**	**0.036**	ug/L	0.047	127	9	16	55	KED
⌊	**Se**	**78**	**0.083**	ug/L	0.243	292	10	11	42	KED
	Y	**89**		ug/L			782831	717600	1	Standard
	Kr	**83**		ug/L			50	50	9	Standard
⌈>	**In-1**	**115**		ug/L			18394	16832	1	KED
|	**Mo**	**98**	**0.010**	ug/L	0.003	30	2	10	25	KED
|	**Cd**	**111**	**0.004**	ug/L	0.005	125	2	3	31	KED
⌊	**Cd**	**114**	**-0.005**	ug/L	0.005	106	5	2	125	KED
⌈>	**In**	**115**		ug/L			1290822	1183711	0	Standard
|	**Ag**	**107**	**-0.003**	ug/L	0.000	5	99	46	4	Standard
|	**Sb**	**121**	**-0.010**	ug/L	0.000	2	202	44	6	Standard
|	**Sb**	**123**	**-0.011**	ug/L	0.001	8	164	37	25	Standard
|	**Ba**	**135**	**0.004**	ug/L	0.004	98	59	73	24	Standard
⌊	**Ba**	**137**	**0.004**	ug/L	0.001	31	107	126	6	Standard
⌈>	**Tb**	**159**		ug/L			1611407	1498197	1	Standard
⌊	**Pb**	**208**	**-0.001**	ug/L	0.001	56	356	286	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: DI
Sample Dil Factor:
Comments:
Sample Date/Time: Saturday, April 10, 2021 06:12:00
Number of Replicates: 3
Method File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Method\200.8_DailyMethod_KED+UCT.mth
Tuning File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\MassCal\Default.tun
Optimization File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\Conditions\Default.dac
Calibration File: C:\Users\metals\Documents\PerkinElmer Syngistix\ICPMS_metals\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			25425	23829	2	Standard
	Cl	**37**		ug/L			5469584	5319962	1	Standard
>	**Sc**	**45**		ug/L			1431133	1293866	0	Standard
	Al	**27**	**0.047**	ug/L	0.011	23	4783	5528	4	Standard
	V	**51**	**-0.015**	ug/L	0.008	52	7571	6468	2	Standard
	V-1	**51**	**0.019**	ug/L	0.001	6	252	709	4	Standard
	Cr	**52**	**-0.057**	ug/L	0.018	31	22548	19154	1	Standard
	Cr	**53**	**0.054**	ug/L	0.007	13	207	322	5	Standard
	Mn	**55**	**0.015**	ug/L	0.001	4	777	1167	1	Standard
>	**Ge**	**72**		ug/L			62323	57986	0	KED
	Co	**59**	**0.001**	ug/L	0.001	158	8	10	36	KED
	Ni	**60**	**0.003**	ug/L	0.003	90	10	12	22	KED
	Ni	**62**	**-0.002**	ug/L	0.007	269	3	2	43	KED
	Cu	**63**	**0.008**	ug/L	0.003	37	67	87	9	KED
	Cu	**65**	**0.002**	ug/L	0.011	453	43	43	37	KED
	Zn	**66**	**0.099**	ug/L	0.032	32	60	93	13	KED
	Zn	**67**	**0.094**	ug/L	0.018	19	11	16	6	KED
	As	**75**	**0.008**	ug/L	0.006	83	9	10	12	KED
	Se	**78**	**0.153**	ug/L	0.082	53	10	13	12	KED
	Y	**89**		ug/L			782831	711719	2	Standard
	Kr	**83**		ug/L			50	46	9	Standard
>	**In-1**	**115**		ug/L			18394	16740	1	KED
	Mo	**98**	**0.002**	ug/L	0.003	127	2	4	67	KED
	Cd	**111**	**0.001**	ug/L	0.004	368	2	2	33	KED
	Cd	**114**	**0.007**	ug/L	0.005	73	5	8	32	KED
>	**In**	**115**		ug/L			1290822	1177862	1	Standard
	Ag	**107**	**-0.003**	ug/L	0.001	20	99	39	26	Standard
	Sb	**121**	**-0.011**	ug/L	0.001	8	202	31	44	Standard
	Sb	**123**	**-0.011**	ug/L	0.001	4	164	34	14	Standard
	Ba	**135**	**0.002**	ug/L	0.005	185	59	65	29	Standard
	Ba	**137**	**0.004**	ug/L	0.003	77	107	129	19	Standard
>	**Tb**	**159**		ug/L			1611407	1505803	1	Standard
	Pb	**208**	**-0.001**	ug/L	0.001	106	356	289	15	Standard

INITIAL CALIBRATION DATA

EPA 200.8 UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Calibration:	ED00035	Instrument:	ICPMS1
Calibration Date:	04/09/2021 15:41		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Arsenic-75a	0	0	0.2	475	10	414.1	20	398.8	50	450.42	100	442.66

INITIAL CALIBRATION DATA

EPA 200.8 UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Calibration:	ED00035	Instrument:	ICPMS1
Calibration Date:	04/09/2021 15:41		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic-75a	363.4967	49.5	0.9994		0.998	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 4/9/21 **Analyst:** MB **Sequence:** SJD0156 **Cal:** ED00035

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		SEQ-CAL1	J3779		
		-CAL2	J3679		
		-CAL3	J38666		
		-CAL4	J3867		
		-CAL5	J3776		
		-CAL6	J3868		
		-IBL1	—		
		-ICV1	J1792		
		-ICB1	J3779		
		-CCV1	J3776		
		-CCB1	J3779		
		-CRL1	J3679		
		-IFA1	J3448		Cr^{53}↑ / Insl. noisy - %R + Analytes OK
		-IFB1	J3777		↓ / Ag↓ - No Ag all run
		-HCV1	J3449		
		-HCV2	J3680		Ag↓
		-IBL2	—		
		-CCV2			
		-CCB2			In noisy - Inconsistently noisy/sl. noisy - No Ba all run
	✓	21C0288-03	SWN	20	Ag only
		-04			Insl. noisy
		-08			
		-09			
		-10			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 85DN5032601

Analysis Date: 4/9/21 **Analyst:** MB **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
	✓	21CΦ288-11	SWN	20	In sl. noisy
	↓	↓ -12	↓	↓	↓ Ag only
	↓	↓ -18	↓	↓	In sl. noisy
		SEQ-IBL3			
		↓ -CCV3			
		↓ -CCB3			
	✓	BJDΦΦ98-BLK2	FRN	5	In↑
	✓	↓ -BS2	↓	20	
		SEQ-IBL4			
		BJDΦ215-BLK1	REN		
		↓ -BS1	↓		
		BJDΦΦ56-BLK2	LEN	200	In sl. noisy Cr, Pb only
		21CΦ451-Φ2	↓	↓	↓
		BJDΦΦ56-DUP2			
		↓ -MS2	↓	↓	
		SEQ-IBL5			
		↓ -CCV4			Ag↓
		↓ -CCB4			Ge, In sl. noisy - %R + Analytes OK
	✓	↓ -CAL1			
		↓ -CCV5			
		↓ -CCB5			
		21CΦ396-Φ2	REN		
		↓ -Φ4	↓		
		↓ -Φ6	↓		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 4/9/21 **Analyst:** MS **Sequence:** ——— **Cal:** ———

All corrections made by analyst unless otherwise noted. MS 4/9/21

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		21C0296396-08	REN		
		21C0396-10	↓		
		↓ -12			
		-14			Sc, In, Tb noisy Pb NR
		-16			
		↓ -17	↓		
		SEQ-IBL6			
		↓ -CCV6			Ag+Ba↓
		↓ -CCB6			
		BJD0217-BLK1	REN		
		↓ -BS1	↓		
		21C0396-18			
		↓ -19			
		BJD0215-DUP1			Cu RPD > 20
		↓ -MS1			
		21C0438-01			
		BJD0217-DUP1			
		↓ -MS1	↓		In noisy Cd NR
		SEQ-IBL7			
		↓ -CCV7			Ag+Ba↓
		↓ -CCB7			
		21C0396-01 4RE1	REN		Pb only
		BJD0217-MS2	↓		Cd only
		21C0446-01	↓		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS - 01 SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 85DN5032601

Analysis Date: 4/9/21 **Analyst:** MS **Sequence:** — **Cal:** —

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		21CΦ446-Φ2	REN		
		↓ -Φ3			
		21CΦ426-Φ1			
		-Φ3			
		-Φ5			In sl. noisy
		-Φ7			
		SEQ-IBL8			
		-CCV8			Ag↓ In sl. noisy
		-CCB8			
		21CΦ438-Φ2	REN		
		↓ -Φ3			
		21CΦ454-Φ2			
		-Φ4			
		-Φ1			
		-Φ3			
		21CΦ456-Φ1			
		-Φ2			
		-Φ3			Sc sl. noisy
		SEQ-IBL9			
		-CCV9			
		-CCB9			In noisy Sc sl. noisy Tb sl. noisy – %R's analytes OK
		Rinse/DI			
			MMS 4/9/21		

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Friday, April 09, 2021 12:08:42
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.10677
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\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
	Be	9.0	5006.2	4997.957	106.598	2.1	Standard
	In	114.9	58511.1	-1069782.033	343.147	0.0	Standard
	U	238.1	131599.7	131599.717	2793.461	2.1	Standard
⌈	CeO	155.9	2518.9	0.019	0.000	2.1	Standard
| >	Ce	139.9	132861.9	132861.868	1064.621	0.8	Standard
⌊	Ce++	70.0	1030.3	0.008	0.000	2.2	Standard
	Bkgd	220.0	4.0	4.000	3.055	76.4	Standard

Current Conditions File Data

Current Value	Description
0.88	Nebulizer Gas Flow STD/KED [NEB]
1.25	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1825.00	Analog Stage Voltage
1500.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-17.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.88	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
1.00	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 4/9/2021 12:08:11 PM
End Time: 4/9/2021 12:19:41 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 5006.21
Obtained Intensity (In 115): 58511.12
Obtained Intensity (U 238): 131599.72
Obtained Intensity (Bkgd 220): 4.00
Obtained Formula (Ce++ 70 / Ce 140): 0.008 (=1030.30 / 132861.87)
Obtained Formula (CeO 156 / Ce 140): 0.019 (=2518.89 / 132861.87)
Obtained RSD (Be 9): 0.0213
Obtained RSD (In 115): 0.0003
Obtained RSD (U 238): 0.0212

Torch Alignment - [Passed]

Vertical	Horizontal	Intensity
1.02 mm	-0.39 mm	66301.50

Nebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 0.895
Obtained Intensity (In 115): 100341.16
Obtained Formula (CeO 156 / Ce 140): 0.0223 (=3855.52 / 173114.59)

Mass Calibration and Resolution - [Passed] Optimum value(s): N/A
Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.712)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.709)
Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.711)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.715)

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.978; Intercept = -13.52

KED Mode QID - Optimum value(s): Correlation Coefficient = 1.000; Intercept = -15.46

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 4/9/2021 12:08:11 PM

STD Performance Check
	Optimization Settings:
		Method: STD Performance Check.mth.
		Intensity Criterion: Be 9 > 2000
		Intensity Criterion: In 115 > 40000
		Intensity Criterion: U 238 > 30000
		Intensity Criterion: Bkgd 220 <= 5
		Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
		Formula Criterion: CeO 156 / Ce 140 <= 0.025
		RSD Criterion: Be 9.0122 < 5
		RSD Criterion: In 114.904 < 5
		RSD Criterion: U 238.05 < 5

	Optimization Results:
	Initial Try
		Obtained Intensity (Be 9): 5006.21
		Obtained Intensity (In 115): 58511.12
		Obtained Intensity (U 238): 131599.72
		Obtained Intensity (Bkgd 220): 4.00
		Obtained Formula (Ce++ 70 / Ce 140): 0.008 (=1030.30 / 132861.87)
		Obtained Formula (CeO 156 / Ce 140): 0.019 (=2518.89 / 132861.87)
		Obtained RSD (Be 9): 0.0213
		Obtained RSD (In 115): 0.0003
		Obtained RSD (U 238): 0.0212

[Passed] Optimum value(s): N/A

Torch Alignment
	Optimization Settings:
		Method: Torch Alignment.mth.
		Intensity Criterion: In 115 Maximum

	Optimization Results:
		Vertical	Horizontal	Intensity
[Passed]	1.02 mm	-0.39 mm	66301.50

Nebulizer Gas Flow STD/KED [NEB]
	Optimization Settings:
		Method: Optimize.mth.
			Initial Try - Start/End/Step: 0.86/0.92/0.005.
		Intensity Criterion: In 115 Maximum
		Formula Criterion: CeO 156 / Ce 140 <= 0.023

	Optimization Results:
	Initial Try

		Obtained Intensity (In 115): 100341.16
		Obtained Formula (CeO 156 / Ce 140): 0.0223 (=3855.52 / 173114.59)
[Passed] Optimum value(s): 0.895

Mass Calibration and Resolution
	Optimization Settings:
		Method: Tuning.mth.
		MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
		Iterations: 6
		Target accuracy (+/- amu): 0.05 for Mass Cal. and 0.03 for Resolution
		Peak height (%) for Res. Opt.: 10

	Optimization Results:
	Initial Try
		Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.724)
		Target/Obtained mass (23.985/23.925), Target/Obtained resolution (0.7/0.742) - <Target not achieved>
		Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.712)
		Target/Obtained mass (238.05/238.025), Target/Obtained resolution (0.7/0.702)
		[Failed]
	Retry 1
		Target/Obtained mass (7.016/7.025), Target/Obtained resolution (0.7/0.712)
		Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.709)
		Target/Obtained mass (114.904/114.875), Target/Obtained resolution (0.7/0.711)
		Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.715)
[Passed] Optimum value(s): N/A

QID STD/DRC
	Optimization Settings:
		Method: QID Calibration.mth.
			Initial Try - Start/End/Step: -20/0/0.5.

	Optimization Results:
	Initial Try

  Optimum value(s): Correlation Coefficient = 0.978; Intercept = -13.52

	Analyte	Mass	Points	DAC	MaxIntensity

		Li	7	41	-14	30789.1
		Mg	24	41	-15	43289.5
		In	115	41	-11.5	128370
		Ce	140	41	-11.5	186108
		Pb	208	41	-10.5	98989.8
		U	238	41	-10.5	175678

KED Mode QID
	Optimization Settings:
		Method: QID Calibration.mth.
			Initial Try - Start/End/Step: -20/0/0.5.

	Optimization Results:
	Initial Try

  Optimum value(s): Correlation Coefficient = 1.000; Intercept = -15.46

	Analyte	Mass	Points	DAC	MaxIntensity

		Li	7	41	-15	23030.5
		Mg	24	41	-14	49955.2
		In	115	41	-11.5	150400
		Ce	140	41	-11	137458
		Pb	208	41	-10	61339.4
		U	238	41	-9.5	122681

End Time: 4/9/2021 12:19:41 PM

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 4/9/2021 12:19:48 PM
End Time: 4/9/2021 12:20:55 PM

QID STD/DRC - Optimum value(s): Correlation Coefficient = 0.995; Intercept = -15.63

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 4/9/2021 12:19:48 PM

QID STD/DRC

Optimization Settings:

Method: QID Calibration.mth.

Initial Try - Start/End/Step: -20/0/0.5.

Optimization Results:

Initial Try

Optimum value(s): Correlation Coefficient = 0.995; Intercept = -15.63

Analyte	Mass	Points	DAC	MaxIntensity
Li	7	41	-15	32132.1
Mg	24	41	-14	42118
In	115	41	-11.5	128520
Ce	140	41	-11.5	182964
Pb	208	41	-10.5	95747.8
U	238	41	-11	174884

End Time: 4/9/2021 12:20:55 PM

Performance Check Report

Sample ID: STD Performance Check
Sample Date/Time: Friday, April 09, 2021 12:21:10
Sample Description:
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\STD Performance Check.mth
Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\STD Performance Check.10685
MassCal File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\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
	Be	9.0	8300.5	8300.545	128.312	1.5	Standard
	In	114.9	121946.7	121946.701	1000.509	0.8	Standard
	U	238.1	168989.0	168988.975	1716.865	1.0	Standard
⎡	CeO	155.9	4222.4	0.023	0.000	1.6	Standard
| >	Ce	139.9	180714.8	180714.794	872.616	0.5	Standard
⎣	Ce++	70.0	1115.4	0.006	0.000	0.8	Standard
	Bkgd	220.0	0.4	0.433	0.190	43.9	Standard

Current Conditions File Data

Current Value	Description
0.90	Nebulizer Gas Flow STD/KED [NEB]
1.25	Auxiliary Gas Flow
17.50	Plasma Gas Flow
-10.75	Deflector Voltage
1600.00	ICP RF Power
-1825.00	Analog Stage Voltage
1500.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-17.00	Cell Rod Offset STD [CRO]
14.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.90	DRC Mode NEB
-7.50	DRC Mode QRO
-2.00	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
1.00	Cell Gas A
0.00	Cell Gas B
200.00	Axial Field Voltage
-11.00	KED Mode CRO
-12.00	KED Mode QRO
-11.00	KED Mode Cell Entrance Voltage
-33.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
3.00	KED Cell Gas B
0.00	KED RPa
0.25	KED RPq
125.00	KED Mode Axial Field Voltage

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Start Time: 4/9/2021 12:21:09 PM
End Time: 4/9/2021 12:23:14 PM

STD Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9): 8300.54
Obtained Intensity (In 115): 121946.70
Obtained Intensity (U 238): 168988.98
Obtained Intensity (Bkgd 220): 0.43
Obtained Formula (Ce++ 70 / Ce 140): 0.006 (=1115.44 / 180714.79)
Obtained Formula (CeO 156 / Ce 140): 0.023 (=4222.36 / 180714.79)
Obtained RSD (Be 9): 0.0155
Obtained RSD (In 115): 0.0082
Obtained RSD (U 238): 0.0102

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Wizard\SmartTune\ARISmartTuneDailyUCT.swz

Optimization Status

Start Time: 4/9/2021 12:21:09 PM

STD Performance Check

Optimization Settings:

Method: STD Performance Check.mth.
Intensity Criterion: Be 9 > 2000
Intensity Criterion: In 115 > 40000
Intensity Criterion: U 238 > 30000
Intensity Criterion: Bkgd 220 <= 5
Formula Criterion: Ce++ 70 / Ce 140 <= 0.03
Formula Criterion: CeO 156 / Ce 140 <= 0.025
RSD Criterion: Be 9.0122 < 5
RSD Criterion: In 114.904 < 5
RSD Criterion: U 238.05 < 5

Optimization Results:

Initial Try

Obtained Intensity (Be 9): 8300.54
Obtained Intensity (In 115): 121946.70
Obtained Intensity (U 238): 168988.98
Obtained Intensity (Bkgd 220): 0.43
Obtained Formula (Ce++ 70 / Ce 140): 0.006 (=1115.44 / 180714.79)
Obtained Formula (CeO 156 / Ce 140): 0.023 (=4222.36 / 180714.79)
Obtained RSD (Be 9): 0.0155
Obtained RSD (In 115): 0.0082
Obtained RSD (U 238): 0.0102

[Passed] Optimum value(s): N/A

End Time: 4/9/2021 12:23:14 PM

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:41:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				31493	1	Standard
	Cl	**37**		ug/L				8704918	0	Standard
⎡>	**Sc**	**45**		ug/L				1717555	2	Standard
⎢	**Cr**	**52**		ug/L				34402	0	Standard
⎣	**Cr**	**53**		ug/L				205	7	Standard
⎡>	**Ge**	**72**		ug/L				111514	0	KED
⎢	**Cu**	**63**		ug/L				85	6	KED
⎢	**Cu**	**65**		ug/L				53	17	KED
⎢	**Zn**	**66**		ug/L				64	14	KED
⎢	**Zn**	**67**		ug/L				12	32	KED
⎢	**As**	**75**		ug/L				4	53	KED
⎣	**Se**	**78**		ug/L				32	11	KED
	Y	**89**		ug/L				860825	3	Standard
	Kr	**83**		ug/L				67	19	Standard
⎡>	**In-1**	**115**		ug/L				38780	1	KED
⎢	**Cd**	**111**		ug/L				4	40	KED
⎣	**Cd**	**114**		ug/L				7	60	KED
⎡>	**In**	**115**		ug/L				1781320	0	Standard
⎢	**Ag**	**107**		ug/L				46	23	Standard
⎢	**Ba**	**135**		ug/L				71	17	Standard
⎣	**Ba**	**137**		ug/L				116	13	Standard
⎡>	**Tb**	**159**		ug/L				3193438	1	Standard
⎣	**Pb**	**208**		ug/L				423	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:45:12
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	32398	0	Standard
	Cl	**37**		ug/L			8704918	8721059	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1677224	3	Standard
|	**Cr**	**52**	**0.500**	ug/L	0.046	9	34402	51727	2	Standard
⌊	**Cr**	**53**	**0.500**	ug/L	0.026	5	205	2254	2	Standard
⌈>	**Ge**	**72**		ug/L			111514	111173	1	KED
|	**Cu**	**63**	**0.500**	ug/L	0.017	3	85	3201	2	KED
|	**Cu**	**65**	**0.500**	ug/L	0.011	2	53	1660	0	KED
|	**Zn**	**66**	**4.000**	ug/L	0.146	3	64	3650	1	KED
|	**Zn**	**67**	**4.000**	ug/L	0.252	6	12	580	5	KED
|	**As**	**75**	**0.200**	ug/L	0.015	7	4	95	5	KED
⌊	**Se**	**78**	**0.500**	ug/L	0.044	8	32	56	5	KED
	Y	**89**		ug/L			860825	859158	2	Standard
	Kr	**83**		ug/L			67	74	28	Standard
⌈>	**In-1**	**115**		ug/L			38780	39172	2	KED
|	**Cd**	**111**	**0.100**	ug/L	0.020	20	4	57	20	KED
⌊	**Cd**	**114**	**0.100**	ug/L	0.001	0	7	152	2	KED
⌈>	**In**	**115**		ug/L			1781320	1770058	3	Standard
|	**Ag**	**107**	**0.200**	ug/L	0.012	5	46	4625	2	Standard
|	**Ba**	**135**	**0.500**	ug/L	0.014	2	71	5149	0	Standard
⌊	**Ba**	**137**	**0.500**	ug/L	0.016	3	116	9739	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3086101	1	Standard
⌊	**Pb**	**208**	**0.100**	ug/L	0.003	2	423	16781	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:49:21
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	33219	0	Standard
	Cl	**37**		ug/L			8704918	9108942	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1698194	1	Standard
|	**Cr**	**52**	**9.996**	ug/L	0.159	1	34402	351837	1	Standard
⌊	**Cr**	**53**	**9.997**	ug/L	0.093	0	205	37472	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	111281	1	KED
|	**Cu**	**63**	**9.998**	ug/L	0.195	1	85	57331	1	KED
|	**Cu**	**65**	**9.998**	ug/L	0.180	1	53	29365	1	KED
|	**Zn**	**66**	**9.863**	ug/L	0.162	1	64	8219	1	KED
|	**Zn**	**67**	**9.964**	ug/L	0.327	3	12	1399	2	KED
|	**As**	**75**	**10.000**	ug/L	0.184	1	4	4141	0	KED
⌊	**Se**	**78**	**10.000**	ug/L	0.017	0	32	501	1	KED
	Y	**89**		ug/L			860825	885884	1	Standard
	Kr	**83**		ug/L			67	73	18	Standard
⌈>	**In-1**	**115**		ug/L			38780	38824	1	KED
|	**Cd**	**111**	**10.000**	ug/L	0.235	2	4	4965	1	KED
⌊	**Cd**	**114**	**10.000**	ug/L	0.195	1	7	12607	0	KED
⌈>	**In**	**115**		ug/L			1781320	1845199	1	Standard
|	**Ag**	**107**	**10.000**	ug/L	0.092	0	46	217424	0	Standard
|	**Ba**	**135**	**9.997**	ug/L	0.067	0	71	95664	0	Standard
⌊	**Ba**	**137**	**9.996**	ug/L	0.075	0	116	175941	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3202123	0	Standard
⌊	**Pb**	**208**	**10.000**	ug/L	0.016	0	423	1356537	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:53:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	33262	0	Standard
	Cl	**37**		ug/L			8704918	9452762	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1708550	0	Standard
|	**Cr**	**52**	**19.919**	ug/L	0.179	0	34402	661322	0	Standard
⌊	**Cr**	**53**	**19.904**	ug/L	0.180	0	205	73463	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	107498	4	KED
|	**Cu**	**63**	**20.038**	ug/L	0.871	4	85	111642	1	KED
|	**Cu**	**65**	**20.087**	ug/L	0.983	4	53	57880	1	KED
|	**Zn**	**66**	**19.877**	ug/L	0.952	4	64	15588	0	KED
|	**Zn**	**67**	**19.707**	ug/L	1.003	5	12	2533	4	KED
|	**As**	**75**	**19.993**	ug/L	0.838	4	4	7976	1	KED
⌊	**Se**	**78**	**20.099**	ug/L	0.383	1	32	959	3	KED
	Y	**89**		ug/L			860825	890642	0	Standard
	Kr	**83**		ug/L			67	86	9	Standard
⌈>	**In-1**	**115**		ug/L			38780	39327	0	KED
|	**Cd**	**111**	**19.906**	ug/L	0.438	2	4	9825	2	KED
⌊	**Cd**	**114**	**19.872**	ug/L	0.106	0	7	24741	1	KED
⌈>	**In**	**115**		ug/L			1781320	1826032	1	Standard
|	**Ag**	**107**	**19.997**	ug/L	0.156	0	46	430018	1	Standard
|	**Ba**	**135**	**20.059**	ug/L	0.394	1	71	192120	0	Standard
⌊	**Ba**	**137**	**19.976**	ug/L	0.241	1	116	346157	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3209863	1	Standard
⌊	**Pb**	**208**	**19.913**	ug/L	0.265	1	423	2661177	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 15:58:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	31951	1	Standard
	Cl	**37**		ug/L			8704918	9682824	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1677433	3	Standard
|	**Cr**	**52**	**50.949**	ug/L	0.781	1	34402	1772903	1	Standard
⌊	**Cr**	**53**	**50.966**	ug/L	1.184	2	205	203963	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	109906	0	KED
|	**Cu**	**63**	**50.550**	ug/L	0.787	1	85	304927	1	KED
|	**Cu**	**65**	**50.465**	ug/L	0.194	0	53	156035	0	KED
|	**Zn**	**66**	**50.546**	ug/L	0.904	1	64	42743	1	KED
|	**Zn**	**67**	**50.630**	ug/L	0.476	0	12	7072	0	KED
|	**As**	**75**	**50.793**	ug/L	0.288	0	4	22521	0	KED
⌊	**Se**	**78**	**50.824**	ug/L	1.076	2	32	2647	2	KED
	Y	**89**		ug/L			860825	862300	1	Standard
	Kr	**83**		ug/L			67	86	9	Standard
⌈>	**In-1**	**115**		ug/L			38780	38499	2	KED
|	**Cd**	**111**	**50.778**	ug/L	0.671	1	4	26593	2	KED
⌊	**Cd**	**114**	**50.926**	ug/L	1.020	2	7	68366	0	KED
⌈>	**In**	**115**		ug/L			1781320	1786165	3	Standard
|	**Ag**	**107**	**50.796**	ug/L	1.076	2	46	1160267	1	Standard
|	**Ba**	**135**	**51.031**	ug/L	2.300	4	71	532455	1	Standard
⌊	**Ba**	**137**	**51.023**	ug/L	2.008	3	116	962462	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3163400	1	Standard
⌊	**Pb**	**208**	**51.199**	ug/L	0.818	1	423	7661045	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:04:27
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	35913	2	Standard
	Cl	**37**		ug/L			8704918	9733527	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1677236	0	Standard
|	**Cr**	**52**	**101.410**	ug/L	1.635	1	34402	3666756	1	Standard
⌊	**Cr**	**53**	**100.215**	ug/L	0.544	0	205	403869	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	106769	1	KED
|	**Cu**	**63**	**100.443**	ug/L	0.424	0	85	597356	1	KED
|	**Cu**	**65**	**100.140**	ug/L	1.977	1	53	302109	0	KED
|	**Zn**	**66**	**100.714**	ug/L	0.744	0	64	84678	0	KED
|	**Zn**	**67**	**100.302**	ug/L	0.417	0	12	13736	0	KED
|	**As**	**75**	**100.629**	ug/L	1.030	1	4	44266	0	KED
⌊	**Se**	**78**	**100.336**	ug/L	0.635	0	32	5104	1	KED
	Y	**89**		ug/L			860825	856946	1	Standard
	Kr	**83**		ug/L			67	121	12	Standard
⌈>	**In-1**	**115**		ug/L			38780	37201	1	KED
|	**Cd**	**111**	**100.634**	ug/L	1.518	1	4	52023	1	KED
⌊	**Cd**	**114**	**100.559**	ug/L	1.903	1	7	132939	0	KED
⌈>	**In**	**115**		ug/L			1781320	1704894	1	Standard
|	**Ag**	**107**	**102.181**	ug/L	1.979	1	46	2403632	2	Standard
|	**Ba**	**135**	**101.148**	ug/L	1.830	1	71	1048177	0	Standard
⌊	**Ba**	**137**	**101.301**	ug/L	1.603	1	116	1907732	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3157829	1	Standard
⌊	**Pb**	**208**	**100.970**	ug/L	1.193	1	423	15585122	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:11:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File:

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	30650	1	Standard
	Cl	**37**		ug/L			8704918	9371696	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1711897	1	Standard
|	**Cr**	**52**	**-0.006**	ug/L	0.018	295	34402	34060	1	Standard
⌊	**Cr**	**53**	**0.000**	ug/L	0.003	7530	205	205	5	Standard
⌈>	**Ge**	**72**		ug/L			111514	108794	1	KED
|	**Cu**	**63**	**0.000**	ug/L	0.001	429	85	84	8	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.004	314	53	48	26	KED
|	**Zn**	**66**	**0.009**	ug/L	0.011	131	64	69	13	KED
|	**Zn**	**67**	**-0.003**	ug/L	0.013	495	12	11	16	KED
|	**As**	**75**	**0.017**	ug/L	0.003	15	4	11	8	KED
⌊	**Se**	**78**	**0.071**	ug/L	0.121	171	32	35	16	KED
	Y	**89**		ug/L			860825	869965	1	Standard
	Kr	**83**		ug/L			67	83	10	Standard
⌈>	**In-1**	**115**		ug/L			38780	38373	1	KED
|	**Cd**	**111**	**0.005**	ug/L	0.007	139	4	7	49	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.001	487	7	7	26	KED
⌈>	**In**	**115**		ug/L			1781320	1776492	1	Standard
|	**Ag**	**107**	**0.010**	ug/L	0.001	10	46	301	9	Standard
|	**Ba**	**135**	**-0.001**	ug/L	0.001	116	71	64	13	Standard
⌊	**Ba**	**137**	**-0.000**	ug/L	0.001	855	116	113	20	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3145400	1	Standard
⌊	**Pb**	**208**	**0.003**	ug/L	0.000	8	423	866	4	Standard

Sample Information

Sample Date/Time: Friday, April 09, 2021 16:04:27
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.m
Mass Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Conditions File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

Calibration

Analyte	Mass	**r Corr Coef**	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Cl	37							
Sc	45							
Cr	52	**0.9995**	0.021	0.50	10	20	50	100
Cr	53	**0.9998**	0.002	0.50	10	20	50	100
Ge	72							
Cu	63	**0.9999**	0.056	0.50	10	20	50	100
Cu	65	**0.9999**	0.028	0.50	10	20	50	100
Zn	66	**0.9998**	0.008	4.00	10	20	50	100
Zn	67	**0.9999**	0.001	4.00	10	20	50	100
As	75	**0.9998**	0.004	0.20	10	20	50	100
Se	78	**0.9998**	0.000	0.50	10	20	50	100
Y	89							
Kr	83							
In-1	115							
Cd	111	**0.9998**	0.014	0.10	10	20	50	100
Cd	114	**0.9998**	0.036	0.10	10	20	50	100
In	115							
Ag	107	**0.9991**	0.014	0.20	10	20	50	100
Ba	135	**0.9996**	0.006	0.50	10	20	50	100
Ba	137	**0.9995**	0.011	0.50	10	20	50	100
Tb	159							
Pb	208	**0.9995**	0.049	0.10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:16:54
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	38373	0	Standard
	Cl	**37**		ug/L			8704918	9723024	1	Standard
⎡>	**Sc**	**45**		ug/L			1717555	1684371	0	Standard
⎢	**Cr**	**52**	**49.925**	ug/L	0.443	0	34402	1830135	1	Standard
⎣	**Cr**	**53**	**53.067**	ug/L	0.448	0	205	214858	0	Standard
⎡>	**Ge**	**72**		ug/L			111514	108717	1	KED
⎢	**Cu**	**63**	**52.561**	ug/L	0.255	0	85	318320	0	KED
⎢	**Cu**	**65**	**53.005**	ug/L	0.554	1	53	162860	0	KED
⎢	**Zn**	**66**	**50.471**	ug/L	0.455	0	64	43239	0	KED
⎢	**Zn**	**67**	**51.328**	ug/L	0.932	1	12	7163	2	KED
⎢	**As**	**75**	**51.622**	ug/L	0.466	0	4	23124	0	KED
⎣	**Se**	**78**	**81.402**	ug/L	1.649	2	32	4222	1	KED
	Y	**89**		ug/L			860825	868441	1	Standard
	Kr	**83**		ug/L			67	97	3	Standard
⎡>	**In-1**	**115**		ug/L			38780	38622	0	KED
⎢	**Cd**	**111**	**49.574**	ug/L	0.415	0	4	26611	1	KED
⎣	**Cd**	**114**	**49.907**	ug/L	0.370	0	7	68511	0	KED
⎡>	**In**	**115**		ug/L			1781320	1766106	0	Standard
⎢	**Ag**	**107**	**48.219**	ug/L	0.282	0	46	1174951	0	Standard
⎢	**Ba**	**135**	**48.570**	ug/L	0.710	1	71	521501	1	Standard
⎣	**Ba**	**137**	**49.607**	ug/L	0.574	1	116	967990	1	Standard
⎡>	**Tb**	**159**		ug/L			3193438	3196881	0	Standard
⎣	**Pb**	**208**	**50.174**	ug/L	0.655	1	423	7841365	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-ICB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:23:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	30535	0	Standard
	Cl	**37**		ug/L			8704918	9321958	0	Standard
⎡>	**Sc**	**45**		ug/L			1717555	1713098	1	Standard
⎢	**Cr**	**52**	**0.010**	ug/L	0.026	265	34402	34666	1	Standard
⎣	**Cr**	**53**	**-0.004**	ug/L	0.002	49	205	186	6	Standard
⎡>	**Ge**	**72**		ug/L			111514	106046	4	KED
⎢	**Cu**	**63**	**0.002**	ug/L	0.001	71	85	90	4	KED
⎢	**Cu**	**65**	**0.001**	ug/L	0.003	540	53	53	21	KED
⎢	**Zn**	**66**	**0.000**	ug/L	0.018	11910	64	61	28	KED
⎢	**Zn**	**67**	**-0.004**	ug/L	0.021	482	12	10	20	KED
⎢	**As**	**75**	**0.007**	ug/L	0.005	67	4	6	32	KED
⎣	**Se**	**78**	**0.122**	ug/L	0.128	104	32	36	13	KED
	Y	**89**		ug/L			860825	876328	1	Standard
	Kr	**83**		ug/L			67	71	13	Standard
⎡>	**In-1**	**115**		ug/L			38780	38865	0	KED
⎢	**Cd**	**111**	**-0.001**	ug/L	0.006	460	4	4	74	KED
⎣	**Cd**	**114**	**0.000**	ug/L	0.003	641	7	8	47	KED
⎡>	**In**	**115**		ug/L			1781320	1772132	2	Standard
⎢	**Ag**	**107**	**0.007**	ug/L	0.002	27	46	216	22	Standard
⎢	**Ba**	**135**	**-0.001**	ug/L	0.001	126	71	60	20	Standard
⎣	**Ba**	**137**	**-0.000**	ug/L	0.000	153	116	109	9	Standard
⎡>	**Tb**	**159**		ug/L			3193438	3136519	0	Standard
⎣	**Pb**	**208**	**0.002**	ug/L	0.000	6	423	703	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:29:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	31747	0	Standard
	Cl	**37**		ug/L			8704918	9932057	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1715849	0	Standard
|	**Cr**	**52**	**48.079**	ug/L	0.783	1	34402	1796473	0	Standard
⌊	**Cr**	**53**	**50.867**	ug/L	0.597	1	205	209806	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	108584	1	KED
|	**Cu**	**63**	**50.371**	ug/L	0.415	0	85	304681	1	KED
|	**Cu**	**65**	**50.309**	ug/L	0.325	0	53	154408	1	KED
|	**Zn**	**66**	**49.581**	ug/L	0.407	0	64	42431	2	KED
|	**Zn**	**67**	**51.359**	ug/L	0.473	0	12	7158	0	KED
|	**As**	**75**	**49.938**	ug/L	0.382	0	4	22345	2	KED
⌊	**Se**	**78**	**50.032**	ug/L	0.394	0	32	2604	1	KED
	Y	**89**		ug/L			860825	868552	2	Standard
	Kr	**83**		ug/L			67	93	16	Standard
⌈>	**In-1**	**115**		ug/L			38780	38029	1	KED
|	**Cd**	**111**	**50.432**	ug/L	0.721	1	4	26652	0	KED
⌊	**Cd**	**114**	**50.895**	ug/L	0.707	1	7	68786	0	KED
⌈>	**In**	**115**		ug/L			1781320	1780686	2	Standard
|	**Ag**	**107**	**48.878**	ug/L	1.274	2	46	1200317	0	Standard
|	**Ba**	**135**	**48.392**	ug/L	1.759	3	71	523592	1	Standard
⌊	**Ba**	**137**	**49.071**	ug/L	0.993	2	116	965125	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3163799	0	Standard
⌊	**Pb**	**208**	**49.439**	ug/L	0.585	1	423	7646164	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:35:54
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	30418	2	Standard
	Cl	**37**		ug/L			8704918	9397108	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1705588	0	Standard
|	**Cr**	**52**	**0.000**	ug/L	0.003	1207	34402	34173	0	Standard
⌊	**Cr**	**53**	**-0.005**	ug/L	0.002	35	205	183	3	Standard
⌈>	**Ge**	**72**		ug/L			111514	110186	2	KED
|	**Cu**	**63**	**0.004**	ug/L	0.002	49	85	108	9	KED
|	**Cu**	**65**	**-0.002**	ug/L	0.002	144	53	48	17	KED
|	**Zn**	**66**	**-0.005**	ug/L	0.011	229	64	59	16	KED
|	**Zn**	**67**	**-0.008**	ug/L	0.031	395	12	10	40	KED
|	**As**	**75**	**0.009**	ug/L	0.004	47	4	7	22	KED
⌊	**Se**	**78**	**-0.047**	ug/L	0.121	256	32	29	20	KED
	Y	**89**		ug/L			860825	876319	0	Standard
	Kr	**83**		ug/L			67	79	9	Standard
⌈>	**In-1**	**115**		ug/L			38780	38643	1	KED
|	**Cd**	**111**	**0.004**	ug/L	0.005	131	4	6	37	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.004	233	7	10	49	KED
⌈>	**In**	**115**		ug/L			1781320	1815052	1	Standard
|	**Ag**	**107**	**0.007**	ug/L	0.001	12	46	226	8	Standard
|	**Ba**	**135**	**-0.001**	ug/L	0.001	99	71	60	22	Standard
⌊	**Ba**	**137**	**0.000**	ug/L	0.001	135	116	126	9	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3154876	1	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.000	5	423	780	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CRL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:41:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	29239	0	Standard
	Cl	**37**		ug/L			8704918	9244937	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1688875	0	Standard
|	**Cr**	**52**	**0.476**	ug/L	0.013	2	34402	51000	0	Standard
⌊	**Cr**	**53**	**0.498**	ug/L	0.025	5	205	2223	5	Standard
⌈>	**Ge**	**72**		ug/L			111514	110068	1	KED
|	**Cu**	**63**	**0.513**	ug/L	0.002	0	85	3230	1	KED
|	**Cu**	**65**	**0.501**	ug/L	0.032	6	53	1610	4	KED
|	**Zn**	**66**	**4.126**	ug/L	0.190	4	64	3636	4	KED
|	**Zn**	**67**	**3.724**	ug/L	0.126	3	12	537	1	KED
|	**As**	**75**	**0.188**	ug/L	0.011	5	4	89	4	KED
⌊	**Se**	**78**	**0.560**	ug/L	0.007	1	32	61	1	KED
	Y	**89**		ug/L			860825	870333	0	Standard
	Kr	**83**		ug/L			67	84	7	Standard
⌈>	**In-1**	**115**		ug/L			38780	39026	2	KED
|	**Cd**	**111**	**0.081**	ug/L	0.002	2	4	48	4	KED
⌊	**Cd**	**114**	**0.091**	ug/L	0.004	4	7	134	4	KED
⌈>	**In**	**115**		ug/L			1781320	1783341	3	Standard
|	**Ag**	**107**	**0.192**	ug/L	0.002	1	46	4770	4	Standard
|	**Ba**	**135**	**0.464**	ug/L	0.022	4	71	5092	1	Standard
⌊	**Ba**	**137**	**0.467**	ug/L	0.007	1	116	9310	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3117644	1	Standard
⌊	**Pb**	**208**	**0.097**	ug/L	0.001	0	423	15163	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFA1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:45:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	177426	1	Standard
	Cl	**37**		ug/L			8704918	16448411	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1411678	1	Standard
|	**Cr**	**52**	**0.417**	ug/L	0.030	7	34402	40834	1	Standard
⌊	**Cr**	**53**	**11.010**	ug/L	0.087	0	205	37493	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	103464	1	KED
|	**Cu**	**63**	**0.054**	ug/L	0.007	12	85	391	10	KED
|	**Cu**	**65**	**0.062**	ug/L	0.008	12	53	229	9	KED
|	**Zn**	**66**	**0.253**	ug/L	0.019	7	64	265	6	KED
|	**Zn**	**67**	**0.179**	ug/L	0.034	19	12	34	13	KED
|	**As**	**75**	**0.026**	ug/L	0.007	26	4	14	19	KED
⌊	**Se**	**78**	**-0.038**	ug/L	0.084	220	32	28	16	KED
	Y	**89**		ug/L			860825	782075	1	Standard
	Kr	**83**		ug/L			67	199	8	Standard
⌈>	**In-1**	**115**		ug/L			38780	37413	1	KED
|	**Cd**	**111**	**0.085**	ug/L	0.011	13	4	48	10	KED
⌊	**Cd**	**114**	**0.059**	ug/L	0.007	12	7	86	11	KED
⌈>	**In**	**115**		ug/L			1781320	2141362	6	Standard
|	**Ag**	**107**	**0.006**	ug/L	0.001	8	46	243	9	Standard
|	**Ba**	**135**	**0.034**	ug/L	0.004	11	71	530	3	Standard
⌊	**Ba**	**137**	**0.028**	ug/L	0.004	13	116	791	5	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3390215	0	Standard
⌊	**Pb**	**208**	**0.014**	ug/L	0.000	0	423	2769	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IFB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:49:39
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	169862	0	Standard
	Cl	**37**		ug/L			8704918	15952951	0	Standard
>	**Sc**	**45**		ug/L			1717555	1341573	1	Standard
	Cr	**52**	**18.707**	ug/L	0.123	0	34402	562941	0	Standard
	Cr	**53**	**28.930**	ug/L	0.230	0	205	93363	0	Standard
>	**Ge**	**72**		ug/L			111514	99390	1	KED
	Cu	**63**	**20.249**	ug/L	0.176	0	85	112155	0	KED
	Cu	**65**	**20.201**	ug/L	0.231	1	53	56774	0	KED
	Zn	**66**	**19.017**	ug/L	0.075	0	64	14930	0	KED
	Zn	**67**	**18.600**	ug/L	0.724	3	12	2380	4	KED
	As	**75**	**19.468**	ug/L	0.122	0	4	7975	0	KED
	Se	**78**	**-0.051**	ug/L	0.099	195	32	26	17	KED
	Y	**89**		ug/L			860825	774463	0	Standard
	Kr	**83**		ug/L			67	193	13	Standard
>	**In-1**	**115**		ug/L			38780	36549	0	KED
	Cd	**111**	**19.585**	ug/L	0.131	0	4	9951	1	KED
	Cd	**114**	**19.606**	ug/L	0.183	0	7	25474	0	KED
>	**In**	**115**		ug/L			1781320	2204222	0	Standard
	Ag	**107**	**15.206**	ug/L	0.046	0	46	462482	0	Standard
	Ba	**135**	**0.038**	ug/L	0.003	6	71	603	5	Standard
	Ba	**137**	**0.032**	ug/L	0.001	2	116	922	2	Standard
>	**Tb**	**159**		ug/L			3193438	3463741	0	Standard
	Pb	**208**	**0.014**	ug/L	0.001	6	423	2754	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:53:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	40979	1	Standard
	Cl	**37**		ug/L			8704918	9078267	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1469043	1	Standard
|	**Cr**	**52**	**199.184**	ug/L	0.861	0	34402	6279875	1	Standard
⌊	**Cr**	**53**	**198.486**	ug/L	2.000	1	205	700380	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	103448	1	KED
|	**Cu**	**63**	**195.146**	ug/L	2.212	1	85	1124291	0	KED
|	**Cu**	**65**	**196.293**	ug/L	2.202	1	53	573752	0	KED
|	**Zn**	**66**	**188.643**	ug/L	0.754	0	64	153624	0	KED
|	**Zn**	**67**	**188.981**	ug/L	0.726	0	12	25067	1	KED
|	**As**	**75**	**196.987**	ug/L	1.436	0	4	83956	0	KED
⌊	**Se**	**78**	**190.856**	ug/L	0.456	0	32	9381	0	KED
	Y	**89**		ug/L			860825	780783	1	Standard
	Kr	**83**		ug/L			67	192	8	Standard
⌈>	**In-1**	**115**		ug/L			38780	37209	1	KED
|	**Cd**	**111**	**197.578**	ug/L	2.653	1	4	102155	0	KED
⌊	**Cd**	**114**	**198.328**	ug/L	3.558	1	7	262238	0	KED
⌈>	**In**	**115**		ug/L			1781320	1913263	1	Standard
|	**Ag**	**107**	**180.072**	ug/L	4.582	2	46	4752068	1	Standard
|	**Ba**	**135**	**198.880**	ug/L	4.588	2	71	2312947	2	Standard
⌊	**Ba**	**137**	**195.521**	ug/L	4.549	2	116	4131545	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3294055	0	Standard
⌊	**Pb**	**208**	**199.440**	ug/L	3.161	1	423	32112105	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-HCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 16:57:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	40422	1	Standard
	Cl	37		ug/L			8704918	9030195	1	Standard
>	Sc	45		ug/L			1717555	1497616	2	Standard
	Cr	52	297.324	ug/L	7.883	2	34402	9538118	1	Standard
	Cr	53	293.051	ug/L	6.566	2	205	1053759	0	Standard
>	Ge	72		ug/L			111514	102671	1	KED
	Cu	63	287.250	ug/L	4.321	1	85	1642445	1	KED
	Cu	65	288.604	ug/L	4.740	1	53	837175	0	KED
	Zn	66	274.143	ug/L	4.779	1	64	221527	0	KED
	Zn	67	273.708	ug/L	6.772	2	12	36021	1	KED
	As	75	291.580	ug/L	5.594	1	4	123325	1	KED
	Se	78	280.629	ug/L	7.543	2	32	13673	1	KED
	Y	89		ug/L			860825	768029	2	Standard
	Kr	83		ug/L			67	290	8	Standard
>	In-1	115		ug/L			38780	36017	1	KED
	Cd	111	291.012	ug/L	5.345	1	4	145632	0	KED
	Cd	114	294.930	ug/L	2.540	0	7	377495	0	KED
>	In	115		ug/L			1781320	1791727	3	Standard
	Ag	107	268.153	ug/L	7.407	2	46	6626210	2	Standard
	Ba	135	302.686	ug/L	4.319	1	71	3296259	2	Standard
	Ba	137	298.882	ug/L	6.227	2	116	5913594	1	Standard
>	Tb	159		ug/L			3193438	3196671	0	Standard
	Pb	208	292.948	ug/L	2.688	0	423	45776488	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:04:47
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	32799	0	Standard
	Cl	**37**		ug/L			8704918	9279826	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1687144	1	Standard
|	**Cr**	**52**	**-0.033**	ug/L	0.009	27	34402	32585	1	Standard
⌊	**Cr**	**53**	**0.081**	ug/L	0.006	7	205	529	5	Standard
⌈>	**Ge**	**72**		ug/L			111514	113232	2	KED
|	**Cu**	**63**	**0.005**	ug/L	0.002	35	85	117	9	KED
|	**Cu**	**65**	**-0.000**	ug/L	0.004	166625	53	54	19	KED
|	**Zn**	**66**	**0.037**	ug/L	0.016	44	64	97	15	KED
|	**Zn**	**67**	**0.051**	ug/L	0.017	33	12	19	11	KED
|	**As**	**75**	**0.022**	ug/L	0.005	24	4	14	14	KED
⌊	**Se**	**78**	**-0.063**	ug/L	0.029	45	32	29	6	KED
	Y	**89**		ug/L			860825	869097	2	Standard
	Kr	**83**		ug/L			67	68	24	Standard
⌈>	**In-1**	**115**		ug/L			38780	40581	0	KED
|	**Cd**	**111**	**0.001**	ug/L	0.005	725	4	5	56	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.004	167	7	11	49	KED
⌈>	**In**	**115**		ug/L			1781320	2154492	6	Standard
|	**Ag**	**107**	**0.019**	ug/L	0.002	9	46	622	7	Standard
|	**Ba**	**135**	**0.002**	ug/L	0.002	82	71	112	12	Standard
⌊	**Ba**	**137**	**0.003**	ug/L	0.001	47	116	212	9	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3394344	0	Standard
⌊	**Pb**	**208**	**0.007**	ug/L	0.000	3	423	1608	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:10:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	34855	1	Standard
	Cl	**37**		ug/L			8704918	9560410	0	Standard
⎡>	**Sc**	**45**		ug/L			1717555	1674728	0	Standard
⎢	**Cr**	**52**	**47.656**	ug/L	0.522	1	34402	1738362	0	Standard
⎣	**Cr**	**53**	**49.575**	ug/L	0.196	0	205	199588	0	Standard
⎡>	**Ge**	**72**		ug/L			111514	112946	1	KED
⎢	**Cu**	**63**	**50.941**	ug/L	0.377	0	85	320506	0	KED
⎢	**Cu**	**65**	**51.628**	ug/L	0.833	1	53	164804	1	KED
⎢	**Zn**	**66**	**49.999**	ug/L	0.556	1	64	44501	0	KED
⎢	**Zn**	**67**	**50.413**	ug/L	1.365	2	12	7308	1	KED
⎢	**As**	**75**	**49.685**	ug/L	0.767	1	4	23123	1	KED
⎣	**Se**	**78**	**49.295**	ug/L	0.814	1	32	2669	1	KED
	Y	**89**		ug/L			860825	842969	2	Standard
	Kr	**83**		ug/L			67	85	19	Standard
⎡>	**In-1**	**115**		ug/L			38780	39651	0	KED
⎢	**Cd**	**111**	**51.016**	ug/L	0.176	0	4	28114	0	KED
⎣	**Cd**	**114**	**50.945**	ug/L	0.531	1	7	71793	0	KED
⎡>	**In**	**115**		ug/L			1781320	1893906	1	Standard
⎢	**Ag**	**107**	**46.115**	ug/L	0.972	2	46	1204779	1	Standard
⎢	**Ba**	**135**	**48.278**	ug/L	1.162	2	71	555720	0	Standard
⎣	**Ba**	**137**	**48.309**	ug/L	1.324	2	116	1010518	0	Standard
⎡>	**Tb**	**159**		ug/L			3193438	3340770	1	Standard
⎣	**Pb**	**208**	**50.025**	ug/L	0.986	1	423	8169055	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 17:17:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	33730	1	Standard
	Cl	**37**		ug/L			8704918	9236281	1	Standard
>	**Sc**	**45**		ug/L			1717555	1686322	1	Standard
	Cr	**52**	**-0.027**	ug/L	0.013	49	34402	32811	0	Standard
	Cr	**53**	**0.039**	ug/L	0.010	24	205	360	9	Standard
>	**Ge**	**72**		ug/L			111514	113261	2	KED
	Cu	**63**	**0.002**	ug/L	0.002	89	85	101	11	KED
	Cu	**65**	**0.002**	ug/L	0.001	72	53	59	8	KED
	Zn	**66**	**0.002**	ug/L	0.017	982	64	66	22	KED
	Zn	**67**	**-0.023**	ug/L	0.016	70	12	8	24	KED
	As	**75**	**0.015**	ug/L	0.001	5	4	11	4	KED
	Se	**78**	**-0.049**	ug/L	0.033	66	32	30	4	KED
	Y	**89**		ug/L			860825	851089	1	Standard
	Kr	**83**		ug/L			67	96	9	Standard
>	**In-1**	**115**		ug/L			38780	40575	0	KED
	Cd	**111**	**0.004**	ug/L	0.001	24	4	7	7	KED
	Cd	**114**	**0.000**	ug/L	0.001	808	7	8	25	KED
>	**In**	**115**		ug/L			1781320	2009915	8	Standard
	Ag	**107**	**0.011**	ug/L	0.001	7	46	351	6	Standard
	Ba	**135**	**0.001**	ug/L	0.002	162	71	93	27	Standard
	Ba	**137**	**0.001**	ug/L	0.001	47	116	158	16	Standard
>	**Tb**	**159**		ug/L			3193438	3332274	1	Standard
	Pb	**208**	**0.005**	ug/L	0.001	25	423	1260	15	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-03
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 17:25:17

