PACIFIC groundwater GROUP

March 30, 2016

Beth Schmoyer, PE
Seattle Public Utilities
700 5th Ave, Suite 4900
Seattle, WA 98124

Re: Groundwater Monitoring Data
Third Quarter, 2015 (2015 Q3)
South Park Water Quality Facility,
Facility/Site No. 22726

Dear Beth:

The purpose of this letter report is to document the methods and results of the Third Quarter (Q3) 2015 groundwater sampling for the South Park Water Quality Facility (Site No. 22726 and Voluntary Cleanup Program (VCP) No. NW 2183)[1]. The work was performed in accordance with the *South Park Pump Station Well Installation and Groundwater Monitoring Plan* (GWMP) (Pacific Groundwater Group [PGG], 2016)[2].

Our professional services were performed, our findings obtained, and our report prepared in accordance with generally accepted hydrogeologic practices. This warranty is in lieu of all other warranties, express or implied.

INTRODUCTION

On October 1, 2015, PGG collected groundwater samples from monitoring wells MW-1, MW-2, and MW-3 PGG using low-flow methods per the GWMP. Table 1 presents a monitoring well and sampling summary and well locations are shown on Figure 1. Groundwater samples were delivered to Analytical Resources, Inc. (ARI) of Tukwila, Washington for analysis. The field notes, laboratory report, and quality control/quality assessment review are included in Attachments 1-3, respectively.

The wells were installed on March 29, 2015, as documented in the GWMP. As depicted on Figure 1, downgradient monitoring wells MW-1 and MW-2 were completed along the

[1] Seattle Public Utilities withdrew this site from the VCP program in December 2015 after the interim action was complete.
[2] PGG, 2016. South Park Pump Station Well Installation and Groundwater Monitoring Plan. Prepared for Seattle Public Utilities, Pacific Groundwater Group, Seattle, WA.

top of the bank or downgradient. Upgradient monitoring well MW-3 was completed near the S Riverside Drive right-of-way on the SPU property.

SUMMARY OF FINDINGS

2015 Q3 South Park Water Quality Facility monitoring parameters were compared to the Preliminary Screening Levels (SLs) for contaminants of potential concern (COPCs) described in the GWMP. See Table 2 for a description of SLs and Table 3 for analytical results.

The vinyl chloride concentration in MW-2 (2.4–3.6 ug/L) exceeded the SL (1.6 ug/L). No other constituents exceeded SLs.

CHEMICAL ANALYSIS

Groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 in 2015 Q3 were analyzed for COPCs established in the *South Park Pump Station & Water Quality Facility, Interim Action Plan* (PGG, 2010)[3]. Groundwater samples were analyzed for volatile organic compounds (VOCs), total and dissolved arsenic and lead, diesel and heavy oil, and filtered/unfiltered carcinogenic polycyclic aromatic hydrocarbons (cPAHs). Note that VOC and PAH results include analytes that have not been identified as COPCs.

In addition to the constituents of potential concern, field parameters (pH, specific conductance, oxidation-reduction potential, turbidity, and temperature) were measured in the field, and monitored natural attenuation parameters (alkalinity, dissolved oxygen, ethane, ethene, methane, ferrous iron, nitrate, nitrite, sulfate, sulfide, and total organic carbon (TOC)) were analyzed by the laboratory.

ANALYTICAL RESULTS

Screening levels at the Site are the most stringent of relevant groundwater or surface water levels (Table 2).[4] The groundwater analytical results are presented in Table 3.

Regarding the 2015 Q3 analytical results above the screening levels, PGG provides the following observations:

- The vinyl chloride concentrations by methods 8260 and 8260-SIM in MW-2 (2.4 and 3.6 ug/L) were above the SL (1.6 ug/L).

[3] PGG, 2010. Interim Action Plan South Park Pump Station & Water Quality Facility Seattle, Washington. Prepared for Seattle Public Utilities, September 2010 by Pacific Groundwater Group, Seattle, WA.
[4] The screening levels are the higher of the laboratory Practical Quantitation Limit (PQL) and the most stringent of the non-potable groundwater and marine surface water levels relevant to the site from Department of Ecology's Cleanup Levels and Risk Calculations (CLARC) website, the final June 2015 updates to the EPA's National Recommended Water Quality Criteria, and EPA's National Toxics Rule.

- Turbidity values at MW-2 (23.8 NTU) and MW-3 (49.5 NTU) were above the project goal (10 NTU). Elevated turbidity may result in high biased metals and PAH concentrations.
- Chrysene was detected in MW-2 (0.011 ug/L) below its SL (0.031 ug/L); chrysene was not detected in the filtered sample (0.01U ug/L). The unfiltered chrysene result may be elevated relative to filtered result due to turbidity artifacts.
- There were low-level detections of non-carcinogenic PAHs in the unfiltered samples (fluoranthene and pyrene) in MW-2 and (acenaphthene, fluoranthene, fluorene, naphthalene, and phenanthrene) in MW-3 that were below SLs or where there are no SLs.

WATER LEVEL DATA

Water levels in all monitoring wells were measured on October 1, 2015 with an electric well sounder during rising tide and prior to groundwater sampling. Water levels reflect an inland groundwater flow direction at the