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	43362	0	Standard
	Cl	**37**		ug/L			8704918	8921725	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1791734	1	Standard
|	**Cr**	**52**	**7.891**	ug/L	0.040	0	34402	337897	0	Standard
⌊	**Cr**	**53**	**8.350**	ug/L	0.114	1	205	36139	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	113096	1	KED
|	**Cu**	**63**	**8.980**	ug/L	0.083	0	85	56642	0	KED
|	**Cu**	**65**	**8.950**	ug/L	0.094	1	53	28655	1	KED
|	**Zn**	**66**	**18.112**	ug/L	0.100	0	64	16184	0	KED
|	**Zn**	**67**	**18.472**	ug/L	0.126	0	12	2689	1	KED
|	**As**	**75**	**1.773**	ug/L	0.074	4	4	830	3	KED
⌊	**Se**	**78**	**0.362**	ug/L	0.051	14	32	52	6	KED
	Y	**89**		ug/L			860825	1146845	0	Standard
	Kr	**83**		ug/L			67	95	5	Standard
⌈>	**In-1**	**115**		ug/L			38780	40689	0	KED
|	**Cd**	**111**	**0.030**	ug/L	0.009	29	4	21	22	KED
⌊	**Cd**	**114**	**0.022**	ug/L	0.003	15	7	39	12	KED
⌈>	**In**	**115**		ug/L			1781320	2123163	5	Standard
|	**Ag**	**107**	**0.030**	ug/L	0.004	14	46	925	8	Standard
|	**Ba**	**135**	**19.347**	ug/L	1.453	7	71	249120	1	Standard
⌊	**Ba**	**137**	**18.965**	ug/L	0.955	5	116	444185	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3479306	0	Standard
⌊	**Pb**	**208**	**1.025**	ug/L	0.014	1	423	174711	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-04
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 17:29:25

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	50406	1	Standard
	Cl	**37**		ug/L			8704918	8943733	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1895876	0	Standard
|	**Cr**	**52**	**11.837**	ug/L	0.149	1	34402	517350	1	Standard
⌊	**Cr**	**53**	**12.489**	ug/L	0.110	0	205	57094	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	114637	0	KED
|	**Cu**	**63**	**16.336**	ug/L	0.164	1	85	104378	0	KED
|	**Cu**	**65**	**16.258**	ug/L	0.238	1	53	52712	0	KED
|	**Zn**	**66**	**24.271**	ug/L	0.138	0	64	21960	0	KED
|	**Zn**	**67**	**26.220**	ug/L	0.899	3	12	3864	2	KED
|	**As**	**75**	**2.576**	ug/L	0.040	1	4	1221	2	KED
⌊	**Se**	**78**	**0.528**	ug/L	0.147	27	32	61	12	KED
	Y	**89**		ug/L			860825	1224736	1	Standard
	Kr	**83**		ug/L			67	139	6	Standard
⌈>	**In-1**	**115**		ug/L			38780	41137	1	KED
|	**Cd**	**111**	**0.038**	ug/L	0.007	19	4	26	16	KED
⌊	**Cd**	**114**	**0.028**	ug/L	0.010	36	7	49	30	KED
⌈>	**In**	**115**		ug/L			1781320	2131739	7	Standard
|	**Ag**	**107**	**0.043**	ug/L	0.004	8	46	1328	0	Standard
|	**Ba**	**135**	**46.350**	ug/L	3.620	7	71	598484	0	Standard
⌊	**Ba**	**137**	**46.063**	ug/L	3.192	6	116	1081356	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3483211	1	Standard
⌊	**Pb**	**208**	**4.303**	ug/L	0.093	2	423	732899	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-08
Sample Dil Factor: 20
DEL
Comments:
Sample Date/Time: Friday, April 09, 2021 17:35:43
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	47427	1	Standard
	Cl	**37**		ug/L			8704918	9008670	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1841461	0	Standard
|	**Cr**	**52**	**9.251**	ug/L	0.137	1	34402	400764	0	Standard
⌊	**Cr**	**53**	**9.913**	ug/L	0.120	1	205	44057	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	113432	0	KED
|	**Cu**	**63**	**13.594**	ug/L	0.183	1	85	85963	1	KED
|	**Cu**	**65**	**13.704**	ug/L	0.141	1	53	43978	1	KED
|	**Zn**	**66**	**20.889**	ug/L	0.104	0	64	18711	0	KED
|	**Zn**	**67**	**21.514**	ug/L	0.234	1	12	3140	1	KED
|	**As**	**75**	**1.479**	ug/L	0.052	3	4	695	3	KED
⌊	**Se**	**78**	**0.329**	ug/L	0.044	13	32	50	4	KED
	Y	**89**		ug/L			860825	1212030	1	Standard
	Kr	**83**		ug/L			67	111	18	Standard
⌈>	**In-1**	**115**		ug/L			38780	40728	0	KED
|	**Cd**	**111**	**0.035**	ug/L	0.010	28	4	24	23	KED
⌊	**Cd**	**114**	**0.031**	ug/L	0.004	12	7	53	11	KED
⌈>	**In**	**115**		ug/L			1781320	2108359	6	Standard
|	**Ag**	**107**	**0.042**	ug/L	0.001	3	46	1286	5	Standard
|	**Ba**	**135**	**31.058**	ug/L	1.981	6	71	397110	0	Standard
⌊	**Ba**	**137**	**30.889**	ug/L	2.093	6	116	717629	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3533076	1	Standard
⌊	**Pb**	**208**	**1.623**	ug/L	0.013	0	423	280777	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-09
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, April 09, 2021 17:39:51

DEL

Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	46246	2	Standard
	Cl	**37**		ug/L			8704918	8950614	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1808929	2	Standard
|	**Cr**	**52**	**8.952**	ug/L	0.089	0	34402	382087	1	Standard
⌊	**Cr**	**53**	**9.497**	ug/L	0.174	1	205	41463	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	115213	0	KED
|	**Cu**	**63**	**9.316**	ug/L	0.048	0	85	59867	0	KED
|	**Cu**	**65**	**9.428**	ug/L	0.228	2	53	30747	2	KED
|	**Zn**	**66**	**17.565**	ug/L	0.222	1	64	15991	1	KED
|	**Zn**	**67**	**18.067**	ug/L	0.326	1	12	2680	1	KED
|	**As**	**75**	**1.924**	ug/L	0.037	1	4	917	1	KED
⌊	**Se**	**78**	**0.388**	ug/L	0.076	19	32	54	7	KED
	Y	**89**		ug/L			860825	1131668	1	Standard
	Kr	**83**		ug/L			67	93	16	Standard
⌈>	**In-1**	**115**		ug/L			38780	40861	0	KED
|	**Cd**	**111**	**0.029**	ug/L	0.003	9	4	21	6	KED
⌊	**Cd**	**114**	**0.028**	ug/L	0.007	23	7	48	20	KED
⌈>	**In**	**115**		ug/L			1781320	2110942	7	Standard
|	**Ag**	**107**	**0.031**	ug/L	0.002	5	46	965	2	Standard
|	**Ba**	**135**	**20.066**	ug/L	1.360	6	71	256710	1	Standard
⌊	**Ba**	**137**	**19.785**	ug/L	1.501	7	116	459789	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3504543	1	Standard
⌊	**Pb**	**208**	**1.099**	ug/L	0.009	0	423	188809	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-10
Sample Dil Factor: 20
Comments:

DEL

Sample Date/Time: Friday, April 09, 2021 17:43:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	47174	1	Standard
	Cl	**37**		ug/L			8704918	8964618	2	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1810257	1	Standard
|	**Cr**	**52**	**7.175**	ug/L	0.069	0	34402	313744	2	Standard
⌊	**Cr**	**53**	**7.575**	ug/L	0.141	1	205	33143	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	115006	0	KED
|	**Cu**	**63**	**10.875**	ug/L	0.093	0	85	69739	0	KED
|	**Cu**	**65**	**11.117**	ug/L	0.090	0	53	36180	0	KED
|	**Zn**	**66**	**17.696**	ug/L	0.466	2	64	16079	1	KED
|	**Zn**	**67**	**17.796**	ug/L	0.883	4	12	2635	5	KED
|	**As**	**75**	**0.951**	ug/L	0.037	3	4	454	3	KED
⌊	**Se**	**78**	**0.329**	ug/L	0.085	25	32	51	9	KED
	Y	**89**		ug/L			860825	1129021	1	Standard
	Kr	**83**		ug/L			67	109	3	Standard
⌈>	**In-1**	**115**		ug/L			38780	40390	0	KED
|	**Cd**	**111**	**0.020**	ug/L	0.006	30	4	16	21	KED
⌊	**Cd**	**114**	**0.016**	ug/L	0.001	8	7	30	6	KED
⌈>	**In**	**115**		ug/L			1781320	1944015	3	Standard
|	**Ag**	**107**	**0.035**	ug/L	0.000	0	46	994	3	Standard
|	**Ba**	**135**	**13.391**	ug/L	0.270	2	71	158257	1	Standard
⌊	**Ba**	**137**	**13.240**	ug/L	0.394	2	116	284312	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3434313	1	Standard
⌊	**Pb**	**208**	**1.244**	ug/L	0.007	0	423	209229	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-11
Sample Dil Factor: 20
DEL
Comments:
Sample Date/Time: Friday, April 09, 2021 17:48:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	47690	0	Standard
	Cl	**37**		ug/L			8704918	9042170	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1778633	1	Standard
|	**Cr**	**52**	**9.712**	ug/L	0.188	1	34402	404531	0	Standard
⌊	**Cr**	**53**	**10.218**	ug/L	0.177	1	205	43854	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	114678	0	KED
|	**Cu**	**63**	**6.343**	ug/L	0.148	2	85	40598	1	KED
|	**Cu**	**65**	**6.221**	ug/L	0.128	2	53	20212	1	KED
|	**Zn**	**66**	**14.862**	ug/L	0.203	1	64	13477	1	KED
|	**Zn**	**67**	**15.004**	ug/L	0.469	3	12	2217	2	KED
|	**As**	**75**	**1.107**	ug/L	0.057	5	4	527	4	KED
⌊	**Se**	**78**	**0.279**	ug/L	0.074	26	32	48	7	KED
	Y	**89**		ug/L			860825	1126200	1	Standard
	Kr	**83**		ug/L			67	100	14	Standard
⌈>	**In-1**	**115**		ug/L			38780	40149	0	KED
|	**Cd**	**111**	**0.030**	ug/L	0.006	20	4	21	15	KED
⌊	**Cd**	**114**	**0.016**	ug/L	0.005	30	7	30	22	KED
⌈>	**In**	**115**		ug/L			1781320	2030172	6	Standard
|	**Ag**	**107**	**0.020**	ug/L	0.002	9	46	626	11	Standard
|	**Ba**	**135**	**12.859**	ug/L	0.904	7	71	158300	1	Standard
⌊	**Ba**	**137**	**12.751**	ug/L	0.791	6	116	285355	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3412015	1	Standard
⌊	**Pb**	**208**	**0.966**	ug/L	0.017	1	423	161556	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-12
Sample Dil Factor: 20
Comments:

DEL

Sample Date/Time: Friday, April 09, 2021 17:52:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	46801	1	Standard
	Cl	**37**		ug/L			8704918	8935681	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1774085	2	Standard
|	**Cr**	**52**	**6.115**	ug/L	0.175	2	34402	267202	0	Standard
⌊	**Cr**	**53**	**6.502**	ug/L	0.088	1	205	27910	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	114600	2	KED
|	**Cu**	**63**	**7.827**	ug/L	0.036	0	85	50040	1	KED
|	**Cu**	**65**	**7.882**	ug/L	0.062	0	53	25578	2	KED
|	**Zn**	**66**	**13.868**	ug/L	0.382	2	64	12572	3	KED
|	**Zn**	**67**	**14.087**	ug/L	0.524	3	12	2081	4	KED
|	**As**	**75**	**0.776**	ug/L	0.048	6	4	370	4	KED
⌊	**Se**	**78**	**0.326**	ug/L	0.051	15	32	50	5	KED
	Y	**89**		ug/L			860825	1096551	2	Standard
	Kr	**83**		ug/L			67	100	20	Standard
⌈>	**In-1**	**115**		ug/L			38780	40242	0	KED
|	**Cd**	**111**	**0.035**	ug/L	0.013	36	4	24	30	KED
⌊	**Cd**	**114**	**0.024**	ug/L	0.005	19	7	43	15	KED
⌈>	**In**	**115**		ug/L			1781320	1961022	2	Standard
|	**Ag**	**107**	**0.022**	ug/L	0.000	0	46	659	2	Standard
|	**Ba**	**135**	**14.525**	ug/L	0.500	3	71	173138	1	Standard
⌊	**Ba**	**137**	**14.394**	ug/L	0.436	3	116	311814	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3391216	1	Standard
⌊	**Pb**	**208**	**0.908**	ug/L	0.018	2	423	151019	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0288-18
Sample Dil Factor: 20
DEL
Comments:
Sample Date/Time: Friday, April 09, 2021 17:56:23
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	47583	0	Standard
	Cl	**37**		ug/L			8704918	8903870	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1814140	1	Standard
|	**Cr**	**52**	**6.450**	ug/L	0.121	1	34402	286264	0	Standard
⌊	**Cr**	**53**	**6.841**	ug/L	0.054	0	205	30021	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	116505	0	KED
|	**Cu**	**63**	**9.388**	ug/L	0.115	1	85	61004	1	KED
|	**Cu**	**65**	**9.435**	ug/L	0.290	3	53	31115	2	KED
|	**Zn**	**66**	**15.106**	ug/L	0.148	0	64	13915	0	KED
|	**Zn**	**67**	**15.459**	ug/L	0.268	1	12	2320	1	KED
|	**As**	**75**	**1.356**	ug/L	0.020	1	4	655	2	KED
⌊	**Se**	**78**	**0.243**	ug/L	0.054	22	32	47	5	KED
	Y	**89**		ug/L			860825	1145973	1	Standard
	Kr	**83**		ug/L			67	110	12	Standard
⌈>	**In-1**	**115**		ug/L			38780	40342	0	KED
|	**Cd**	**111**	**0.017**	ug/L	0.006	36	4	14	24	KED
⌊	**Cd**	**114**	**0.009**	ug/L	0.004	46	7	21	28	KED
⌈>	**In**	**115**		ug/L			1781320	2055836	6	Standard
|	**Ag**	**107**	**0.023**	ug/L	0.000	1	46	715	8	Standard
|	**Ba**	**135**	**10.813**	ug/L	0.567	5	71	134880	1	Standard
⌊	**Ba**	**137**	**10.542**	ug/L	0.567	5	116	238967	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3460991	1	Standard
⌊	**Pb**	**208**	**1.113**	ug/L	0.020	1	423	188786	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:01:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	34904	1	Standard
	Cl	**37**		ug/L			8704918	8667072	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1744160	2	Standard
|	**Cr**	**52**	**-0.055**	ug/L	0.019	34	34402	32878	0	Standard
⌊	**Cr**	**53**	**0.013**	ug/L	0.004	28	205	261	3	Standard
⌈>	**Ge**	**72**		ug/L			111514	114141	0	KED
|	**Cu**	**63**	**0.004**	ug/L	0.002	53	85	112	12	KED
|	**Cu**	**65**	**0.002**	ug/L	0.003	142	53	61	15	KED
|	**Zn**	**66**	**0.056**	ug/L	0.014	24	64	115	10	KED
|	**Zn**	**67**	**0.020**	ug/L	0.039	197	12	15	37	KED
|	**As**	**75**	**0.003**	ug/L	0.003	87	4	5	24	KED
⌊	**Se**	**78**	**-0.115**	ug/L	0.013	11	32	26	3	KED
	Y	**89**		ug/L			860825	894059	0	Standard
	Kr	**83**		ug/L			67	74	13	Standard
⌈>	**In-1**	**115**		ug/L			38780	40427	1	KED
|	**Cd**	**111**	**-0.001**	ug/L	0.005	580	4	4	68	KED
⌊	**Cd**	**114**	**-0.002**	ug/L	0.003	117	7	4	81	KED
⌈>	**In**	**115**		ug/L			1781320	2109539	5	Standard
|	**Ag**	**107**	**0.001**	ug/L	0.000	35	46	94	19	Standard
|	**Ba**	**135**	**0.006**	ug/L	0.001	14	71	162	7	Standard
⌊	**Ba**	**137**	**0.006**	ug/L	0.002	33	116	277	17	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3288715	1	Standard
⌊	**Pb**	**208**	**0.003**	ug/L	0.000	8	423	952	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:07:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	35058	2	Standard
	Cl	**37**		ug/L			8704918	9840210	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1740344	1	Standard
|	**Cr**	**52**	**47.456**	ug/L	0.625	1	34402	1798923	0	Standard
⌊	**Cr**	**53**	**50.401**	ug/L	1.236	2	205	210824	1	Standard
⌈>	**Ge**	**72**		ug/L			111514	113810	1	KED
|	**Cu**	**63**	**51.415**	ug/L	0.264	0	85	325965	0	KED
|	**Cu**	**65**	**51.501**	ug/L	0.271	0	53	165662	0	KED
|	**Zn**	**66**	**50.141**	ug/L	0.389	0	64	44970	0	KED
|	**Zn**	**67**	**50.842**	ug/L	0.407	0	12	7427	0	KED
|	**As**	**75**	**50.475**	ug/L	0.120	0	4	23672	1	KED
⌊	**Se**	**78**	**50.238**	ug/L	0.416	0	32	2741	1	KED
	Y	**89**		ug/L			860825	882167	1	Standard
	Kr	**83**		ug/L			67	84	18	Standard
⌈>	**In-1**	**115**		ug/L			38780	39907	1	KED
|	**Cd**	**111**	**51.160**	ug/L	0.278	0	4	28374	0	KED
⌊	**Cd**	**114**	**51.482**	ug/L	0.459	0	7	73022	1	KED
⌈>	**In**	**115**		ug/L			1781320	1915986	1	Standard
|	**Ag**	**107**	**45.704**	ug/L	0.787	1	46	1208129	2	Standard
|	**Ba**	**135**	**48.271**	ug/L	0.316	0	71	562266	1	Standard
⌊	**Ba**	**137**	**48.188**	ug/L	1.081	2	116	1019834	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3360065	0	Standard
⌊	**Pb**	**208**	**50.465**	ug/L	1.478	2	423	8288557	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:14:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	33755	2	Standard
	Cl	**37**		ug/L			8704918	9252844	1	Standard
⎡>	**Sc**	**45**		ug/L			1717555	1724705	1	Standard
⎢	**Cr**	**52**	**-0.001**	ug/L	0.007	748	34402	34508	0	Standard
⎣	**Cr**	**53**	**0.004**	ug/L	0.002	54	205	224	5	Standard
⎡>	**Ge**	**72**		ug/L			111514	114404	1	KED
⎢	**Cu**	**63**	**-0.001**	ug/L	0.002	215	85	80	17	KED
⎢	**Cu**	**65**	**-0.001**	ug/L	0.004	346	53	52	23	KED
⎢	**Zn**	**66**	**0.016**	ug/L	0.017	103	64	80	20	KED
⎢	**Zn**	**67**	**0.024**	ug/L	0.019	79	12	15	18	KED
⎢	**As**	**75**	**0.004**	ug/L	0.004	106	4	6	31	KED
⎣	**Se**	**78**	**-0.052**	ug/L	0.055	105	32	30	11	KED
	Y	**89**		ug/L			860825	860381	1	Standard
	Kr	**83**		ug/L			67	73	26	Standard
⎡>	**In-1**	**115**		ug/L			38780	40422	1	KED
⎢	**Cd**	**111**	**0.001**	ug/L	0.006	452	4	5	60	KED
⎣	**Cd**	**114**	**0.003**	ug/L	0.002	81	7	11	24	KED
⎡>	**In**	**115**		ug/L			1781320	1881682	2	Standard
⎢	**Ag**	**107**	**0.006**	ug/L	0.000	2	46	201	4	Standard
⎢	**Ba**	**135**	**-0.000**	ug/L	0.001	141	71	70	9	Standard
⎣	**Ba**	**137**	**0.000**	ug/L	0.001	386	116	128	16	Standard
⎡>	**Tb**	**159**		ug/L			3193438	3217701	2	Standard
⎣	**Pb**	**208**	**0.003**	ug/L	0.000	7	423	954	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0098-BLK2
Sample Dil Factor: 5
DEL
Comments:
Sample Date/Time: Friday, April 09, 2021 18:18:58
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	122827	1	Standard
	Cl	**37**		ug/L			8704918	9395829	0	Standard
>	**Sc**	**45**		ug/L			1717555	1897781	1	Standard
	Cr	**52**	**0.179**	ug/L	0.004	1	34402	45250	1	Standard
	Cr	**53**	**0.057**	ug/L	0.006	10	205	486	5	Standard
>	**Ge**	**72**		ug/L			111514	116914	0	KED
	Cu	**63**	**0.073**	ug/L	0.008	11	85	562	8	KED
	Cu	**65**	**0.069**	ug/L	0.008	11	53	283	8	KED
	Zn	**66**	**0.338**	ug/L	0.023	6	64	378	5	KED
	Zn	**67**	**0.250**	ug/L	0.080	32	12	50	24	KED
	As	**75**	**0.003**	ug/L	0.005	159	4	5	38	KED
	Se	**78**	**-0.046**	ug/L	0.075	162	32	31	13	KED
	Y	**89**		ug/L			860825	960470	1	Standard
	Kr	**83**		ug/L			67	67	25	Standard
>	**In-1**	**115**		ug/L			38780	42309	0	KED
	Cd	**111**	**-0.002**	ug/L	0.002	137	4	4	35	KED
	Cd	**114**	**-0.001**	ug/L	0.002	136	7	6	41	KED
>	**In**	**115**		ug/L			1781320	2323727	0	Standard
	Ag	**107**	**0.004**	ug/L	0.001	18	46	196	12	Standard
	Ba	**135**	**0.021**	ug/L	0.000	2	71	394	1	Standard
	Ba	**137**	**0.018**	ug/L	0.001	5	116	619	4	Standard
>	**Tb**	**159**		ug/L			3193438	3538178	1	Standard
	Pb	**208**	**0.010**	ug/L	0.001	6	423	2259	4	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0098-BS2
Sample Dil Factor: 20
DEL
Comments:
Sample Date/Time: Friday, April 09, 2021 18:23:06
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	56900	0	Standard
	Cl	**37**		ug/L			8704918	9561497	1	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1798306	0	Standard
|	**Cr**	**52**	**24.564**	ug/L	0.111	0	34402	979648	0	Standard
⌊	**Cr**	**53**	**25.919**	ug/L	0.118	0	205	112151	0	Standard
⌈>	**Ge**	**72**		ug/L			111514	115781	2	KED
|	**Cu**	**63**	**26.783**	ug/L	0.704	2	85	172738	1	KED
|	**Cu**	**65**	**26.647**	ug/L	0.244	0	53	87221	1	KED
|	**Zn**	**66**	**75.710**	ug/L	0.865	1	64	69043	1	KED
|	**Zn**	**67**	**73.086**	ug/L	1.738	2	12	10856	2	KED
|	**As**	**75**	**23.796**	ug/L	0.539	2	4	11353	2	KED
⌊	**Se**	**78**	**72.697**	ug/L	1.518	2	32	4018	0	KED
	Y	**89**		ug/L			860825	906297	1	Standard
	Kr	**83**		ug/L			67	83	19	Standard
⌈>	**In-1**	**115**		ug/L			38780	41904	0	KED
|	**Cd**	**111**	**24.179**	ug/L	0.473	1	4	14083	1	KED
⌊	**Cd**	**114**	**24.121**	ug/L	0.132	0	7	35929	0	KED
⌈>	**In**	**115**		ug/L			1781320	2184283	1	Standard
|	**Ag**	**107**	**21.823**	ug/L	0.598	2	46	657612	2	Standard
|	**Ba**	**135**	**21.438**	ug/L	0.247	1	71	284732	1	Standard
⌊	**Ba**	**137**	**21.745**	ug/L	0.395	1	116	524784	0	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3380879	0	Standard
⌊	**Pb**	**208**	**25.945**	ug/L	0.475	1	423	4288083	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:28:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	35579	2	Standard
	Cl	**37**		ug/L			8704918	9205340	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1762973	2	Standard
|	**Cr**	**52**	**-0.030**	ug/L	0.017	54	34402	34157	1	Standard
⌊	**Cr**	**53**	**0.008**	ug/L	0.005	57	205	246	9	Standard
⌈>	**Ge**	**72**		ug/L			111514	116329	0	KED
|	**Cu**	**63**	**0.004**	ug/L	0.003	73	85	113	15	KED
|	**Cu**	**65**	**0.000**	ug/L	0.001	583	53	57	8	KED
|	**Zn**	**66**	**0.064**	ug/L	0.018	28	64	125	12	KED
|	**Zn**	**67**	**0.141**	ug/L	0.027	18	12	33	11	KED
|	**As**	**75**	**0.008**	ug/L	0.003	34	4	8	15	KED
⌊	**Se**	**78**	**0.036**	ug/L	0.080	223	32	35	12	KED
	Y	**89**		ug/L			860825	878954	2	Standard
	Kr	**83**		ug/L			67	85	11	Standard
⌈>	**In-1**	**115**		ug/L			38780	41072	0	KED
|	**Cd**	**111**	**-0.000**	ug/L	0.003	620	4	4	34	KED
⌊	**Cd**	**114**	**-0.002**	ug/L	0.001	34	7	4	23	KED
⌈>	**In**	**115**		ug/L			1781320	1953167	0	Standard
|	**Ag**	**107**	**0.005**	ug/L	0.001	23	46	180	16	Standard
|	**Ba**	**135**	**0.007**	ug/L	0.001	19	71	159	10	Standard
⌊	**Ba**	**137**	**0.008**	ug/L	0.000	4	116	297	1	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3315009	1	Standard
⌊	**Pb**	**208**	**0.004**	ug/L	0.001	15	423	1073	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0215-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:34:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	49953	0	Standard
	Cl	37		ug/L			8704918	9193026	1	Standard
⌈>	Sc	45		ug/L			1717555	1775587	1	Standard
|	Cr	52	0.011	ug/L	0.012	104	34402	35985	0	Standard
⌊	Cr	53	0.042	ug/L	0.005	12	205	392	6	Standard
⌈>	Ge	72		ug/L			111514	115575	2	KED
|	Cu	63	0.023	ug/L	0.002	8	85	238	5	KED
|	Cu	65	0.020	ug/L	0.008	41	53	121	24	KED
|	Zn	66	0.198	ug/L	0.046	23	64	245	14	KED
|	Zn	67	0.156	ug/L	0.084	53	12	35	34	KED
|	As	75	0.007	ug/L	0.000	3	4	7	3	KED
⌊	Se	78	-0.019	ug/L	0.041	216	32	32	5	KED
	Y	89		ug/L			860825	902932	1	Standard
	Kr	83		ug/L			67	61	42	Standard
⌈>	In-1	115		ug/L			38780	41380	1	KED
|	Cd	111	-0.002	ug/L	0.003	151	4	3	50	KED
⌊	Cd	114	-0.002	ug/L	0.003	211	7	6	78	KED
⌈>	In	115		ug/L			1781320	2010021	8	Standard
|	Ag	107	0.003	ug/L	0.000	8	46	123	13	Standard
|	Ba	135	0.012	ug/L	0.004	34	71	220	14	Standard
⌊	Ba	137	0.011	ug/L	0.002	15	116	381	7	Standard
⌈>	Tb	159		ug/L			3193438	3333002	1	Standard
⌊	Pb	208	0.004	ug/L	0.000	7	423	1107	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0215-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 18:38:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	52878	1	Standard
	Cl	37		ug/L			8704918	9303355	0	Standard
>	Sc	45		ug/L			1717555	1747680	0	Standard
	Cr	52	24.061	ug/L	0.236	0	34402	933250	1	Standard
	Cr	53	25.143	ug/L	0.236	0	205	105733	0	Standard
>	Ge	72		ug/L			111514	114555	3	KED
	Cu	63	26.468	ug/L	0.800	3	85	168842	1	KED
	Cu	65	26.431	ug/L	0.518	1	53	85577	2	KED
	Zn	66	79.093	ug/L	1.585	2	64	71341	2	KED
	Zn	67	74.631	ug/L	1.636	2	12	10966	2	KED
	As	75	24.061	ug/L	0.446	1	4	11355	1	KED
	Se	78	75.216	ug/L	1.550	2	32	4112	1	KED
	Y	89		ug/L			860825	888095	0	Standard
	Kr	83		ug/L			67	88	8	Standard
>	In-1	115		ug/L			38780	40477	0	KED
	Cd	111	24.821	ug/L	0.239	0	4	13966	1	KED
	Cd	114	24.493	ug/L	0.144	0	7	35241	0	KED
>	In	115		ug/L			1781320	1977730	8	Standard
	Ag	107	23.536	ug/L	1.804	7	46	639741	2	Standard
	Ba	135	23.230	ug/L	1.774	7	71	278176	0	Standard
	Ba	137	23.479	ug/L	1.701	7	116	511078	1	Standard
>	Tb	159		ug/L			3193438	3301341	1	Standard
	Pb	208	25.416	ug/L	0.691	2	423	4100755	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0056-BLK2
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, April 09, 2021 18:42:48
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	55211	1	Standard
	Cl	37		ug/L			8704918	14267935	1	Standard
⌈>	Sc	45		ug/L			1717555	1802776	0	Standard
|	Cr	52	0.106	ug/L	0.008	7	34402	40180	1	Standard
⌊	Cr	53	6.727	ug/L	0.074	1	205	29342	1	Standard
⌈>	Ge	72		ug/L			111514	118458	1	KED
|	Cu	63	0.032	ug/L	0.004	12	85	303	9	KED
|	Cu	65	0.028	ug/L	0.002	7	53	149	5	KED
|	Zn	66	0.396	ug/L	0.033	8	64	436	5	KED
|	Zn	67	0.408	ug/L	0.090	21	12	74	19	KED
|	As	75	0.016	ug/L	0.006	36	4	12	22	KED
⌊	Se	78	0.005	ug/L	0.022	467	32	34	4	KED
	Y	89		ug/L			860825	898834	0	Standard
	Kr	83		ug/L			67	71	6	Standard
⌈>	In-1	115		ug/L			38780	40907	1	KED
|	Cd	111	0.002	ug/L	0.004	163	4	6	34	KED
⌊	Cd	114	0.003	ug/L	0.003	94	7	12	31	KED
⌈>	In	115		ug/L			1781320	2020925	7	Standard
|	Ag	107	0.010	ug/L	0.001	14	46	316	6	Standard
|	Ba	135	0.136	ug/L	0.015	11	71	1740	3	Standard
⌊	Ba	137	0.135	ug/L	0.014	10	116	3131	5	Standard
⌈>	Tb	159		ug/L			3193438	3399887	1	Standard
⌊	Pb	208	0.012	ug/L	0.000	3	423	2479	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0451-02
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, April 09, 2021 18:46:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	56446	1	Standard
	Cl	37		ug/L			8704918	13991213	0	Standard
>	Sc	45		ug/L			1717555	1781852	1	Standard
	Cr	52	0.138	ug/L	0.011	8	34402	40931	1	Standard
	Cr	53	7.435	ug/L	0.141	1	205	32024	0	Standard
>	Ge	72		ug/L			111514	120167	0	KED
	Cu	63	0.131	ug/L	0.006	4	85	965	4	KED
	Cu	65	0.126	ug/L	0.009	7	53	484	6	KED
	Zn	66	0.426	ug/L	0.016	3	64	471	2	KED
	Zn	67	0.493	ug/L	0.072	14	12	88	11	KED
	As	75	0.029	ug/L	0.003	9	4	18	8	KED
	Se	78	-0.126	ug/L	0.052	41	32	27	10	KED
	Y	89		ug/L			860825	908440	2	Standard
	Kr	83		ug/L			67	73	10	Standard
>	In-1	115		ug/L			38780	41304	0	KED
	Cd	111	0.009	ug/L	0.006	63	4	10	32	KED
	Cd	114	0.006	ug/L	0.001	24	7	16	12	KED
>	In	115		ug/L			1781320	2031154	5	Standard
	Ag	107	0.002	ug/L	0.001	37	46	108	17	Standard
	Ba	135	1.176	ug/L	0.054	4	71	14579	1	Standard
	Ba	137	1.181	ug/L	0.062	5	116	26582	1	Standard
>	Tb	159		ug/L			3193438	3379535	0	Standard
	Pb	208	0.008	ug/L	0.000	0	423	1820	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0056-DUP2
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, April 09, 2021 18:51:28
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	55662	0	Standard
	Cl	37		ug/L			8704918	14139183	0	Standard
>	Sc	45		ug/L			1717555	1826015	1	Standard
	Cr	52	0.120	ug/L	0.006	5	34402	41249	1	Standard
	Cr	53	7.554	ug/L	0.134	1	205	33340	0	Standard
>	Ge	72		ug/L			111514	118391	0	KED
	Cu	63	0.127	ug/L	0.005	3	85	930	3	KED
	Cu	65	0.128	ug/L	0.006	4	53	486	4	KED
	Zn	66	0.467	ug/L	0.051	10	64	503	9	KED
	Zn	67	0.493	ug/L	0.175	35	12	87	30	KED
	As	75	0.038	ug/L	0.005	12	4	23	10	KED
	Se	78	-0.037	ug/L	0.080	217	32	32	14	KED
	Y	89		ug/L			860825	921569	1	Standard
	Kr	83		ug/L			67	73	12	Standard
>	In-1	115		ug/L			38780	41211	0	KED
	Cd	111	0.011	ug/L	0.008	68	4	11	38	KED
	Cd	114	0.006	ug/L	0.007	112	7	17	57	KED
>	In	115		ug/L			1781320	2137667	7	Standard
	Ag	107	0.001	ug/L	0.001	36	46	97	15	Standard
	Ba	135	1.129	ug/L	0.093	8	71	14695	0	Standard
	Ba	137	1.133	ug/L	0.106	9	116	26775	2	Standard
>	Tb	159		ug/L			3193438	3437105	1	Standard
	Pb	208	0.008	ug/L	0.000	1	423	1794	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0056-MS2
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, April 09, 2021 18:56:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	55740	0	Standard
	Cl	37		ug/L			8704918	14286466	2	Standard
>	Sc	45		ug/L			1717555	1786321	0	Standard
	Cr	52	5.097	ug/L	0.077	1	34402	230256	1	Standard
	Cr	53	13.498	ug/L	0.215	1	205	58116	0	Standard
>	Ge	72		ug/L			111514	119959	1	KED
	Cu	63	5.542	ug/L	0.056	1	85	37112	0	KED
	Cu	65	5.553	ug/L	0.088	1	53	18879	1	KED
	Zn	66	5.711	ug/L	0.081	1	64	5460	1	KED
	Zn	67	6.624	ug/L	0.293	4	12	1031	3	KED
	As	75	20.138	ug/L	0.384	1	4	9956	1	KED
	Se	78	20.688	ug/L	0.574	2	32	1210	2	KED
	Y	89		ug/L			860825	917486	1	Standard
	Kr	83		ug/L			67	66	27	Standard
>	In-1	115		ug/L			38780	41573	1	KED
	Cd	111	5.158	ug/L	0.011	0	4	2985	1	KED
	Cd	114	5.153	ug/L	0.123	2	7	7620	1	KED
>	In	115		ug/L			1781320	2112270	4	Standard
	Ag	107	4.520	ug/L	0.399	8	46	131415	4	Standard
	Ba	135	20.089	ug/L	0.959	4	71	257707	3	Standard
	Ba	137	19.629	ug/L	1.558	7	116	456963	2	Standard
>	Tb	159		ug/L			3193438	3424172	1	Standard
	Pb	208	19.948	ug/L	0.176	0	423	3339188	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:07:25
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	35039	1	Standard
	Cl	**37**		ug/L			8704918	9243150	1	Standard
⎡>	**Sc**	**45**		ug/L			1717555	1739334	1	Standard
⎢	**Cr**	**52**	**-0.047**	ug/L	0.012	26	34402	33101	1	Standard
⎣	**Cr**	**53**	**0.118**	ug/L	0.003	2	205	700	2	Standard
⎡>	**Ge**	**72**		ug/L			111514	114258	3	KED
⎢	**Cu**	**63**	**0.008**	ug/L	0.003	40	85	134	11	KED
⎢	**Cu**	**65**	**-0.000**	ug/L	0.001	434	53	54	2	KED
⎢	**Zn**	**66**	**0.061**	ug/L	0.012	19	64	120	11	KED
⎢	**Zn**	**67**	**0.042**	ug/L	0.022	52	12	18	15	KED
⎢	**As**	**75**	**0.008**	ug/L	0.004	43	4	8	24	KED
⎣	**Se**	**78**	**-0.088**	ug/L	0.026	29	32	28	4	KED
	Y	**89**		ug/L			860825	887994	1	Standard
	Kr	**83**		ug/L			67	76	4	Standard
⎡>	**In-1**	**115**		ug/L			38780	41646	0	KED
⎢	**Cd**	**111**	**0.007**	ug/L	0.006	80	4	9	36	KED
⎣	**Cd**	**114**	**0.000**	ug/L	0.003	553	7	9	42	KED
⎡>	**In**	**115**		ug/L			1781320	1933981	1	Standard
⎢	**Ag**	**107**	**0.002**	ug/L	0.000	12	46	102	8	Standard
⎢	**Ba**	**135**	**0.006**	ug/L	0.002	31	71	145	13	Standard
⎣	**Ba**	**137**	**0.008**	ug/L	0.001	7	116	295	5	Standard
⎡>	**Tb**	**159**		ug/L			3193438	3321258	2	Standard
⎣	**Pb**	**208**	**0.003**	ug/L	0.000	1	423	965	3	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:11:57
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			31493	34083	1	Standard
	Cl	37		ug/L			8704918	9955911	1	Standard
>	Sc	45		ug/L			1717555	1747338	0	Standard
	Cr	52	47.259	ug/L	0.190	0	34402	1798951	0	Standard
	Cr	53	49.727	ug/L	0.452	0	205	208876	0	Standard
>	Ge	72		ug/L			111514	114564	1	KED
	Cu	63	51.051	ug/L	1.227	2	85	325760	1	KED
	Cu	65	50.778	ug/L	1.126	2	53	164397	1	KED
	Zn	66	49.897	ug/L	1.338	2	64	45038	1	KED
	Zn	67	50.075	ug/L	0.540	1	12	7364	0	KED
	As	75	49.835	ug/L	0.915	1	4	23522	0	KED
	Se	78	49.546	ug/L	1.935	3	32	2720	2	KED
	Y	89		ug/L			860825	886197	1	Standard
	Kr	83		ug/L			67	90	22	Standard
>	In-1	115		ug/L			38780	40781	0	KED
	Cd	111	49.674	ug/L	0.141	0	4	28154	0	KED
	Cd	114	50.194	ug/L	0.532	1	7	72754	1	KED
>	In	115		ug/L			1781320	1978013	1	Standard
	Ag	107	44.566	ug/L	0.606	1	46	1216388	2	Standard
	Ba	135	46.078	ug/L	0.950	2	71	554010	0	Standard
	Ba	137	45.617	ug/L	0.585	1	116	997005	2	Standard
>	Tb	159		ug/L			3193438	3352969	1	Standard
	Pb	208	49.220	ug/L	0.652	1	423	8067159	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:18:50
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			31493	33147	0	Standard
	Cl	**37**		ug/L			8704918	9608458	0	Standard
⌈>	**Sc**	**45**		ug/L			1717555	1781953	2	Standard
|	**Cr**	**52**	**-0.040**	ug/L	0.024	59	34402	34141	0	Standard
⌊	**Cr**	**53**	**0.053**	ug/L	0.005	9	205	438	4	Standard
⌈>	**Ge**	**72**		ug/L			111514	110179	6	KED
|	**Cu**	**63**	**0.002**	ug/L	0.003	181	85	93	14	KED
|	**Cu**	**65**	**-0.003**	ug/L	0.002	58	53	43	11	KED
|	**Zn**	**66**	**0.026**	ug/L	0.011	43	64	86	16	KED
|	**Zn**	**67**	**0.014**	ug/L	0.051	372	12	13	55	KED
|	**As**	**75**	**0.009**	ug/L	0.007	70	4	8	31	KED
⌊	**Se**	**78**	**0.010**	ug/L	0.034	339	32	32	7	KED
	Y	**89**		ug/L			860825	907206	1	Standard
	Kr	**83**		ug/L			67	82	5	Standard
⌈>	**In-1**	**115**		ug/L			38780	41353	0	KED
|	**Cd**	**111**	**0.000**	ug/L	0.003	374026	4	5	39	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.003	114	7	4	114	KED
⌈>	**In**	**115**		ug/L			1781320	2141172	6	Standard
|	**Ag**	**107**	**0.005**	ug/L	0.000	5	46	198	3	Standard
|	**Ba**	**135**	**-0.001**	ug/L	0.000	37	71	74	3	Standard
⌊	**Ba**	**137**	**-0.001**	ug/L	0.001	72	116	118	6	Standard
⌈>	**Tb**	**159**		ug/L			3193438	3328740	0	Standard
⌊	**Pb**	**208**	**0.003**	ug/L	0.000	2	423	970	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CAL1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:27:59
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L				32947	0	Standard
	Cl	**37**		ug/L				9523131	1	Standard
⌈>	**Sc**	**45**		ug/L				1783698	0	Standard
|	**Cr**	**52**		ug/L				33904	1	Standard
⌊	**Cr**	**53**		ug/L				376	1	Standard
⌈>	**Ge**	**72**		ug/L				115729	3	KED
|	**Cu**	**63**		ug/L				83	21	KED
|	**Cu**	**65**		ug/L				51	9	KED
|	**Zn**	**66**		ug/L				58	10	KED
|	**Zn**	**67**		ug/L				11	66	KED
|	**As**	**75**		ug/L				5	44	KED
⌊	**Se**	**78**		ug/L				29	10	KED
	Y	**89**		ug/L				898977	3	Standard
	Kr	**83**		ug/L				74	2	Standard
⌈>	**In-1**	**115**		ug/L				41368	0	KED
|	**Cd**	**111**		ug/L				3	78	KED
⌊	**Cd**	**114**		ug/L				6	70	KED
⌈>	**In**	**115**		ug/L				1988467	0	Standard
|	**Ag**	**107**		ug/L				120	10	Standard
|	**Ba**	**135**		ug/L				52	20	Standard
⌊	**Ba**	**137**		ug/L				81	26	Standard
⌈>	**Tb**	**159**		ug/L				3324569	1	Standard
⌊	**Pb**	**208**		ug/L				581	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:32:07
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	32708	3	Standard
	Cl	**37**		ug/L			9523131	10214500	1	Standard
⎡>	**Sc**	**45**		ug/L			1783698	1732385	1	Standard
⎢	**Cr**	**52**	**48.465**	ug/L	0.833	1	33904	1826265	1	Standard
⎣	**Cr**	**53**	**50.527**	ug/L	0.631	1	376	210552	0	Standard
⎡>	**Ge**	**72**		ug/L			115729	115397	0	KED
⎢	**Cu**	**63**	**50.762**	ug/L	0.044	0	83	326321	0	KED
⎢	**Cu**	**65**	**50.884**	ug/L	0.380	0	51	165954	0	KED
⎢	**Zn**	**66**	**49.669**	ug/L	0.430	0	58	45165	1	KED
⎢	**Zn**	**67**	**50.556**	ug/L	0.656	1	11	7488	1	KED
⎢	**As**	**75**	**49.496**	ug/L	0.292	0	5	23537	0	KED
⎣	**Se**	**78**	**49.349**	ug/L	1.311	2	29	2727	3	KED
	Y	**89**		ug/L			898977	900124	2	Standard
	Kr	**83**		ug/L			74	86	14	Standard
⎡>	**In-1**	**115**		ug/L			41368	40954	0	KED
⎢	**Cd**	**111**	**49.497**	ug/L	0.541	1	3	28172	1	KED
⎣	**Cd**	**114**	**49.721**	ug/L	0.278	0	6	72375	0	KED
⎡>	**In**	**115**		ug/L			1988467	1892627	2	Standard
⎢	**Ag**	**107**	**46.539**	ug/L	1.071	2	120	1214800	0	Standard
⎢	**Ba**	**135**	**48.565**	ug/L	1.452	2	52	558466	0	Standard
⎣	**Ba**	**137**	**48.336**	ug/L	0.929	1	81	1010346	1	Standard
⎡>	**Tb**	**159**		ug/L			3324569	3339294	0	Standard
⎣	**Pb**	**208**	**50.096**	ug/L	0.581	1	581	8178334	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:39:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	32584	0	Standard
	Cl	**37**		ug/L			9523131	9660212	2	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1750238	0	Standard
|	**Cr**	**52**	**0.009**	ug/L	0.025	291	33904	33591	2	Standard
⌊	**Cr**	**53**	**-0.010**	ug/L	0.004	36	376	329	4	Standard
⌈>	**Ge**	**72**		ug/L			115729	113928	2	KED
|	**Cu**	**63**	**0.002**	ug/L	0.002	97	83	95	11	KED
|	**Cu**	**65**	**-0.003**	ug/L	0.001	25	51	42	6	KED
|	**Zn**	**66**	**-0.002**	ug/L	0.017	758	58	55	26	KED
|	**Zn**	**67**	**-0.007**	ug/L	0.028	378	11	10	39	KED
|	**As**	**75**	**0.004**	ug/L	0.001	17	5	7	3	KED
⌊	**Se**	**78**	**0.134**	ug/L	0.097	72	29	36	15	KED
	Y	**89**		ug/L			898977	902721	2	Standard
	Kr	**83**		ug/L			74	69	22	Standard
⌈>	**In-1**	**115**		ug/L			41368	40636	1	KED
|	**Cd**	**111**	**0.006**	ug/L	0.002	30	3	6	14	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.002	636	6	6	47	KED
⌈>	**In**	**115**		ug/L			1988467	1922871	3	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.000	4	120	200	2	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.002	263	52	57	30	Standard
⌊	**Ba**	**137**	**0.002**	ug/L	0.000	20	81	114	5	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3312902	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	11	581	800	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-02
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:46:21
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	68411	0	Standard
	Cl	37		ug/L			9523131	9532342	0	Standard
⌈>	Sc	45		ug/L			1783698	1849919	0	Standard
|	Cr	52	0.276	ug/L	0.008	2	33904	46069	1	Standard
⌊	Cr	53	1.310	ug/L	0.024	1	376	6209	1	Standard
⌈>	Ge	72		ug/L			115729	112115	2	KED
|	Cu	63	0.998	ug/L	0.015	1	83	6309	2	KED
|	Cu	65	0.993	ug/L	0.010	1	51	3194	1	KED
|	Zn	66	3.354	ug/L	0.111	3	58	3016	4	KED
|	Zn	67	3.642	ug/L	0.231	6	11	534	7	KED
|	As	75	2.623	ug/L	0.088	3	5	1217	3	KED
⌊	Se	78	0.152	ug/L	0.080	52	29	36	9	KED
	Y	89		ug/L			898977	893228	1	Standard
	Kr	83		ug/L			74	80	12	Standard
⌈>	In-1	115		ug/L			41368	40238	1	KED
|	Cd	111	0.007	ug/L	0.005	65	3	7	37	KED
⌊	Cd	114	0.004	ug/L	0.001	24	6	12	13	KED
⌈>	In	115		ug/L			1988467	2181541	1	Standard
|	Ag	107	0.001	ug/L	0.000	32	120	166	5	Standard
|	Ba	135	8.802	ug/L	0.219	2	52	116753	1	Standard
⌊	Ba	137	8.697	ug/L	0.129	1	81	209658	0	Standard
⌈>	Tb	159		ug/L			3324569	3416186	1	Standard
⌊	Pb	208	0.086	ug/L	0.002	1	581	14973	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-04
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:50:29
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	72071	1	Standard
	Cl	**37**		ug/L			9523131	9397217	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1836870	1	Standard
|	**Cr**	**52**	**0.312**	ug/L	0.015	4	33904	47164	1	Standard
⌊	**Cr**	**53**	**1.398**	ug/L	0.021	1	376	6553	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	114514	0	KED
|	**Cu**	**63**	**1.151**	ug/L	0.008	0	83	7426	1	KED
|	**Cu**	**65**	**1.156**	ug/L	0.020	1	51	3789	1	KED
|	**Zn**	**66**	**3.220**	ug/L	0.054	1	58	2959	0	KED
|	**Zn**	**67**	**3.855**	ug/L	0.214	5	11	577	5	KED
|	**As**	**75**	**2.508**	ug/L	0.024	0	5	1189	0	KED
⌊	**Se**	**78**	**0.035**	ug/L	0.066	187	29	31	11	KED
	Y	**89**		ug/L			898977	882059	0	Standard
	Kr	**83**		ug/L			74	70	16	Standard
⌈>	**In-1**	**115**		ug/L			41368	41277	1	KED
|	**Cd**	**111**	**0.013**	ug/L	0.006	42	3	11	30	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.002	57	6	11	24	KED
⌈>	**In**	**115**		ug/L			1988467	2247793	1	Standard
|	**Ag**	**107**	**-0.000**	ug/L	0.000	141	120	126	9	Standard
|	**Ba**	**135**	**8.429**	ug/L	0.065	0	52	115229	0	Standard
⌊	**Ba**	**137**	**8.352**	ug/L	0.046	0	81	207485	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3468087	0	Standard
⌊	**Pb**	**208**	**0.113**	ug/L	0.002	1	581	19711	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-06
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:54:37
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	70272	0	Standard
	Cl	**37**		ug/L			9523131	9475470	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1781615	1	Standard
|	**Cr**	**52**	**0.342**	ug/L	0.039	11	33904	46873	1	Standard
⌊	**Cr**	**53**	**1.283**	ug/L	0.024	1	376	5863	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	112182	0	KED
|	**Cu**	**63**	**1.076**	ug/L	0.019	1	83	6806	1	KED
|	**Cu**	**65**	**1.132**	ug/L	0.040	3	51	3637	3	KED
|	**Zn**	**66**	**2.419**	ug/L	0.069	2	58	2192	2	KED
|	**Zn**	**67**	**2.860**	ug/L	0.212	7	11	422	6	KED
|	**As**	**75**	**0.486**	ug/L	0.008	1	5	230	1	KED
⌊	**Se**	**78**	**-0.001**	ug/L	0.062	4578	29	28	11	KED
	Y	**89**		ug/L			898977	879200	1	Standard
	Kr	**83**		ug/L			74	74	20	Standard
⌈>	**In-1**	**115**		ug/L			41368	40502	2	KED
|	**Cd**	**111**	**0.007**	ug/L	0.002	20	3	7	12	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.003	103	6	10	39	KED
⌈>	**In**	**115**		ug/L			1988467	2236412	2	Standard
|	**Ag**	**107**	**-0.001**	ug/L	0.000	60	120	110	13	Standard
|	**Ba**	**135**	**8.769**	ug/L	0.142	1	52	119246	0	Standard
⌊	**Ba**	**137**	**8.696**	ug/L	0.178	2	81	214874	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3436174	0	Standard
⌊	**Pb**	**208**	**0.049**	ug/L	0.001	1	581	8881	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-08
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 19:58:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	78275	1	Standard
	Cl	37		ug/L			9523131	9550970	0	Standard
⌈>	Sc	45		ug/L			1783698	1729739	1	Standard
|	Cr	52	0.332	ug/L	0.017	5	33904	45132	1	Standard
⌊	Cr	53	1.057	ug/L	0.017	1	376	4755	0	Standard
⌈>	Ge	72		ug/L			115729	111752	2	KED
|	Cu	63	1.588	ug/L	0.037	2	83	9958	0	KED
|	Cu	65	1.601	ug/L	0.019	1	51	5103	0	KED
|	Zn	66	2.341	ug/L	0.056	2	58	2115	3	KED
|	Zn	67	2.782	ug/L	0.085	3	11	409	3	KED
|	As	75	0.578	ug/L	0.021	3	5	271	2	KED
⌊	Se	78	0.009	ug/L	0.074	829	29	29	14	KED
	Y	89		ug/L			898977	887854	1	Standard
	Kr	83		ug/L			74	77	21	Standard
⌈>	In-1	115		ug/L			41368	39973	2	KED
|	Cd	111	0.009	ug/L	0.004	40	3	8	24	KED
⌊	Cd	114	0.008	ug/L	0.003	31	6	17	17	KED
⌈>	In	115		ug/L			1988467	2243077	1	Standard
|	Ag	107	0.001	ug/L	0.000	24	120	157	4	Standard
|	Ba	135	11.730	ug/L	0.219	1	52	159965	0	Standard
⌊	Ba	137	11.647	ug/L	0.162	1	81	288651	0	Standard
⌈>	Tb	159		ug/L			3324569	3450437	0	Standard
⌊	Pb	208	0.046	ug/L	0.001	2	581	8410	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-10
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:02:54
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	73008	1	Standard
	Cl	37		ug/L			9523131	9384686	1	Standard
⌈>	Sc	45		ug/L			1783698	1735943	1	Standard
|	Cr	52	0.126	ug/L	0.010	8	33904	37649	0	Standard
⌊	Cr	53	0.905	ug/L	0.015	1	376	4140	0	Standard
⌈>	Ge	72		ug/L			115729	109109	1	KED
|	Cu	63	0.897	ug/L	0.028	3	83	5526	2	KED
|	Cu	65	0.891	ug/L	0.027	3	51	2795	3	KED
|	Zn	66	1.847	ug/L	0.060	3	58	1641	3	KED
|	Zn	67	2.243	ug/L	0.053	2	11	324	3	KED
|	As	75	1.814	ug/L	0.044	2	5	820	1	KED
⌊	Se	78	0.147	ug/L	0.135	92	29	35	20	KED
	Y	89		ug/L			898977	833492	2	Standard
	Kr	83		ug/L			74	64	16	Standard
⌈>	In-1	115		ug/L			41368	39408	0	KED
|	Cd	111	0.003	ug/L	0.002	62	3	5	21	KED
⌊	Cd	114	0.006	ug/L	0.004	67	6	14	38	KED
⌈>	In	115		ug/L			1988467	2127841	5	Standard
|	Ag	107	-0.001	ug/L	0.000	22	120	92	13	Standard
|	Ba	135	11.005	ug/L	0.677	6	52	142084	0	Standard
⌊	Ba	137	10.912	ug/L	0.754	6	81	255956	1	Standard
⌈>	Tb	159		ug/L			3324569	3388549	1	Standard
⌊	Pb	208	0.019	ug/L	0.001	3	581	3748	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-12
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:07:02
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	72512	3	Standard
	Cl	37		ug/L			9523131	9172443	1	Standard
⌈>	Sc	45		ug/L			1783698	1728944	1	Standard
|	Cr	52	0.188	ug/L	0.011	5	33904	39804	1	Standard
⌊	Cr	53	0.898	ug/L	0.026	2	376	4095	3	Standard
⌈>	Ge	72		ug/L			115729	108455	1	KED
|	Cu	63	1.035	ug/L	0.021	2	83	6329	1	KED
|	Cu	65	1.014	ug/L	0.021	2	51	3153	1	KED
|	Zn	66	1.828	ug/L	0.103	5	58	1614	5	KED
|	Zn	67	2.275	ug/L	0.059	2	11	326	2	KED
|	As	75	3.473	ug/L	0.135	3	5	1557	4	KED
⌊	Se	78	0.049	ug/L	0.159	323	29	30	26	KED
	Y	89		ug/L			898977	840190	1	Standard
	Kr	83		ug/L			74	69	3	Standard
⌈>	In-1	115		ug/L			41368	39458	2	KED
|	Cd	111	0.007	ug/L	0.006	87	3	7	45	KED
⌊	Cd	114	0.004	ug/L	0.001	26	6	11	9	KED
⌈>	In	115		ug/L			1988467	2212713	1	Standard
|	Ag	107	-0.002	ug/L	0.000	15	120	84	7	Standard
|	Ba	135	9.794	ug/L	0.154	1	52	131777	0	Standard
⌊	Ba	137	9.617	ug/L	0.123	1	81	235161	1	Standard
⌈>	Tb	159		ug/L			3324569	3450360	1	Standard
⌊	Pb	208	0.044	ug/L	0.002	4	581	8093	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-14
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:11:09
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	106132	1	Standard
	Cl	37		ug/L			9523131	8911222	2	Standard
>	Sc	45		ug/L			1783698	1611107	9	Standard
	Cr	52	1.075	ug/L	0.196	18	33904	67192	0	Standard
	Cr	53	1.520	ug/L	0.153	10	376	6181	1	Standard
>	Ge	72		ug/L			115729	109977	0	KED
	Cu	63	1.014	ug/L	0.016	1	83	6289	2	KED
	Cu	65	1.013	ug/L	0.036	3	51	3197	2	KED
	Zn	66	5.865	ug/L	0.096	1	58	5131	0	KED
	Zn	67	5.553	ug/L	0.202	3	11	793	4	KED
	As	75	1.437	ug/L	0.067	4	5	656	5	KED
	Se	78	0.143	ug/L	0.042	29	29	35	6	KED
	Y	89		ug/L			898977	807150	10	Standard
	Kr	83		ug/L			74	89	9	Standard
>	In-1	115		ug/L			41368	40309	1	KED
	Cd	111	0.012	ug/L	0.007	55	3	10	37	KED
	Cd	114	0.006	ug/L	0.004	58	6	15	35	KED
>	In	115		ug/L			1988467	2098402	14	Standard
	Ag	107	-0.001	ug/L	0.001	67	120	92	13	Standard
	Ba	135	4.507	ug/L	0.605	13	52	56822	1	Standard
	Ba	137	4.376	ug/L	0.605	13	81	100209	2	Standard
>	Tb	159		ug/L			3324569	3300221	9	Standard
	Pb	208	0.199	ug/L	0.016	8	581	32485	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-16
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:15:41
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	70934	0	Standard
	Cl	37		ug/L			9523131	9459136	0	Standard
⌈>	Sc	45		ug/L			1783698	1696335	1	Standard
|	Cr	52	0.373	ug/L	0.009	2	33904	45767	0	Standard
⌊	Cr	53	1.271	ug/L	0.011	0	376	5534	0	Standard
⌈>	Ge	72		ug/L			115729	108967	1	KED
|	Cu	63	1.272	ug/L	0.008	0	83	7797	0	KED
|	Cu	65	1.284	ug/L	0.013	1	51	4001	0	KED
|	Zn	66	2.586	ug/L	0.032	1	58	2272	1	KED
|	Zn	67	2.902	ug/L	0.117	4	11	415	2	KED
|	As	75	0.494	ug/L	0.031	6	5	227	7	KED
⌊	Se	78	0.113	ug/L	0.133	117	29	33	21	KED
	Y	89		ug/L			898977	849484	0	Standard
	Kr	83		ug/L			74	67	27	Standard
⌈>	In-1	115		ug/L			41368	39759	0	KED
|	Cd	111	0.009	ug/L	0.003	36	3	8	22	KED
⌊	Cd	114	0.003	ug/L	0.004	114	6	10	46	KED
⌈>	In	115		ug/L			1988467	2273788	1	Standard
|	Ag	107	-0.002	ug/L	0.001	35	120	80	26	Standard
|	Ba	135	8.822	ug/L	0.222	2	52	121976	1	Standard
⌊	Ba	137	8.661	ug/L	0.094	1	81	217635	0	Standard
⌈>	Tb	159		ug/L			3324569	3448520	0	Standard
⌊	Pb	208	0.143	ug/L	0.001	0	581	24731	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-17
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:21:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	76742	1	Standard
	Cl	37		ug/L			9523131	9533405	0	Standard
⌈>	Sc	45		ug/L			1783698	1700543	1	Standard
|	Cr	52	0.309	ug/L	0.009	2	33904	43544	1	Standard
⌊	Cr	53	1.362	ug/L	0.016	1	376	5919	1	Standard
⌈>	Ge	72		ug/L			115729	108914	0	KED
|	Cu	63	1.345	ug/L	0.022	1	83	8236	1	KED
|	Cu	65	1.333	ug/L	0.026	1	51	4149	1	KED
|	Zn	66	3.152	ug/L	0.100	3	58	2756	2	KED
|	Zn	67	3.548	ug/L	0.091	2	11	506	2	KED
|	As	75	1.944	ug/L	0.070	3	5	877	3	KED
⌊	Se	78	0.035	ug/L	0.083	235	29	29	14	KED
	Y	89		ug/L			898977	846617	0	Standard
	Kr	83		ug/L			74	84	5	Standard
⌈>	In-1	115		ug/L			41368	39946	0	KED
|	Cd	111	0.011	ug/L	0.002	14	3	9	10	KED
⌊	Cd	114	0.004	ug/L	0.002	56	6	12	25	KED
⌈>	In	115		ug/L			1988467	2321068	1	Standard
|	Ag	107	-0.001	ug/L	0.001	57	120	109	15	Standard
|	Ba	135	6.719	ug/L	0.110	1	52	94856	0	Standard
⌊	Ba	137	6.674	ug/L	0.112	1	81	171207	0	Standard
⌈>	Tb	159		ug/L			3324569	3476528	0	Standard
⌊	Pb	208	0.139	ug/L	0.001	0	581	24272	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:28:46
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	34100	0	Standard
	Cl	**37**		ug/L			9523131	9238671	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1648295	1	Standard
|	**Cr**	**52**	**-0.001**	ug/L	0.018	1198	33904	31271	0	Standard
⌊	**Cr**	**53**	**-0.000**	ug/L	0.006	1546	376	346	6	Standard
⌈>	**Ge**	**72**		ug/L			115729	113403	1	KED
|	**Cu**	**63**	**0.005**	ug/L	0.000	8	83	111	0	KED
|	**Cu**	**65**	**0.004**	ug/L	0.003	86	51	62	16	KED
|	**Zn**	**66**	**0.031**	ug/L	0.012	37	58	85	10	KED
|	**Zn**	**67**	**0.041**	ug/L	0.028	68	11	17	22	KED
|	**As**	**75**	**-0.003**	ug/L	0.002	68	5	4	22	KED
⌊	**Se**	**78**	**-0.059**	ug/L	0.083	140	29	26	18	KED
	Y	**89**		ug/L			898977	846928	2	Standard
	Kr	**83**		ug/L			74	55	5	Standard
⌈>	**In-1**	**115**		ug/L			41368	40965	2	KED
|	**Cd**	**111**	**0.000**	ug/L	0.003	5287	3	3	41	KED
⌊	**Cd**	**114**	**-0.002**	ug/L	0.003	124	6	3	106	KED
⌈>	**In**	**115**		ug/L			1988467	2222610	2	Standard
|	**Ag**	**107**	**-0.003**	ug/L	0.000	5	120	55	5	Standard
|	**Ba**	**135**	**0.005**	ug/L	0.002	42	52	119	21	Standard
⌊	**Ba**	**137**	**0.006**	ug/L	0.001	15	81	232	8	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3375693	0	Standard
⌊	**Pb**	**208**	**0.000**	ug/L	0.000	30	581	659	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:34:19
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	33706	2	Standard
	Cl	**37**		ug/L			9523131	9863776	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1642159	1	Standard
|	**Cr**	**52**	**48.018**	ug/L	0.614	1	33904	1715423	0	Standard
⌊	**Cr**	**53**	**50.168**	ug/L	0.945	1	376	198173	1	Standard
⌈>	**Ge**	**72**		ug/L			115729	111479	1	KED
|	**Cu**	**63**	**52.052**	ug/L	1.214	2	83	323176	0	KED
|	**Cu**	**65**	**52.101**	ug/L	0.366	0	51	164150	1	KED
|	**Zn**	**66**	**51.143**	ug/L	0.680	1	58	44918	1	KED
|	**Zn**	**67**	**50.971**	ug/L	0.936	1	11	7293	2	KED
|	**As**	**75**	**50.419**	ug/L	0.946	1	5	23158	0	KED
⌊	**Se**	**78**	**50.928**	ug/L	0.155	0	29	2717	1	KED
	Y	**89**		ug/L			898977	851165	2	Standard
	Kr	**83**		ug/L			74	78	17	Standard
⌈>	**In-1**	**115**		ug/L			41368	40299	0	KED
|	**Cd**	**111**	**50.982**	ug/L	0.257	0	3	28552	0	KED
⌊	**Cd**	**114**	**50.950**	ug/L	0.987	1	6	72970	1	KED
⌈>	**In**	**115**		ug/L			1988467	2119544	5	Standard
|	**Ag**	**107**	**42.720**	ug/L	2.324	5	120	1246970	0	Standard
|	**Ba**	**135**	**44.439**	ug/L	2.118	4	52	571678	1	Standard
⌊	**Ba**	**137**	**43.786**	ug/L	1.936	4	81	1023755	1	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3407158	0	Standard
⌊	**Pb**	**208**	**50.976**	ug/L	0.374	0	581	8490717	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:41:11
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	33431	1	Standard
	Cl	**37**		ug/L			9523131	9519691	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1710054	1	Standard
|	**Cr**	**52**	**-0.001**	ug/L	0.003	205	33904	32450	1	Standard
⌊	**Cr**	**53**	**-0.017**	ug/L	0.006	38	376	292	7	Standard
⌈>	**Ge**	**72**		ug/L			115729	113873	1	KED
|	**Cu**	**63**	**-0.001**	ug/L	0.002	165	83	76	15	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.002	197	51	47	10	KED
|	**Zn**	**66**	**0.003**	ug/L	0.008	253	58	60	12	KED
|	**Zn**	**67**	**0.001**	ug/L	0.012	1047	11	11	16	KED
|	**As**	**75**	**0.006**	ug/L	0.003	48	5	8	16	KED
⌊	**Se**	**78**	**0.046**	ug/L	0.068	147	29	31	11	KED
	Y	**89**		ug/L			898977	885856	2	Standard
	Kr	**83**		ug/L			74	66	13	Standard
⌈>	**In-1**	**115**		ug/L			41368	41268	1	KED
|	**Cd**	**111**	**0.004**	ug/L	0.006	149	3	5	57	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.001	29	6	3	36	KED
⌈>	**In**	**115**		ug/L			1988467	2244973	1	Standard
|	**Ag**	**107**	**0.002**	ug/L	0.000	12	120	189	2	Standard
|	**Ba**	**135**	**-0.000**	ug/L	0.001	251	52	53	20	Standard
⌊	**Ba**	**137**	**0.001**	ug/L	0.001	55	81	126	13	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3391153	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	44	581	741	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0217-BLK1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:48:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	57118	0	Standard
	Cl	37		ug/L			9523131	9539924	1	Standard
>	Sc	45		ug/L			1783698	1723493	1	Standard
	Cr	52	0.102	ug/L	0.021	20	33904	36514	0	Standard
	Cr	53	0.047	ug/L	0.004	8	376	558	4	Standard
>	Ge	72		ug/L			115729	112580	1	KED
	Cu	63	0.089	ug/L	0.007	7	83	641	7	KED
	Cu	65	0.088	ug/L	0.005	5	51	328	3	KED
	Zn	66	1.667	ug/L	0.064	3	58	1533	2	KED
	Zn	67	1.542	ug/L	0.112	7	11	233	7	KED
	As	75	0.000	ug/L	0.001	81016	5	5	9	KED
	Se	78	0.052	ug/L	0.107	204	29	31	18	KED
	Y	89		ug/L			898977	882448	1	Standard
	Kr	83		ug/L			74	69	33	Standard
>	In-1	115		ug/L			41368	42010	0	KED
	Cd	111	0.000	ug/L	0.006	1275	3	3	86	KED
	Cd	114	-0.001	ug/L	0.001	119	6	5	17	KED
>	In	115		ug/L			1988467	2282028	1	Standard
	Ag	107	-0.001	ug/L	0.001	58	120	96	23	Standard
	Ba	135	0.055	ug/L	0.004	7	52	826	6	Standard
	Ba	137	0.054	ug/L	0.001	2	81	1445	1	Standard
>	Tb	159		ug/L			3324569	3443642	0	Standard
	Pb	208	0.012	ug/L	0.000	3	581	2539	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0217-BS1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:52:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	57698	1	Standard
	Cl	37		ug/L			9523131	9565614	0	Standard
>	Sc	45		ug/L			1783698	1732285	0	Standard
	Cr	52	24.058	ug/L	0.086	0	33904	923174	1	Standard
	Cr	53	25.182	ug/L	0.240	0	376	105132	1	Standard
>	Ge	72		ug/L			115729	116260	0	KED
	Cu	63	27.047	ug/L	0.339	1	83	175219	1	KED
	Cu	65	27.262	ug/L	0.015	0	51	89606	0	KED
	Zn	66	79.106	ug/L	0.758	0	58	72430	0	KED
	Zn	67	76.728	ug/L	1.101	1	11	11443	0	KED
	As	75	24.258	ug/L	0.084	0	5	11625	0	KED
	Se	78	76.956	ug/L	0.550	0	29	4267	0	KED
	Y	89		ug/L			898977	877754	1	Standard
	Kr	83		ug/L			74	72	9	Standard
>	In-1	115		ug/L			41368	41012	1	KED
	Cd	111	25.376	ug/L	0.293	1	3	14464	0	KED
	Cd	114	25.559	ug/L	0.519	2	6	37253	0	KED
>	In	115		ug/L			1988467	2255328	1	Standard
	Ag	107	21.491	ug/L	0.046	0	120	668848	1	Standard
	Ba	135	21.692	ug/L	0.059	0	52	297452	0	Standard
	Ba	137	21.359	ug/L	0.080	0	81	532252	1	Standard
>	Tb	159		ug/L			3324569	3428560	0	Standard
	Pb	208	26.044	ug/L	0.126	0	581	4365616	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-18
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 20:56:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	117236	0	Standard
	Cl	37		ug/L			9523131	8876297	0	Standard
>	Sc	45		ug/L			1783698	1733905	0	Standard
	Cr	52	1.206	ug/L	0.043	3	33904	77638	1	Standard
	Cr	53	1.612	ug/L	0.018	1	376	7077	1	Standard
>	Ge	72		ug/L			115729	111808	1	KED
	Cu	63	0.872	ug/L	0.020	2	83	5510	1	KED
	Cu	65	0.879	ug/L	0.008	0	51	2825	0	KED
	Zn	66	5.217	ug/L	0.048	0	58	4646	0	KED
	Zn	67	4.859	ug/L	0.030	0	11	707	0	KED
	As	75	1.227	ug/L	0.056	4	5	570	4	KED
	Se	78	0.230	ug/L	0.081	35	29	40	9	KED
	Y	89		ug/L			898977	843014	0	Standard
	Kr	83		ug/L			74	68	7	Standard
>	In-1	115		ug/L			41368	39487	0	KED
	Cd	111	0.016	ug/L	0.003	17	3	12	12	KED
	Cd	114	0.009	ug/L	0.003	35	6	19	24	KED
>	In	115		ug/L			1988467	2193136	1	Standard
	Ag	107	0.005	ug/L	0.001	17	120	297	11	Standard
	Ba	135	4.810	ug/L	0.160	3	52	64168	2	Standard
	Ba	137	4.743	ug/L	0.105	2	81	114972	1	Standard
>	Tb	159		ug/L			3324569	3373467	0	Standard
	Pb	208	0.235	ug/L	0.000	0	581	39350	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-19
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:00:48
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	79838	0	Standard
	Cl	37		ug/L			9523131	9363801	1	Standard
>	Sc	45		ug/L			1783698	1659094	1	Standard
	Cr	52	0.198	ug/L	0.001	0	33904	38566	1	Standard
	Cr	53	0.941	ug/L	0.021	2	376	4099	2	Standard
>	Ge	72		ug/L			115729	108322	0	KED
	Cu	63	2.186	ug/L	0.030	1	83	13263	1	KED
	Cu	65	2.154	ug/L	0.033	1	51	6641	1	KED
	Zn	66	2.772	ug/L	0.010	0	58	2417	0	KED
	Zn	67	3.257	ug/L	0.042	1	11	462	1	KED
	As	75	1.381	ug/L	0.017	1	5	621	1	KED
	Se	78	0.085	ug/L	0.088	103	29	32	13	KED
	Y	89		ug/L			898977	827766	0	Standard
	Kr	83		ug/L			74	76	13	Standard
>	In-1	115		ug/L			41368	39380	0	KED
	Cd	111	0.014	ug/L	0.004	26	3	10	18	KED
	Cd	114	0.006	ug/L	0.005	81	6	14	45	KED
>	In	115		ug/L			1988467	2209178	1	Standard
	Ag	107	0.000	ug/L	0.000	81	120	139	4	Standard
	Ba	135	9.639	ug/L	0.181	1	52	129481	0	Standard
	Ba	137	9.537	ug/L	0.161	1	81	232808	0	Standard
>	Tb	159		ug/L			3324569	3437546	0	Standard
	Pb	208	0.063	ug/L	0.000	0	581	11225	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0215-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:05:20
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	80561	1	Standard
	Cl	37		ug/L			9523131	9485236	0	Standard
>	Sc	45		ug/L			1783698	1683602	0	Standard
	Cr	52	0.213	ug/L	0.014	6	33904	39647	1	Standard
	Cr	53	0.917	ug/L	0.017	1	376	4063	2	Standard
>	Ge	72		ug/L			115729	108553	0	KED
	Cu	63	2.711	ug/L	0.020	0	83	16471	1	KED
	Cu	65	2.693	ug/L	0.077	2	51	8307	3	KED
	Zn	66	2.914	ug/L	0.146	5	58	2544	5	KED
	Zn	67	3.323	ug/L	0.144	4	11	473	4	KED
	As	75	1.379	ug/L	0.043	3	5	622	3	KED
	Se	78	0.118	ug/L	0.079	66	29	33	12	KED
	Y	89		ug/L			898977	817567	2	Standard
	Kr	83		ug/L			74	69	23	Standard
>	In-1	115		ug/L			41368	39726	1	KED
	Cd	111	0.016	ug/L	0.004	26	3	12	20	KED
	Cd	114	0.009	ug/L	0.001	10	6	19	5	KED
>	In	115		ug/L			1988467	2229773	1	Standard
	Ag	107	-0.001	ug/L	0.001	119	120	119	17	Standard
	Ba	135	9.648	ug/L	0.242	2	52	130796	1	Standard
	Ba	137	9.526	ug/L	0.259	2	81	234664	0	Standard
>	Tb	159		ug/L			3324569	3428756	0	Standard
	Pb	208	0.061	ug/L	0.001	1	581	10847	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0215-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:10:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	76233	1	Standard
	Cl	37		ug/L			9523131	9554097	1	Standard
⌈>	Sc	45		ug/L			1783698	1675469	0	Standard
|	Cr	52	22.750	ug/L	0.191	0	33904	846041	0	Standard
⌊	Cr	53	24.629	ug/L	0.374	1	376	99445	0	Standard
⌈>	Ge	72		ug/L			115729	107868	1	KED
|	Cu	63	28.378	ug/L	0.431	1	83	170531	0	KED
|	Cu	65	28.538	ug/L	0.442	1	51	87010	0	KED
|	Zn	66	80.973	ug/L	0.916	1	58	68782	1	KED
|	Zn	67	79.052	ug/L	0.729	0	11	10939	1	KED
|	As	75	26.533	ug/L	0.341	1	5	11795	1	KED
⌊	Se	78	78.513	ug/L	0.948	1	29	4038	1	KED
	Y	89		ug/L			898977	831002	1	Standard
	Kr	83		ug/L			74	70	18	Standard
⌈>	In-1	115		ug/L			41368	40033	1	KED
|	Cd	111	25.060	ug/L	0.335	1	3	13943	0	KED
⌊	Cd	114	25.480	ug/L	0.561	2	6	36254	1	KED
⌈>	In	115		ug/L			1988467	2249601	2	Standard
|	Ag	107	20.469	ug/L	0.504	2	120	635197	0	Standard
|	Ba	135	30.631	ug/L	0.442	1	52	418853	0	Standard
⌊	Ba	137	30.210	ug/L	0.623	2	81	750631	0	Standard
⌈>	Tb	159		ug/L			3324569	3468584	1	Standard
⌊	Pb	208	25.768	ug/L	0.331	1	581	4369409	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0438-01
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:18:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	77265	1	Standard
	Cl	37		ug/L			9523131	9617344	1	Standard
⌈>	Sc	45		ug/L			1783698	1708376	1	Standard
|	Cr	52	0.269	ug/L	0.018	6	33904	42285	1	Standard
⌊	Cr	53	1.275	ug/L	0.024	1	376	5592	1	Standard
⌈>	Ge	72		ug/L			115729	110442	2	KED
|	Cu	63	1.355	ug/L	0.055	4	83	8411	1	KED
|	Cu	65	1.363	ug/L	0.020	1	51	4301	1	KED
|	Zn	66	3.126	ug/L	0.110	3	58	2771	2	KED
|	Zn	67	3.422	ug/L	0.175	5	11	495	5	KED
|	As	75	1.814	ug/L	0.074	4	5	830	2	KED
⌊	Se	78	0.020	ug/L	0.103	506	29	29	17	KED
	Y	89		ug/L			898977	841451	0	Standard
	Kr	83		ug/L			74	67	22	Standard
⌈>	In-1	115		ug/L			41368	40903	1	KED
|	Cd	111	0.007	ug/L	0.005	61	3	7	33	KED
⌊	Cd	114	0.003	ug/L	0.002	78	6	10	28	KED
⌈>	In	115		ug/L			1988467	2272667	1	Standard
|	Ag	107	0.001	ug/L	0.001	52	120	175	10	Standard
|	Ba	135	6.566	ug/L	0.137	2	52	90747	0	Standard
⌊	Ba	137	6.602	ug/L	0.063	0	81	165828	0	Standard
⌈>	Tb	159		ug/L			3324569	3523691	1	Standard
⌊	Pb	208	0.136	ug/L	0.003	1	581	23980	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0217-DUP1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:22:56
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	79227	1	Standard
	Cl	37		ug/L			9523131	9586028	0	Standard
⌈>	Sc	45		ug/L			1783698	1709452	0	Standard
|	Cr	52	0.284	ug/L	0.012	4	33904	42853	0	Standard
⌊	Cr	53	1.308	ug/L	0.020	1	376	5732	2	Standard
⌈>	Ge	72		ug/L			115729	110921	1	KED
|	Cu	63	1.395	ug/L	0.019	1	83	8694	0	KED
|	Cu	65	1.412	ug/L	0.013	0	51	4474	0	KED
|	Zn	66	2.874	ug/L	0.045	1	58	2564	1	KED
|	Zn	67	3.100	ug/L	0.427	13	11	452	14	KED
|	As	75	1.903	ug/L	0.064	3	5	875	4	KED
⌊	Se	78	0.068	ug/L	0.057	84	29	32	10	KED
	Y	89		ug/L			898977	851797	0	Standard
	Kr	83		ug/L			74	55	16	Standard
⌈>	In-1	115		ug/L			41368	39845	0	KED
|	Cd	111	0.006	ug/L	0.005	76	3	6	37	KED
⌊	Cd	114	0.009	ug/L	0.002	23	6	19	15	KED
⌈>	In	115		ug/L			1988467	2257384	2	Standard
|	Ag	107	-0.000	ug/L	0.000	168	120	128	8	Standard
|	Ba	135	6.665	ug/L	0.170	2	52	91491	0	Standard
⌊	Ba	137	6.580	ug/L	0.259	3	81	164108	2	Standard
⌈>	Tb	159		ug/L			3324569	3507384	0	Standard
⌊	Pb	208	0.145	ug/L	0.002	1	581	25524	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0217-MS1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:28:27
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	77998	0	Standard
	Cl	37		ug/L			9523131	9548531	0	Standard
>	Sc	45		ug/L			1783698	1715619	1	Standard
	Cr	52	21.987	ug/L	0.246	1	33904	838308	0	Standard
	Cr	53	23.996	ug/L	0.201	0	376	99225	0	Standard
>	Ge	72		ug/L			115729	110370	1	KED
	Cu	63	27.195	ug/L	0.320	1	83	167225	0	KED
	Cu	65	27.299	ug/L	0.137	0	51	85178	1	KED
	Zn	66	79.952	ug/L	0.597	0	58	69496	1	KED
	Zn	67	77.268	ug/L	0.639	0	11	10940	0	KED
	As	75	26.272	ug/L	0.215	0	5	11951	1	KED
	Se	78	76.331	ug/L	0.988	1	29	4017	0	KED
	Y	89		ug/L			898977	848106	0	Standard
	Kr	83		ug/L			74	90	16	Standard
>	In-1	115		ug/L			41368	36899	15	KED
	Cd	111	27.146	ug/L	3.455	12	3	13738	4	KED
	Cd	114	27.513	ug/L	3.786	13	6	35572	3	KED
>	In	115		ug/L			1988467	2308748	1	Standard
	Ag	107	19.719	ug/L	0.264	1	120	628198	1	Standard
	Ba	135	27.224	ug/L	0.182	0	52	382134	1	Standard
	Ba	137	26.950	ug/L	0.271	1	81	687460	1	Standard
>	Tb	159		ug/L			3324569	3527008	1	Standard
	Pb	208	25.293	ug/L	0.419	1	581	4360805	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL7
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:36:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	34374	1	Standard
	Cl	**37**		ug/L			9523131	9352513	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1657924	0	Standard
|	**Cr**	**52**	**-0.000**	ug/L	0.004	1651	33904	31504	0	Standard
⌊	**Cr**	**53**	**-0.007**	ug/L	0.004	57	376	321	5	Standard
⌈>	**Ge**	**72**		ug/L			115729	110359	1	KED
|	**Cu**	**63**	**0.010**	ug/L	0.003	27	83	139	13	KED
|	**Cu**	**65**	**0.002**	ug/L	0.001	61	51	56	7	KED
|	**Zn**	**66**	**0.037**	ug/L	0.032	87	58	87	32	KED
|	**Zn**	**67**	**0.026**	ug/L	0.042	163	11	14	41	KED
|	**As**	**75**	**0.006**	ug/L	0.002	30	5	8	10	KED
⌊	**Se**	**78**	**-0.095**	ug/L	0.067	70	29	23	13	KED
	Y	**89**		ug/L			898977	838534	1	Standard
	Kr	**83**		ug/L			74	66	7	Standard
⌈>	**In-1**	**115**		ug/L			41368	40133	0	KED
|	**Cd**	**111**	**-0.000**	ug/L	0.001	249	3	3	17	KED
⌊	**Cd**	**114**	**0.000**	ug/L	0.002	1351	6	6	42	KED
⌈>	**In**	**115**		ug/L			1988467	2207699	0	Standard
|	**Ag**	**107**	**-0.001**	ug/L	0.001	99	120	111	20	Standard
|	**Ba**	**135**	**0.005**	ug/L	0.001	27	52	120	14	Standard
⌊	**Ba**	**137**	**0.005**	ug/L	0.001	10	81	216	6	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3370878	0	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.000	21	581	853	7	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:41:33
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	34465	1	Standard
	Cl	**37**		ug/L			9523131	10008559	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1637059	1	Standard
|	**Cr**	**52**	**48.252**	ug/L	1.233	2	33904	1718020	0	Standard
⌊	**Cr**	**53**	**50.487**	ug/L	0.926	1	376	198797	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	111407	0	KED
|	**Cu**	**63**	**52.259**	ug/L	0.243	0	83	324328	0	KED
|	**Cu**	**65**	**52.793**	ug/L	0.687	1	51	166234	1	KED
|	**Zn**	**66**	**51.748**	ug/L	0.217	0	58	45423	0	KED
|	**Zn**	**67**	**52.027**	ug/L	0.907	1	11	7439	1	KED
|	**As**	**75**	**50.721**	ug/L	0.595	1	5	23286	1	KED
⌊	**Se**	**78**	**50.315**	ug/L	1.646	3	29	2683	2	KED
	Y	**89**		ug/L			898977	853208	1	Standard
	Kr	**83**		ug/L			74	76	10	Standard
⌈>	**In-1**	**115**		ug/L			41368	41029	0	KED
|	**Cd**	**111**	**50.644**	ug/L	0.560	1	3	28877	1	KED
⌊	**Cd**	**114**	**50.755**	ug/L	0.641	1	6	74009	0	KED
⌈>	**In**	**115**		ug/L			1988467	2195954	1	Standard
|	**Ag**	**107**	**41.833**	ug/L	1.068	2	120	1267415	2	Standard
|	**Ba**	**135**	**43.211**	ug/L	1.090	2	52	576782	1	Standard
⌊	**Ba**	**137**	**42.438**	ug/L	0.617	1	81	1029524	1	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3395254	0	Standard
⌊	**Pb**	**208**	**52.152**	ug/L	0.560	1	581	8656392	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:48:26
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	33763	1	Standard
	Cl	**37**		ug/L			9523131	9607360	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1652804	0	Standard
|	**Cr**	**52**	**0.023**	ug/L	0.006	26	33904	32211	0	Standard
⌊	**Cr**	**53**	**-0.016**	ug/L	0.002	11	376	286	2	Standard
⌈>	**Ge**	**72**		ug/L			115729	112917	1	KED
|	**Cu**	**63**	**0.002**	ug/L	0.002	109	83	92	12	KED
|	**Cu**	**65**	**-0.000**	ug/L	0.001	350	51	48	8	KED
|	**Zn**	**66**	**0.040**	ug/L	0.031	76	58	92	28	KED
|	**Zn**	**67**	**0.046**	ug/L	0.027	58	11	17	22	KED
|	**As**	**75**	**0.005**	ug/L	0.004	79	5	7	24	KED
⌊	**Se**	**78**	**0.006**	ug/L	0.090	1633	29	29	15	KED
	Y	**89**		ug/L			898977	855718	0	Standard
	Kr	**83**		ug/L			74	61	9	Standard
⌈>	**In-1**	**115**		ug/L			41368	41046	1	KED
|	**Cd**	**111**	**0.005**	ug/L	0.009	165	3	6	75	KED
⌊	**Cd**	**114**	**-0.001**	ug/L	0.003	261	6	4	97	KED
⌈>	**In**	**115**		ug/L			1988467	2186095	1	Standard
|	**Ag**	**107**	**0.002**	ug/L	0.000	7	120	205	2	Standard
|	**Ba**	**135**	**0.004**	ug/L	0.001	20	52	108	9	Standard
⌊	**Ba**	**137**	**0.005**	ug/L	0.001	18	81	203	10	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3335416	0	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	32	581	795	8	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0396-14RE1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:54:12
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	102707	0	Standard
	Cl	**37**		ug/L			9523131	9089880	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1702915	1	Standard
|	**Cr**	**52**	**1.005**	ug/L	0.008	0	33904	68925	1	Standard
⌊	**Cr**	**53**	**1.453**	ug/L	0.016	1	376	6303	1	Standard
⌈>	**Ge**	**72**		ug/L			115729	109162	2	KED
|	**Cu**	**63**	**1.003**	ug/L	0.026	2	83	6172	1	KED
|	**Cu**	**65**	**1.004**	ug/L	0.048	4	51	3143	4	KED
|	**Zn**	**66**	**5.909**	ug/L	0.107	1	58	5129	0	KED
|	**Zn**	**67**	**6.065**	ug/L	0.457	7	11	859	6	KED
|	**As**	**75**	**1.425**	ug/L	0.017	1	5	646	1	KED
⌊	**Se**	**78**	**0.192**	ug/L	0.019	9	29	38	3	KED
	Y	**89**		ug/L			898977	841438	2	Standard
	Kr	**83**		ug/L			74	67	1	Standard
⌈>	**In-1**	**115**		ug/L			41368	39673	0	KED
|	**Cd**	**111**	**0.008**	ug/L	0.004	52	3	7	30	KED
⌊	**Cd**	**114**	**0.004**	ug/L	0.003	70	6	12	32	KED
⌈>	**In**	**115**		ug/L			1988467	2154318	6	Standard
|	**Ag**	**107**	**0.001**	ug/L	0.000	20	120	161	10	Standard
|	**Ba**	**135**	**4.284**	ug/L	0.350	8	52	55942	1	Standard
⌊	**Ba**	**137**	**4.254**	ug/L	0.335	7	81	100962	1	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3409209	0	Standard
⌊	**Pb**	**208**	**0.192**	ug/L	0.004	2	581	32590	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: BJD0217-MS2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 21:58:20
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	69588	1	Standard
	Cl	**37**		ug/L			9523131	9491128	0	Standard
⎡>	**Sc**	**45**		ug/L			1783698	1686421	0	Standard
⎢	**Cr**	**52**	**22.773**	ug/L	0.173	0	33904	852416	0	Standard
⎣	**Cr**	**53**	**24.774**	ug/L	0.182	0	376	100692	0	Standard
⎡>	**Ge**	**72**		ug/L			115729	109103	1	KED
⎢	**Cu**	**63**	**27.712**	ug/L	0.253	0	83	168463	1	KED
⎢	**Cu**	**65**	**27.828**	ug/L	0.366	1	51	85829	0	KED
⎢	**Zn**	**66**	**81.927**	ug/L	0.243	0	58	70395	1	KED
⎢	**Zn**	**67**	**77.384**	ug/L	1.111	1	11	10830	0	KED
⎢	**As**	**75**	**27.048**	ug/L	0.038	0	5	12163	1	KED
⎣	**Se**	**78**	**78.330**	ug/L	0.723	0	29	4075	1	KED
	Y	**89**		ug/L			898977	839702	1	Standard
	Kr	**83**		ug/L			74	78	15	Standard
⎡>	**In-1**	**115**		ug/L			41368	38904	1	KED
⎢	**Cd**	**111**	**25.835**	ug/L	0.490	1	3	13967	0	KED
⎣	**Cd**	**114**	**26.061**	ug/L	0.423	1	6	36032	0	KED
⎡>	**In**	**115**		ug/L			1988467	2224950	2	Standard
⎢	**Ag**	**107**	**20.701**	ug/L	0.312	1	120	635467	1	Standard
⎢	**Ba**	**135**	**28.190**	ug/L	0.824	2	52	381166	0	Standard
⎣	**Ba**	**137**	**28.044**	ug/L	0.851	3	81	689106	1	Standard
⎡>	**Tb**	**159**		ug/L			3324569	3430141	0	Standard
⎣	**Pb**	**208**	**25.853**	ug/L	0.535	2	581	4335450	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0446-01
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:03:52
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	82220	1	Standard
	Cl	37		ug/L			9523131	9773487	1	Standard
>	Sc	45		ug/L			1783698	1696057	1	Standard
	Cr	52	0.300	ug/L	0.028	9	33904	43112	0	Standard
	Cr	53	1.590	ug/L	0.048	3	376	6831	1	Standard
>	Ge	72		ug/L			115729	108153	1	KED
	Cu	63	1.019	ug/L	0.037	3	83	6213	1	KED
	Cu	65	1.019	ug/L	0.030	2	51	3161	4	KED
	Zn	66	2.920	ug/L	0.084	2	58	2539	1	KED
	Zn	67	3.074	ug/L	0.206	6	11	436	7	KED
	As	75	2.258	ug/L	0.067	2	5	1011	4	KED
	Se	78	0.046	ug/L	0.183	392	29	30	31	KED
	Y	89		ug/L			898977	845736	2	Standard
	Kr	83		ug/L			74	73	17	Standard
>	In-1	115		ug/L			41368	39481	1	KED
	Cd	111	0.012	ug/L	0.002	18	3	10	10	KED
	Cd	114	0.002	ug/L	0.001	61	6	9	19	KED
>	In	115		ug/L			1988467	2258591	1	Standard
	Ag	107	0.001	ug/L	0.001	79	120	171	16	Standard
	Ba	135	7.568	ug/L	0.152	2	52	103940	0	Standard
	Ba	137	7.488	ug/L	0.099	1	81	186908	0	Standard
>	Tb	159		ug/L			3324569	3429848	1	Standard
	Pb	208	0.110	ug/L	0.002	1	581	19053	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0446-02
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:08:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	108115	1	Standard
	Cl	37		ug/L			9523131	8970219	1	Standard
⌈>	Sc	45		ug/L			1783698	1668125	0	Standard
|	Cr	52	1.123	ug/L	0.026	2	33904	71703	1	Standard
⌊	Cr	53	1.574	ug/L	0.008	0	376	6656	1	Standard
⌈>	Ge	72		ug/L			115729	109668	1	KED
|	Cu	63	0.644	ug/L	0.006	0	83	4010	0	KED
|	Cu	65	0.656	ug/L	0.012	1	51	2082	0	KED
|	Zn	66	4.033	ug/L	0.100	2	58	3535	1	KED
|	Zn	67	3.878	ug/L	0.185	4	11	556	6	KED
|	As	75	1.565	ug/L	0.014	0	5	712	0	KED
⌊	Se	78	0.045	ug/L	0.083	187	29	30	14	KED
	Y	89		ug/L			898977	837406	1	Standard
	Kr	83		ug/L			74	78	9	Standard
⌈>	In-1	115		ug/L			41368	39411	1	KED
|	Cd	111	0.009	ug/L	0.009	104	3	8	63	KED
⌊	Cd	114	0.002	ug/L	0.003	149	6	8	40	KED
⌈>	In	115		ug/L			1988467	2276342	3	Standard
|	Ag	107	-0.001	ug/L	0.001	67	120	113	17	Standard
|	Ba	135	3.970	ug/L	0.084	2	52	54975	1	Standard
⌊	Ba	137	3.926	ug/L	0.079	2	81	98775	1	Standard
⌈>	Tb	159		ug/L			3324569	3445461	2	Standard
⌊	Pb	208	0.167	ug/L	0.003	1	581	28701	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0446-03
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:12:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	82844	0	Standard
	Cl	37		ug/L			9523131	9568197	0	Standard
⌈>	Sc	45		ug/L			1783698	1653581	1	Standard
|	Cr	52	0.177	ug/L	0.010	5	33904	37691	0	Standard
⌊	Cr	53	0.940	ug/L	0.010	1	376	4083	1	Standard
⌈>	Ge	72		ug/L			115729	107388	0	KED
|	Cu	63	1.273	ug/L	0.018	1	83	7688	1	KED
|	Cu	65	1.251	ug/L	0.035	2	51	3843	2	KED
|	Zn	66	1.783	ug/L	0.045	2	58	1560	1	KED
|	Zn	67	2.308	ug/L	0.071	3	11	328	3	KED
|	As	75	1.478	ug/L	0.032	2	5	659	2	KED
⌊	Se	78	0.094	ug/L	0.018	18	29	32	3	KED
	Y	89		ug/L			898977	814982	0	Standard
	Kr	83		ug/L			74	61	18	Standard
⌈>	In-1	115		ug/L			41368	39193	1	KED
|	Cd	111	0.005	ug/L	0.006	114	3	6	50	KED
⌊	Cd	114	0.004	ug/L	0.001	17	6	12	8	KED
⌈>	In	115		ug/L			1988467	2207864	0	Standard
|	Ag	107	-0.002	ug/L	0.000	8	120	84	5	Standard
|	Ba	135	9.599	ug/L	0.081	0	52	128885	0	Standard
⌊	Ba	137	9.407	ug/L	0.122	1	81	229552	1	Standard
⌈>	Tb	159		ug/L			3324569	3412239	0	Standard
⌊	Pb	208	0.038	ug/L	0.000	1	581	6911	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0426-01
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:18:04
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	71101	1	Standard
	Cl	**37**		ug/L			9523131	9568402	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1504319	1	Standard
|	**Cr**	**52**	**17.288**	ug/L	0.194	1	33904	584062	0	Standard
⌊	**Cr**	**53**	**19.660**	ug/L	0.181	0	376	71342	1	Standard
⌈>	**Ge**	**72**		ug/L			115729	104811	1	KED
|	**Cu**	**63**	**1.471**	ug/L	0.002	0	83	8660	1	KED
|	**Cu**	**65**	**1.481**	ug/L	0.028	1	51	4430	1	KED
|	**Zn**	**66**	**1.143**	ug/L	0.040	3	58	995	2	KED
|	**Zn**	**67**	**1.757**	ug/L	0.139	7	11	246	7	KED
|	**As**	**75**	**9.713**	ug/L	0.125	1	5	4199	0	KED
⌊	**Se**	**78**	**0.383**	ug/L	0.072	18	29	45	8	KED
	Y	**89**		ug/L			898977	784800	0	Standard
	Kr	**83**		ug/L			74	81	16	Standard
⌈>	**In-1**	**115**		ug/L			41368	38241	0	KED
|	**Cd**	**111**	**0.007**	ug/L	0.005	64	3	6	34	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.006	368	6	8	93	KED
⌈>	**In**	**115**		ug/L			1988467	2202290	1	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.000	11	120	60	15	Standard
|	**Ba**	**135**	**11.699**	ug/L	0.295	2	52	156641	1	Standard
⌊	**Ba**	**137**	**11.518**	ug/L	0.155	1	81	280277	1	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3389977	0	Standard
⌊	**Pb**	**208**	**0.030**	ug/L	0.000	0	581	5618	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0426-03
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:22:12
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	77433	0	Standard
	Cl	**37**		ug/L			9523131	15851278	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1594492	0	Standard
|	**Cr**	**52**	**0.048**	ug/L	0.015	31	33904	31924	1	Standard
⌊	**Cr**	**53**	**7.417**	ug/L	0.044	0	376	28739	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	100511	0	KED
|	**Cu**	**63**	**0.995**	ug/L	0.006	0	83	5640	0	KED
|	**Cu**	**65**	**0.960**	ug/L	0.029	3	51	2772	3	KED
|	**Zn**	**66**	**0.763**	ug/L	0.034	4	58	653	4	KED
|	**Zn**	**67**	**3.294**	ug/L	0.278	8	11	434	8	KED
|	**As**	**75**	**0.219**	ug/L	0.006	2	5	95	3	KED
⌊	**Se**	**78**	**2.964**	ug/L	0.164	5	29	166	4	KED
	Y	**89**		ug/L			898977	777587	0	Standard
	Kr	**83**		ug/L			74	66	26	Standard
⌈>	**In-1**	**115**		ug/L			41368	36962	1	KED
|	**Cd**	**111**	**0.027**	ug/L	0.008	30	3	17	24	KED
⌊	**Cd**	**114**	**0.022**	ug/L	0.003	14	6	35	11	KED
⌈>	**In**	**115**		ug/L			1988467	2052668	4	Standard
|	**Ag**	**107**	**-0.000**	ug/L	0.002	355	120	113	46	Standard
|	**Ba**	**135**	**52.987**	ug/L	3.237	6	52	659972	1	Standard
⌊	**Ba**	**137**	**52.836**	ug/L	2.627	4	81	1196368	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3336746	0	Standard
⌊	**Pb**	**208**	**0.022**	ug/L	0.001	3	581	4114	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0426-05
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:26:44
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	79321	0	Standard
	Cl	**37**		ug/L			9523131	9786259	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1484135	1	Standard
|	**Cr**	**52**	**14.872**	ug/L	0.216	1	33904	499625	0	Standard
⌊	**Cr**	**53**	**17.184**	ug/L	0.288	1	376	61551	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	101227	1	KED
|	**Cu**	**63**	**1.230**	ug/L	0.019	1	83	7008	2	KED
|	**Cu**	**65**	**1.267**	ug/L	0.008	0	51	3669	0	KED
|	**Zn**	**66**	**1.226**	ug/L	0.026	2	58	1027	3	KED
|	**Zn**	**67**	**1.836**	ug/L	0.227	12	11	248	11	KED
|	**As**	**75**	**4.494**	ug/L	0.117	2	5	1878	1	KED
⌊	**Se**	**78**	**1.956**	ug/L	0.282	14	29	119	12	KED
	Y	**89**		ug/L			898977	777560	1	Standard
	Kr	**83**		ug/L			74	70	16	Standard
⌈>	**In-1**	**115**		ug/L			41368	37999	1	KED
|	**Cd**	**111**	**0.008**	ug/L	0.003	36	3	7	19	KED
⌊	**Cd**	**114**	**0.003**	ug/L	0.003	111	6	9	40	KED
⌈>	**In**	**115**		ug/L			1988467	2092273	5	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.000	5	120	76	2	Standard
|	**Ba**	**135**	**13.394**	ug/L	0.950	7	52	170019	2	Standard
⌊	**Ba**	**137**	**13.219**	ug/L	0.788	5	81	304994	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3340574	1	Standard
⌊	**Pb**	**208**	**0.050**	ug/L	0.001	1	581	8738	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0426-07
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:32:16
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	80607	0	Standard
	Cl	**37**		ug/L			9523131	15639868	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1613384	0	Standard
|	**Cr**	**52**	**0.089**	ug/L	0.007	7	33904	33730	1	Standard
⌊	**Cr**	**53**	**7.580**	ug/L	0.076	1	376	29709	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	100955	0	KED
|	**Cu**	**63**	**1.005**	ug/L	0.015	1	83	5726	1	KED
|	**Cu**	**65**	**1.035**	ug/L	0.045	4	51	2996	3	KED
|	**Zn**	**66**	**0.549**	ug/L	0.028	5	58	486	4	KED
|	**Zn**	**67**	**3.127**	ug/L	0.082	2	11	414	2	KED
|	**As**	**75**	**0.223**	ug/L	0.012	5	5	97	5	KED
⌊	**Se**	**78**	**2.812**	ug/L	0.222	7	29	160	6	KED
	Y	**89**		ug/L			898977	785885	1	Standard
	Kr	**83**		ug/L			74	62	9	Standard
⌈>	**In-1**	**115**		ug/L			41368	37144	0	KED
|	**Cd**	**111**	**0.021**	ug/L	0.014	66	3	13	52	KED
⌊	**Cd**	**114**	**0.016**	ug/L	0.002	13	6	26	10	KED
⌈>	**In**	**115**		ug/L			1988467	1960618	0	Standard
|	**Ag**	**107**	**-0.001**	ug/L	0.001	74	120	86	27	Standard
|	**Ba**	**135**	**54.913**	ug/L	0.251	0	52	654519	0	Standard
⌊	**Ba**	**137**	**54.034**	ug/L	0.319	0	81	1170421	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3336403	1	Standard
⌊	**Pb**	**208**	**0.012**	ug/L	0.000	2	581	2499	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL8
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:39:49
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	37090	0	Standard
	Cl	**37**		ug/L			9523131	9483486	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1657573	1	Standard
|	**Cr**	**52**	**-0.042**	ug/L	0.011	26	33904	30014	0	Standard
⌊	**Cr**	**53**	**0.175**	ug/L	0.011	6	376	1045	5	Standard
⌈>	**Ge**	**72**		ug/L			115729	112983	2	KED
|	**Cu**	**63**	**0.006**	ug/L	0.004	68	83	120	22	KED
|	**Cu**	**65**	**0.001**	ug/L	0.003	482	51	52	18	KED
|	**Zn**	**66**	**0.054**	ug/L	0.021	39	58	105	18	KED
|	**Zn**	**67**	**0.049**	ug/L	0.075	152	11	18	60	KED
|	**As**	**75**	**-0.001**	ug/L	0.001	50	5	4	5	KED
⌊	**Se**	**78**	**-0.028**	ug/L	0.064	234	29	27	12	KED
	Y	**89**		ug/L			898977	846467	0	Standard
	Kr	**83**		ug/L			74	66	13	Standard
⌈>	**In-1**	**115**		ug/L			41368	41110	1	KED
|	**Cd**	**111**	**-0.001**	ug/L	0.004	426	3	2	88	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.002	481	6	6	45	KED
⌈>	**In**	**115**		ug/L			1988467	2194252	1	Standard
|	**Ag**	**107**	**-0.003**	ug/L	0.000	6	120	48	11	Standard
|	**Ba**	**135**	**0.006**	ug/L	0.000	6	52	140	4	Standard
⌊	**Ba**	**137**	**0.006**	ug/L	0.000	4	81	231	2	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3332498	0	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	30	581	700	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:44:22
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	35015	1	Standard
	Cl	**37**		ug/L			9523131	9689065	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1642859	0	Standard
|	**Cr**	**52**	**47.665**	ug/L	0.780	1	33904	1703914	1	Standard
⌊	**Cr**	**53**	**49.843**	ug/L	0.520	1	376	196998	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	113758	1	KED
|	**Cu**	**63**	**51.213**	ug/L	0.747	1	83	324519	1	KED
|	**Cu**	**65**	**51.755**	ug/L	0.722	1	51	166390	0	KED
|	**Zn**	**66**	**50.181**	ug/L	0.658	1	58	44975	0	KED
|	**Zn**	**67**	**50.963**	ug/L	1.333	2	11	7442	3	KED
|	**As**	**75**	**49.536**	ug/L	0.205	0	5	23222	1	KED
⌊	**Se**	**78**	**49.373**	ug/L	0.445	0	29	2689	1	KED
	Y	**89**		ug/L			898977	838499	1	Standard
	Kr	**83**		ug/L			74	92	12	Standard
⌈>	**In-1**	**115**		ug/L			41368	39987	0	KED
|	**Cd**	**111**	**51.388**	ug/L	0.222	0	3	28557	0	KED
⌊	**Cd**	**114**	**51.342**	ug/L	0.387	0	6	72968	0	KED
⌈>	**In**	**115**		ug/L			1988467	2036189	5	Standard
|	**Ag**	**107**	**43.566**	ug/L	1.999	4	120	1222018	0	Standard
|	**Ba**	**135**	**46.008**	ug/L	2.944	6	52	568246	1	Standard
⌊	**Ba**	**137**	**45.732**	ug/L	2.466	5	81	1026843	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3404968	1	Standard
⌊	**Pb**	**208**	**51.953**	ug/L	0.482	0	581	8647420	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:51:15
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	34688	1	Standard
	Cl	**37**		ug/L			9523131	9416859	1	Standard
⎡>	**Sc**	**45**		ug/L			1783698	1690757	1	Standard
⎢	**Cr**	**52**	**0.001**	ug/L	0.020	1453	33904	32181	2	Standard
⎣	**Cr**	**53**	**0.084**	ug/L	0.007	8	376	699	4	Standard
⎡>	**Ge**	**72**		ug/L			115729	116238	1	KED
⎢	**Cu**	**63**	**-0.001**	ug/L	0.001	128	83	78	7	KED
⎢	**Cu**	**65**	**0.000**	ug/L	0.001	978	51	52	7	KED
⎢	**Zn**	**66**	**0.048**	ug/L	0.018	37	58	102	15	KED
⎢	**Zn**	**67**	**0.072**	ug/L	0.037	52	11	22	26	KED
⎢	**As**	**75**	**0.006**	ug/L	0.003	46	5	8	16	KED
⎣	**Se**	**78**	**0.043**	ug/L	0.075	173	29	32	13	KED
	Y	**89**		ug/L			898977	877965	4	Standard
	Kr	**83**		ug/L			74	60	14	Standard
⎡>	**In-1**	**115**		ug/L			41368	42159	1	KED
⎢	**Cd**	**111**	**0.001**	ug/L	0.008	518	3	4	101	KED
⎣	**Cd**	**114**	**0.001**	ug/L	0.001	49	6	8	11	KED
⎡>	**In**	**115**		ug/L			1988467	2264943	3	Standard
⎢	**Ag**	**107**	**0.002**	ug/L	0.001	41	120	193	9	Standard
⎢	**Ba**	**135**	**0.005**	ug/L	0.001	20	52	122	11	Standard
⎣	**Ba**	**137**	**0.005**	ug/L	0.001	12	81	222	10	Standard
⎡>	**Tb**	**159**		ug/L			3324569	3446616	3	Standard
⎣	**Pb**	**208**	**0.001**	ug/L	0.000	12	581	751	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0438-02
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:55:24
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	115447	0	Standard
	Cl	**37**		ug/L			9523131	8912502	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1754441	1	Standard
|	**Cr**	**52**	**1.092**	ug/L	0.009	0	33904	74262	1	Standard
⌊	**Cr**	**53**	**1.543**	ug/L	0.023	1	376	6870	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	113761	0	KED
|	**Cu**	**63**	**0.765**	ug/L	0.010	1	83	4931	2	KED
|	**Cu**	**65**	**0.763**	ug/L	0.025	3	51	2501	2	KED
|	**Zn**	**66**	**4.548**	ug/L	0.052	1	58	4128	1	KED
|	**Zn**	**67**	**4.921**	ug/L	0.165	3	11	728	4	KED
|	**As**	**75**	**1.132**	ug/L	0.034	3	5	535	2	KED
⌊	**Se**	**78**	**0.115**	ug/L	0.057	49	29	35	9	KED
	Y	**89**		ug/L			898977	861393	3	Standard
	Kr	**83**		ug/L			74	70	10	Standard
⌈>	**In-1**	**115**		ug/L			41368	40648	0	KED
|	**Cd**	**111**	**0.009**	ug/L	0.005	59	3	8	35	KED
⌊	**Cd**	**114**	**0.007**	ug/L	0.001	20	6	17	12	KED
⌈>	**In**	**115**		ug/L			1988467	2308459	1	Standard
|	**Ag**	**107**	**0.001**	ug/L	0.000	34	120	175	8	Standard
|	**Ba**	**135**	**4.548**	ug/L	0.140	3	52	63854	1	Standard
⌊	**Ba**	**137**	**4.465**	ug/L	0.069	1	81	113931	1	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3529289	1	Standard
⌊	**Pb**	**208**	**0.215**	ug/L	0.003	1	581	37777	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0438-03
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 22:59:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	13		ug/L			32947	89116	0	Standard
	Cl	37		ug/L			9523131	9427241	0	Standard
⌈>	Sc	45		ug/L			1783698	1712395	0	Standard
|	Cr	52	0.260	ug/L	0.028	10	33904	42046	2	Standard
⌊	Cr	53	0.966	ug/L	0.029	2	376	4334	2	Standard
⌈>	Ge	72		ug/L			115729	110654	0	KED
|	Cu	63	2.154	ug/L	0.013	0	83	13352	1	KED
|	Cu	65	2.135	ug/L	0.048	2	51	6724	2	KED
|	Zn	66	2.713	ug/L	0.031	1	58	2417	1	KED
|	Zn	67	2.964	ug/L	0.211	7	11	431	6	KED
|	As	75	1.312	ug/L	0.013	0	5	603	1	KED
⌊	Se	78	0.036	ug/L	0.089	246	29	30	16	KED
	Y	89		ug/L			898977	853150	0	Standard
	Kr	83		ug/L			74	64	10	Standard
⌈>	In-1	115		ug/L			41368	40501	1	KED
|	Cd	111	0.011	ug/L	0.004	32	3	9	20	KED
⌊	Cd	114	0.008	ug/L	0.005	64	6	17	39	KED
⌈>	In	115		ug/L			1988467	2304782	0	Standard
|	Ag	107	-0.000	ug/L	0.000	201	120	133	7	Standard
|	Ba	135	9.107	ug/L	0.117	1	52	127663	1	Standard
⌊	Ba	137	8.899	ug/L	0.176	1	81	226648	1	Standard
⌈>	Tb	159		ug/L			3324569	3526399	1	Standard
⌊	Pb	208	0.066	ug/L	0.002	3	581	11988	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0454-02
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:04:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	66221	1	Standard
	Cl	**37**		ug/L			9523131	9376948	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1697755	0	Standard
|	**Cr**	**52**	**0.176**	ug/L	0.016	9	33904	38665	0	Standard
⌊	**Cr**	**53**	**0.211**	ug/L	0.005	2	376	1219	2	Standard
⌈>	**Ge**	**72**		ug/L			115729	116760	1	KED
|	**Cu**	**63**	**0.035**	ug/L	0.005	15	83	308	9	KED
|	**Cu**	**65**	**0.031**	ug/L	0.002	7	51	154	5	KED
|	**Zn**	**66**	**0.516**	ug/L	0.028	5	58	533	6	KED
|	**Zn**	**67**	**0.428**	ug/L	0.014	3	11	75	2	KED
|	**As**	**75**	**0.001**	ug/L	0.003	576	5	6	25	KED
⌊	**Se**	**78**	**-0.053**	ug/L	0.037	69	29	27	8	KED
	Y	**89**		ug/L			898977	875617	0	Standard
	Kr	**83**		ug/L			74	58	6	Standard
⌈>	**In-1**	**115**		ug/L			41368	42759	1	KED
|	**Cd**	**111**	**0.003**	ug/L	0.005	171	3	5	56	KED
⌊	**Cd**	**114**	**0.001**	ug/L	0.002	240	6	8	43	KED
⌈>	**In**	**115**		ug/L			1988467	2308290	1	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.000	3	120	62	4	Standard
|	**Ba**	**135**	**0.014**	ug/L	0.002	14	52	258	11	Standard
⌊	**Ba**	**137**	**0.015**	ug/L	0.001	7	81	484	3	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3460781	1	Standard
⌊	**Pb**	**208**	**0.005**	ug/L	0.001	11	581	1418	5	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0454-04
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:08:13
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	67612	1	Standard
	Cl	**37**		ug/L			9523131	9345511	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1703086	0	Standard
|	**Cr**	**52**	**0.089**	ug/L	0.013	14	33904	35618	1	Standard
⌊	**Cr**	**53**	**0.101**	ug/L	0.006	6	376	774	4	Standard
⌈>	**Ge**	**72**		ug/L			115729	116782	0	KED
|	**Cu**	**63**	**0.040**	ug/L	0.005	11	83	347	8	KED
|	**Cu**	**65**	**0.044**	ug/L	0.001	2	51	195	1	KED
|	**Zn**	**66**	**0.466**	ug/L	0.038	8	58	487	7	KED
|	**Zn**	**67**	**0.504**	ug/L	0.067	13	11	86	11	KED
|	**As**	**75**	**0.001**	ug/L	0.002	280	5	6	12	KED
⌊	**Se**	**78**	**0.007**	ug/L	0.041	577	29	30	6	KED
	Y	**89**		ug/L			898977	862770	1	Standard
	Kr	**83**		ug/L			74	63	19	Standard
⌈>	**In-1**	**115**		ug/L			41368	42147	1	KED
|	**Cd**	**111**	**0.003**	ug/L	0.001	30	3	5	10	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.002	2967	6	6	41	KED
⌈>	**In**	**115**		ug/L			1988467	2304466	0	Standard
|	**Ag**	**107**	**-0.003**	ug/L	0.000	7	120	49	13	Standard
|	**Ba**	**135**	**0.012**	ug/L	0.001	4	52	226	3	Standard
⌊	**Ba**	**137**	**0.012**	ug/L	0.000	2	81	405	2	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3472671	1	Standard
⌊	**Pb**	**208**	**0.002**	ug/L	0.000	8	581	953	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0454-01
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:12:22
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	66444	1	Standard
	Cl	**37**		ug/L			9523131	9316176	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1687440	1	Standard
|	**Cr**	**52**	**0.109**	ug/L	0.016	15	33904	35994	0	Standard
⌊	**Cr**	**53**	**0.109**	ug/L	0.010	9	376	796	3	Standard
⌈>	**Ge**	**72**		ug/L			115729	118079	0	KED
|	**Cu**	**63**	**0.070**	ug/L	0.003	4	83	545	3	KED
|	**Cu**	**65**	**0.067**	ug/L	0.005	7	51	277	5	KED
|	**Zn**	**66**	**0.566**	ug/L	0.038	6	58	585	6	KED
|	**Zn**	**67**	**0.569**	ug/L	0.076	13	11	97	11	KED
|	**As**	**75**	**0.002**	ug/L	0.003	150	5	6	18	KED
⌊	**Se**	**78**	**-0.034**	ug/L	0.080	238	29	28	15	KED
	Y	**89**		ug/L			898977	846827	0	Standard
	Kr	**83**		ug/L			74	50	4	Standard
⌈>	**In-1**	**115**		ug/L			41368	41581	0	KED
|	**Cd**	**111**	**-0.000**	ug/L	0.001	2483	3	3	15	KED
⌊	**Cd**	**114**	**-0.003**	ug/L	0.002	72	6	2	105	KED
⌈>	**In**	**115**		ug/L			1988467	2226587	0	Standard
|	**Ag**	**107**	**-0.002**	ug/L	0.000	15	120	60	18	Standard
|	**Ba**	**135**	**0.064**	ug/L	0.000	0	52	923	0	Standard
⌊	**Ba**	**137**	**0.063**	ug/L	0.003	4	81	1645	3	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3365923	0	Standard
⌊	**Pb**	**208**	**0.011**	ug/L	0.000	3	581	2480	2	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0454-03
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:16:55
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	66066	1	Standard
	Cl	**37**		ug/L			9523131	9574559	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1708791	1	Standard
|	**Cr**	**52**	**0.112**	ug/L	0.021	18	33904	36573	0	Standard
⌊	**Cr**	**53**	**0.129**	ug/L	0.007	5	376	889	3	Standard
⌈>	**Ge**	**72**		ug/L			115729	115585	0	KED
|	**Cu**	**63**	**0.193**	ug/L	0.008	4	83	1325	3	KED
|	**Cu**	**65**	**0.190**	ug/L	0.007	3	51	670	2	KED
|	**Zn**	**66**	**1.353**	ug/L	0.078	5	58	1288	4	KED
|	**Zn**	**67**	**1.251**	ug/L	0.066	5	11	196	5	KED
|	**As**	**75**	**0.011**	ug/L	0.004	40	5	10	19	KED
⌊	**Se**	**78**	**0.024**	ug/L	0.037	152	29	31	7	KED
	Y	**89**		ug/L			898977	883002	0	Standard
	Kr	**83**		ug/L			74	59	22	Standard
⌈>	**In-1**	**115**		ug/L			41368	41361	1	KED
|	**Cd**	**111**	**0.004**	ug/L	0.002	45	3	5	16	KED
⌊	**Cd**	**114**	**-0.000**	ug/L	0.002	1704	6	6	42	KED
⌈>	**In**	**115**		ug/L			1988467	2242397	0	Standard
|	**Ag**	**107**	**-0.003**	ug/L	0.000	9	120	54	14	Standard
|	**Ba**	**135**	**0.122**	ug/L	0.004	3	52	1727	4	Standard
⌊	**Ba**	**137**	**0.122**	ug/L	0.001	1	81	3110	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3426292	1	Standard
⌊	**Pb**	**208**	**0.042**	ug/L	0.001	2	581	7686	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0456-01
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:22:27
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	111695	1	Standard
	Cl	**37**		ug/L			9523131	58494703	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1802913	2	Standard
|	**Cr**	**52**	**10.922**	ug/L	0.434	3	33904	454646	1	Standard
⌊	**Cr**	**53**	**37.850**	ug/L	1.632	4	376	164159	2	Standard
⌈>	**Ge**	**72**		ug/L			115729	92991	1	KED
|	**Cu**	**63**	**1.450**	ug/L	0.015	1	83	7577	0	KED
|	**Cu**	**65**	**1.445**	ug/L	0.036	2	51	3839	3	KED
|	**Zn**	**66**	**1.910**	ug/L	0.098	5	58	1444	4	KED
|	**Zn**	**67**	**8.608**	ug/L	0.610	7	11	1034	6	KED
|	**As**	**75**	**2.695**	ug/L	0.071	2	5	1037	3	KED
⌊	**Se**	**78**	**0.338**	ug/L	0.101	30	29	38	11	KED
	Y	**89**		ug/L			898977	730438	2	Standard
	Kr	**83**		ug/L			74	1730	1	Standard
⌈>	**In-1**	**115**		ug/L			41368	33247	0	KED
|	**Cd**	**111**	**0.021**	ug/L	0.005	24	3	12	18	KED
⌊	**Cd**	**114**	**0.012**	ug/L	0.005	45	6	19	33	KED
⌈>	**In**	**115**		ug/L			1988467	1462258	2	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.001	48	120	149	20	Standard
|	**Ba**	**135**	**185.397**	ug/L	5.909	3	52	1647034	0	Standard
⌊	**Ba**	**137**	**198.335**	ug/L	5.647	2	81	3202261	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	2851917	2	Standard
⌊	**Pb**	**208**	**0.280**	ug/L	0.008	3	581	39500	1	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0456-02
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:27:00
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	109033	1	Standard
	Cl	**37**		ug/L			9523131	57214447	3	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1692586	1	Standard
|	**Cr**	**52**	**11.843**	ug/L	0.149	1	33904	460294	0	Standard
⌊	**Cr**	**53**	**35.490**	ug/L	0.389	1	376	144600	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	90884	1	KED
|	**Cu**	**63**	**1.656**	ug/L	0.067	4	83	8448	3	KED
|	**Cu**	**65**	**1.653**	ug/L	0.087	5	51	4285	5	KED
|	**Zn**	**66**	**1.774**	ug/L	0.113	6	58	1314	5	KED
|	**Zn**	**67**	**8.361**	ug/L	0.544	6	11	982	6	KED
|	**As**	**75**	**3.258**	ug/L	0.086	2	5	1224	2	KED
⌊	**Se**	**78**	**0.484**	ug/L	0.175	36	29	44	16	KED
	Y	**89**		ug/L			898977	713353	1	Standard
	Kr	**83**		ug/L			74	1306	4	Standard
⌈>	**In-1**	**115**		ug/L			41368	33141	0	KED
|	**Cd**	**111**	**0.055**	ug/L	0.002	4	3	28	3	KED
⌊	**Cd**	**114**	**0.043**	ug/L	0.021	48	6	56	44	KED
⌈>	**In**	**115**		ug/L			1988467	1487568	2	Standard
|	**Ag**	**107**	**0.003**	ug/L	0.000	14	120	144	6	Standard
|	**Ba**	**135**	**182.455**	ug/L	6.404	3	52	1648967	1	Standard
⌊	**Ba**	**137**	**194.515**	ug/L	6.665	3	81	3194736	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	2854408	0	Standard
⌊	**Pb**	**208**	**0.293**	ug/L	0.003	0	581	41448	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: 21C0456-03
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:32:32
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	89091	1	Standard
	Cl	**37**		ug/L			9523131	15263357	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	2046183	6	Standard
|	**Cr**	**52**	**3.773**	ug/L	0.260	6	33904	203314	1	Standard
⌊	**Cr**	**53**	**10.484**	ug/L	0.491	4	376	51843	1	Standard
⌈>	**Ge**	**72**		ug/L			115729	106638	0	KED
|	**Cu**	**63**	**3.465**	ug/L	0.050	1	83	20656	0	KED
|	**Cu**	**65**	**3.459**	ug/L	0.091	2	51	10467	1	KED
|	**Zn**	**66**	**0.712**	ug/L	0.055	7	58	651	6	KED
|	**Zn**	**67**	**1.257**	ug/L	0.126	10	11	182	8	KED
|	**As**	**75**	**13.049**	ug/L	0.153	1	5	5738	1	KED
⌊	**Se**	**78**	**0.348**	ug/L	0.115	33	29	44	13	KED
	Y	**89**		ug/L			898977	897698	1	Standard
	Kr	**83**		ug/L			74	161	27	Standard
⌈>	**In-1**	**115**		ug/L			41368	37387	0	KED
|	**Cd**	**111**	**0.015**	ug/L	0.003	20	3	10	13	KED
⌊	**Cd**	**114**	**0.018**	ug/L	0.003	18	6	29	14	KED
⌈>	**In**	**115**		ug/L			1988467	1716421	2	Standard
|	**Ag**	**107**	**0.013**	ug/L	0.000	3	120	420	4	Standard
|	**Ba**	**135**	**9.511**	ug/L	0.391	4	52	99206	1	Standard
⌊	**Ba**	**137**	**9.384**	ug/L	0.246	2	81	177914	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3114102	1	Standard
⌊	**Pb**	**208**	**0.867**	ug/L	0.015	1	581	132536	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-IBL9
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:40:05
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	33364	1	Standard
	Cl	**37**		ug/L			9523131	8952365	1	Standard
⎡>	**Sc**	**45**		ug/L			1783698	1789024	1	Standard
⎢	**Cr**	**52**	**0.029**	ug/L	0.004	14	33904	35109	1	Standard
⎣	**Cr**	**53**	**0.760**	ug/L	0.038	4	376	3642	4	Standard
⎡>	**Ge**	**72**		ug/L			115729	117193	2	KED
⎢	**Cu**	**63**	**0.010**	ug/L	0.002	16	83	151	9	KED
⎢	**Cu**	**65**	**0.001**	ug/L	0.003	647	51	53	22	KED
⎢	**Zn**	**66**	**0.051**	ug/L	0.022	42	58	106	19	KED
⎢	**Zn**	**67**	**0.029**	ug/L	0.040	136	11	15	36	KED
⎢	**As**	**75**	**0.002**	ug/L	0.002	67	5	6	10	KED
⎣	**Se**	**78**	**0.127**	ug/L	0.044	34	29	37	8	KED
	Y	**89**		ug/L			898977	904648	0	Standard
	Kr	**83**		ug/L			74	96	6	Standard
⎡>	**In-1**	**115**		ug/L			41368	42352	1	KED
⎢	**Cd**	**111**	**0.003**	ug/L	0.003	106	3	5	36	KED
⎣	**Cd**	**114**	**0.001**	ug/L	0.003	270	6	8	53	KED
⎡>	**In**	**115**		ug/L			1988467	2003568	8	Standard
⎢	**Ag**	**107**	**-0.003**	ug/L	0.000	15	120	46	18	Standard
⎢	**Ba**	**135**	**0.007**	ug/L	0.003	34	52	139	14	Standard
⎣	**Ba**	**137**	**0.007**	ug/L	0.001	11	81	232	4	Standard
⎡>	**Tb**	**159**		ug/L			3324569	3265648	0	Standard
⎣	**Pb**	**208**	**0.001**	ug/L	0.000	68	581	673	10	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:44:38
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	33448	1	Standard
	Cl	**37**		ug/L			9523131	9615810	0	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1781227	0	Standard
|	**Cr**	**52**	**48.865**	ug/L	0.466	0	33904	1893126	0	Standard
⌊	**Cr**	**53**	**51.461**	ug/L	0.195	0	376	220512	0	Standard
⌈>	**Ge**	**72**		ug/L			115729	117657	1	KED
|	**Cu**	**63**	**51.265**	ug/L	1.077	2	83	335921	0	KED
|	**Cu**	**65**	**51.055**	ug/L	0.426	0	51	169763	1	KED
|	**Zn**	**66**	**49.793**	ug/L	0.415	0	58	46157	1	KED
|	**Zn**	**67**	**50.403**	ug/L	0.690	1	11	7611	1	KED
|	**As**	**75**	**50.422**	ug/L	0.360	0	5	24446	1	KED
⌊	**Se**	**78**	**50.575**	ug/L	1.275	2	29	2847	1	KED
	Y	**89**		ug/L			898977	924234	1	Standard
	Kr	**83**		ug/L			74	91	10	Standard
⌈>	**In-1**	**115**		ug/L			41368	40297	2	KED
|	**Cd**	**111**	**50.344**	ug/L	0.376	0	3	28193	2	KED
⌊	**Cd**	**114**	**51.008**	ug/L	0.413	0	6	73047	1	KED
⌈>	**In**	**115**		ug/L			1988467	1951839	2	Standard
|	**Ag**	**107**	**46.617**	ug/L	1.590	3	120	1254664	1	Standard
|	**Ba**	**135**	**47.820**	ug/L	1.596	3	52	567092	0	Standard
⌊	**Ba**	**137**	**47.544**	ug/L	1.653	3	81	1024577	0	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3295847	1	Standard
⌊	**Pb**	**208**	**50.247**	ug/L	0.863	1	581	8095070	0	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: SEQ-CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:51:31
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	33747	1	Standard
	Cl	**37**		ug/L			9523131	9326558	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1710272	5	Standard
|	**Cr**	**52**	**0.027**	ug/L	0.054	198	33904	33426	0	Standard
⌊	**Cr**	**53**	**0.323**	ug/L	0.031	9	376	1682	1	Standard
⌈>	**Ge**	**72**		ug/L			115729	119178	1	KED
|	**Cu**	**63**	**0.001**	ug/L	0.001	105	83	95	10	KED
|	**Cu**	**65**	**-0.001**	ug/L	0.001	89	51	48	8	KED
|	**Zn**	**66**	**0.039**	ug/L	0.023	57	58	97	22	KED
|	**Zn**	**67**	**0.014**	ug/L	0.007	47	11	13	7	KED
|	**As**	**75**	**0.003**	ug/L	0.001	29	5	7	6	KED
⌊	**Se**	**78**	**-0.028**	ug/L	0.055	195	29	29	10	KED
	Y	**89**		ug/L			898977	856704	5	Standard
	Kr	**83**		ug/L			74	101	16	Standard
⌈>	**In-1**	**115**		ug/L			41368	43034	0	KED
|	**Cd**	**111**	**0.006**	ug/L	0.006	114	3	6	55	KED
⌊	**Cd**	**114**	**0.002**	ug/L	0.001	81	6	9	20	KED
⌈>	**In**	**115**		ug/L			1988467	2134709	10	Standard
|	**Ag**	**107**	**0.002**	ug/L	0.001	32	120	181	3	Standard
|	**Ba**	**135**	**0.006**	ug/L	0.002	31	52	131	7	Standard
⌊	**Ba**	**137**	**0.007**	ug/L	0.001	19	81	260	1	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3304462	6	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.000	30	581	761	9	Standard

ICP-MS Quantitative Analysis - Summary Report

Sample ID: RINSE
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, April 09, 2021 23:55:40
Number of Replicates: 3
Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\200.8_DailyMethod_KED_UCT.mth
Tuning File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\MassCal\Default.tun
Optimization File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Conditions\Default.dac
Calibration File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\System\040921A.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD	Mode
	C	**13**		ug/L			32947	48220	0	Standard
	Cl	**37**		ug/L			9523131	9422871	1	Standard
⌈>	**Sc**	**45**		ug/L			1783698	1928274	0	Standard
|	**Cr**	**52**	**-0.003**	ug/L	0.004	125	33904	36510	0	Standard
⌊	**Cr**	**53**	**0.241**	ug/L	0.007	2	376	1523	2	Standard
⌈>	**Ge**	**72**		ug/L			115729	118561	0	KED
|	**Cu**	**63**	**0.002**	ug/L	0.003	141	83	100	20	KED
|	**Cu**	**65**	**0.001**	ug/L	0.003	350	51	55	15	KED
|	**Zn**	**66**	**0.009**	ug/L	0.018	189	58	68	23	KED
|	**Zn**	**67**	**0.023**	ug/L	0.013	55	11	15	12	KED
|	**As**	**75**	**0.001**	ug/L	0.001	104	5	6	8	KED
⌊	**Se**	**78**	**0.096**	ug/L	0.060	62	29	35	9	KED
	Y	**89**		ug/L			898977	1012696	0	Standard
	Kr	**83**		ug/L			74	81	22	Standard
⌈>	**In-1**	**115**		ug/L			41368	45250	0	KED
|	**Cd**	**111**	**0.000**	ug/L	0.004	780	3	4	58	KED
⌊	**Cd**	**114**	**-0.001**	ug/L	0.002	175	6	5	62	KED
⌈>	**In**	**115**		ug/L			1988467	2580535	0	Standard
|	**Ag**	**107**	**-0.001**	ug/L	0.001	53	120	115	18	Standard
|	**Ba**	**135**	**0.001**	ug/L	0.000	15	52	78	1	Standard
⌊	**Ba**	**137**	**0.001**	ug/L	0.000	18	81	146	4	Standard
⌈>	**Tb**	**159**		ug/L			3324569	3744648	1	Standard
⌊	**Pb**	**208**	**0.001**	ug/L	0.001	98	581	781	14	Standard

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00033
Control Limt: +/- 10.00%
Sequence: SJD0150

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJD0150-ICV1	Arsenic-75a	50.000	51.9	104	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV1	Arsenic-75a	50.000	51.5	103	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV2	Arsenic-75a	50.000	52.2	104	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV3	Arsenic-75a	50.000	51.0	102	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV4	Arsenic-75a	50.000	51.4	103	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV5	Arsenic-75a	50.000	52.2	104	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV6	Arsenic-75a	50.000	53.0	106	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV7	Arsenic-75a	50.000	52.7	105	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV8	Arsenic-75a	50.000	52.3	105	ug/L	EPA 200.8 UCT-KED
SJD0150-CCV9	Arsenic-75a	50.000	51.8	104	ug/L	EPA 200.8 UCT-KED
SJD0150-CCVA	Arsenic-75a	50.000	52.3	105	ug/L	EPA 200.8 UCT-KED
SJD0150-CCVB	Arsenic-75a	50.000	52.3	105	ug/L	EPA 200.8 UCT-KED
SJD0150-CCVC	Arsenic-75a	50.000	52.1	104	ug/L	EPA 200.8 UCT-KED
SJD0150-CCVD	Arsenic-75a	50.000	52.0	104	ug/L	EPA 200.8 UCT-KED

* Values outside of QC limits

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00035
Control Limt: +/- 10.00%
Sequence: SJD0156

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJD0156-ICV1	Arsenic-75a	50.000	51.6	103	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV1	Arsenic-75a	50.000	49.9	99.9	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV2	Arsenic-75a	50.000	49.7	99.4	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV3	Arsenic-75a	50.000	50.5	101	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV4	Arsenic-75a	50.000	49.8	99.7	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV5	Arsenic-75a	50.000	49.5	99.0	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV6	Arsenic-75a	50.000	50.4	101	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV7	Arsenic-75a	50.000	50.7	101	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV8	Arsenic-75a	50.000	49.5	99.1	ug/L	EPA 200.8 UCT-KED
SJD0156-CCV9	Arsenic-75a	50.000	50.4	101	ug/L	EPA 200.8 UCT-KED

* Values outside of QC limits

INSTRUMENT BLANKS
EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00033
Sequence: SJD0150
Date Analyzed: 04/09/21 16:26

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJD0150-IBL1	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SJD0150-ICB1	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SJD0150-CCB1	Arsenic-75a	-0.00900	0.0373	0.200	ug/L	
SJD0150-IBL2	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SJD0150-IBL3	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	
SJD0150-CCB2	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SJD0150-CCB3	Arsenic-75a	-0.0210	0.0373	0.200	ug/L	
SJD0150-IBL4	Arsenic-75a	-0.00600	0.0373	0.200	ug/L	
SJD0150-CCB4	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SJD0150-IBL5	Arsenic-75a	-0.0120	0.0373	0.200	ug/L	
SJD0150-CCB5	Arsenic-75a	-0.00600	0.0373	0.200	ug/L	
SJD0150-IBL6	Arsenic-75a	-0.00300	0.0373	0.200	ug/L	
SJD0150-IBL7	Arsenic-75a	-0.0150	0.0373	0.200	ug/L	
SJD0150-CCB6	Arsenic-75a	-0.0130	0.0373	0.200	ug/L	
SJD0150-IBL8	Arsenic-75a	-0.0120	0.0373	0.200	ug/L	
SJD0150-CCB7	Arsenic-75a	-0.0160	0.0373	0.200	ug/L	
SJD0150-CCB8	Arsenic-75a	0.00200	0.0373	0.200	ug/L	
SJD0150-IBL9	Arsenic-75a	-0.0100	0.0373	0.200	ug/L	
SJD0150-CCB9	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SJD0150-IBLA	Arsenic-75a	-0.00300	0.0373	0.200	ug/L	
SJD0150-IBLB	Arsenic-75a	-0.0100	0.0373	0.200	ug/L	
SJD0150-CCBA	Arsenic-75a	-0.00200	0.0373	0.200	ug/L	
SJD0150-IBLC	Arsenic-75a	-0.0130	0.0373	0.200	ug/L	
SJD0150-CCBB	Arsenic-75a	-0.00200	0.0373	0.200	ug/L	
SJD0150-IBLD	Arsenic-75a	0.00100	0.0373	0.200	ug/L	
SJD0150-IBLE	Arsenic-75a	-0.00500	0.0373	0.200	ug/L	
SJD0150-CCBC	Arsenic-75a	0.00	0.0373	0.200	ug/L	
SJD0150-IBLF	Arsenic-75a	0.0200	0.0373	0.200	ug/L	
SJD0150-CCBD	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	

INSTRUMENT BLANKS
EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Instrument ID: ICPMS1
Sequence: SJD0156
SDG: 21C0456
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: ED00035
Date Analyzed: 04/09/21 16:11

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJD0156-IBL1	Arsenic-75a	0.0170	0.0373	0.200	ug/L	
SJD0156-ICB1	Arsenic-75a	0.00700	0.0373	0.200	ug/L	
SJD0156-CCB1	Arsenic-75a	0.00900	0.0373	0.200	ug/L	
SJD0156-IBL2	Arsenic-75a	0.0220	0.0373	0.200	ug/L	
SJD0156-CCB2	Arsenic-75a	0.0150	0.0373	0.200	ug/L	
SJD0156-IBL3	Arsenic-75a	0.00300	0.0373	0.200	ug/L	
SJD0156-CCB3	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SJD0156-IBL4	Arsenic-75a	0.00800	0.0373	0.200	ug/L	
SJD0156-IBL5	Arsenic-75a	0.00800	0.0373	0.200	ug/L	
SJD0156-CCB4	Arsenic-75a	0.00900	0.0373	0.200	ug/L	
SJD0156-CCB5	Arsenic-75a	0.00400	0.0373	0.200	ug/L	
SJD0156-IBL6	Arsenic-75a	-0.00300	0.0373	0.200	ug/L	
SJD0156-CCB6	Arsenic-75a	0.00600	0.0373	0.200	ug/L	
SJD0156-IBL7	Arsenic-75a	0.00600	0.0373	0.200	ug/L	
SJD0156-CCB7	Arsenic-75a	0.00500	0.0373	0.200	ug/L	
SJD0156-IBL8	Arsenic-75a	-0.00100	0.0373	0.200	ug/L	
SJD0156-CCB8	Arsenic-75a	0.00600	0.0373	0.200	ug/L	
SJD0156-IBL9	Arsenic-75a	0.00200	0.0373	0.200	ug/L	
SJD0156-CCB9	Arsenic-75a	0.00300	0.0373	0.200	ug/L	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0150
Instrument: ICPMS1
Calibration: ED00033

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SJD0150-CAL1	XDT_m2210409A-001	NA	04/09/21 15:50
CAL 1 - LOW CHECK	SJD0150-CAL2	XDT_m2210409A-002	NA	04/09/21 15:55
CAL 2	SJD0150-CAL3	XDT_m2210409A-003	NA	04/09/21 16:00
CAL 3	SJD0150-CAL4	XDT_m2210409A-004	NA	04/09/21 16:06
CAL 4	SJD0150-CAL5	XDT_m2210409A-005	NA	04/09/21 16:11
CAL 5	SJD0150-CAL6	XDT_m2210409A-006	NA	04/09/21 16:18
RINSE	SJD0150-IBL1	XDT_m2210409A-007	NA	04/09/21 16:26
Initial Cal Check	SJD0150-ICV1	XDT_m2210409A-010	NA	04/09/21 16:41
Initial Cal Blank	SJD0150-ICB1	XDT_m2210409A-011	NA	04/09/21 16:48
Calibration Check	SJD0150-CCV1	XDT_m2210409A-012	NA	04/09/21 16:57
Calibration Blank	SJD0150-CCB1	XDT_m2210409A-013	NA	04/09/21 17:05
Instrument RL Check	SJD0150-CRL1	XDT_m2210409A-014	NA	04/09/21 17:10
Interference Check A	SJD0150-IFA1	XDT_m2210409A-015	NA	04/09/21 17:16
Interference Check B	SJD0150-IFB1	XDT_m2210409A-017	NA	04/09/21 17:28
LR200	SJD0150-HCV1	XDT_m2210409A-018	NA	04/09/21 17:34
LR300	SJD0150-HCV2	XDT_m2210409A-019	NA	04/09/21 17:39
Instrument Blank	SJD0150-IBL2	XDT_m2210409A-020	NA	04/09/21 17:47
Instrument Blank	SJD0150-IBL3	XDT_m2210409A-021	NA	04/09/21 17:54
Calibration Check	SJD0150-CCV2	XDT_m2210409A-022	NA	04/09/21 18:01
Calibration Blank	SJD0150-CCB2	XDT_m2210409A-023	NA	04/09/21 18:09
Calibration Check	SJD0150-CCV3	XDT_m2210409A-025	NA	04/09/21 18:21
Calibration Blank	SJD0150-CCB3	XDT_m2210409A-026	NA	04/09/21 18:29
Blank	BJD0219-BLK1	XDT_m2210409A-029	Water	04/09/21 18:46
LCS	BJD0219-BS1	XDT_m2210409A-030	Water	04/09/21 18:51
ZZZZZ	21D0090-01	XDT_m2210409A-031	Water	04/09/21 18:59
ZZZZZ	21D0090-01	XDT_m2210409A-031	Water	04/09/21 18:59
ZZZZZ	21D0090-01	XDT_m2210409A-031	Water	04/09/21 18:59
ZZZZZ	21D0090-01	XDT_m2210409A-031	Water	04/09/21 18:59
Instrument Blank	SJD0150-IBL4	XDT_m2210409A-036	NA	04/09/21 19:33
Calibration Check	SJD0150-CCV4	XDT_m2210409A-037	NA	04/09/21 19:39

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0150
Instrument: ICPMS1
Calibration: ED00033

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Blank	SJD0150-CCB4	XDT_m2210409A-038	NA	04/09/21 19:47
Instrument Blank	SJD0150-IBL5	XDT_m2210409A-048	NA	04/09/21 20:54
Calibration Check	SJD0150-CCV5	XDT_m2210409A-049	NA	04/09/21 21:00
Calibration Blank	SJD0150-CCB5	XDT_m2210409A-050	NA	04/09/21 21:08
Instrument Blank	SJD0150-IBL6	XDT_m2210409A-056	NA	04/09/21 21:47
ZZZZZ	21D0039-02	XDT_m2210409A-057	Water	04/09/21 21:53
ZZZZZ	21D0039-02	XDT_m2210409A-057	Water	04/09/21 21:53
ZZZZZ	21D0039-02	XDT_m2210409A-057	Water	04/09/21 21:53
ZZZZZ	21D0039-02	XDT_m2210409A-057	Water	04/09/21 21:53
ZZZZZ	21D0039-02	XDT_m2210409A-057	Water	04/09/21 21:53
Instrument Blank	SJD0150-IBL7	XDT_m2210409A-058	NA	04/09/21 22:02
Calibration Check	SJD0150-CCV6	XDT_m2210409A-061	NA	04/09/21 22:19
Calibration Blank	SJD0150-CCB6	XDT_m2210409A-062	NA	04/09/21 22:27
Instrument Blank	SJD0150-IBL8	XDT_m2210409A-072	NA	04/09/21 23:29
Calibration Check	SJD0150-CCV7	XDT_m2210409A-073	NA	04/09/21 23:35
Calibration Blank	SJD0150-CCB7	XDT_m2210409A-074	NA	04/09/21 23:43
Calibration Check	SJD0150-CCV8	XDT_m2210409A-076	NA	04/09/21 23:53
Calibration Blank	SJD0150-CCB8	XDT_m2210409A-077	NA	04/10/21 00:01
Instrument Blank	SJD0150-IBL9	XDT_m2210409A-087	NA	04/10/21 01:03
Calibration Check	SJD0150-CCV9	XDT_m2210409A-088	NA	04/10/21 01:10
Calibration Blank	SJD0150-CCB9	XDT_m2210409A-089	NA	04/10/21 01:17
ZZZZZ	21C0437-01	XDT_m2210409A-090	Water	04/10/21 01:22
ZZZZZ	21C0437-01	XDT_m2210409A-090	Water	04/10/21 01:22
ZZZZZ	21C0437-01	XDT_m2210409A-090	Water	04/10/21 01:22
ZZZZZ	21C0437-01	XDT_m2210409A-090	Water	04/10/21 01:22
Instrument Blank	SJD0150-IBLA	XDT_m2210409A-092	NA	04/10/21 01:34
Instrument Blank	SJD0150-IBLB	XDT_m2210409A-099	NA	04/10/21 02:17
Calibration Check	SJD0150-CCVA	XDT_m2210409A-100	NA	04/10/21 02:23
Calibration Blank	SJD0150-CCBA	XDT_m2210409A-101	NA	04/10/21 02:31
MW-103(S)-033021	21C0456-04	XDT_m2210409A-102	Water	04/10/21 02:36

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SJD0150	Instrument:	ICPMS1
		Calibration:	ED00033

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MW-103(S)-033021	BJD0219-DUP1	XDT_m2210409A-103	Water	04/10/21 02:41
MW-103(S)-033021	BJD0219-MS1	XDT_m2210409A-104	Water	04/10/21 02:47
Instrument Blank	SJD0150-IBLC	XDT_m2210409A-111	NA	04/10/21 03:31
Calibration Check	SJD0150-CCVB	XDT_m2210409A-112	NA	04/10/21 03:36
Calibration Blank	SJD0150-CCBB	XDT_m2210409A-113	NA	04/10/21 03:44
Instrument Blank	SJD0150-IBLD	XDT_m2210409A-117	NA	04/10/21 04:10
Instrument Blank	SJD0150-IBLE	XDT_m2210409A-123	NA	04/10/21 04:47
Calibration Check	SJD0150-CCVC	XDT_m2210409A-124	NA	04/10/21 04:54
Calibration Blank	SJD0150-CCBC	XDT_m2210409A-125	NA	04/10/21 05:02
Instrument Blank	SJD0150-IBLF	XDT_m2210409A-130	NA	04/10/21 05:27
Calibration Check	SJD0150-CCVD	XDT_m2210409A-131	NA	04/10/21 05:34
Calibration Blank	SJD0150-CCBD	XDT_m2210409A-132	NA	04/10/21 05:41

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0156
Instrument: ICPMS1
Calibration: ED00035

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SJD0156-CAL1	XDT_m1210409A-004	NA	04/09/21 15:41
CAL 1 - LOW CHECK	SJD0156-CAL2	XDT_m1210409A-005	NA	04/09/21 15:45
CAL 2	SJD0156-CAL3	XDT_m1210409A-006	NA	04/09/21 15:49
CAL 3	SJD0156-CAL4	XDT_m1210409A-007	NA	04/09/21 15:53
CAL 4	SJD0156-CAL5	XDT_m1210409A-008	NA	04/09/21 15:58
CAL 5	SJD0156-CAL6	XDT_m1210409A-009	NA	04/09/21 16:04
RINSE	SJD0156-IBL1	XDT_m1210409A-010	NA	04/09/21 16:11
Initial Cal Check	SJD0156-ICV1	XDT_m1210409A-012	NA	04/09/21 16:16
Initial Cal Blank	SJD0156-ICB1	XDT_m1210409A-013	NA	04/09/21 16:23
Calibration Check	SJD0156-CCV1	XDT_m1210409A-014	NA	04/09/21 16:29
Calibration Blank	SJD0156-CCB1	XDT_m1210409A-015	NA	04/09/21 16:35
Instrument RL Check	SJD0156-CRL1	XDT_m1210409A-016	NA	04/09/21 16:41
Interference Check A	SJD0156-IFA1	XDT_m1210409A-017	NA	04/09/21 16:45
Interference Check B	SJD0156-IFB1	XDT_m1210409A-018	NA	04/09/21 16:49
LR200	SJD0156-HCV1	XDT_m1210409A-019	NA	04/09/21 16:53
LR300	SJD0156-HCV2	XDT_m1210409A-020	NA	04/09/21 16:57
Instrument Blank	SJD0156-IBL2	XDT_m1210409A-021	NA	04/09/21 17:04
Calibration Check	SJD0156-CCV2	XDT_m1210409A-022	NA	04/09/21 17:10
Calibration Blank	SJD0156-CCB2	XDT_m1210409A-023	NA	04/09/21 17:17
Instrument Blank	SJD0156-IBL3	XDT_m1210409A-032	NA	04/09/21 18:01
Calibration Check	SJD0156-CCV3	XDT_m1210409A-033	NA	04/09/21 18:07
Calibration Blank	SJD0156-CCB3	XDT_m1210409A-034	NA	04/09/21 18:14
Instrument Blank	SJD0156-IBL4	XDT_m1210409A-037	NA	04/09/21 18:28
Instrument Blank	SJD0156-IBL5	XDT_m1210409A-044	NA	04/09/21 19:07
Calibration Check	SJD0156-CCV4	XDT_m1210409A-045	NA	04/09/21 19:11
Calibration Blank	SJD0156-CCB4	XDT_m1210409A-046	NA	04/09/21 19:18
Calibration Check	SJD0156-CCV5	XDT_m1210409A-048	NA	04/09/21 19:32
Calibration Blank	SJD0156-CCB5	XDT_m1210409A-049	NA	04/09/21 19:39
ZZZZZ	21C0396-02	XDT_m1210409A-050	Water	04/09/21 19:46
ZZZZZ	21C0396-02	XDT_m1210409A-050	Water	04/09/21 19:46

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0156
Instrument: ICPMS1
Calibration: ED00035

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21C0396-02	XDT_m1210409A-050	Water	04/09/21 19:46
ZZZZZ	21C0396-02	XDT_m1210409A-050	Water	04/09/21 19:46
ZZZZZ	21C0396-04	XDT_m1210409A-051	Water	04/09/21 19:50
ZZZZZ	21C0396-04	XDT_m1210409A-051	Water	04/09/21 19:50
ZZZZZ	21C0396-04	XDT_m1210409A-051	Water	04/09/21 19:50
ZZZZZ	21C0396-04	XDT_m1210409A-051	Water	04/09/21 19:50
ZZZZZ	21C0396-06	XDT_m1210409A-052	Water	04/09/21 19:54
ZZZZZ	21C0396-06	XDT_m1210409A-052	Water	04/09/21 19:54
ZZZZZ	21C0396-06	XDT_m1210409A-052	Water	04/09/21 19:54
ZZZZZ	21C0396-06	XDT_m1210409A-052	Water	04/09/21 19:54
ZZZZZ	21C0396-08	XDT_m1210409A-053	Water	04/09/21 19:58
ZZZZZ	21C0396-08	XDT_m1210409A-053	Water	04/09/21 19:58
ZZZZZ	21C0396-08	XDT_m1210409A-053	Water	04/09/21 19:58
ZZZZZ	21C0396-08	XDT_m1210409A-053	Water	04/09/21 19:58
ZZZZZ	21C0396-10	XDT_m1210409A-054	Water	04/09/21 20:02
ZZZZZ	21C0396-10	XDT_m1210409A-054	Water	04/09/21 20:02
ZZZZZ	21C0396-10	XDT_m1210409A-054	Water	04/09/21 20:02
ZZZZZ	21C0396-10	XDT_m1210409A-054	Water	04/09/21 20:02
ZZZZZ	21C0396-12	XDT_m1210409A-055	Water	04/09/21 20:07
ZZZZZ	21C0396-12	XDT_m1210409A-055	Water	04/09/21 20:07
ZZZZZ	21C0396-12	XDT_m1210409A-055	Water	04/09/21 20:07
ZZZZZ	21C0396-12	XDT_m1210409A-055	Water	04/09/21 20:07
ZZZZZ	21C0396-14	XDT_m1210409A-056	Water	04/09/21 20:11
ZZZZZ	21C0396-14	XDT_m1210409A-056	Water	04/09/21 20:11
ZZZZZ	21C0396-14	XDT_m1210409A-056	Water	04/09/21 20:11
ZZZZZ	21C0396-14	XDT_m1210409A-056	Water	04/09/21 20:11
ZZZZZ	21C0396-16	XDT_m1210409A-057	Water	04/09/21 20:15
ZZZZZ	21C0396-16	XDT_m1210409A-057	Water	04/09/21 20:15
ZZZZZ	21C0396-16	XDT_m1210409A-057	Water	04/09/21 20:15
ZZZZZ	21C0396-16	XDT_m1210409A-057	Water	04/09/21 20:15

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0156
Instrument: ICPMS1
Calibration: ED00035

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21C0396-17	XDT_m1210409A-058	Water	04/09/21 20:21
ZZZZZ	21C0396-17	XDT_m1210409A-058	Water	04/09/21 20:21
ZZZZZ	21C0396-17	XDT_m1210409A-058	Water	04/09/21 20:21
ZZZZZ	21C0396-17	XDT_m1210409A-058	Water	04/09/21 20:21
Instrument Blank	SJD0156-IBL6	XDT_m1210409A-059	NA	04/09/21 20:28
Calibration Check	SJD0156-CCV6	XDT_m1210409A-060	NA	04/09/21 20:34
Calibration Blank	SJD0156-CCB6	XDT_m1210409A-061	NA	04/09/21 20:41
ZZZZZ	21C0396-18	XDT_m1210409A-064	Water	04/09/21 20:56
ZZZZZ	21C0396-18	XDT_m1210409A-064	Water	04/09/21 20:56
ZZZZZ	21C0396-18	XDT_m1210409A-064	Water	04/09/21 20:56
ZZZZZ	21C0396-18	XDT_m1210409A-064	Water	04/09/21 20:56
ZZZZZ	21C0396-19	XDT_m1210409A-065	Water	04/09/21 21:00
ZZZZZ	21C0396-19	XDT_m1210409A-065	Water	04/09/21 21:00
ZZZZZ	21C0396-19	XDT_m1210409A-065	Water	04/09/21 21:00
ZZZZZ	21C0396-19	XDT_m1210409A-065	Water	04/09/21 21:00
ZZZZZ	21C0438-01	XDT_m1210409A-068	Water	04/09/21 21:18
ZZZZZ	21C0438-01	XDT_m1210409A-068	Water	04/09/21 21:18
ZZZZZ	21C0438-01	XDT_m1210409A-068	Water	04/09/21 21:18
ZZZZZ	21C0438-01	XDT_m1210409A-068	Water	04/09/21 21:18
Instrument Blank	SJD0156-IBL7	XDT_m1210409A-071	NA	04/09/21 21:36
Calibration Check	SJD0156-CCV7	XDT_m1210409A-072	NA	04/09/21 21:41
Calibration Blank	SJD0156-CCB7	XDT_m1210409A-073	NA	04/09/21 21:48
ZZZZZ	21C0446-01	XDT_m1210409A-076	Water	04/09/21 22:03
ZZZZZ	21C0446-01	XDT_m1210409A-076	Water	04/09/21 22:03
ZZZZZ	21C0446-01	XDT_m1210409A-076	Water	04/09/21 22:03
ZZZZZ	21C0446-01	XDT_m1210409A-076	Water	04/09/21 22:03
ZZZZZ	21C0446-02	XDT_m1210409A-077	Water	04/09/21 22:08
ZZZZZ	21C0446-02	XDT_m1210409A-077	Water	04/09/21 22:08
ZZZZZ	21C0446-02	XDT_m1210409A-077	Water	04/09/21 22:08
ZZZZZ	21C0446-02	XDT_m1210409A-077	Water	04/09/21 22:08

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0156
Instrument: ICPMS1
Calibration: ED00035

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21C0446-03	XDT_m1210409A-078	Water	04/09/21 22:12
ZZZZZ	21C0446-03	XDT_m1210409A-078	Water	04/09/21 22:12
ZZZZZ	21C0446-03	XDT_m1210409A-078	Water	04/09/21 22:12
ZZZZZ	21C0446-03	XDT_m1210409A-078	Water	04/09/21 22:12
ZZZZZ	21C0426-01	XDT_m1210409A-079	Water	04/09/21 22:18
ZZZZZ	21C0426-03	XDT_m1210409A-080	Water	04/09/21 22:22
ZZZZZ	21C0426-05	XDT_m1210409A-081	Water	04/09/21 22:26
ZZZZZ	21C0426-07	XDT_m1210409A-082	Water	04/09/21 22:32
Instrument Blank	SJD0156-IBL8	XDT_m1210409A-083	NA	04/09/21 22:39
Calibration Check	SJD0156-CCV8	XDT_m1210409A-084	NA	04/09/21 22:44
Calibration Blank	SJD0156-CCB8	XDT_m1210409A-085	NA	04/09/21 22:51
ZZZZZ	21C0438-02	XDT_m1210409A-086	Water	04/09/21 22:55
ZZZZZ	21C0438-02	XDT_m1210409A-086	Water	04/09/21 22:55
ZZZZZ	21C0438-02	XDT_m1210409A-086	Water	04/09/21 22:55
ZZZZZ	21C0438-02	XDT_m1210409A-086	Water	04/09/21 22:55
ZZZZZ	21C0438-03	XDT_m1210409A-087	Water	04/09/21 22:59
ZZZZZ	21C0438-03	XDT_m1210409A-087	Water	04/09/21 22:59
ZZZZZ	21C0438-03	XDT_m1210409A-087	Water	04/09/21 22:59
ZZZZZ	21C0438-03	XDT_m1210409A-087	Water	04/09/21 22:59
ZZZZZ	21C0454-02	XDT_m1210409A-088	Water	04/09/21 23:04
ZZZZZ	21C0454-02	XDT_m1210409A-088	Water	04/09/21 23:04
ZZZZZ	21C0454-04	XDT_m1210409A-089	Water	04/09/21 23:08
ZZZZZ	21C0454-04	XDT_m1210409A-089	Water	04/09/21 23:08
ZZZZZ	21C0454-01	XDT_m1210409A-090	Water	04/09/21 23:12
ZZZZZ	21C0454-01	XDT_m1210409A-090	Water	04/09/21 23:12
ZZZZZ	21C0454-03	XDT_m1210409A-091	Water	04/09/21 23:16
ZZZZZ	21C0454-03	XDT_m1210409A-091	Water	04/09/21 23:16
MW-101(S)-033021	21C0456-01	XDT_m1210409A-092	Water	04/09/21 23:22
MW-201(S)-033021	21C0456-02	XDT_m1210409A-093	Water	04/09/21 23:27
MW-102(S)-033021	21C0456-03	XDT_m1210409A-094	Water	04/09/21 23:32

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SJD0156	Instrument:	ICPMS1
		Calibration:	ED00035

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Instrument Blank	SJD0156-IBL9	XDT_m1210409A-095	NA	04/09/21 23:40
Calibration Check	SJD0156-CCV9	XDT_m1210409A-096	NA	04/09/21 23:44
Calibration Blank	SJD0156-CCB9	XDT_m1210409A-097	NA	04/09/21 23:51

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Sequence: SJD0178
Instrument: ICPMS2
Calibration: ED00036

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	21D0088-01	XDT_m22100412a-039	Water	04/12/21 16:50
ZZZZZ	21D0088-01	XDT_m22100412a-039	Water	04/12/21 16:50
ZZZZZ	21D0088-01	XDT_m22100412a-039	Water	04/12/21 16:50
ZZZZZ	21D0088-01	XDT_m22100412a-039	Water	04/12/21 16:50
ZZZZZ	21D0088-01	XDT_m22100412a-039	Water	04/12/21 16:50
ZZZZZ	21C0426-02	XDT_m22100412a-040	Water	04/12/21 16:55
ZZZZZ	21C0426-04	XDT_m22100412a-041	Water	04/12/21 17:00
ZZZZZ	21C0426-06	XDT_m22100412a-042	Water	04/12/21 17:04
ZZZZZ	21C0426-08	XDT_m22100412a-043	Water	04/12/21 17:09
ZZZZZ	21D0039-02	XDT_m22100412a-045	Water	04/12/21 17:19
ZZZZZ	21D0039-02	XDT_m22100412a-045	Water	04/12/21 17:19
ZZZZZ	21D0088-01RE1	XDT_m22100412a-057	Water	04/12/21 18:51
ZZZZZ	21D0064-02	XDT_m22100412a-058	Water	04/12/21 18:56
ZZZZZ	21D0064-03	XDT_m22100412a-059	Water	04/12/21 19:01
ZZZZZ	21D0064-01	XDT_m22100412a-061	Water	04/12/21 19:13
ZZZZZ	21D0064-04	XDT_m22100412a-073	Water	04/12/21 20:29
ZZZZZ	21D0083-21	XDT_m22100412a-085	Water	04/12/21 21:37
ZZZZZ	21D0083-21	XDT_m22100412a-085	Water	04/12/21 21:37
ZZZZZ	21D0083-21	XDT_m22100412a-085	Water	04/12/21 21:37
ZZZZZ	21D0083-21	XDT_m22100412a-085	Water	04/12/21 21:37
ZZZZZ	21D0083-21	XDT_m22100412a-085	Water	04/12/21 21:37

ICP INTERFERENCE CHECK SAMPLE

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00033
Sequence: SJD0150
Standard ID: J003448

Lab Sample ID	Analyte	True	Found	%R	Units
SJD0150-IFA1	Arsenic-75a	0	0.0060		ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

ICP INTERFERENCE CHECK SAMPLE

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00033
Sequence: SJD0150
Standard ID: J003448

Lab Sample ID	Analyte	True	Found	%R	Units
SJD0150-IFB1	Arsenic-75a	20.000	19.124	95.6	ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

ICP INTERFERENCE CHECK SAMPLE

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00035
Sequence: SJD0156
Standard ID: J003448

Lab Sample ID	Analyte	True	Found	%R	Units
SJD0156-IFA1	Arsenic-75a	0	0.0260		ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

ICP INTERFERENCE CHECK SAMPLE

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00035
Sequence: SJD0156
Standard ID: J003448

Lab Sample ID	Analyte	True	Found	%R	Units
SJD0156-IFB1	Arsenic-75a	20.000	19.468	97.3	ug/L

* Indicates %R outside of QC limits
NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.

DETECTION LEVEL STANDARD
EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00033
Sequence: SJD0150
Lab Sample ID: SJD0150-CRL1

Analyte	True	Found	%R	Units	QC Limts
Arsenic-75a	0.20000	0.189	94.5	ug/L	50 - 150

* Values outside of QC limits

DETECTION LEVEL STANDARD
EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: ICPMS1
Calibration: ED00035
Sequence: SJD0156
Lab Sample ID: SJD0156-CRL1

Analyte	True	Found	%R	Units	QC Limts
Arsenic-75a	0.20000	0.188	94.0	ug/L	50 - 150

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: ED00033
Laboratory ID: SJD0150-HCV1
Sequence: SJD0150
Standard ID: J003449

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	200.00	207	3.7	10.00

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: ED00033
Laboratory ID: SJD0150-HCV2
Sequence: SJD0150
Standard ID: J003680

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	300.00	303	1.2	10.00

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: ED00035
Laboratory ID: SJD0156-HCV1
Sequence: SJD0156
Standard ID: J003449

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	200.00	197	-1.5	10.00

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HIGH-CONCENTRATION CALIBRATION VERIFICATION

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Calibration: ED00035
Laboratory ID: SJD0156-HCV2
Sequence: SJD0156
Standard ID: J003680

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Arsenic-75a	300.00	292	-2.8	10.00

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW-101(S)-033021 21C0456-01	03/30/21 10:30	03/30/21 17:15	04/09/21 13:51	10	180	04/09/21 23:22	11	180	
MW-201(S)-033021 21C0456-02	03/30/21 10:40	03/30/21 17:15	04/09/21 13:51	10	180	04/09/21 23:27	11	180	
MW-102(S)-033021 21C0456-03	03/30/21 11:45	03/30/21 17:15	04/09/21 13:51	10	180	04/09/21 23:32	10	180	
MW-103(S)-033021 21C0456-04	03/30/21 15:50	03/30/21 17:15	04/09/21 13:51	9	180	04/10/21 02:36	10	180	
Duplicate BJD0219-DUP1	03/30/21 15:50	03/30/21 17:15	04/09/21 13:51	9	180	04/10/21 02:41	10	180	
Matrix Spike BJD0219-MS1	03/30/21 15:50	03/30/21 17:15	04/09/21 13:51	9	180	04/10/21 02:47	10	180	

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

EPA 200.8 UCT-KED

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Matrix: Water
Instrument: ICPMS1

Analyte	MDL	RL	Units
Arsenic-75a	0.0373	0.200	ug/L

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO Guide 34, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO10
Lot Number:	N2-MO670050
Matrix:	H2O tr NH4OH
Value / Analyte(s):	10 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	2197
Starting Material Purity:	99.9921%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 31 µg/mL

Density: 1.011 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10006 ± 42 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **10021 ± 44 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two Methods

Certified Value, $X_{CRM/RM}$, where two methods of characterization are used is the weighted mean of the two results:

$X_{CRM/RM} = [(w_a)(X_a) + (w_b)(X_b)]$

X_a = mean of Assay Method A with standard uncertainty $u_{char\ a}$

X_b = mean of Assay Method B with standard uncertainty $u_{char\ b}$

w_a and w_b = the weighting factors for each method calculated using the inverse square of the variance:

$w_a = (1/u_{char\ a})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

$w_b = (1/u_{char\ b})^2 / ((1/u_{char\ a})^2 + (1/u_{char\ b})^2))$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a\&b} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a\&b} = [(w_a)^2 (u_{char\ a})^2 + (w_b)^2 (u_{char\ b})^2]^{½}$ where $u_{char\ a}$ and $u_{char\ b}$ are the square root of the sum of the squares of errors from characterization which include instrument measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM}$ = mean of Assay Method A with standard uncertainty $u_{char\ a}$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2 in all cases at Inorganic Ventures

$u_{char\ a}$ = square root of the sum of the squares of the errors from characterization which include instrumental measurement, density, NIST SRM uncertainty, weighing, and volume

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000631	M	Eu	<	0.000315	O	Na		0.006415	M	Se	<	0.010742	M	Zn		0.009510
M	Al		0.003279	M	Fe	<	0.006634	M	Nb	<	0.025907	i	Si	<		M	Zr	<	0.001263
M	As		0.104451	M	Ga	<	0.000315	i	Nd	<		M	Sm	<	0.000315				
M	Au	<	0.003161	M	Gd	<	0.000315	M	Ni	<	0.001895	M	Sn		0.004481				
M	B	<	0.050867	M	Ge	<	0.001263	M	Os	<	0.000632	M	Sr		0.000436				
i	Ba	<		M	Hf	<	0.000315	i	P	<		M	Ta	<	0.001263				
M	Be	<	0.000315	M	Hg	<	0.006954	M	Pb	<	0.001263	M	Tb	<	0.000315				
M	Bi	<	0.005055	M	Ho	<	0.000315	M	Pd	<	0.000631	i	Te	<					
O	Ca		0.011541	M	In		0.003935	M	Pr	<	0.061294	M	Th	<	0.000315				
O	Cd	<	0.118155	M	Ir	<	0.003161	M	Pt	<	0.000631	O	Ti	<	0.103600				
M	Ce	<	0.071404	O	K		0.181442	M	Rb	<	0.005687	M	Tl		0.000983				
M	Co	<	0.003159	M	La	<	0.000315	M	Re		0.050830	M	Tm	<	0.000315				
M	Cr		0.051377	O	Li		0.001182	M	Rh	<	0.000315	M	U	<	0.000315				
M	Cs	<	0.005055	M	Lu	<	0.000315	M	Ru	<	0.088514	M	V	<	0.012006				
M	Cu		0.004809	M	Mg		0.010712	i	S	<		M	W		1.251642				
M	Dy	<	0.001263	M	Mn		0.003279	M	Sb		0.003169	M	Y	<	0.000315				
M	Er	<	0.000315	s	Mo	<		M	Sc	<	0.000631	M	Yb	<	0.000315				

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)
Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.
Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.
Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO Guide 34 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 10, 2018

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 10, 2022**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB10
Lot Number:	N2-SB672482
Matrix:	3% (v/v) HNO3 3% (v/v) Tartaric Acid
Value / Analyte(s):	10 000 µg/mL ea: Antimony
Starting Material:	Antimony Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9838%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10041 ± 45 µg/mL

Density: 1.061 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10041 ± 39 µg/mL**
ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000210	M	Eu	<	0.000110	O	Na		0.060000	M	Se	<	0.001500	O	Zn		0.003900
M	Al		0.110000	O	Fe		0.028000	M	Nb	<	0.000110	O	Si		0.071000	M	Zr	<	0.002700
M	As	<	0.003100	M	Ga	<	0.000210	M	Nd	<	0.000110	M	Sm	<	0.000110				
M	Au	<	0.000110	M	Gd	<	0.000110	O	Ni		0.005900	M	Sn		0.001800				
O	B		0.018000	M	Ge	<	0.000110	M	Os	<	0.000110	O	Sr	<	0.000540				
O	Ba	<	0.000540	M	Hf	<	0.000610	O	P		0.590000	M	Ta	<	0.000410				
O	Be	<	0.000110	M	Hg	<	0.000110	M	Pb	<	0.002500	M	Tb	<	0.000110				
M	Bi	<	0.000210	M	Ho	<	0.000110	M	Pd	<	0.000110	M	Te	<	0.002600				
O	Ca		0.078000	M	In	<	0.000410	M	Pr	<	0.003100	M	Th	<	0.000110				
M	Cd	<	0.000210	M	Ir	<	0.000110	M	Pt	<	0.000110	O	Ti		0.014000				
M	Ce		0.007700	O	K		0.530000	M	Rb		0.002200	M	Tl	<	0.000110				
M	Co	<	0.001300	O	La	<	0.008300	M	Re	<	0.000110	M	Tm	<	0.000110				
O	Cr		0.099000	O	Li		0.000540	M	Rh	<	0.000110	M	U	<	0.000110				
M	Cs	<	0.000510	M	Lu	<	0.000110	M	Ru	<	0.000110	O	V	<	0.001400				
O	Cu	<	0.003100	O	Mg		0.004500	n	S	<		M	W	<	0.000510				
M	Dy	<	0.000110	O	Mn		0.002700	s	Sb	<		M	Y	<	0.000110				
M	Er	<	0.000110	M	Mo		0.003600	O	Sc	<	0.000850	M	Yb	<	0.000110				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 Sb(O)C4H4O6-1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO3 / LDPE container.
Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H2O / HF / HNO3 mixture); Oxides (Soluble in HCl and tartaric acid or H2O / HF / HNO3 mixtures); Ores (fusion with Na2CO3 in Pt0 followed by dissolving the fuseate in a H2O / HF / HNO3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 18, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 18, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAG10
Lot Number:	P2-AG679501
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Silver
Starting Material:	Ag Shot
Starting Material Lot#:	2217
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9996 ± 30 µg/mL

Density: 1.053 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10015 ± 56 µg/mL**
ICP Assay NIST SRM 3151 Lot Number: 160729

Assay Method #2 **9992 ± 25 µg/mL**
Volhard NIST SRM 999c Lot Number: 999c

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

s	Ag	<		M	Eu	<	0.000253	O	Na		0.005562	M	Se	<	0.018179	M	Zn		0.005799
O	Al		0.006295	O	Fe		0.002932	M	Nb	<	0.000253	M	Si		0.022484	M	Zr	<	0.005559
M	As	<	0.002403	M	Ga	<	0.000253	M	Nd	<	0.000253	M	Sm	<	0.000253				
M	Au		0.001634	M	Gd	<	0.000253	O	Ni	<	0.005472	M	Sn		0.001927				
O	B	<	0.009978	M	Ge	<	0.000754	M	Os	<	0.000254	O	Sr		0.000086				
M	Ba	<	0.000785	M	Hf	<	0.000253	M	P	<	0.053784	M	Ta	<	0.000253				
M	Be	<	0.002407	M	Hg	<	0.001332	M	Pb		0.003281	M	Tb	<	0.000253				
M	Bi		0.001671	M	Ho	<	0.000253	M	Pd	<	0.001382	M	Te	<	0.003715				
O	Ca		0.007115	M	In	<	0.003483	M	Pr	<	0.000253	M	Th	<	0.000253				
M	Cd	<	0.000253	M	Ir	<	0.000254	M	Pt	<	0.000253	M	Ti	<	0.002706				
M	Ce	<	0.000573	O	K		0.004010	M	Rb	<	0.000253	M	Tl	<	0.000253				
M	Co	<	0.000253	M	La	<	0.000253	M	Re	<	0.000253	M	Tm	<	0.000253				
O	Cr	<	0.005043	O	Li	<	0.000214	M	Rh	<	0.000253	M	U	<	0.000253				
M	Cs	<	0.002769	M	Lu	<	0.000253	M	Ru	<	0.000254	M	V	<	0.000822				
O	Cu		0.004614	O	Mg		0.001034	M	S	<	0.560935	M	W	<	0.002146				
M	Dy	<	0.000253	M	Mn	<	0.000253	M	Sb	<	0.006899	M	Y	<	0.000253				
M	Er	<	0.000253	M	Mo	<	0.000479	M	Sc	<	0.000733	M	Yb	<	0.000253				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 107.87 +1 6 $Ag(H_2O)_6^+$
Chemical Compatibility -Stable in HNO_3, and HF. Avoid basic media. Ag forms more insoluble salts than any other metal. It also is subject to photochemical reduction to the metal in HCl media although 10 µg/mL solutions in 10% HCl [$AgClx_{1-x}$] are commonly used in the analytical laboratory. The most common solubility problems exist with arsenate, arsenite , bromide, chloride, iodide, carbonate , chromate, cyanide, iodate, oxalate, oxide, sulfate, sulfide, tartrate, and thiocyanate in aqueous media. The addition of nitric acid renders many of these salts soluble.
Stability - 2-100 ppb levels stable for 75+ days when mixed with equivalent levels of all other elements including the precious metals (where chloride is present) when in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Ag Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HNO_3); Ores (Digestion with conc. HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 107 amu	1 ppt	N/A	91Zr16O
ICP-OES 243.779 nm	0.12/0.01 µg/mL	1	Mn, Th, Ni, Rh
ICP-OES 328.068 nm	0.007/0.0007 µg/mL	1	Ce, Rh, V
ICP-OES 338.289 nm	0.013/0.001 µg/mL	1	Ce, Cr, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 07, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 07, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAL10
Lot Number:	R2-AL689264
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Aluminum
Starting Material:	Al shot
Starting Material Lot#:	2253
Starting Material Purity:	99.9986%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10020 ± 33 µg/mL

Density: 1.085 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10028 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **9979 ± 49 µg/mL**
ICP Assay NIST SRM 3101a Lot Number: 140903

Assay Method #3 **10031 ± 52 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000635	M	Eu	<	0.000635	O	Na		0.026739	M	Se	<	0.011252	M	Zn	<	0.006354
s	Al	<		O	Fe		0.014971	M	Nb	<	0.000635	O	Si		0.079302	M	Zr	<	0.005083
O	As	<	0.026840	M	Ga	<	0.005083	M	Nd	<	0.001906	M	Sm	<	0.000635				
M	Au	<	0.000625	M	Gd	<	0.000635	M	Ni	<	0.012708	M	Sn	<	0.008895				
O	B		0.010178	M	Ge	<	0.002541	M	Os	<	0.000625	O	Sr	<	0.000671				
M	Ba	<	0.003812	M	Hf	<	0.000635	n	P	<		M	Ta	<	0.000635				
M	Be	<	0.002541	M	Hg	<	0.000625	M	Pb	<	0.000635	M	Tb	<	0.006354				
M	Bi	<	0.000635	M	Ho	<	0.000635	M	Pd	<	0.000635	M	Te	<	0.006989				
O	Ca		0.010097	M	In	<	0.016521	M	Pr	<	0.000635	M	Th	<	0.001270				
M	Cd	<	0.000635	M	Ir	<	0.000625	M	Pt	<	0.000635	O	Ti		0.001157				
M	Ce	<	0.010166	O	K		0.008132	M	Rb	<	0.002541	M	Tl	<	0.000635				
O	Co	<	0.009394	O	La	<	0.009394	M	Re	<	0.000635	M	Tm	<	0.000635				
O	Cr		0.002638	O	Li	<	0.000671	M	Rh	<	0.000635	M	U	<	0.000635				
M	Cs	<	0.001906	M	Lu	<	0.000635	M	Ru	<	0.000625	O	V	<	0.013420				
O	Cu		0.008751	O	Mg		0.011605	i	S	<		M	W	<	0.003812				
M	Dy	<	0.000635	O	Mn		0.000780	M	Sb	<	0.001270	M	Y	<	0.000635				
M	Er	<	0.000635	M	Mo	<	0.005718	M	Sc	<	0.003812	M	Yb	<	0.000635				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 26.98 +3 6 Al(H2O)6+3

Chemical Compatibility -Soluble in HCl, HNO3, HF and H2SO4. Avoid neutral media. Soluble in strongly basic NaOH forming the Al(OH)4(H2O)21- species. Stable with most metals and inorganic anions. The phosphate is insoluble in water and only slightly soluble in acid.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Al Containing Samples (Preparation and Solution) -Metal (Best dissolved in HCl / HNO3); a- Al2O3 (Na2CO3 fusion in Pt0);

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 27 amu	30 ppt	N/A	12C15N, 13C14N, 1H12C14N, 11B16O, 54Cr2+, 54Fe2+
ICP-OES 167.078 nm	0.1/0.009 µg/mL	1	Fe
ICP-OES 394.401 nm	0.05/0.006 µg/mL	1	U, Ce
ICP-OES 396.152 nm	0.03/0.006 µg/mL	1	Mo, Zr, Ce

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 22, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 22, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGAS10
Lot Number:	R2-AS691113
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Arsenic
Starting Material:	As Pieces
Starting Material Lot#:	2208
Starting Material Purity:	99.9980%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9981 ± 55 µg/mL

Density: 1.028 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9981 ± 55 µg/mL**
ICP Assay NIST SRM 3103a Lot Number: 100818

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The follow ing equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001578	M	Eu	<	0.000526	O	Na		0.036136	M	Se	<	0.014204	O	Zn	<	0.003390
O	Al		0.006694	M	Fe		0.002633	O	Nb	<	0.011526	O	Si		0.139479	M	Zr	<	0.003156
s	As	<		M	Ga	<	0.000526	M	Nd	<	0.000526	M	Sm	<	0.000526				
M	Au	<	0.000526	M	Gd	<	0.000526	O	Ni	<	0.005537	M	Sn	<	0.001052				
M	B		0.017011	M	Ge	<	0.000526	M	Os	<	0.000526	M	Sr	<	0.000526				
M	Ba	<	0.000526	M	Hf	<	0.000526	O	P	<	0.056500	M	Ta	<	0.000526				
O	Be	<	0.001130	M	Hg	<	0.002104	M	Pb	<	0.000526	M	Tb	<	0.000526				
M	Bi	<	0.002104	M	Ho	<	0.000526	M	Pd	<	0.000526	M	Te	<	0.003682				
O	Ca		0.005657	M	In	<	0.000526	M	Pr	<	0.002630	M	Th	<	0.000526				
M	Cd	<	0.000526	M	Ir	<	0.000526	M	Pt	<	0.000526	O	Ti	<	0.001017				
M	Ce	<	0.000526	O	K		0.003865	M	Rb	<	0.002104	M	Tl	<	0.000526				
M	Co	<	0.003156	M	La	<	0.000526	M	Re	<	0.000526	M	Tm	<	0.000526				
M	Cr		0.000877	M	Li	<	0.000526	M	Rh	<	0.000526	M	U	<	0.000526				
M	Cs	<	0.002104	M	Lu	<	0.000526	M	Ru	<	0.000526	M	V	<	0.001578				
M	Cu	<	0.003156	O	Mg		0.000235	O	S	<	0.056500	M	W	<	0.000526				
M	Dy	<	0.000526	M	Mn	<	0.001052	M	Sb	<	0.000526	M	Y	<	0.000526				
M	Er	<	0.000526	M	Mo	<	0.000526	M	Sc	<	0.002104	M	Yb	<	0.000526				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 74.92 ; mix of +3 and +5 ; 6 ; H_3AsO_4 and $HAsO_2$

Chemical Compatibility - Arsenic has no cationic chemistry. It is soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices water and NH_4OH . It is stable with most inorganic anions (forms arsenate when boiled with chromate) but many cationic metals form the insoluble arsenates under pH neutral conditions. When fluorinated and / or under acidic conditions arsenate formation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container.

As Containing Samples (Preparation and Solution) - Metal (soluble in 1:1 H_2O / HNO_3); Oxides (the oxide exists in crystalline and amorphous forms where the amorphic form is more water soluble. The oxides typically dissolve in dilute acidic solutions when boiled); Minerals (one gram of powered sample is fused in a Ni crucible with 10 grams of a 1:1 mix of K_2CO_3 and KNO_3 and the melt extracted with hot water); Organic Matrices (0.2 to 0.5 grams of sample are fused with 15 grams of a 1:1 Na_2CO_3 / Na_2O_2 mix in a Ni crucible. The fuseate is extracted with water and acidified with HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 75 amu	20 ppt	N/A	40Ar35Cl, 59Co16O, 36Ar38Ar1H,8Ar37Cl,Ar39K, 150Nd2+,150Sm2+
ICP-OES 189.042 nm	0.05/0.005 µg/mL	1	Cr
ICP-OES 193.696 nm	0.1/0.01 µg/mL	1	V, Ge
ICP-OES 228.812 nm	0.1/0.01 µg/mL	1	Cd, Pt, Ir, Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 25, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 25, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBA10
Lot Number:	P2-BA682107
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Barium
Starting Material:	Ba(NO3)2
Starting Material Lot#:	Mixed Lots
Starting Material Purity:	99.9995%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10072 ± 32 µg/mL

Density: 1.024 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10054 ± 80 µg/mL**
ICP Assay NIST SRM 3104a Lot Number: 140909

Assay Method #2 **10075 ± 30 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001538	O	Eu	<	0.028728	O	Na		0.006767	M	Se	<	0.007964	O	Zn		0.004335
M	Al		0.005194	M	Fe		0.016554	M	Nb	<	0.000200	O	Si	<	0.020780	M	Zr	<	0.000271
M	As	<	0.000519	M	Ga	<	0.000200	M	Nd	<	0.000200	M	Sm	<	0.082480				
M	Au	<	0.003452	M	Gd	<	0.000200	M	Ni	<	0.001290	M	Sn	<	0.000200				
M	B	<	0.002519	M	Ge	<	0.000430	M	Os	<	0.000752	O	Sr		0.027070				
s	Ba	<		M	Hf	<	0.002746	O	P	<	0.044677	M	Ta	<	0.001008				
M	Be	<	0.000430	M	Hg	<	0.001063	M	Pb	<	0.002257	M	Tb	<	0.000200				
M	Bi	<	0.002971	M	Ho	<	0.000200	M	Pd	<	0.000286	M	Te	<	0.001470				
O	Ca		0.026224	M	In	<	0.000200	M	Pr	<	0.000200	M	Th	<	0.000200				
M	Cd	<	0.000200	M	Ir	<	0.000446	M	Pt	<	0.000200	M	Ti	<	0.000324				
M	Ce	<	0.004362	O	K		0.011526	M	Rb		0.001487	M	Tl	<	0.000200				
M	Co	<	0.000200	O	La	<	0.091587	M	Re	<	0.000200	M	Tm	<	0.000954				
M	Cr	<	0.002191	O	Li	<	0.002181	M	Rh	<	0.000200	M	U	<	0.000200				
M	Cs	<	0.001640	M	Lu	<	0.002934	M	Ru	<	0.000200	M	V	<	0.000229				
M	Cu	<	0.003646	O	Mg		0.002379	O	S	<	0.073041	M	W	<	0.001627				
M	Dy	<	0.000200	M	Mn	<	0.000902	M	Sb	<	0.000514	O	Y	<	0.019637				
M	Er	<	0.000556	M	Mo	<	0.000455	M	Sc	<	0.000478	M	Yb	<	0.001991				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 137.33 +2 6 $Ba(H_2O)_6^{+2}$
Chemical Compatibility - Soluble in HCl, and HNO_3. Avoid H_2SO_4, HF and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, iodate, molybdate, sulfite and tungstate in neutral aqueous media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1 -10,000 ppm solutions chemically stable for years in 1-3.5% HNO_3 / LDPE container.
Ba Containing Samples (Preparation and Solution) -Metal(is best dissolved in diluted HNO_3); Ores(Carbonate fusion in Pt0 followed by HCl dissolution. If sulfate is present dissolve the fuseate using HCl / tartaric acid to prevent $BaSO_4$ precipitate); Organic Matrices (dry ash and dissolve in dilute HCl.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 138 amu	1 ppt	N/A	122Sn16O, 122Te16O
ICP-OES 230.424 nm	0.004/0.0005 µg/mL	1	Mo, Ir, Co
ICP-OES 233.527 nm	0.004/0.0003 µg/mL	1	
ICP-OES 455.403 nm	0.002/0.0001 µg/mL	1	Zr, U

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 13, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 13, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGBE10
Lot Number:	P2-BE678865
Matrix:	6% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Beryllium
Starting Material:	Beryllium diacetate
Starting Material Lot#:	2221
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10036 ± 35 µg/mL

Density: 1.140 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10051 ± 42 µg/mL**
ICP Assay NIST SRM 3105a Lot Number: 090514

Assay Method #2 **10008 ± 59 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.045414	M	Eu	<	0.000254	O	Na		0.015009	M	Se	<	0.015257	O	Zn		0.004059
O	Al		0.008058	O	Fe		0.011749	M	Nb	<	0.000254	O	Si		0.063793	O	Zr	<	0.007064
M	As	<	0.006473	M	Ga	<	0.000254	M	Nd	<	0.000254	M	Sm	<	0.000254				
M	Au	<	0.000248	M	Gd	<	0.000254	M	Ni	<	0.002034	M	Sn	<	0.002542				
O	B	<	0.021661	M	Ge	<	0.000508	M	Os	<	0.000248	M	Sr	<	0.000254				
M	Ba		0.001760	M	Hf	<	0.000254	O	P	<	0.666500	M	Ta	<	0.000254				
s	Be	<		M	Hg	<	0.001244	M	Pb	<	0.001271	M	Tb	<	0.000254				
M	Bi	<	0.000254	M	Ho	<	0.000254	M	Pd	<	0.000254	M	Te	<	0.001780				
O	Ca		0.015256	M	In	<	0.000254	M	Pr	<	0.000254	M	Th	<	0.000254				
M	Cd	<	0.000254	M	Ir	<	0.000248	M	Pt	<	0.000254	O	Ti	<	0.002266				
M	Ce	<	0.000254	O	K		0.031127	M	Rb	<	0.000508	M	Tl	<	0.000254				
M	Co	<	0.004068	M	La	<	0.000254	M	Re	<	0.000254	M	Tm	<	0.000254				
M	Cr	<	0.001525	O	Li	<	0.000666	M	Rh	<	0.000254	M	U	<	0.000254				
M	Cs		0.001642	M	Lu	<	0.000254	M	Ru	<	0.000248	M	V	<	0.000508				
M	Cu	<	0.005085	O	Mg		0.001907	i	S	<		M	W	<	0.004068				
M	Dy	<	0.000254	O	Mn	<	0.001333	M	Sb	<	0.000254	M	Y	<	0.000254				
M	Er	<	0.000254	M	Mo	<	0.000762	O	Sc	<	0.001333	M	Yb	<	0.000254				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 9.01 +2 4 Be+(H2O)4+2
Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.
Stability - 2-100 ppb levels stable for months in 1 % HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 5-10 % HNO3 / LDPE container.
Be Containing Samples (Preparation and Solution) - Meta l(is best dissolved in diluted H2SO4); BeO (boiling nitric, hydrochloric, or sulfuric acids or KHSO4 fusion); Ores (H2SO4/HF digestion or carbonate fusion in Pt0); Organic Matrices (sulfuric/peroxide digestion or nitric/sulfuric/perchloric acid decomposition, or dry ash and dissolution according to the BeO procedure above).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 9 amu	4 ppt	N/A	
ICP-OES 234.861 nm	0.0003/0.00016 µg/mL	1	Fe, Ta, Mo
ICP-OES 313.042 nm	0.0003/0.00009 µg/mL	1	V, Ce, U
ICP-OES 313.107 nm	0.0007/0.0005 µg/mL	1	Ce, Th, Tm

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 22, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCA10
Lot Number:	P2-CA688224
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Calcium
Starting Material:	Calcium Oxide
Starting Material Lot#:	P2-CA677788
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10034 ± 30 µg/mL

Density: 1.039 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10033 ± 29 µg/mL**
ICP Assay NIST SRM 3109a Lot Number: 130213

Assay Method #2 **10038 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10021 ± 47 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.004700	M	Eu	<	0.001200	O	Na		0.005556	M	Se	<	0.023000	O	Zn		0.000555
M	Al		0.005229	O	Fe		0.002723	M	Nb	<	0.001200	O	Si	<	0.029000	M	Zr	<	0.001200
M	As	<	0.013000	M	Ga	<	0.002400	M	Nd	<	0.001200	M	Sm	<	0.001200				
M	Au	<	0.002400	M	Gd	<	0.001200	O	Ni	<	0.003100	M	Sn	<	0.003600				
O	B	<	0.014000	M	Ge	<	0.003600	M	Os	<	0.001200	O	Sr		0.043577				
M	Ba		0.001024	M	Hf	<	0.001200	O	P	<	0.067000	M	Ta	<	0.001200				
M	Be	<	0.001200	M	Hg	<	0.003600	M	Pb	<	0.017000	M	Tb	<	0.001200				
M	Bi	<	0.001200	M	Ho	<	0.001200	M	Pd	<	0.001200	M	Te	<	0.015000				
s	Ca	<		M	In	<	0.001200	M	Pr	<	0.001200	M	Th	<	0.001200				
M	Cd	<	0.001200	M	Ir	<	0.001200	M	Pt	<	0.001200	O	Ti	<	0.007900				
M	Ce	<	0.001200	O	K		0.005556	M	Rb	<	0.001200	M	Tl	<	0.001200				
O	Co		0.000642	M	La	<	0.001200	M	Re	<	0.001200	M	Tm	<	0.001200				
M	Cr	<	0.004700	O	Li	<	0.002300	M	Rh	<	0.001200	M	U	<	0.001200				
M	Cs	<	0.001200	M	Lu	<	0.001200	M	Ru	<	0.001200	M	V	<	0.001200				
M	Cu	<	0.007100	O	Mg		0.003268	n	S	<		M	W	<	0.002400				
M	Dy	<	0.001200	O	Mn		0.000119	M	Sb	<	0.001200	M	Y	<	0.001200				
M	Er	<	0.001200	M	Mo		0.001024	O	Sc	<	0.006800	M	Yb	<	0.001200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 40.08 +2 6 $Ca(H_2O)_{6}^{+2}$

Chemical Compatibility - Soluble in HCl and HNO_3. Avoid H_2SO_4, HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicate, carbonate, hydroxide, oxide, fluoride, sulfate, oxalate, chromate, arsenate, and tungstate in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.

Ca Containing Samples (Preparation and Solution) -Metal (best dissolved in diluted HNO_3); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (dry ash and dissolution in dilute HCl. Do not heat when dissolving to avoid precipitation of SiO_2). The oxide, hydroxide, carbonate, phosphate, and fluoride of calcium are soluble in % levels of HCl or HNO_3. The sulfates (gypsum, anhydrite, etc.), certain silicates, and complex compounds require fusion with Na_2CO_3 followed by HCl / water dissolution. Note that contamination is a very real problem when analyzing for trace levels.

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 44 amu	1200 ppt	n/a	16O212C, 28Si16O, 88Sr
ICP-OES 393.366 nm	0.0002 / 0.00004 µg/mL	1	U, Ce
ICP-OES 396.847 nm	0.0005 / 0.00006 µg/mL	1	Th
ICP-OES 422.673 nm	0.01 / 0.001 µg/mL	1	Ge

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 25, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 25, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCD10
Lot Number:	P2-CD675954
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cadmium
Starting Material:	Cd Shot
Starting Material Lot#:	1954
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10014 ± 30 µg/mL

Density: 1.029 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10021 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10038 ± 43 µg/mL**
ICP Assay NIST SRM 3108 Lot Number: 130116

Assay Method #3 **9996 ± 30 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000834	O	Eu	<	0.002146	O	Na		0.003359	M	Se	<	0.003997	O	Zn		0.000251
O	Al		0.002435	O	Fe	<	0.001180	M	Nb	<	0.000399	O	Si		0.009519	M	Zr	<	0.000399
M	As	<	0.003997	M	Ga	<	0.000399	M	Nd	<	0.000399	M	Sm	<	0.000799				
M	Au	<	0.002809	M	Gd	<	0.000399	M	Ni	<	0.002398	M	Sn	<	0.000799				
M	B	<	0.005197	M	Ge	<	0.004397	M	Os	<	0.000401	O	Sr	<	0.000107				
M	Ba	<	0.000399	M	Hf	<	0.000399	O	P	<	0.023606	M	Ta	<	0.000399				
O	Be	<	0.000107	O	Hg	<	0.010730	M	Pb	<	0.001599	M	Tb	<	0.000399				
M	Bi	<	0.000399	M	Ho	<	0.000399	M	Pd	<	0.000799	M	Te	<	0.005596				
O	Ca		0.001399	O	In	<	0.015558	M	Pr	<	0.000399	M	Th	<	0.000399				
s	Cd	<		M	Ir	<	0.000401	M	Pt	<	0.000399	O	Ti	<	0.000536				
M	Ce	<	0.000399	O	K		0.004479	M	Rb	<	0.000399	M	Tl		0.000625				
M	Co	<	0.000399	M	La	<	0.000399	M	Re	<	0.000399	M	Tm	<	0.000399				
M	Cr	<	0.001199	O	Li	<	0.000214	M	Rh	<	0.000399	M	U	<	0.000399				
M	Cs	<	0.000399	M	Lu	<	0.000399	M	Ru	<	0.000401	M	V	<	0.001599				
O	Cu	<	0.003219	O	Mg		0.000083	O	S	<	0.021460	M	W	<	0.000799				
M	Dy	<	0.000399	O	Mn	<	0.000429	M	Sb	<	0.001599	M	Y	<	0.000399				
M	Er	<	0.000399	M	Mo	<	0.000399	O	Sc	<	0.000429	M	Yb	<	0.000399				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 112.41 +2 4 Cd2(OH) (aq)3+ and Cd(OH)(aq)
Chemical Compatibility -Stable in HCl, HNO3, H2SO4 , and HF. Avoid basic media forming insoluble carbonate and hydroxide.
Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO3 / LDPE container.
Cd Containing Samples (Preparation and Solution) -Metal (soluble in HNO3); Oxides (soluble in HCl or HNO3); Ores (dissolve in HCl /HNO3 then take to fumes with H2SO4. The silica and lead sulfate are filtered off after the addition of water); Organic based (dry ash at 450°C and dissolve ash in HCl), (sulfuric / peroxide acid digestion).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 111 amu	11 ppt	n/a	95Mo16O
ICP-OES 214.438 nm	0.003 / 0.0003 µg/mL	1	Pt, Ir
ICP-OES 226.502 nm	0.003 / 0.0003 µg/mL	1	Ir
ICP-OES 228.802 nm	0.003 / 0.0003 µg/mL	1	Co, Ir, As, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 07, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 07, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCO10
Lot Number:	N2-CO671028
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Cobalt
Starting Material:	COBALT
Starting Material Lot#:	1749
Starting Material Purity:	99.9978%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9988 ± 34 µg/mL

Density: 1.057 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9973 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10024 ± 50 µg/mL**
ICP Assay NIST SRM traceable to 3113 Lot Number: M2-CO661665

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

O	Ag		0.022956	M	Eu	<	0.000422	O	Na		0.008125	M	Se	<	0.009290	M	Zn		0.007197
O	Al		0.013621	O	Fe		0.048700	M	Nb	<	0.000422	O	Si		0.017539	M	Zr	<	0.014357
i	As	<		M	Ga	<	0.000844	M	Nd	<	0.017735	M	Sm	<	0.001689				
M	Au	<	0.000583	M	Gd		0.003247	O	Ni	<	0.043642	M	Sn	<	0.005067				
M	B	<	0.013512	M	Ge	<	0.004645	M	Os	<	0.000583	O	Sr		0.000841				
O	Ba		0.071210	M	Hf	<	0.000422	n	P	<		M	Ta	<	0.000422				
O	Be	<	0.001771	M	Hg	<	0.002334	M	Pb		0.010094	M	Tb	<	0.001689				
M	Bi		0.000614	M	Ho	<	0.000422	M	Pd	<	0.000422	M	Te	<	0.008445				
O	Ca		0.025034	M	In	<	0.003378	M	Pr	<	0.006756	M	Th	<	0.000422				
M	Cd	<	0.000844	M	Ir	<	0.000583	M	Pt	<	0.000422	M	Ti	<	0.002533				
M	Ce		0.002721	O	K		0.005785	M	Rb	<	0.001689	M	Tl	<	0.000422				
s	Co	<		M	La		0.000877	M	Re		0.016853	M	Tm	<	0.000422				
M	Cr	<	0.020269	O	Li		0.000262	M	Rh	<	0.000422	M	U	<	0.000422				
M	Cs		0.000877	M	Lu	<	0.000422	M	Ru	<	0.000583	M	V	<	0.001689				
M	Cu		0.007197	O	Mg		0.003444	n	S	<		M	W	<	0.000844				
M	Dy	<	0.000422	O	Mn	<	0.006072	M	Sb	<	0.005911	M	Y		0.001228				
M	Er	<	0.000422	M	Mo	<	0.005911	M	Sc	<	0.001689	M	Yb	<	0.003378				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.93 +2 6 $Co(H_2O)_6^{2+}$
Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
Co Containing Samples (Preparation and Solution) - Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (dissolve in HCl / HNO_3).
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 59 amu	2 ppt	n/a	42Ca16O1H , 40Ar18O1H , 36Ar23Na, 43Ca16O, 24Mg35Cl
ICP-OES 228.616 nm	0.01/0.001 µg/mL	1	
ICP-OES 237.862 nm	0.01/0.002 µg/mL	1	W, Re, Al, Ta
ICP-OES 238.892 nm	0.01/0.002 µg/mL	1	Fe, W, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 15, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 15, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCR(3)10
Lot Number:	P2-CR684202
Matrix:	10% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Chromium
Starting Material:	Cr METAL
Starting Material Lot#:	2077
Starting Material Purity:	99.9942%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10056 ± 49 µg/mL

Density: 1.084 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10061 ± 71 µg/mL**
ICP Assay NIST SRM 3112a Lot Number: 170630

Assay Method #2 **10052 ± 64 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000540	M	Eu	<	0.003200	O	Na		0.130027	M	Se	<	0.012000	O	Zn	<	0.002700
O	Al		0.016626	O	Fe		0.202502	M	Nb	<	0.022000	n	Si	<		M	Zr	<	0.020000
M	As		0.003836	O	Ga	<	0.031000	M	Nd	<	0.000540	M	Sm	<	0.035000				
M	Au	<	0.000540	M	Gd	<	0.000540	O	Ni		0.009165	M	Sn		0.004049				
M	B	<	0.049000	M	Ge	<	0.005400	M	Os	<	0.088000	O	Sr	<	0.000250				
O	Ba	<	0.002000	M	Hf	<	0.000540	i	P	<		M	Ta	<	0.000540				
O	Be	<	0.000250	M	Hg	<	0.001600	M	Pb		0.002557	M	Tb	<	0.000540				
M	Bi		0.008952	M	Ho	<	0.000540	M	Pd	<	0.001100	M	Te	<	0.004800				
O	Ca		0.074605	M	In	<	0.001100	M	Pr	<	0.000540	M	Th	<	0.000540				
M	Cd	<	0.000540	M	Ir	<	0.000540	M	Pt	<	0.000540	O	Ti		0.013428				
M	Ce	<	0.000540	O	K		0.034105	i	Rb	<		M	Tl	<	0.001100				
O	Co	<	0.002900	M	La	<	0.001100	M	Re	<	0.002700	O	Tm	<	0.001800				
s	Cr	<		O	Li	<	0.000130	M	Rh	<	0.032000	M	U	<	0.001100				
M	Cs	<	0.019000	M	Lu	<	0.000540	M	Ru	<	0.094000	O	V		0.159869				
O	Cu		0.010018	O	Mg		0.001449	i	S	<		M	W	<	0.028000				
M	Dy	<	0.000540	O	Mn	<	0.014000	M	Sb	<	0.008600	M	Y	<	0.001100				
M	Er	<	0.016000	O	Mo	<	0.013000	O	Sc	<	0.001400	M	Yb	<	0.000540				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 52.00 +3 6 $Cr(H_2O)_6^{3+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cr3 Containing Samples (Preparation and Solution) -Metal (soluble in HCl); Oxides/Ores (Chrome ore/oxides are very difficult to dissolve. The following procedures [A-D] are commonly used: A. Fusion with $KHSO_4$ and extraction with hot KCl. The residue fused with Na_2CO_3 and $KClO_3$, 3:1. B. Fusion with $NaKSO_4$ and NaF 2:1, C. Fusion with magnesia or lime and sodium or potassium carbonates, 4:1. D. Fusion with Na_2O_2 or NaOH and KNO_3 or NaOH and Na_2O_2. Nickel, iron, copper, or silver crucibles should be used for D. Platinum may be used for A, B, C); Organic Matrices (ash at 4500C followed by one of the fusion methods above or sulfuric/hydrogen peroxide acid digestions may be applicable to non oxide containing samples).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 52 amu	40 ppt	N/A	36S16O, 36Ar16O - The 50Cr, 53Cr, 54Cr lines suffer from many more potential interferences from sulfur, chlorine and argon compounds of oxygen, nitrogen and carbon.
ICP-OES 205.552 nm	0.006/0.0008 µg/mL	1	Os
ICP-OES 276.654 nm	0.01/0.001 µg/mL	1	Cu, Ta, V
ICP-OES 284.325 nm	0.008/0.0007 µg/mL	1	

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

November 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **November 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGCU10
Lot Number:	P2-CU682108
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Copper
Starting Material:	Cu Metal
Starting Material Lot#:	2095
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 30 µg/mL

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9977 ± 50 µg/mL**
ICP Assay NIST SRM 3114 Lot Number: 121207

Assay Method #2 **10024 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10007 ± 46 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.007542	M	Eu	<	0.000942	O	Na		0.001434	M	Se	<	0.016971	M	Zn	<	0.005657
O	Al	<	0.000609	O	Fe		0.008700	M	Nb	<	0.000942	O	Si		0.003052	M	Zr	<	0.000942
M	As	<	0.010371	M	Ga	<	0.000942	M	Nd	<	0.000942	M	Sm	<	0.000942				
M	Au	<	0.001885	M	Gd	<	0.000942	M	Ni		0.003781	M	Sn	<	0.005657				
O	B		0.003663	M	Ge	<	0.005657	M	Os	<	0.000942	M	Sr	<	0.000942				
M	Ba		0.004253	M	Hf	<	0.000942	O	P	<	0.031668	M	Ta	<	0.000942				
M	Be	<	0.000942	O	Hg	<	0.007064	M	Pb		0.005789	M	Tb	<	0.000942				
M	Bi	<	0.000942	M	Ho	<	0.000942	M	Pd	<	0.000942	M	Te	<	0.004714				
O	Ca		0.002304	M	In	<	0.000942	M	Pr	<	0.000942	M	Th	<	0.000942				
M	Cd	<	0.000942	M	Ir	<	0.000942	M	Pt	<	0.000942	O	Ti	<	0.002801				
M	Ce	<	0.000942	O	K		0.000763	M	Rb	<	0.000942	M	Tl	<	0.000942				
M	Co		0.001890	M	La	<	0.000942	M	Re	<	0.000942	M	Tm	<	0.000942				
M	Cr	<	0.005657	O	Li	<	0.000243	i	Rh	<		M	U	<	0.000942				
M	Cs	<	0.000942	M	Lu	<	0.000942	M	Ru	<	0.039588	M	V	<	0.003771				
s	Cu	<		O	Mg		0.000320	O	S		0.007174	M	W	<	0.005657				
M	Dy	<	0.000942	O	Mn		0.000793	M	Sb	<	0.001885	M	Y	<	0.000942				
M	Er	<	0.000942	M	Mo	<	0.005657	M	Sc	<	0.000942	M	Yb	<	0.000942				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 63.55 +2 6 $Cu(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4, HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Cu Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 63 amu	10 ppt	n/a	40Ar23Na 47Ti16O, 14N12C37Cl, 16O12C35Cl, 23Na40Ca
ICP-OES 219.958 nm	0.01/.002 µg/mL	1	Th, Ta, Nb, U, Hf
ICP-OES 224.700 nm	0.01/.001 µg/mL	1	Pb, Ir, Ni, W
ICP-OES 324.754 nm	0.06/.001 µg/mL		Nb, U, Th, Mo, Hf

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 24, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 24, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	ARI-1
Lot Number:	R2-MEB692461
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Iron

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Iron, Fe	**10 000.0 ± 40.0 µg/mL**		

Density: 1.037 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928

The follow ing equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$
w_i = the weighting factors for each method calculated using the inverse square of the variance:
$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2
$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with
$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2
$u_{char\ a}$ = the errors from characterization
u_{bb} = bottle to bottle homogeneity standard uncertainty
u_{lts} = long term stability standard uncertainty (storage)
u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 22, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGK10
Lot Number:	P2-K688009
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Potassium
Starting Material:	KNO3
Starting Material Lot#:	2313
Starting Material Purity:	99.9971%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10013 ± 30 µg/mL

Density: 1.025 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10007 ± 24 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #2 **9984 ± 73 µg/mL**
ICP Assay NIST SRM 3141a Lot Number: 140813

Assay Method #3 **10020 ± 22 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001400	M	Eu	<	0.000660	O	Na		0.240000	M	Se	<	0.007900	O	Zn	0.017000
O	Al		0.001600	O	Fe		0.005800	M	Nb	<	0.000660	O	Si		0.012000	O	Zr	< 0.001600
M	As	<	0.005300	M	Ga	<	0.000660	M	Nd	<	0.000660	M	Sm	<	0.000660			
M	Au	<	0.002000	M	Gd	<	0.000660	O	Ni	<	0.004900	M	Sn	<	0.000660			
O	B	<	0.005600	M	Ge	<	0.002000	M	Os	<	0.003300	O	Sr		0.000055			
O	Ba	<	0.000860	M	Hf	<	0.000660	O	P	<	0.032000	M	Ta	<	0.000660			
O	Be	<	0.000082	M	Hg	<	0.002000	M	Pb	<	0.002300	M	Tb	<	0.000660			
M	Bi	<	0.006600	M	Ho	<	0.000660	M	Pd	<	0.000660	M	Te	<	0.017000			
O	Ca		0.031000	M	In	<	0.000660	M	Pr	<	0.000660	M	Th	<	0.000660			
O	Cd	<	0.000450	M	Ir	<	0.000660	M	Pt	<	0.002700	M	Ti	<	0.000660			
M	Ce	<	0.000660	s	K	<		M	Rb		0.480000	M	Tl	<	0.000660			
O	Co	<	0.000780	M	La	<	0.000660	M	Re	<	0.000660	M	Tm	<	0.000660			
O	Cr		0.000530	O	Li	<	0.000084	M	Rh	<	0.000660	M	U	<	0.000660			
M	Cs	<	0.000660	M	Lu	<	0.000660	M	Ru	<	0.000660	O	V	<	0.001100			
M	Cu	<	0.002700	O	Mg		0.006300	O	S		0.028000	M	W	<	0.000660			
M	Dy	<	0.000660	O	Mn		0.000480	M	Sb	<	0.000660	M	Y	<	0.000660			
M	Er	<	0.000660	M	Mo	<	0.000660	O	Sc	<	0.000340	O	Yb	<	0.000270			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 39.10 +1 (6) K+(aq)
Chemical Compatibility -Soluble in HCl, HNO_3, H_2SO_4 and HF aqueous matrices. Avoid use of $HClO_4$ due to insolubility of the perchlorate. Stable with all metals and inorganic anions except ClO_4^-.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
K Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Sodium carbonate fusion in Pt0 followed by HCl dissolution-blank levels of K in sodium carbonate critical); Organic Matrices (Sulfuric/peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 39 amu	10 ppt	n/a	38ArH, 23Na16O, 78Se
ICP-OES 404.721 nm	1.1 / 0.05 µg/mL	1	U, Ce
ICP-OES 766.490 nm	0.4 / 0.001 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 771.531 nm	1.0 / 0.03 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

February 10, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **February 10, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMG10
Lot Number:	P2-MG686672
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Magnesium
Starting Material:	Magnesium
Starting Material Lot#:	2168
Starting Material Purity:	99.9996%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10003 ± 30 µg/mL

Density: 1.053 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9958 ± 36 µg/mL**
ICP Assay NIST SRM 3131a Lot Number: 140110

Assay Method #2 **10015 ± 26 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10017 ± 29 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001471	M	Eu	<	0.000599	O	Na		0.007247	M	Se	<	0.031185	O	Zn	<	0.002438
M	Al		0.003845	M	Fe	<	0.001062	M	Nb	<	0.000599	O	Si	<	0.022307	M	Zr	<	0.000603
M	As	<	0.004195	M	Ga	<	0.000599	M	Nd	<	0.004804	M	Sm	<	0.000599				
M	Au	<	0.010269	M	Gd	<	0.000599	M	Ni		0.003944	M	Sn	<	0.000599				
O	B	<	0.015847	M	Ge	<	0.001198	M	Os	<	0.000599	O	Sr	<	0.000365				
O	Ba		0.000222	M	Hf	<	0.000599	O	P	<	0.059731	M	Ta	<	0.000599				
M	Be	<	0.000599	M	Hg	<	0.004427	M	Pb	<	0.000599	M	Tb	<	0.000599				
M	Bi	<	0.000599	M	Ho	<	0.000599	M	Pd	<	0.000599	M	Te	<	0.002397				
O	Ca		0.013052	M	In	<	0.000599	M	Pr	<	0.000599	M	Th	<	0.000599				
M	Cd	<	0.000599	M	Ir	<	0.000599	M	Pt	<	0.000599	O	Ti	<	0.002316				
M	Ce	<	0.000599	O	K		0.014274	M	Rb	<	0.006958	M	Tl	<	0.000599				
M	Co	<	0.000599	M	La	<	0.001754	M	Re	<	0.000599	M	Tm	<	0.000599				
M	Cr	<	0.005882	O	Li		0.010969	M	Rh	<	0.000599	M	U	<	0.000599				
M	Cs	<	0.001801	M	Lu	<	0.000599	M	Ru	<	0.000599	O	V	<	0.006704				
M	Cu	<	0.008473	s	Mg	<		O	S	<	0.088621	M	W	<	0.000599				
M	Dy	<	0.000599	O	Mn		0.003249	M	Sb	<	0.000599	M	Y	<	0.000599				
M	Er	<	0.000599	M	Mo	<	0.000730	O	Sc		0.000444	M	Yb	<	0.000599				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 24.31 +2 6 $Mg(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, HNO_3, and H_2SO_4 avoid HF, H_3PO_4 and neutral to basic media. Stable with most metals and inorganic anions forming insoluble silicates, carbonates, hydroxides, oxides, and tungstates in neutral and slightly acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-10% HNO_3 / LDPE container.

Mg Containing Samples (Preparation and Solution) - Metal (Best dissolved in diluted HNO_3); Oxide (Readily soluble in above compatible aqueous acidic solutions); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric / peroxide digestion or nitric / sulfuric / perchloric acid decomposition, or dry ash and dissolution in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 24 amu	42 ppt	n/a	7Li17O, 48Ti+2 , 48Ca+2
ICP-OES 279.553 nm	0.0002 / 0.00003 µg/mL	1	Th
ICP-OES 280.270 nm	0.0003 / 0.00005 µg/mL	1	U, V
ICP-OES 285.213 nm	0.002 / 0.00003 µg/mL	1	U, Hf, Cr, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMN10
Lot Number:	P2-MN687536
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Manganese
Starting Material:	Mn Metal
Starting Material Lot#:	2275
Starting Material Purity:	99.9909%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10046 ± 30 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10045 ± 25 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10083 ± 68 µg/mL**
ICP Assay NIST SRM 3132 Lot Number: 050429

Assay Method #3 **10031 ± 47 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001500	M	Eu	<	0.000730	O	Na		0.176713	M	Se	<	0.006600	M	Zn		0.009960
O	Al		0.004337	M	Fe	<	0.650000	M	Nb	<	0.000730	O	Si		0.097995	M	Zr	<	0.000730
M	As	<	0.008000	M	Ga		0.004337	M	Nd	<	0.001500	M	Sm	<	0.000730				
M	Au	<	0.000730	M	Gd	<	0.000730	M	Ni		0.024097	M	Sn	<	0.002200				
M	B		0.069078	M	Ge	<	0.004400	M	Os	<	0.000730	O	Sr		0.000931				
M	Ba	<	0.001500	M	Hf	<	0.000730	i	P	<		M	Ta	<	0.000730				
M	Be	<	0.000730	M	Hg	<	0.002200	M	Pb		0.007389	M	Tb	<	0.000730				
M	Bi	<	0.003000	M	Ho	<	0.000730	M	Pd	<	0.000730	M	Te	<	0.019000				
O	Ca		0.062652	M	In	<	0.003000	M	Pr	<	0.000730	M	Th	<	0.000730				
M	Cd	<	0.001500	M	Ir	<	0.000730	M	Pt	<	0.000730	O	Ti	<	0.006500				
M	Ce	<	0.007300	O	K		0.006425	M	Rb	<	0.006600	M	Tl	<	0.000730				
O	Co		0.014779	M	La	<	0.003000	M	Re	<	0.000730	M	Tm	<	0.000730				
O	Cr		0.273102	O	Li		0.000417	M	Rh	<	0.003000	M	U	<	0.001500				
M	Cs	<	0.000730	M	Lu	<	0.000730	M	Ru	<	0.004400	M	V	<	0.000730				
O	Cu		0.007711	O	Mg		0.321297	i	S	<		M	W	<	0.004400				
M	Dy	<	0.001500	s	Mn	<		M	Sb	<	0.021000	O	Y		0.001365				
M	Er	<	0.001500	M	Mo		0.010281	O	Sc	<	0.004100	M	Yb	<	0.000730				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 54.94 +2 6 $Mn(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5 % HNO_3/LDPE container.

Mn Containing Samples (Preparation and Solution) -Metal (Soluble in dilute acids); Oxides (Soluble in dilute acids); Ores (Dissolve with HCl. If silica is present add HF and then fume off silica by adding H_2SO_4 and heat to SO_3 fumes - dense white fumes).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 55 amu	10 ppt	n/a	40Ar14N1H,39K16O,37Cl18O,40Ar15N,38Ar17O,36Ar18O1H ,38Ar16O1H,37Cl17O1H,23Na32S
ICP-OES 257.610 nm	0.0014 / 0.00002 µg/mL	1	Ce, W, Re
ICP-OES 259.373 nm	0.0016 / 0.00002 µg/mL	1	U, Ta, Mo, Fe, Nb
ICP-OES 260.569 nm	0.0021 / 0.00002 µg/mL	1	Co

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

January 05, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **January 05, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGMO10
Lot Number:	P2-MO681847
Matrix:	tr. NH4OH H2O
Value / Analyte(s):	10 000 µg/mL ea: Molybdenum
Starting Material:	Ammonium Molybdate
Starting Material Lot#:	2257
Starting Material Purity:	99.9914%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10030 ± 30 µg/mL

Density: 1.011 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10066 ± 45 µg/mL**
ICP Assay NIST SRM 3134 Lot Number: 130418

Assay Method #2 **10002 ± 40 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.001826	M	Eu	<	0.000300	M	Na		0.008765	M	Se	<	0.007480	M	Zn		0.002557
M	Al		0.004462	M	Fe		0.002097	M	Nb	<	0.015030	i	Si	<		M	Zr	<	0.005393
M	As	<	0.003006	M	Ga	<	0.000300	i	Nd	<		M	Sm	<	0.000300				
M	Au	<	0.006012	M	Gd	<	0.000300	M	Ni	<	0.004828	M	Sn		0.001006				
M	B	<	0.035184	M	Ge	<	0.000903	M	Os	<	0.003006	M	Sr		0.001906				
O	Ba		0.015639	M	Hf	<	0.000896	i	P	<		M	Ta	<	0.000300				
M	Be	<	0.003006	M	Hg	<	0.003006	M	Pb	<	0.000409	M	Tb	<	0.000300				
M	Bi	<	0.000401	M	Ho	<	0.000300	M	Pd	<	0.001114	M	Te	<	0.060122				
O	Ca		0.032644	M	In	<	0.015030	M	Pr	<	0.090184	M	Th	<	0.000786				
O	Cd	<	0.051800	M	Ir	<	0.007483	M	Pt	<	0.000388	O	Ti	<	0.093240				
M	Ce	<	0.015030	M	K		1.116389	M	Rb		0.040710	M	Tl		0.013162				
M	Co		0.004039	M	La	<	0.000300	M	Re	<	0.000300	M	Tm	<	0.000300				
M	Cr		0.005941	O	Li		0.000215	M	Rh	<	0.000300	M	U		0.000938				
M	Cs		0.002817	M	Lu	<	0.000300	M	Ru	<	0.003006	M	V	<	0.000759				
M	Cu		0.005181	M	Mg		0.005221	i	S	<		M	W		0.593427				
M	Dy	<	0.000300	M	Mn		0.000953	M	Sb		0.003153	M	Y	<	0.000300				
M	Er	<	0.000300	s	Mo	<		M	Sc	<	0.009019	M	Yb	<	0.000300				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 95.94 +6 6,7,8,9 [MoO4] -2(chemical form as received)

Chemical Compatibility -Mo is received in a NH4OH matrix giving the operator the option of using HCl or HF to stabilize acidic solutions. The [MoO4]-2 is soluble in concentrated HCl [MoOCl5]-2, dilute HF / HNO3 [MoOF5] -2 and basic media [MoO4]-2. Stable at ppm levels with some metals provided it is fluorinated. Do not mix with Alkaline or Rare Earths when HF is present. Stable with most inorganic anions provided it is in the [MoO4]-2 chemical form.

Stability - 2-100 ppb levels stable (alone or mixed with all other metals that are at comparable levels) as the [MoOF5]-2 for months in 1% HNO3 / LDPE container. 1-10,000 ppm single element solutions as the [MoO4] -2 chemically stable for years in 1% NH4OH in a LDPE container.

Mo Containing Samples (Preparation and Solution) -Metal (Soluble in HF / HNO3 or hot dilute HCl); Oxide (soluble in HF or NH4OH) ; Organic Matrices (Dry ash at 450EC in Pt0 and dissolve oxide with HF or HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 95 amu	3 ppt	n/a	40Ar39K16O,79Br16O,190Os2+,190Pt2+
ICP-OES 202.030 nm	0.008 / 0.0002 µg/mL	1	Os, Hf
ICP-OES 203.844 nm	0.012 / 0.002 µg/mL	1	
ICP-OES 204.598 nm	0.012 / 0.001 µg/mL	1	Ir, Ta

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 30, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 30, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNA10
Lot Number:	P2-NA685078
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Sodium
Starting Material:	Sodium Carbonate
Starting Material Lot#:	1870
Starting Material Purity:	99.9994%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10012 ± 40 µg/mL

Density: 1.034 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9956 ± 67 µg/mL**
ICP Assay NIST SRM 3152a Lot Number: 120715

Assay Method #2 **10019 ± 21 µg/mL**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Assay Method #3 **10010 ± 21 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000930	M	Eu	<	0.000930	s	Na	<		M	Se	<	0.024000	M	Zn	0.001689
M	Al		0.003769	M	Fe		0.001429	M	Nb	<	0.000930	O	Si	<	0.018000	M	Zr	< 0.000930
M	As	<	0.008300	M	Ga	<	0.000930	M	Nd	<	0.000930	M	Sm	<	0.000930			
M	Au	<	0.001900	M	Gd	<	0.000930	O	Ni	<	0.005100	M	Sn	<	0.001900			
O	B	<	0.015000	M	Ge	<	0.001900	M	Os	<	0.000930	M	Sr		0.000727			
M	Ba	<	0.000930	M	Hf	<	0.000930	O	P	<	0.037000	M	Ta	<	0.000930			
M	Be	<	0.002800	M	Hg	<	0.000930	M	Pb	<	0.000930	M	Tb	<	0.000930			
M	Bi	<	0.000930	M	Ho	<	0.000930	M	Pd	<	0.000930	M	Te	<	0.002800			
O	Ca		0.019497	M	In	<	0.000930	M	Pr	<	0.000930	M	Th	<	0.000930			
M	Cd	<	0.000930	M	Ir	<	0.000930	M	Pt	<	0.000930	O	Ti	<	0.001900			
M	Ce	<	0.000930	O	K		0.142978	M	Rb	<	0.000930	M	Tl	<	0.000930			
M	Co	<	0.000930	M	La	<	0.000930	M	Re	<	0.000930	M	Tm	<	0.000930			
M	Cr		0.000844	O	Li	<	0.000130	M	Rh	<	0.000930	M	U	<	0.000930			
M	Cs	<	0.000930	M	Lu	<	0.000930	M	Ru	<	0.001900	M	V	<	0.001900			
M	Cu	<	0.004700	O	Mg		0.001143	O	S	<	0.037000	M	W	<	0.001900			
M	Dy	<	0.000930	M	Mn	<	0.001900	M	Sb	<	0.000930	M	Y	<	0.000930			
M	Er	<	0.000930	M	Mo	<	0.001900	O	Sc	<	0.000370	M	Yb	<	0.000930			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 22.99 +1 (6) Na+(aq) largely ionic in nature

Chemical Compatibility -Soluble in HCl, HNO3, H2SO4 and HF aqueous matrices. Stable with all metals and inorganic anions.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO3 / LDPE container.

Na Containing Samples (Preparation and Solution) - Metal (Dissolves very rapidly in water); Ores (Lithium carbonate fusion in graphite crucible followed by HCl dissolution - blank levels of Na in lithium carbonate critical); Organic Matrices (Sulfuric / peroxide digestion or nitric/sulfuric/perchloric acid decomposition).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 23 amu	310 ppt	n/a	46Ti+2 , 46Ca+2
ICP-OES 330.237 nm	2.0 / 0.09 µg/mL	1	Pd, Zn
ICP-OES 588.995 nm	0.03 / 0.006 µg/mL	1	2nd order radiation from R.E.s on some optical designs
ICP-OES 589.595 nm	0.07 / 0.00009 µg/mL	1	2nd order radiation from R.E.s on some optical designs

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 12, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 12, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGNI10
Lot Number:	P2-NI686384
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Nickel
Starting Material:	Ni Metal
Starting Material Lot#:	2277 and 2282
Starting Material Purity:	99.9992%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9979 ± 30 µg/mL

Density: 1.038 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9971 ± 54 µg/mL**
ICP Assay NIST SRM 3136 Lot Number: 120619

Assay Method #2 **9970 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **9993 ± 33 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.002606	M	Eu	<	0.001100	O	Na		0.004965	O	Se	<	0.067000	M	Zn		0.006578
M	Al	<	0.013000	O	Fe		0.018618	M	Nb	<	0.001100	O	Si		0.010923	M	Zr	<	0.001100
O	As	<	0.067000	M	Ga	<	0.001100	M	Nd	<	0.001100	M	Sm	<	0.001100				
M	Au	<	0.002100	M	Gd	<	0.001100	s	Ni	<		M	Sn	<	0.016000				
M	B	<	0.017000	M	Ge	<	0.004200	M	Os		0.002110	O	Sr	<	0.000940				
M	Ba	<	0.001100	M	Hf	<	0.001100	i	P	<		M	Ta	<	0.001100				
O	Be	<	0.000410	M	Hg		0.014895	M	Pb		0.006578	M	Tb	<	0.001100				
M	Bi	<	0.004200	M	Ho	<	0.001100	M	Pd	<	0.001100	M	Te	<	0.015000				
O	Ca		0.003351	M	In	<	0.001100	M	Pr	<	0.001100	M	Th	<	0.001100				
M	Cd		0.001365	M	Ir		0.004716	M	Pt	<	0.001100	M	Ti	<	0.004200				
M	Ce	<	0.001100	O	K		0.004716	M	Rb	<	0.001100	M	Tl	<	0.001100				
O	Co		0.017377	M	La	<	0.001100	M	Re		0.001737	M	Tm	<	0.001100				
O	Cr	<	0.006700	O	Li	<	0.000140	M	Rh	<	0.006300	M	U	<	0.001100				
M	Cs	<	0.007300	M	Lu	<	0.001100	M	Ru	<	0.019000	M	V	<	0.002100				
M	Cu		0.004096	O	Mg		0.000372	i	S	<		M	W	<	0.006300				
M	Dy	<	0.001100	O	Mn	<	0.001900	M	Sb		0.005833	O	Y	<	0.000540				
M	Er	<	0.001100	M	Mo	<	0.008400	M	Sc	<	0.002100	M	Yb	<	0.001100				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 58.69 +2 6 $Ni(H_2O)_6^{2+}$

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Ni Containing Samples (Preparation and Solution) -Metal (Soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 60 amu	100 ppt	n/a	$^{43}Ca^{16}O^{1}H$, $^{44}Ca^{16}O$, $^{23}Na^{37}Cl$
ICP-OES 221.647 nm	0.01 / 0.0009 µg/mL	1	Si
ICP-OES 231.604 nm	0.02 / 0.002 µg/mL	1	Sb, Ta, Co
ICP-OES 232.003 nm	0.02 / 0.006 µg/mL	1	Cr, Re, Os, Nb, Ag, Pt, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGPB10
Lot Number:	P2-PB686383
Matrix:	0.5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Lead
Starting Material:	Lead Nitrate
Starting Material Lot#:	2299
Starting Material Purity:	99.9974%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10031 ± 30 µg/mL

Density: 1.015 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10060 ± 63 µg/mL**
ICP Assay NIST SRM 3128 Lot Number: 101026

Assay Method #2 **10048 ± 32 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10007 ± 32 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag		0.000850	M	Eu	<	0.000310	O	Na		0.005780	M	Se	<	0.004600	M	Zn		0.005440
O	Al		0.234602	O	Fe		0.023460	M	Nb	<	0.000310	O	Si		0.047600	M	Zr	<	0.000610
M	As	<	0.001900	M	Ga	<	0.000310	M	Nd	<	0.000310	M	Sm	<	0.000310				
M	Au	<	0.002200	M	Gd	<	0.004300	M	Ni	<	0.001600	M	Sn	<	0.000610				
O	B	<	0.005200	M	Ge	<	0.000610	M	Os	<	0.000310	O	Sr		0.000442				
O	Ba		0.001530	M	Hf	<	0.000310	O	P	<	0.052000	M	Ta	<	0.000310				
O	Be	<	0.000630	M	Hg	<	0.001600	s	Pb	<		M	Tb	<	0.000310				
O	Bi		0.021080	M	Ho	<	0.000610	M	Pd	<	0.000310	M	Te	<	0.004300				
O	Ca		0.037400	M	In	<	0.000310	M	Pr	<	0.000310	M	Th	<	0.000310				
M	Cd	<	0.000610	M	Ir	<	0.000310	M	Pt	<	0.000310	M	Ti		0.002992				
M	Ce	<	0.000910	O	K		0.008840	M	Rb	<	0.000610	M	Tl		0.037400				
M	Co	<	0.000610	M	La	<	0.000610	M	Re	<	0.000310	M	Tm	<	0.000610				
M	Cr	<	0.003400	O	Li		0.000108	O	Rh	<	0.006300	M	U	<	0.000310				
M	Cs		0.002686	M	Lu	<	0.000310	M	Ru	<	0.000310	M	V	<	0.000310				
M	Cu	<	0.002500	O	Mg		0.004760	O	S	<	0.052000	M	W	<	0.002200				
M	Dy	<	0.000310	M	Mn	<	0.000310	M	Sb	<	0.001300	M	Y	<	0.000310				
M	Er	<	0.000310	O	Mo	<	0.005400	M	Sc	<	0.000310	M	Yb	<	0.000310				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 207.20 +2 6 $Pb(H_2O)_6^{+2}$

Chemical Compatibility - Soluble in HCl, HF and HNO_3. Avoid H_2SO_4. Stable with most metals and inorganic anions forming insoluble carbonate, borate, sulfate, sulfite, sulfide, phosphate, oxalate, chromate, tannate, iodate, and cyanide in neutral aqueous media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.

Pb Containing Samples (Preparation and Solution) -Metal (Best dissolved in 1:1 H_2O / HNO_3); Oxides (The many different Pb oxides are soluble in HNO_3 with the exception of PbO_2 which is soluble in HCl or HF); Ores and Alloys (Best attacked using 1:1 H_2O / HNO_3); Organic Matrices (Dry ash and dissolve in dilute HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 208 amu	5 ppt	n/a	192Pt16O, 192Os16O
ICP-OES 168.215 nm	0.03 / 0.003 µg/mL	1	Co
ICP-OES 217.000 nm	0.09 / 0.03 µg/mL	1	W, Ir, Hf, Sb, Th
ICP-OES 220.353 nm	0.04 / 0.006 µg/mL	1	Bi, Nb

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 02, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 02, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSB10
Lot Number:	P2-SB676840
Matrix:	3% (v/v) HNO3 3% (w/v) Tartaric acid
Value / Analyte(s):	10 000 µg/mL ea: Antimony
Starting Material:	Antimony Metal
Starting Material Lot#:	1857
Starting Material Purity:	99.9898%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10019 ± 51 µg/mL

Density: 1.062 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10019 ± 45 µg/mL**
ICP Assay NIST SRM 3102a Lot Number: 140911

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000110	M	Eu	<	0.000110	O	Na		0.160000	M	Se	<	0.002700	O	Zn		0.006000
M	Al		0.010000	O	Fe		0.054000	M	Nb	<	0.000110	O	Si		0.087000	O	Zr	<	0.003200
M	As	<	0.003400	M	Ga	<	0.000110	M	Nd	<	0.000110	M	Sm	<	0.000110				
M	Au	<	0.000110	M	Gd	<	0.000110	O	Ni	<	0.005900	M	Sn	<	0.002300				
O	B		0.018000	M	Ge	<	0.000110	M	Os	<	0.000110	O	Sr		0.000540				
O	Ba	<	0.000750	M	Hf	<	0.000410	O	P		0.550000	M	Ta	<	0.000410				
O	Be	<	0.000110	M	Hg	<	0.000310	M	Pb	<	0.000210	M	Tb	<	0.000110				
M	Bi	<	0.000210	M	Ho	<	0.000110	M	Pd	<	0.000110	M	Te	<	0.001900				
O	Ca		0.097000	M	In	<	0.000110	M	Pr	<	0.002000	M	Th	<	0.000110				
M	Cd	<	0.000110	M	Ir	<	0.000410	M	Pt	<	0.000110	O	Ti	<	0.004000				
M	Ce		0.006100	O	K		0.018000	M	Rb	<	0.000110	M	Tl	<	0.000110				
M	Co	<	0.001800	O	La	<	0.005800	M	Re	<	0.000110	M	Tm	<	0.000110				
M	Cr		0.005500	O	Li	<	0.000110	M	Rh	<	0.000110	M	U	<	0.000110				
M	Cs	<	0.000110	M	Lu	<	0.000110	M	Ru	<	0.000110	M	V	<	0.000510				
M	Cu	<	0.002300	O	Mg		0.020000	n	S	<		M	W	<	0.000410				
M	Dy	<	0.000110	M	Mn		0.001200	s	Sb	<		M	Y	<	0.000110				
M	Er	<	0.000110	M	Mo	<	0.000110	O	Sc	<	0.001500	M	Yb	<	0.000110				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 121.75 +3 6 $Sb(O)C_4H_4O_6^-$1
Chemical Compatibility -Stable in conc. HCl, dilute or conc. HF. Stable in dilute HNO_3 as the fluoride or tartrate complex. Avoid basic media. Stable with most metals and inorganic anions in acidic media as the tartrate provided the acidity is not too high or the acid is oxidizing causing loss of the stabilizing tartrate ion. The fluoride complex of antimony is stable in strong acid but you should only mix with other metals that are fluorinated.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-2% HNO_3 / LDPE container.
Sb Containing Samples (Preparation and Solution) -Metal and alloys (Soluble in H_2O / HF / HNO_3 mixture); Oxides (Soluble in HCl and tartaric acid or H_2O / HF / HNO_3 mixtures); Ores (fusion with Na_2CO_3 in Pt0 followed by dissolving the fuseate in a H_2O / HF / HNO_3 mixture); Organic based (sulfuric acid / hydrogen peroxide digestion)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 121 amu	5 ppt	N/A	105Pd16O, 89Y16O2
ICP-OES 206.833 nm	0.03/0.003 µg/mL	1	Ta, Cr, Ge, Hf
ICP-OES 217.581 nm	0.05/0.005 µg/mL	1	Nb, W, Re, Fe
ICP-OES 231.147 nm	0.06/0.006 µg/mL	1	Ni, Co, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 20, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 20, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGSE10
Lot Number:	P2-SE684206
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Selenium
Starting Material:	Se Metal
Starting Material Lot#:	1962
Starting Material Purity:	99.9991%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9992 ± 61 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9993 ± 67 µg/mL**
ICP Assay NIST SRM 3149 Lot Number: 100901

Assay Method #2 **9992 ± 73 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.002242	M	Eu	<	0.000373	O	Na		0.013700	s	Se	<		O	Zn		0.002382
M	Al		0.004465	M	Fe		0.008506	O	Nb	<	0.002975	O	Si		0.006270	M	Zr	<	0.001868
O	As	<	0.022040	M	Ga	<	0.000373	M	Nd	<	0.000373	M	Sm	<	0.000373				
M	Au	<	0.000373	M	Gd	<	0.000373	O	Ni		0.001849	M	Sn		0.000850				
O	B	<	0.007714	M	Ge	<	0.002616	M	Os	<	0.000373	M	Sr	<	0.001121				
M	Ba	<	0.001495	M	Hf	<	0.000373	O	P	<	0.022040	M	Ta	<	0.000373				
M	Be	<	0.001495	M	Hg	<	0.002240	M	Pb		0.006379	M	Tb	<	0.006353				
M	Bi	<	0.000373	M	Ho	<	0.000373	M	Pd	<	0.000373	M	Te	<	0.012707				
O	Ca		0.006552	M	In	<	0.000373	M	Pr	<	0.001495	M	Th	<	0.002990				
M	Cd		0.001169	M	Ir	<	0.000373	M	Pt	<	0.000373	M	Ti	<	0.003363				
M	Ce	<	0.000373	O	K		0.002006	M	Rb	<	0.001868	M	Tl		0.008613				
M	Co	<	0.000373	M	La	<	0.001121	M	Re	<	0.000373	M	Tm	<	0.000373				
M	Cr		0.002870	O	Li		0.000062	M	Rh	<	0.000373	M	U	<	0.000373				
M	Cs	<	0.001121	M	Lu	<	0.000373	M	Ru	<	0.001493	M	V	<	0.000747				
M	Cu	<	0.000747	O	Mg		0.001159	O	S		0.024674	M	W	<	0.002242				
M	Dy	<	0.000373	M	Mn	<	0.000373	M	Sb	<	0.002242	M	Y	<	0.000373				
M	Er	<	0.000373	O	Mo	<	0.003195	M	Sc	<	0.001121	M	Yb	<	0.000373				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 78.96 +4 6 H_2SeO_3

Chemical Compatibility -Soluble in HCl, HNO_3,H_3PO_4, H_2SO_4 and HF aqueous matrices and water. It is stable with most inorganic anions but many cationic metals form the insoluble selenites under pH neutral conditions. When fluorinated and/or under acidic conditions precipitation is typically not a problem at moderate to low concentrations.

Stability - 2-100 ppb levels stable for months alone or mixed with other elements at equivalent levels in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Se Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (readily soluble in water); Minerals and alloys (acid digestion with HNO_3or HNO_3 / HF); Organic Matrices (acid digestion with hot concentrated H_2SO_4 accompanied by the careful dropwise addition of H_2O_2 until clear).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 82 amu	200 ppt	N/A	12C35Cl2
ICP-OES 196.026 nm	0.08/0.006 µg/mL	1	Fe
ICP-OES 203.985 nm	0.2/0.05 µg/mL	1	Sb, Ir, Cr, Ta
ICP-OES 206.279 nm	0.3/0.16 µg/mL	1	Cr, Pt

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 13, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 13, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGTL10
Lot Number:	P2-TL681849
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Thallium
Starting Material:	TlNO3
Starting Material Lot#:	2118
Starting Material Purity:	99.9998%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10015 ± 50 µg/mL

Density: 1.035 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10015 ± 45 µg/mL**
ICP Assay NIST SRM 3158 Lot Number: 151215

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$CRM/RM\ Expanded\ Uncertainty\ (\pm) = U_{CRM/RM} = k\ (u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000200	M	Eu	<	0.000200	O	Na		0.002486	M	Se	<	0.011019	O	Zn		0.002295
O	Al	<	0.004184	O	Fe	<	0.002824	M	Nb	<	0.000200	O	Si		0.003755	M	Zr	<	0.000200
M	As	<	0.002003	M	Ga	<	0.000200	M	Nd	<	0.000200	M	Sm	<	0.000200				
O	Au	<	0.002824	M	Gd	<	0.000200	M	Ni		0.001722	M	Sn	<	0.000601				
O	B	<	0.004184	M	Ge	<	0.000801	M	Os	<	0.000198	O	Sr	<	0.000313				
M	Ba	<	0.000400	M	Hf	<	0.000200	O	P	<	0.010460	M	Ta	<	0.000200				
O	Be	<	0.000104	M	Hg	<	0.000794	M	Pb		0.000810	M	Tb	<	0.000200				
M	Bi	<	0.005209	M	Ho	<	0.000200	M	Pd	<	0.000400	M	Te	<	0.005008				
O	Ca		0.002433	M	In	<	0.000200	M	Pr	<	0.000200	M	Th	<	0.000200				
M	Cd		0.001316	M	Ir	<	0.000198	M	Pt	<	0.000801	O	Ti	<	0.001255				
M	Ce	<	0.000200	O	K		0.006167	M	Rb	<	0.000200	s	Tl	<					
M	Co	<	0.000601	M	La	<	0.000200	M	Re	<	0.000200	M	Tm	<	0.000200				
M	Cr	<	0.000801	O	Li	<	0.000177	M	Rh	<	0.000200	M	U	<	0.000200				
M	Cs	<	0.003606	M	Lu	<	0.000200	M	Ru	<	0.000397	M	V	<	0.002203				
M	Cu	<	0.001001	O	Mg		0.000528	O	S	<	0.015690	M	W	<	0.000601				
M	Dy	<	0.000200	M	Mn	<	0.000801	M	Sb	<	0.000400	M	Y	<	0.000200				
M	Er	<	0.000200	M	Mo	<	0.001202	O	Sc	<	0.000711	M	Yb	<	0.000200				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 204.38 +1 6 Tl(H2O)61+

Chemical Compatibility - Soluble in HCl, HNO3, and H2SO4. Stable with most metals and inorganic anions. The sulfite, thiocyanate and oxalate are moderately soluble; the phosphate and arsenite are slightly soluble and the sulfide is insoluble.

Stability - 2-100 ppb levels stable for months in 1% HNO3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO3 / LDPE container.

Tl Containing Samples (Preparation and Solution) -Metal (Best dissolved in HNO3 which forms chiefly the Tl1+ ion.); Oxide (The thallous oxide is readily soluble in water. The thallic oxide requires high levels of acid); Ores (Carbonate fusion in Pt0 followed by HCl dissolution); Organic Matrices (Sulfuric/peroxide digestion or dry ash and dissolution in HCl).

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 205 amu	2 ppt	N/A	189Os16O
ICP-OES 190.864 nm	0.04 / 0.004 µg/mL	1	V, Ti
ICP-OES 276.787 nm	0.1 / 0.01 µg/mL	1	Ta, V, Fe, Cr
ICP-OES 351.924 nm	0.2 / 0.02 µg/mL	1	Th, Ce, Zr

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 31, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 31, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGV10
Lot Number:	P2-V677312
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Vanadium
Starting Material:	V2O5
Starting Material Lot#:	1782
Starting Material Purity:	99.9939%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 9984 ± 30 µg/mL

Density: 1.102 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **9975 ± 30 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #2 **10026 ± 64 µg/mL**
ICP Assay NIST SRM 3165 Lot Number: 160906

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000273	M	Eu	<	0.000118	O	Na		0.100243	M	Se	<	0.001167	M	Zn	<	0.006080
M	Al		0.057110	M	Fe		0.212199	M	Nb	<	0.001479	O	Si		0.333950	M	Zr	<	0.003181
M	As	<	0.000540	M	Ga	<	0.009451	M	Nd	<	0.000118	M	Sm	<	0.000118				
M	Au	<	0.000191	M	Gd	<	0.000118	M	Ni	<	0.003169	M	Sn	<	0.000733				
M	B	<	0.002950	M	Ge	<	0.000434	M	Os	<	0.000150	M	Sr		0.000557				
M	Ba	<	0.001024	M	Hf	<	0.000118	O	P	<	0.056000	M	Ta	<	0.000118				
M	Be	<	0.000118	M	Hg	<	0.000170	M	Pb		0.002214	M	Tb	<	0.000118				
M	Bi	<	0.000363	M	Ho	<	0.000118	M	Pd	<	0.000140	M	Te	<	0.002236				
O	Ca		0.109005	M	In	<	0.000118	M	Pr	<	0.000118	M	Th	<	0.000118				
M	Cd	<	0.000145	M	Ir	<	0.000118	M	Pt	<	0.000118	M	Ti		0.012731				
M	Ce	<	0.000245	M	K		0.019121	M	Rb	<	0.000118	M	Tl	<	0.000118				
M	Co	<	0.000119	M	La	<	0.000118	M	Re	<	0.000118	M	Tm	<	0.000118				
O	Cr		0.158019	M	Li	<	0.000501	M	Rh	<	0.000118	M	U	<	0.000395				
M	Cs		0.004388	M	Lu	<	0.000118	M	Ru	<	0.000118	s	V	<					
M	Cu	<	0.002021	M	Mg		0.005621	n	S	<		M	W		0.001599				
M	Dy	<	0.000118	M	Mn		0.005968	M	Sb		0.079957	M	Y	<	0.000118				
M	Er	<	0.000118	O	Mo		0.065962	M	Sc	<	0.000118	M	Yb	<	0.000118				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 50.94 +5 6 $H_2V_{10}O_{28}^{4-}$
Chemical Compatibility -Soluble in HCl, HNO_3, H_2SO_4, HF, H_3PO_4 and strong basic media. Stable with most metals and inorganic anions in acidic media.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.
V Containing Samples (Preparation and Solution) -Metal (Fusion with NaOH or KOH in Ni0 or Na_2CO_3 / KNO_3); Oxides (V_2O_3 - use HCl, V_2O_4 - use HCl or HNO_3, V_2O_5 - use concentrated acids); Ores (Na_2CO_3 / KNO_3 in Pt0 caution - nitrates attack Pto followed by water extraction of fuseate); Organic Matrices (Ash at 450 EC followed by dissolving according to V_2O_5 above) .
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 51 amu	4 ppt	N/A	34S16O1H, 35Cl16O, 38Ar13C, 36Ar15N, 36Ar14N1H, 37Cl14N,36S15N, 33S18O, 34S17O, 102Ru+2,02Pd+2
ICP-OES 290.882 nm	0.008 / 0.0008 µg/mL	1	Hf, Nb
ICP-OES 292.402 nm	0.006 / 0.001 µg/mL	1	Th
ICP-OES 309.311 nm	0.005 / 0.001 µg/mL	1	Mg, U, Th

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 12, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 12, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Supervisor, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGZN10
Lot Number:	P2-ZN686137
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	10 000 µg/mL ea: Zinc
Starting Material:	Zn Shot
Starting Material Lot#:	2201
Starting Material Purity:	99.9993%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 10040 ± 30 µg/mL

Density: 1.033 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **10009 ± 54 µg/mL**
ICP Assay NIST SRM 3168a Lot Number: 120629

Assay Method #2 **10049 ± 33 µg/mL**
EDTA NIST SRM 928 Lot Number: 928

Assay Method #3 **10041 ± 28 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.003057	M	Eu	<	0.000509	O	Na		0.001874	M	Se	<	0.023441	s	Zn	<	
O	Al	<	0.005720	O	Fe		0.006348	M	Nb	<	0.000509	O	Si	<	0.057200	M	Zr	<	0.000509
M	As	<	0.003057	M	Ga	<	0.007134	M	Nd	<	0.000509	M	Sm	<	0.000509				
M	Au	<	0.000510	M	Gd	<	0.000509	M	Ni	<	0.000509	M	Sn	<	0.000509				
O	B	<	0.017160	M	Ge	<	0.003057	M	Os	<	0.000510	M	Sr	<	0.000509				
M	Ba	<	0.000509	M	Hf	<	0.000509	O	P	<	0.057200	M	Ta	<	0.000509				
M	Be	<	0.000509	M	Hg	<	0.001021	O	Pb		0.023870	M	Tb	<	0.000509				
M	Bi	<	0.005095	M	Ho	<	0.000509	M	Pd	<	0.002038	M	Te	<	0.023441				
O	Ca		0.033793	M	In	<	0.000509	M	Pr	<	0.000509	M	Th	<	0.000509				
O	Cd		0.003924	M	Ir	<	0.000510	M	Pt	<	0.000509	M	Ti	<	0.000509				
M	Ce	<	0.000509	O	K		0.001499	M	Rb	<	0.002038	M	Tl	<	0.009172				
M	Co	<	0.000509	M	La	<	0.000509	M	Re	<	0.000509	M	Tm	<	0.000509				
O	Cr		0.001549	O	Li	<	0.000457	M	Rh	<	0.000509	M	U	<	0.000509				
M	Cs	<	0.000509	M	Lu	<	0.000509	M	Ru	<	0.006129	M	V	<	0.000509				
O	Cu	<	0.010296	O	Mg		0.000349	O	S	<	0.034320	M	W	<	0.001019				
M	Dy	<	0.000509	M	Mn	<	0.000509	M	Sb	<	0.001019	M	Y	<	0.000509				
M	Er	<	0.000509	M	Mo	<	0.000509	M	Sc	<	0.000509	M	Yb	<	0.000509				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 65.39 +2 4 Zn(OH)(aq)1+

Chemical Compatibility -Stable in HCl, HNO_3, H_2SO_4 ,HF, H_3PO_4. Avoid basic media forming insoluble carbonate and hydroxide. Stable with most metals and inorganic anions in acidic media.

Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 1-5% HNO_3 / LDPE container.

Zn Containing Samples (Preparation and Solution) -Metal (soluble in HNO_3); Oxides (Soluble in HCl); Ores (Dissolve in HCl / HNO_3); Organic based (dry ash at 4500C and dissolve ash in HCl) (sulfuric/peroxide acid digestion)

Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 66 amu	7 ppt	N/A	50Ti16O,50Cr16O, 50V16O, 34S16O2, 32S16O18O, 32S17O2, 33S16O17O, 32S34S, 33S2
ICP-OES 202.548 nm	0.004/0.0002 µg/mL	1	Nb, Cu, Co, Hf
ICP-OES 206.200 nm	0.006/0.0006 µg/mL	1	Sb, Ta, Bi, Os
ICP-OES 213.856 nm	0.002/0.0004 µg/mL	1	Ni, Cu, V

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

December 05, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **December 05, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Single Analyte Custom Grade Solution
Catalog Number:	CGU1
Lot Number:	P2-U683975
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Uranium
Starting Material:	Uranyl Nitrate
Starting Material Lot#:	1948
Starting Material Purity:	99.9985%

3.0 CERTIFIED VALUES AND UNCERTAINTIES

Certified Value: 1001 ± 5 µg/mL

Density: 1.010 g/mL (measured at 20 ± 4 ºC)

Assay Information:

Assay Method #1 **1001 ± 5 µg/mL**
ICP Assay NIST SRM 3164 Lot Number: 080521

Assay Method #2 **1002 ± 6 µg/mL**
Calculated NIST SRM Lot Number: See Sec. 4.2

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.24 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000103	M	Eu	<	0.000103	M	Na		0.020618	M	Se	<	0.001246	M	Zn	<	0.003533
M	Al	<	0.003740	M	Fe		0.001029	M	Nb	<	0.000207	M	Si	<	0.035027	M	Zr	<	0.000103
M	As	<	0.001143	M	Ga	<	0.001350	M	Nd	<	0.000623	M	Sm	<	0.000311				
M	Au	<	0.000207	M	Gd	<	0.000311	M	Ni	<	0.008313	M	Sn	<	0.007273				
M	B	<	0.005819	M	Ge	<	0.001974	M	Os	<	0.000103	M	Sr	<	0.001039				
M	Ba	<	0.002286	M	Hf	<	0.000103	i	P	<		M	Ta	<	0.000103				
M	Be	<	0.001350	M	Hg	<	0.000415	M	Pb	<	0.000103	M	Tb	<	0.000103				
M	Bi	<	0.000103	M	Ho	<	0.000103	M	Pd	<	0.000207	M	Te	<	0.006234				
M	Ca	<	0.010391	M	In	<	0.000103	M	Pr	<	0.000103	M	Th		0.010535				
M	Cd	<	0.000103	M	Ir	<	0.000103	M	Pt	<	0.000103	M	Ti	<	0.000207				
M	Ce	<	0.000103	M	K	<	0.041565	M	Rb	<	0.000519	M	Tl	<	0.000103				
M	Co	<	0.000415	M	La	<	0.001662	M	Re	<	0.000103	M	Tm	<	0.000103				
M	Cr	<	0.001870	M	Li	<	0.001662	M	Rh	<	0.000103	s	U	<					
M	Cs		0.000175	M	Lu	<	0.000103	M	Ru	<	0.000519	M	V	<	0.000207				
M	Cu		0.000792	M	Mg	<	0.002493	i	S	<		M	W	<	0.000103				
M	Dy	<	0.000103	M	Mn	<	0.001454	M	Sb	<	0.000103	M	Y	<	0.000103				
M	Er	<	0.000103	M	Mo	<	0.000415	M	Sc	<	0.006234	M	Yb	<	0.000103				

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Atomic Weight; Valence; Coordination Number; Chemical Form in Solution - 238.03 +6 8 UO_2^{2+}(uranyl)
Chemical Compatibility - Soluble in HCl and HNO_3. Avoid H_3PO_4. H_2SO_4 and HF matrices should not be a problem depending upon [U]. Although the UO_2^{2+} ion is distinctly basic, any U+4 will precipitate in basic media. UO_2^{2+}salts are generally soluble in water and UO_2^{2+} is stable with most metals and inorganic anions. The uranyl phosphate is insoluble in water. UF_4 and UF_6 are water soluble.
Stability - 2-100 ppb levels stable for months in 1% HNO_3 / LDPE container. 1-10,000 ppm solutions chemically stable for years in 2-5% HNO_3 / LDPE container.
U Containing Samples (Preparation and Solution) -Metal (Dissolves rapidly in HCl and HNO_3); Oxide (Soluble in HNO_3); Ores (Digest for 1-2 hours with 1 gram of ore to 30 mL 1:1 HNO_3. Silica insolubles are removed by filtration after bringing the sample to fumes with conc. H_2SO_4.)
Atomic Spectroscopic Information (ICP-OES D.L.s are given as radial/axial view):

Technique/Line	**Estimated D.L.**	**Order**	**Interferences** (underlined indicates severe)
ICP-MS 238 amu	2 ppt	N/A	206Pb16O2
ICP-OES 263.553 nm	0.3 / 0.01 µg/mL	1	Ce, Ir, Th, Rh, W, Zr, Ta, Ti, V, Hf, Fe, Re, Ru
ICP-OES 367.007 nm	0.3 / 0.02 µg/mL	1	Th, Ce
ICP-OES 385.958 nm	0.3 / 0.01 µg/mL	1	Th, Fe

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 28, 2019

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 28, 2023**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-ICVMS-2
Lot Number:	R2-MEB692462
Matrix:	3% (v/v) HNO_3 tr. HF
Value / Analyte(s):	2.5 µg/mL ea: Molybdenum, Antimony

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**2.505 ± 0.017 µg/mL**	**Molybdenum, Mo**	**2.503 ± 0.017 µg/mL**

Density: 1.012 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Sb	ICP Assay	3102a	140911
Sb	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \Sigma(w_i)(X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$$

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a)\,(u_{char\ a})$$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$$\text{CRM/RM Expanded Uncertainty } (\pm) = U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 22, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-ICVMS-3
Lot Number:	R2-MEB692463
Matrix:	7% (v/v) HNO3
Value / Analyte(s):	250 µg/mL ea:

Aluminum, Calcium,
Iron, Potassium,
Magnesium, Sodium,

4 µg/mL ea:
Selenium,

2.5 µg/mL ea:

Thorium,	Thallium,
Uranium,	Vanadium,
Zinc,	Manganese,
Cadmium,	Cobalt,
Chromium,	Copper,
Arsenic,	Barium,
Beryllium,	Nickel,
Lead,	Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	250.1 ± 0.8 µg/mL	Arsenic, As	2.505 ± 0.022 µg/mL
Barium, Ba	2.504 ± 0.013 µg/mL	Beryllium, Be	2.502 ± 0.015 µg/mL
Cadmium, Cd	2.504 ± 0.013 µg/mL	Calcium, Ca	249.9 ± 1.3 µg/mL
Chromium, Cr	2.505 ± 0.017 µg/mL	Cobalt, Co	2.505 ± 0.015 µg/mL
Copper, Cu	2.505 ± 0.013 µg/mL	Iron, Fe	250.3 ± 1.0 µg/mL
Lead, Pb	2.505 ± 0.014 µg/mL	Magnesium, Mg	249.9 ± 1.3 µg/mL
Manganese, Mn	2.505 ± 0.013 µg/mL	Nickel, Ni	2.505 ± 0.014 µg/mL
Potassium, K	249.9 ± 1.2 µg/mL	Selenium, Se	4.007 ± 0.024 µg/mL
Silver, Ag	2.495 ± 0.017 µg/mL	Sodium, Na	249.9 ± 1.2 µg/mL
Thallium, Tl	2.500 ± 0.017 µg/mL	Thorium, Th	2.496 ± 0.013 µg/mL
Uranium, U	2.505 ± 0.013 µg/mL	Vanadium, V	2.505 ± 0.014 µg/mL
Zinc, Zn	2.505 ± 0.014 µg/mL		

Density: 1.040 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Ag	Calculated		See Sec. 4.2
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	EDTA	928	928
Co	ICP Assay	traceable to 3113	M2-CO661665
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Th	EDTA	928	928
Th	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.24 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Low Silver Note: This solution contains "LOW" levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 22, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	AR-6020ICS-0A10
Lot Number:	R2-MEB692465
Matrix:	1.4% (v/v) HNO3
Value / Analyte(s):	1 000 µg/mL ea: Chloride,
	200 µg/mL ea: Carbon,
	100 µg/mL ea: Calcium, Aluminum, Iron, Potassium, Magnesium, Sodium, Phosphorus, Sulfur,
	2 µg/mL ea: Titanium, Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	100.0 ± 0.3 µg/mL	Calcium, Ca	100.0 ± 0.5 µg/mL
Carbon, C	200.1 ± 0.5 µg/mL	Chloride, Cl	1 000 ± 5 µg/mL
Iron, Fe	100.0 ± 0.5 µg/mL	Magnesium, Mg	100.0 ± 0.5 µg/mL
Molybdenum, Mo	2.001 ± 0.012 µg/mL	Phosphorus, P	100.1 ± 0.6 µg/mL
Potassium, K	100.0 ± 0.5 µg/mL	Sodium, Na	100.0 ± 0.5 µg/mL
Sulfur, S	100.0 ± 0.5 µg/mL	Titanium, Ti	2.001 ± 0.017 µg/mL

Density: 1.007 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
Ti	ICP Assay	3162a	130925

The follow ing equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\,(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

April 22, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **April 22, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Manager, Quality Control

Certifying Officer:

Paul Gaines
CEO, Senior Technical Director

Form I
INORGANIC ANALYSIS DATA SHEET
SM 4500-CN⁻ E-99

MW-SPL1(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-05RE1 A	SDG:	21C0456
Sampled:	03/30/21 13:15	Prepared:	04/05/21 14:18	File ID:	CN 04072021 LRB2-018
% Solids:	0.00	Preparation:	SM 4500-CN⁻ G-99	Analyzed:	04/07/21 14:15
Batch:	BJD0130	Sequence:	SJD0098	Initial/Final:	50 mL / 50 mL
Instrument:	UV1800-2			Calibration:	UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Total	0.400	5	0.0250	0.0250	D

Form I
INORGANIC ANALYSIS DATA SHEET
SM 4500-CN^- E-99

MW-SPL101(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-06RE1 A	SDG:	21C0456
Sampled:	03/30/21 13:25	Prepared:	04/05/21 14:18	File ID:	CN 04072021 LRB2-019
% Solids:	0.00	Preparation:	SM 4500-CN^- G-99	Analyzed:	04/07/21 14:16
Batch:	BJD0130	Sequence:	SJD0098	Initial/Final:	50 mL / 50 mL
Instrument:	UV1800-2			Calibration:	UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Total	0.300	5	0.0250	0.0250	D

Form I
INORGANIC ANALYSIS DATA SHEET
SM 4500-CN⁻ E-99

MW-SPL2(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-07 A	SDG:	21C0456
Sampled:	03/30/21 14:25	Prepared:	04/05/21 14:18	File ID:	CN 04072021 LRB2-016
% Solids:	0.00	Preparation:	SM 4500-CN⁻ G-99	Analyzed:	04/07/21 13:54
Batch:	BJD0130	Sequence:	SJD0098	Initial/Final:	50 mL / 50 mL
Instrument:	UV1800-2			Calibration:	UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Total	0.120	1	0.0050	0.0050	

PREPARATION BATCH SUMMARY

SM 4500-CN⁻ E-99

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Batch: BJD0130 Batch Matrix: Water Preparation: SM 4500-CN⁻ G-99

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW-SPL1(S)-033021	21C0456-05RE1	CN 04072021 LRB2-018	04/05/21 14:18	Added 4/7/2021 by LRB
MW-SPL101(S)-033021	21C0456-06RE1	CN 04072021 LRB2-019	04/05/21 14:18	Added 4/7/2021 by LRB
MW-SPL2(S)-033021	21C0456-07	CN 04072021 LRB2-016	04/05/21 14:18	
Blank	BJD0130-BLK1	CN 04072021 LRB2-004	04/05/21 14:18	
LCS	BJD0130-BS1	CN 04072021 LRB2-005	04/05/21 14:18	
MRL Check	BJD0130-MRL1	CN 04072021 LRB2-003	04/05/21 14:18	

Analytical Resources, Incorporated

Method: ***Cyanide, Total, EPA 9014*** Analyst: LRB

Matrix: ***Water*** Batch ID: BJD0130 Prep Date, Time: 4/5/2021 14:18

Revision Date & # : ***0*** ***7/1/2015***

Sample Preparation Log

Reagents, Equipment

NaOH 0.04 N:	***I011083***
50% H2SO4:	J002311
0.4 N Sulfamic Acid:	J003308
MgCl Solution:	J002963
KCN Stock:	J001145
KCN Int:	J003612
ERA Stock:	J003611
ERA Int:	J003620

Step By Step

Low Std 0.025mL KCN Int to 50 mL 0.04N NaOH
High Std 1ml KCN Int to 50 mL 0.04 NaOH
LCS Std 0.75 mL ERA Int to 50mL 0.04N NaOH
MS is typically 0.75 mL of KCN Int
Add 50mL 0.04N NaOH to each trap tube
Add 50mL Sample to each Distillation tube
Assemble Apparatus
Add 5mL sulfamic acid through air inlet, wait 3 min. Slowly add 5mL H2SO4 through air inlet, wait 3 min
Add 2mL MgCl Sol. Wash with DI
Turn on heat to 125° and set timer to 120 min.
Wait 15 min after distillation is complete.

Conc. ppm
0
50
100
250
500
1000

Revision: ***0*** ***7/1/2015***

Lab Number	Meth.	ph12, Cl,S-Fail?	Sample Amount (g/mL)	Final Volume (mL)	Spike ID	Spike Volume (µL)
21C0377-01		PASS	50.000	50		
21C0377-01		PASS	50	50		
21C0398-02		PASS	50	50		
21C0399-02		PASS	50	50		
21C0401-01		PASS	50	50		
21C0456-05		PASS	50	50		
21C0456-06		PASS	50	50		
21C0456-07		PASS	50	50		
21D0015-02		PASS	50	50		
BJD0130-BLK1			50	50		
BJD0130-BS1			50	50	J003620	750
21C0377-01-DUP1		PASS	50	50		
BJD0130-MRL1			50	50	J003612	25
21C0377-01-MS1		PASS	50	50	J003612	750

Form I

METHOD BLANK DATA SHEET

SM 4500-CN⁻ E-99

TotalAnalytes

Blank

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Batch: BJD0130
Laboratory ID: BJD0130-BLK1
Prepared: 04/05/21 14:18
Matrix: Water
Preparation: SM 4500-CN⁻ G-99
Analyzed: 04/07/21 13:46
Sequence: SJD0098
Calibration: N/A
Instrument: UV1800-2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Total	ND	1	0.0050	0.0050	U

LCS / LCS DUPLICATE RECOVERY

SM 4500-CN⁻ E-99

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Matrix:	Water	Analyzed:	04/07/21 13:47
Batch:	BJD0130	Laboratory ID:	BJD0130-BS1
Preparation:	SM 4500-CN⁻ G-99	Sequence Name:	LCS
Initial/Final:	50 mL / 50 mL		

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	Q	LCS % REC. #	QC LIMITS REC.
Cyanide, Total	0.150	0.126		83.7	75 - 125

* Indicates values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

SM 4500-CN⁻ E-99

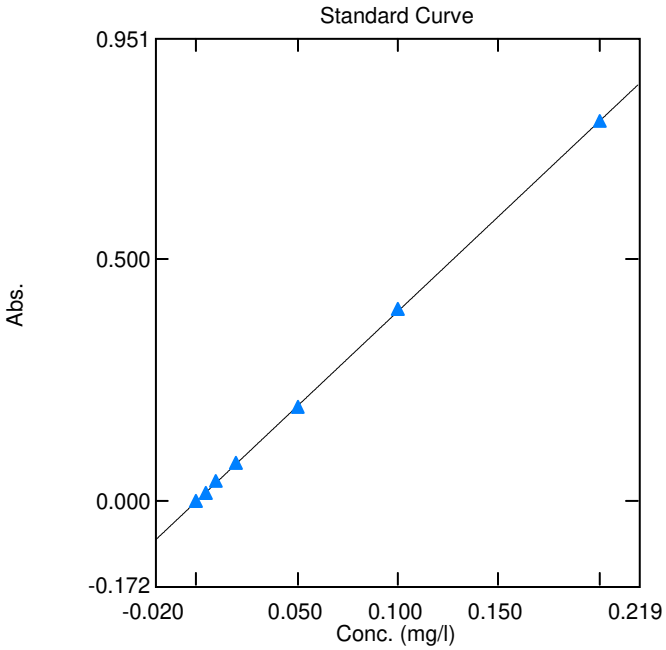
Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SJD0098	Instrument:	UV1800-2
		Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SJD0098-CAL1	CN 04072021 LRB1-001	NA	04/07/21 13:17
Cal Standard	SJD0098-CAL2	CN 04072021 LRB1-002	NA	04/07/21 13:17
Cal Standard	SJD0098-CAL3	CN 04072021 LRB1-003	NA	04/07/21 13:18
Cal Standard	SJD0098-CAL4	CN 04072021 LRB1-004	NA	04/07/21 13:18
Cal Standard	SJD0098-CAL5	CN 04072021 LRB1-005	NA	04/07/21 13:19
Cal Standard	SJD0098-CAL6	CN 04072021 LRB1-006	NA	04/07/21 13:19
Cal Standard	SJD0098-CAL7	CN 04072021 LRB1-007	NA	04/07/21 13:20
Initial Cal Blank	SJD0098-ICB1	CN 04072021 LRB2-001	NA	04/07/21 13:21
Initial Cal Check	SJD0098-ICV1	CN 04072021 LRB2-002	NA	04/07/21 13:22
MRL Check	BJD0130-MRL1	CN 04072021 LRB2-003	Water	04/07/21 13:46
Blank	BJD0130-BLK1	CN 04072021 LRB2-004	Water	04/07/21 13:46
LCS	BJD0130-BS1	CN 04072021 LRB2-005	Water	04/07/21 13:47
Calibration Blank	SJD0098-CCB1	CN 04072021 LRB2-013	NA	04/07/21 13:52
Calibration Check	SJD0098-CCV1	CN 04072021 LRB2-014	NA	04/07/21 13:53
MW-SPL2(S)-033021	21C0456-07	CN 04072021 LRB2-016	Water	04/07/21 13:54
MW-SPL1(S)-033021	21C0456-05RE1	CN 04072021 LRB2-018	Water	04/07/21 14:15
MW-SPL101(S)-033021	21C0456-06RE1	CN 04072021 LRB2-019	Water	04/07/21 14:16
Calibration Blank	SJD0098-CCB2	CN 04072021 LRB2-020	NA	04/07/21 14:17
Calibration Check	SJD0098-CCV2	CN 04072021 LRB2-021	NA	04/07/21 14:18

Quantitative Measurement Report

Print Date: 04/07/2021 02:22:12 PM

Data set: K:\Conventionals\Methods\Cyanide\Instrument Data\2021\APR\CN 04072021 LRB.pho



x = 0.255842 y - 6.03867e-005
r2 = 0.99993

Software Information
Software Name: UVProbe
Version: 2.70
Mode: Security Mode

Data Information
Filename: K:\Conventionals\Methods\Cyanide\Instrument Data \2021\APR\CN 04072021 LRB.pho
Title:
Analyst: WCW
Date/Time: 04/07/2021 02:22:01 PM
Comments:

Instrument Information
Instrument Name: UV1800-2
Instrument Type: UV-1800 Series
Model (S/N): UV1800 (A11455350874)

Standard Table

	Sample ID	Date	Time	Conc	WL578.0	Comments
1	SEQ_CAL1	04/07/2021	01:17:26 PM	0.000	0.000	
2	SEQ_CAL2	04/07/2021	01:17:53 PM	0.005	0.018	
3	SEQ_CAL3	04/07/2021	01:18:19 PM	0.010	0.040	
4	SEQ_CAL4	04/07/2021	01:18:47 PM	0.020	0.079	
5	SEQ_CAL5	04/07/2021	01:19:14 PM	0.050	0.194	
6	SEQ_CAL6	04/07/2021	01:19:43 PM	0.100	0.396	
7	SEQ_CAL7	04/07/2021	01:20:35 PM	0.200	0.780	
8						

Quantitative Measurement Report

Print Date: 04/07/2021 02:22:12 PM

Data set: K:\Conventionals\Methods\Cyanide\Instrument Data\2021\APR\CN 04072021 LRB.pho

Sample Table

	Sample ID	Date	Time	Conc	WL578.0	Dilution	DF	PreDF	
1	SEQ_ICB1	04/07/2021	01:21:28 PM	-0.000	-0.001	1.000	1.000	1.000	
2	SEQ_ICV1	04/07/2021	01:22:01 PM	0.099	0.387	1.000	1.000	1.000	
3	BJD0130_MRL1	04/07/2021	01:46:06 PM	0.004	0.015	1.000	1.000	1.000	
4	BJD0130_BLK1	04/07/2021	01:46:40 PM	-0.000	0.000	1.000	1.000	1.000	
5	BJD0130_BS1	04/07/2021	01:47:26 PM	0.126	0.492	1.000	1.000	1.000	
6	21C0377_01	04/07/2021	01:48:16 PM	0.001	0.003	1.000	1.000	1.000	
7	BJD0130_DUP1	04/07/2021	01:48:45 PM	0.001	0.004	1.000	1.000	1.000	
8	BJD0130_MS1	04/07/2021	01:49:22 PM	0.121	0.471	1.000	1.000	1.000	
9	21C0398_02	04/07/2021	01:50:05 PM	0.005	0.018	1.000	1.000	1.000	
10	21C0399_02	04/07/2021	01:50:47 PM	0.001	0.005	1.000	1.000	1.000	
11	21C0401_01	04/07/2021	01:51:20 PM	0.001	0.005	1.000	1.000	1.000	
12	21C0456_05	04/07/2021	01:51:55 PM	0.381	1.490	1.000	1.000	1.000	
13	SEQ_CCB1	04/07/2021	01:52:43 PM	-0.000	-0.001	1.000	1.000	1.000	
14	SEQ_CCV1	04/07/2021	01:53:11 PM	0.098	0.381	1.000	1.000	1.000	
15	21C0456_06	04/07/2021	01:53:50 PM	0.295	1.153	1.000	1.000	1.000	
16	21C0456_07	04/07/2021	01:54:32 PM	0.120	0.469	1.000	1.000	1.000	
17	21D0015_02	04/07/2021	01:55:18 PM	0.000	0.001	1.000	1.000	1.000	
18	21C0456_05RE1	04/07/2021	02:15:58 PM	0.080	0.314	5.000	5.000	1.000	
19	21C0456_06RE1	04/07/2021	02:16:49 PM	0.060	0.236	5.000	5.000	1.000	
20	SEQ_CCB2	04/07/2021	02:17:45 PM	-0.000	-0.001	1.000	1.000	1.000	
21	SEQ_CCV2	04/07/2021	02:18:16 PM	0.099	0.386	1.000	1.000	1.000	
22									

Quantitative Measurement Report

Print Date: 04/07/2021 02:22:12 PM

Data set: K:\Conventionals\Methods\Cyanide\Instrument Data\2021\APR\CN 04072021 LRB.pho

[Wavelengths]
Wavelength Name: WL578.0
Wavelength: 578.00 nm

[Calibration Curve]
Column for Cal. Curve: WL578.0
Cal. Curve Type: Multi Point
Cal. Curve Unit: mg/l
Selected Wavelength: WL578.0
Calibration Equation: Conc = K1*(Abs) + K0
Zero Interception: Not Selected

[Measurement Parameters(Standard)]
Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Measurement Parameters(Sample)]
Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Equations]
Equation Name: Dilution
Equation: DF*PreDF
Units: mg/l

[Pass Fail]

[Method Summary]
Title:
Date/Time: 12/02/2016 05:08:48 PM
Comments:
Sample Preparations:

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

INSTRUMENT BLANKS
SM 4500-CN⁻ E-99

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: UV1800-2
Calibration: UNASSIGNED
Sequence: SJD0098
Date Analyzed: 04/07/21 13:21

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJD0098-ICB1	Cyanide, Total	0.00	0.005	0.0050	mg/L	
SJD0098-CCB1	Cyanide, Total	0.00	0.005	0.0050	mg/L	
SJD0098-CCB2	Cyanide, Total	0.00	0.005	0.0050	mg/L	

INITIAL AND CONTINUING CALIBRATION CHECK

SM 4500-CN^- E-99

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: UV1800-2
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: SJD0098

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJD0098-ICV1	Cyanide, Total	0.10033	0.0990	98.7	mg/L	SM 4500-CN^- E-99
SJD0098-CCV1	Cyanide, Total	0.10033	0.0980	97.7	mg/L	SM 4500-CN^- E-99
SJD0098-CCV2	Cyanide, Total	0.10033	0.0990	98.7	mg/L	SM 4500-CN^- E-99

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: SM 4500-CN⁻ E-99

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW-SPL1(S)-033021 21C0456-05RE1	03/30/21 13:15	03/30/21 17:15	04/05/21 14:18	6	14	04/07/21 14:15	2	4	
MW-SPL101(S)-033021 21C0456-06RE1	03/30/21 13:25	03/30/21 17:15	04/05/21 14:18	6	14	04/07/21 14:16	2	4	
MW-SPL2(S)-033021 21C0456-07	03/30/21 14:25	03/30/21 17:15	04/05/21 14:18	5	14	04/07/21 13:54	2	4	

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

SM 4500-CN^- E-99

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Matrix: Water
Instrument: UV1800-2

Analyte	MDL	RL	Units
Cyanide, Total	0.0050	0.0050	mg/L

Form I
INORGANIC ANALYSIS DATA SHEET
SM 4500-CN⁻ I-97

MW-SPL1(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-05 A	SDG:	21C0456
Sampled:	03/30/21 13:15	Prepared:	04/13/21 13:18	File ID:	CN 04142021 LRB2-006
% Solids:	0.00	Preparation:	SM 4500-CN⁻ I-99	Analyzed:	04/14/21 13:45
Batch:	BJD0337	Sequence:	SJD0201	Initial/Final:	50 mL / 50 mL
Instrument:	UV1800-2			Calibration:	UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Weak Acid Dissociable	0.016	1	0.005	0.005	

Form I
INORGANIC ANALYSIS DATA SHEET
SM 4500-CN⁻ I-97

MW-SPL101(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-06 A	SDG:	21C0456
Sampled:	03/30/21 13:25	Prepared:	04/13/21 13:18	File ID:	CN 04142021 LRB2-009
% Solids:	0.00	Preparation:	SM 4500-CN⁻ I-99	Analyzed:	04/14/21 13:48
Batch:	BJD0337	Sequence:	SJD0201	Initial/Final:	50 mL / 50 mL
Instrument:	UV1800-2			Calibration:	UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Weak Acid Dissociable	0.009	1	0.005	0.005	

Form I
INORGANIC ANALYSIS DATA SHEET
SM 4500-CN^- I-97

MW-SPL2(S)-033021

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Port of Tacoma - Kaiser GWM 2021				
Matrix:	Ground Water	Laboratory ID:	21C0456-07 A	SDG:	21C0456
Sampled:	03/30/21 14:25	Prepared:	04/13/21 13:18	File ID:	CN 04142021 LRB2-010
% Solids:	0.00	Preparation:	SM 4500-CN^- I-99	Analyzed:	04/14/21 13:49
Batch:	BJD0337	Sequence:	SJD0201	Initial/Final:	50 mL / 50 mL
Instrument:	UV1800-2			Calibration:	UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Weak Acid Dissociable	0.010	1	0.005	0.005	

PREPARATION BATCH SUMMARY

SM 4500-CN^- I-97

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Batch: BJD0337 Batch Matrix: Water Preparation: SM 4500-CN^- I-99

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
MW-SPL1(S)-033021	21C0456-05	CN 04142021 LRB2-006	04/13/21 13:18	
MW-SPL101(S)-033021	21C0456-06	CN 04142021 LRB2-009	04/13/21 13:18	
MW-SPL2(S)-033021	21C0456-07	CN 04142021 LRB2-010	04/13/21 13:18	
Blank	BJD0337-BLK1	CN 04142021 LRB2-004	04/13/21 13:18	
LCS	BJD0337-BS1	CN 04142021 LRB2-005	04/13/21 13:18	
MW-SPL1(S)-033021	BJD0337-DUP1	CN 04142021 LRB2-007	04/13/21 13:18	
MRL Check	BJD0337-MRL1	CN 04142021 LRB2-003	04/13/21 13:18	
MW-SPL1(S)-033021	BJD0337-MS1	CN 04142021 LRB2-008	04/13/21 13:18	

Analytical Resources, Incorporated

Method: ***Cyanide, WAD, SM 4500-CN⁻I-97*** Analyst: LRB

Matrix: ***Water*** Batch ID: BJD0337 Prep Date, Time: 4/13/2021 13:18

Revision Date & # : ***0*** ***7/1/2015***

Sample Preparation Log

Reagents, Equipment

NaOH 0.04 N:	***I011083***
ZnOAc:	I011523
Methyl Red:	I008471
Acetate Buffer:	I004300
10% Acetic Acid:	H005084

Step By Step

Low Std 0.025mL KCN Int to 50 mL 0.04N NaOH
High Std 1ml KCN Int to 50 mL 0.04 NaOH
LCS Std 0.750 mL ERA Int to 50mL 0.04N NaOH
MS is typically 0.75 mL of KCN Int
Add 50mL 0.04N NaOH to each trap tube
Add 50mL Sample to each Distillation tube
and 2 drops Methyl Red.
Assemble Apparatus
Add 2mL Acetate buffer and 2mL ZnOAC through
air inlet. Tubes should be pink. If not, add 10 %
Acetic Acid until pink persists.
Turn on heat to 125° and set timer to 120 min.
Wait 15 min after distillation is complete.

Conc. ppm
0
50
100
250
500
1000

Revision: ***0*** ***7/1/2015***

Lab Number	Name	ph12, Cl,S-Fail?	Sample Amount (g/mL)	Final Volume (mL)	Spike ID	Spike Volume (µL)
21C0456-05		PASS	50.000	50		
21C0456-06		PASS	50	50		
21C0456-07		PASS	50	50		
BJD0337-BLK1			50	50		
BJD0337-BS1			50	50	J003883	750
21C0456-05-DUP1		PASS	50	50		
BJD0337-MRL1			50	50	J003875	25
21C0456-05-MS1		PASS	50	50	J003875	750

Form I

METHOD BLANK DATA SHEET

SM 4500-CN⁻ I-97

TotalAnalytes

Blank

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Batch: BJD0337
Laboratory ID: BJD0337-BLK1
Prepared: 04/13/21 13:18
Matrix: Water
Preparation: SM 4500-CN⁻ I-99
Analyzed: 04/14/21 13:43
Sequence: SJD0201
Calibration: N/A
Instrument: UV1800-2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
57-12-5	Cyanide, Weak Acid Dissociable	ND	1	0.005	0.005	U

LCS / LCS DUPLICATE RECOVERY

SM 4500-CN⁻ I-97

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Matrix:	Water	Analyzed:	04/14/21 13:44
Batch:	BJD0337	Laboratory ID:	BJD0337-BS1
Preparation:	SM 4500-CN⁻ I-99	Sequence Name:	LCS
Initial/Final:	50 mL / 50 mL		

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	Q	LCS % REC. #	QC LIMITS REC.
Cyanide, Weak Acid Dissociable	0.150	0.130		86.4	75 - 125

* Indicates values outside of QC limits

MW-SPL1(S)-033021

DUPLICATES

SM 4500-CN⁻ I-97

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Matrix: Water
Laboratory ID: BJD0337-DUP1
Batch: BJD0337
Lab Source ID: 21C0456-05
Preparation: SM 4500-CN⁻ I-99
Initial/Final: 50 mL / 50 mL
Source Sample Name: MW-SPL1(S)-033021
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Cyanide, Weak Acid Dissociable	20	0.016	0.015	6.45	

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

MS / MS DUPLICATE RECOVERY
SM 4500-CN⁻ I-97

Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Matrix:	Water	Analyzed:	04/14/21 13:46
Batch:	BJD0337	Laboratory ID:	BJD0337-MS1
Preparation:	SM 4500-CN⁻ I-99	Sequence Name:	Matrix Spike
Initial/Final:	50 mL / 50 mL	Source Sample:	MW-SPL1(S)-033021

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	Q	MS CONCENTRATION (mg/L)	Q	MS % REC. #	QC LIMITS REC.
Cyanide, Weak Acid Dissociable	0.149	0.016		0.155		93.4	75 - 125

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

SM 4500-CN⁻ I-97

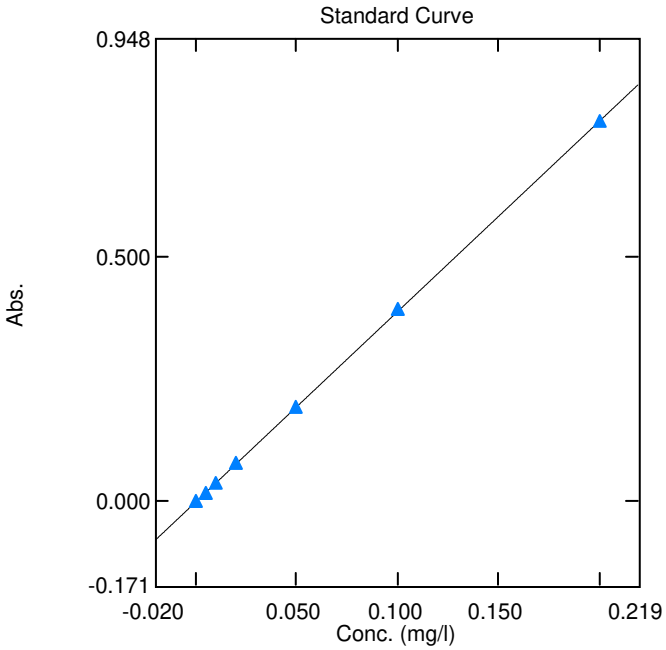
Laboratory:	Analytical Resources, Inc.	SDG:	21C0456
Client:	Anchor QEA, LLC	Project:	Port of Tacoma - Kaiser GWM 2021
Sequence:	SJD0201	Instrument:	UV1800-2
		Calibration:	UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SJD0201-CAL1	CN 04142021 LRB1-001	NA	04/14/21 13:22
Cal Standard	SJD0201-CAL2	CN 04142021 LRB1-002	NA	04/14/21 13:23
Cal Standard	SJD0201-CAL3	CN 04142021 LRB1-003	NA	04/14/21 13:23
Cal Standard	SJD0201-CAL4	CN 04142021 LRB1-004	NA	04/14/21 13:24
Cal Standard	SJD0201-CAL5	CN 04142021 LRB1-005	NA	04/14/21 13:24
Cal Standard	SJD0201-CAL6	CN 04142021 LRB1-006	NA	04/14/21 13:25
Cal Standard	SJD0201-CAL7	CN 04142021 LRB1-007	NA	04/14/21 13:26
Initial Cal Blank	SJD0201-ICB1	CN 04142021 LRB2-001	NA	04/14/21 13:26
Initial Cal Check	SJD0201-ICV1	CN 04142021 LRB2-002	NA	04/14/21 13:27
MRL Check	BJD0337-MRL1	CN 04142021 LRB2-003	Water	04/14/21 13:42
Blank	BJD0337-BLK1	CN 04142021 LRB2-004	Water	04/14/21 13:43
LCS	BJD0337-BS1	CN 04142021 LRB2-005	Water	04/14/21 13:44
MW-SPL1(S)-033021	21C0456-05	CN 04142021 LRB2-006	Water	04/14/21 13:45
MW-SPL1(S)-033021	BJD0337-DUP1	CN 04142021 LRB2-007	Water	04/14/21 13:45
MW-SPL1(S)-033021	BJD0337-MS1	CN 04142021 LRB2-008	Water	04/14/21 13:46
MW-SPL101(S)-033021	21C0456-06	CN 04142021 LRB2-009	Water	04/14/21 13:48
MW-SPL2(S)-033021	21C0456-07	CN 04142021 LRB2-010	Water	04/14/21 13:49
Calibration Blank	SJD0201-CCB1	CN 04142021 LRB2-011	NA	04/14/21 13:49
Calibration Check	SJD0201-CCV1	CN 04142021 LRB2-012	NA	04/14/21 13:50

Quantitative Measurement Report

Print Date: 04/14/2021 01:52:18 PM

Data set: K:\Conventionals\Methods\Cyanide\Instrument Data\2021\APR\CN 04142021 LRB.pho



x = 0.256284 y + 1.03161e-004
r2 = 0.99995

Software Information
Software Name: UVProbe
Version: 2.70
Mode: Security Mode

Data Information
Filename: K:\Conventionals\Methods\Cyanide\Instrument Data \2021\APR\CN 04142021 LRB.pho
Title:
Analyst: WCW
Date/Time: 04/14/2021 01:52:06 PM
Comments:

Instrument Information
Instrument Name: UV1800-2
Instrument Type: UV-1800 Series
Model (S/N): UV1800 (A11455350874)

Standard Table

	Sample ID	Date	Time	Conc	WL578.0	Comments
1	SEQ_CAL1	04/14/2021	01:22:27 PM	0.000	0.000	
2	SEQ_CAL2	04/14/2021	01:23:03 PM	0.005	0.018	
3	SEQ_CAL3	04/14/2021	01:23:34 PM	0.010	0.038	
4	SEQ_CAL4	04/14/2021	01:24:21 PM	0.020	0.077	
5	SEQ_CAL5	04/14/2021	01:24:55 PM	0.050	0.193	
6	SEQ_CAL6	04/14/2021	01:25:35 PM	0.100	0.394	
7	SEQ_CAL7	04/14/2021	01:26:06 PM	0.200	0.778	
8						

Quantitative Measurement Report

Print Date: 04/14/2021 01:52:19 PM

Data set: K:\Conventionals\Methods\Cyanide\Instrument Data\2021\APR\CN 04142021 LRB.pho

Sample Table

	Sample ID	Date	Time	Conc	WL578.0	Dilution	DF	PreDF	
1	SEQ_ICB1	04/14/2021	01:26:51 PM	-0.000	-0.001	1.000	1.000	1.000	
2	SEQ_ICV1	04/14/2021	01:27:22 PM	0.097	0.380	1.000	1.000	1.000	
3	BJD0337_MRL1	04/14/2021	01:42:25 PM	0.006	0.025	1.000	1.000	1.000	
4	BJD0337_BLK1	04/14/2021	01:43:06 PM	0.002	0.008	1.000	1.000	1.000	
5	BJD0337_BS1	04/14/2021	01:44:09 PM	0.130	0.506	1.000	1.000	1.000	
6	21C0456_05	04/14/2021	01:45:29 PM	0.016	0.062	1.000	1.000	1.000	
7	BJD0337_DUP1	04/14/2021	01:45:58 PM	0.015	0.058	1.000	1.000	1.000	
8	BJD0337_MS1	04/14/2021	01:46:38 PM	0.155	0.604	1.000	1.000	1.000	
9	21C0456_06	04/14/2021	01:48:28 PM	0.009	0.037	1.000	1.000	1.000	
10	21C0456_07	04/14/2021	01:49:17 PM	0.010	0.040	1.000	1.000	1.000	
11	SEQ_CCB1	04/14/2021	01:49:57 PM	0.001	0.004	1.000	1.000	1.000	
12	SEQ_CCV1	04/14/2021	01:50:35 PM	0.099	0.386	1.000	1.000	1.000	
13									

Quantitative Measurement Report

Print Date: 04/14/2021 01:52:19 PM

Data set: K:\Conventionals\Methods\Cyanide\Instrument Data\2021\APR\CN 04142021 LRB.pho

[Wavelengths]
Wavelength Name: WL578.0
Wavelength: 578.00 nm

[Calibration Curve]
Column for Cal. Curve: WL578.0
Cal. Curve Type: Multi Point
Cal. Curve Unit: mg/l
Selected Wavelength: WL578.0
Calibration Equation: Conc = K1*(Abs) + K0
Zero Interception: Not Selected

[Measurement Parameters(Standard)]
Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Measurement Parameters(Sample)]
Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Equations]
Equation Name: Dilution
Equation: DF*PreDF
Units: mg/l

[Pass Fail]

[Method Summary]
Title:
Date/Time: 12/02/2016 05:08:48 PM
Comments:
Sample Preparations:

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

INSTRUMENT BLANKS
SM 4500-CN⁻ I-97

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: UV1800-2
Calibration: UNASSIGNED
Sequence: SJD0201
Date Analyzed: 04/14/21 13:26

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJD0201-ICB1	Cyanide, Weak Acid Dissociable	0.00	0.005	0.005	mg/L	
SJD0201-CCB1	Cyanide, Weak Acid Dissociable	0.001	0.005	0.005	mg/L	

INITIAL AND CONTINUING CALIBRATION CHECK

SM 4500-CN⁻ I-97

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Instrument ID: UV1800-2
Calibration: UNASSIGNED
Control Limt: +/- 10.00%
Sequence: SJD0201

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJD0201-ICV1	Cyanide, Weak Acid Dissociable	0.10033	0.097	96.7	mg/L	SM 4500-CN⁻ I-97
SJD0201-CCV1	Cyanide, Weak Acid Dissociable	0.10033	0.099	98.7	mg/L	SM 4500-CN⁻ I-97

* Values outside of QC limits

HOLDING TIME SUMMARY

Analysis: SM 4500-CN^- I-97

Laboratory: Analytical Resources, Inc. SDG: 21C0456

Client: Anchor QEA, LLC Project: Port of Tacoma - Kaiser GWM 2021

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
MW-SPL1(S)-033021 21C0456-05	03/30/21 13:15	03/30/21 17:15	04/13/21 13:18	14	14	04/14/21 13:45	1	4	
MW-SPL101(S)-033021 21C0456-06	03/30/21 13:25	03/30/21 17:15	04/13/21 13:18	13	14	04/14/21 13:48	1	4	
MW-SPL2(S)-033021 21C0456-07	03/30/21 14:25	03/30/21 17:15	04/13/21 13:18	13	14	04/14/21 13:49	1	4	
Duplicate BJD0337-DUP1	03/30/21 13:15	03/30/21 17:15	04/13/21 13:18	14	14	04/14/21 13:45	1	4	
Matrix Spike BJD0337-MS1	03/30/21 13:15	03/30/21 17:15	04/13/21 13:18	14	14	04/14/21 13:46	1	4	

* Indicates hold time exceedance.

METHOD DETECTION AND REPORTING LIMITS

SM 4500-CN^- I-97

Laboratory: Analytical Resources, Inc.
SDG: 21C0456
Client: Anchor QEA, LLC
Project: Port of Tacoma - Kaiser GWM 2021
Matrix: Water
Instrument: UV1800-2

Analyte	MDL	RL	Units
Cyanide, Weak Acid Dissociable	0.005	0.005	mg/L

Appendix C
Data Validation Report

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Anchor QEA, LLC
1201 Third Ave. Suite 2600
Seattle, WA 98101
ATTN: Ms. Delaney Peterson
dpeterson@anchorqea.com

May 10, 2021

SUBJECT: Port of Tacoma, Kaiser, Data Validation

Dear Ms. Peterson,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on April 21, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #50940:

SDG #	Fraction
21C0456	Polynuclear Aromatic Hydrocarbons, Arsenic, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- Ecology Cleanup Action Plan, Former Kaiser Aluminum Property, 3400 Taylor Way, Tacoma, Washington, July 2016
- USEPA, National Functional Guidelines Organic Superfund Methods Data Review, January 2017
- USEPA, National Functional Guidelines Inorganic Superfund Methods Data Review, January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
crink@lab-data.com
Project Manager/Senior Chemist

848 pages-ADV

Attachment 1

EDD Stage 2B

LDC #50940 (Anchor Environmental-Seattle WA / Port of Tacoma, Kaiser)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PAHs (8270D -SIM)		As (200.8)		CN- (4500 CN E)		WAD CN- (4500)																											
Matrix:	Water/Sediment			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	21C0456	04/21/21	05/12/21	3	0	4	0	3	0	3	0																										
Total	J/CR			3	0	4	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS, MSD, or DUP's.

L:\Anchor\Port of Tacoma\Kaiser\50940ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Port of Tacoma, Kaiser

LDC Report Date: May 10, 2021

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): 21C0456

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW-SPL1(S)-033021	21C0456-05	Water	03/30/21
MW-SPL101(S)-033021	21C0456-06	Water	03/30/21
MW-SPL2(S)-033021	21C0456-07	Water	03/30/21

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Ecology Cleanup Action Plan, Former Kaiser Aluminum Property, 3400 Taylor Way, Tacoma, Washington (July 2016) and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A decafluorotriphenylphosphine (DFTPP) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
04/16/21	2-Chloronaphthalene	20.4	All samples in SDG 21C0456	J (all detects) UJ (all non-detects)	A
	Dibenzofuran	21.2		J (all detects) UJ (all non-detects)	

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples. Using professional judgment, no data were qualified when one surrogate %R was outside the QC limits and the %R was greater than or equal to 10%.

VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples MW-SPL1(S)-033021 and MW-SPL101(S)-033021 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-SPL1(S)-033021	MW-SPL101(S)-033021	
Naphthalene	0.003	0.004	29
2-Methylnaphthalene	0.003	0.003	0
1-Methylnaphthalene	0.002	0.002	0
Acenaphthene	0.004	0.005	22
Dibenzofuran	0.003	0.003	0
Fluorene	0.003	0.004	29

Compound	Concentration (ug/L)		RPD
	MW-SPL1(S)-033021	MW-SPL101(S)-033021	
Phenanthrene	0.003	0.004	29
Anthracene	0.025	0.022	13
Carbazole	0.003	0.004	29
Fluoranthene	0.003	0.005	50
Pyrene	0.003	0.005	50
Chrysene	0.002	0.002	0
Benzo(b)fluoranthene	0.002	0.004	67
Benzo(j)fluoranthene	0.010U	0.002	Not calculable
Benzofluoranthenes, total	0.004	0.009	77
Perylene	0.010U	0.008	Not calculable
Indeno(1,2,3-cd)pyrene	0.010U	0.002	Not calculable
Benzo(g,h,i)perylene	0.002	0.003	40

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2B validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to continuing calibration %D, data were qualified as estimated in three samples.

No results were rejected in this SDG.

Port of Tacoma, Kaiser
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 21C0456

Sample	Compound	Flag	A or P	Reason
MW-SPL1(S)-033021 MW-SPL101(S)-033021 MW-SPL2(S)-033021	2-Chloronaphthalene Dibenzofuran	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

Port of Tacoma, Kaiser
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 21C0456

No Sample Data Qualified in this SDG

LDC #: 50940A2b **VALIDATION COMPLETENESS WORKSHEET** Date: 05/05/21
SDG #: 21C0456 Stage 2B Page: 1 of 1
Laboratory: Analytical Resources, Inc. Reviewer: SW
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	ICAL ≤ 20% r ICV ≤ 30%
IV.	Continuing calibration	SW	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	SW	1 surr out in MB NQ - QC only
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 1/2
XI.	Internal standards	A	
XII.	Target analyte quantitation	N	
XIII.	Target analyte identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID		Lab ID	Matrix	Date
1	MW-SPL1(S)-033021	D	21C0456-05	Water	03/20/21
2	MW-SPL101(S)-033021	D	21C0456-06	Water	03/20/21
3	MW-SPL2(S)-033021		21C0456-07	Water	03/20/21
4					
5					
6					
7					
8					
9					

Notes:

	BJD0015-BLK1						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	GG. Acenaphthene	MMM. Bis(2-Chloroisopropyl)ether	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	Y1. 3,3'-Dimethylbenzidine
B. Bis (2-chloroethyl) ether	HH. 2,4-Dinitrophenol	NNN. Aniline	TTTT. 1-Methyldibenzothiophene (1MDT)	Z1. o-Toluidine
C. 2-Chlorophenol	II. 4-Nitrophenol	OOO. N-Nitrosodimethylamine	UUUU.. 2,3,4,6-Tetrachlorophenol	A2. Benzo(j)fluoranthene
D. 1,3-Dichlorobenzene	JJ. Dibenzofuran	PPP. Benzoic Acid	VVVV. 1,2,4,5-Tetrachlorobenzene	B2. Benzofluoranthenes, total
E. 1,4-Dichlorobenzene	KK. 2,4-Dinitrotoluene	QQQ. Benzyl alcohol	WWWW.. 2-Picoline	C2. trans-Decalin
F. 1,2-Dichlorobenzene	LL. Diethylphthalate	RRR. Pyridine	XXXX. 3-Methylcholanthrene	D2. cis-Decalin
G. 2-Methylphenol	MM. 4-Chlorophenyl-phenyl ether	SSS. Benzidine	YYYY. a,a-Dimethylphenethylamine	E2. Dibenzo(a)anthracenes
H. 2,2'-Oxybis(1-chloropropane)	NN. Fluorene	TTT. 1-Methylnaphthalene	ZZZZ. Hexachloropropene	F2.
I. 4-Methylphenol	OO. 4-Nitroaniline	UUU.Benzo(b)thiophene	A1. N-Nitrosodiethylamine	G2.
J. N-Nitroso-di-n-propylamine	PP. 4,6-Dinitro-2-methylphenol	VVV.Benzonaphthothiophene	B1. N-Nitrosodi-n-butylamine	H2.
K. Hexachloroethane	QQ. N-Nitrosodiphenylamine	WWW.Benzo(e)pyrene	C1. N-Nitrosomethylethylamine	I2.
L. Nitrobenzene	RR. 4-Bromophenyl-phenylether	XXX. 2,6-Dimethylnaphthalene	D1. N-Nitrosomorpholine	J2.
M. Isophorone	SS. Hexachlorobenzene	YYY. 2,3,5-Trimethylnaphthalene	E1. N-Nitrosopyrrolidine	K2.
N. 2-Nitrophenol	TT. Pentachlorophenol	ZZZ. Perylene	F1. Phenacetin	L2.
O. 2,4-Dimethylphenol	UU. Phenanthrene	AAAA. Dibenzothiophene	G1. 2-Acetylaminofluorene	M2.
P. Bis(2-chloroethoxy)methane	VV. Anthracene	BBBB. Benzo(a)fluoranthene	H1. Pronamide	N2.
Q. 2,4-Dichlorophenol	WW. Carbazole	CCCC. Benzo(b)fluorene	I1. Methyl methanesulfonate	O2.
R. 1,2,4-Trichlorobenzene	XX. Di-n-butylphthalate	DDDD. cis/trans-Decalin	J1. Ethyl methanesulfonate	P2.
S. Naphthalene	YY. Fluoranthene	EEEE. Biphenyl	K1. o,o',o''-Triethylphosphorothioate	Q2.
T. 4-Chloroaniline	ZZ. Pyrene	FFFF. Retene	L1. n-Phenylene diamine	R2.
U. Hexachlorobutadiene	AAA. Butylbenzylphthalate	GGGG. C30-Hopane	M1. 1,4-Naphthoquinone	S2.
V. 4-Chloro-3-methylphenol	BBB. 3,3'-Dichlorobenzidine	HHHH. 1-Methylphenanthrene	N1. N-Nitro-o-toluidine	T2.
W. 2-Methylnaphthalene	CCC. Benzo(a)anthracene	IIII. 1,4-Dioxane	O1. 1,3,5-Trinitrobenzene	U2.
X. Hexachlorocyclopentadiene	DDD. Chrysene	JJJJ. Acetophenone	P1. Pentachlorobenzene	V2..
Y. 2,4,6-Trichlorophenol	EEE. Bis(2-ethylhexyl)phthalate	KKKK. Atrazine	Q1. 4-Aminobiphenyl	W2
Z. 2,4,5-Trichlorophenol	FFF. Di-n-octylphthalate	LLLL. Benzaldehyde	R1. 2-Naphthylamine	X2..
AA. 2-Chloronaphthalene	GGG. Benzo(b)fluoranthene	MMMM. Caprolactam	S1. Triphenylene	Y2.
BB. 2-Nitroaniline	HHH. Benzo(k)fluoranthene	NNNN. 2,6-Dichlorophenol	T1. Octachlorostyrene	Z2.
CC. Dimethylphthalate	III. Benzo(a)pyrene	OOOO. 1,2-Diphenylhydrazine	U1. Famphur	
DD. Acenaphthylene	JJJ. Indeno(1,2,3-cd)pyrene	PPPP. 3-Methylphenol	V1. 1,4-phenylenediamine	
EE. 2,6-Dinitrotoluene	KKK. Dibenz(a,h)anthracene	QQQQ. 3&4-Methylphenol	W1. Methapyrilene	
FF. 3-Nitroaniline	LLL. Benzo(g,h,i)perylene	RRRR. 4-Dimethyldibenzothiophene	X1. Pentachloroethane	

LDC #: 50940A2b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: JVG

METHOD: GC/MS SVOA (EPA SW 846 Method 8270E-SIM)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y (N) N/A Were percent differences (%D) ≤20 % and relative response factors (RRF) within the method criteria?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit)	Associated Samples	Qualifications
	04/16/21	NT1121041602	AA (-)	20.4		All (ND + Det)	J/UJ/A
			JJ (-)	21.2		↓ ↓	↓

CONCAL.wpd

LDC #: 50940A2b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: JVG

METHOD: GC/MS PAH (EPA SW 846 Method 8270E-SIM)

Compound	Concentration (ug/L)		RPD
	1	2	
S	0.003	0.004	29
W	0.003	0.003	0
TTT	0.002	0.002	0
GG	0.004	0.005	22
JJ	0.003	0.003	0
NN	0.003	0.004	29
UU	0.003	0.004	29
VV	0.025	0.022	13
WW	0.003	0.004	29
YY	0.003	0.005	50
ZZ	0.003	0.005	50
DDD	0.002	0.002	0
GGG	0.002	0.004	67
A2	0.010U	0.002	NC
B2	0.004	0.009	77
ZZZ	0.010U	0.008	NC
JJJ	0.010U	0.002	NC
LLL	0.002	0.003	40

V:\Josephine\FIELD DUPLICATES\50940A2b anchor tacoma.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Port of Tacoma, Kaiser

LDC Report Date: May 7, 2021

Parameters: Arsenic

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): 21C0456

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW-101(S)-033021	21C0456-01	Water	03/30/21
MW-201(S)-033021	21C0456-02	Water	03/30/21
MW-102(S)-033021	21C0456-03	Water	03/30/21
MW-103(S)-033021	21C0456-04	Water	03/30/21
MW-103(S)-033021MS	21C0456-04MS	Water	03/30/21
MW-103(S)-033021DUP	21C0456-04SDUP	Water	03/30/21

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Ecology Cleanup Action Plan, Former Kaiser Aluminum Property, 3400 Taylor Way, Tacoma, Washington (July 2016) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Method Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Arsenic by Environmental Protection Agency (EPA) Method 200.8

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

VIII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

IX. Serial Dilution

Serial dilution was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples MW-101(S)-033021 and MW-201(S)-033021 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyze	Concentration (ug/L)		RPD
	MW-101(S)-033021	MW-201(S)-033021	
Arsenic	2.70	3.26	19

XII. Internal Standards (ICP-MS)

Internal standards were not reviewed for Stage 2B validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2B validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Port of Tacoma, Kaiser
Arsenic - Data Qualification Summary - SDG 21C0456

No Sample Data Qualified in this SDG

Port of Tacoma, Kaiser
Arsenic - Laboratory Blank Data Qualification Summary - SDG 21C0456

No Sample Data Qualified in this SDG

LDC #: 50940A4a **VALIDATION COMPLETENESS WORKSHEET** Date: 5/6/21
SDG #: 21C0456 Stage 2B Page: 1 of 1
Laboratory: Analytical Resources, Inc. Reviewer: ATL
2nd Reviewer:

METHOD: Arsenic (EPA SW 846 Method 200.8)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	5
VIII.	Duplicate sample analysis	A	6
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(1,2)
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-101(S)-033021	21C0456-01	Water	03/30/21
2	MW-201(S)-033021	21C0456-02	Water	03/30/21
3	MW-102(S)-033021	21C0456-03	Water	03/30/21
4	MW-103(S)-033021	21C0456-04	Water	03/30/21
5	MW-103(S)-033021MS	21C0456-04MS	Water	03/30/21
6	MW-103(S)-033021DUP	21C0456-04SDUP	Water	03/30/21
7				
8				
9				
10				
11				
12				

Notes:

LDC#: 50940A4a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: Metals (EPA Method 6010/6020/7000/200.7/200.8)

Analyte	Concentration (ug/L)		RPD	
	1	2		
Arsenic	2.70	3.26	19	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2021\50940A4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Port of Tacoma, Kaiser

LDC Report Date: May 7, 2021

Parameters: Wet Chemistry

Validation Level: Stage 2B

Laboratory: Analytical Resources, Inc.

Sample Delivery Group (SDG): 21C0456

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
MW-SPL1(S)-033021	21C0456-05	Water	03/30/21
MW-SPL101(S)-033021	21C0456-06	Water	03/30/21
MW-SPL2(S)-033021	21C0456-07	Water	03/30/21
MW-SPL1(S)-033021MS	21C0456-05MS	Water	03/30/21
MW-SPL1(S)-033021DUP	21C0456-05DUP	Water	03/30/21

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Ecology Cleanup Action Plan, Former Kaiser Aluminum Property, 3400 Taylor Way, Tacoma, Washington (July 2016) and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Cyanide and Weak Acid Dissociable Cyanide by Method SM 4500

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met with the following exceptions:

Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
MW-SPL1(S)-033021 MW-SPL101(S)-033021 MW-SPL2(S)-033021	WAD cyanide	15 days	14 days	J (all detects)	P

II. Initial Calibration

All criteria for the initial calibration were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples MW-SPL1(S)-033021 and MW-SPL101(S)-033021 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/L)		RPD
	MW-SPL1(S)-033021	MW-SPL101(S)-033021	
Cyanide, WAD	0.016	0.009	56
Cyanide, total	0.4	0.3	29

X. Sample Result Verification

Raw data were not reviewed for Stage 2B validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to technical holding time, data were qualified as estimated in three samples.

No results were rejected in this SDG.

Port of Tacoma, Kaiser
Wet Chemistry - Data Qualification Summary - SDG 21C0456

Sample	Analyte	Flag	A or P	Reason
MW-SPL1(S)-033021 MW-SPL101(S)-033021 MW-SPL2(S)-033021	WAD cyanide	J (all detects)	P	Technical holding times

Port of Tacoma, Kaiser
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 21C0456

No Sample Data Qualified in this SDG

LDC #: 50940A6 **VALIDATION COMPLETENESS WORKSHEET** Date: 5/6/21
SDG #: 21C0456 Stage 2B Page: 1 of 1
Laboratory: Analytical Resources, Inc. Reviewer: ATV
2nd Reviewer:

METHOD: (Analyte) Cyanide & WAD Cyanide (Method SM 4500)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/SW	
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Laboratory Blanks	A	
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	4
VII.	Duplicate sample analysis	A	5
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(1,2)
X.	Sample result verification	N	
XI	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	MW-SPL1(S)-033021	21C0456-05	Water	03/20/21
2	MW-SPL101(S)-033021	21C0456-06	Water	03/20/21
3	MW-SPL2(S)-033021	21C0456-07	Water	03/20/21
4	MW-SPL1(S)-033021MS	21C0456-05MS	Water	03/20/21
5	MW-SPL1(S)-033021DUP	21C0456-05DUP	Water	03/20/21
6				
7				
8				
9				
10				
11				
12				
13				
14				

Notes:

LDC #: 50940AG

VALIDATION FINDINGS WORKSHEET

Sample Specific Analysis Reference

Page: 1 of 1

Reviewer: ATL

All circled methods are applicable to each sample.

Sample ID	Parameter
1,2,3	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk [✓ Tot CN] NH_3 TKN TOC Cr6+ ClO_4 [✓ WAD CN]
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
QC	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
4,5	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk [✓ WAD CN] NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4
	pH TDS Cl F NO_3 NO_2 SO_4 O-PO_4 Alk CN NH_3 TKN TOC Cr6+ ClO_4

Comments:

LDC #: 50940A6

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: ATV

All circled dates have exceeded the technical holding time.
(Y) N N/A Were all samples preserved as applicable to each method ?
(Y) N N/A Were all cooler temperatures within validation criteria?

Method:	WAD CN (SM4500)		
Parameters:	water		
Technical holding time:	14 days		

Sample ID	Sampling date	Analysis date	Total Time	Qualifier	Analysis date	Total Time	Qualifier
1,2,3	3/30/21	4/14/21	15days	J/UJ/P (detect)			

LDC# 50940A6

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Inorganics: Method See Cover

Analyte	Concentration (mg/L)		RPD	
	1	2		
Cyanide, Weak Acid Dissociable	0.016	0.009	56	
Cyanide, Total	0.4	0.3	29	

\\LDCFILESERVER\Validation\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2021\50940A6.wpd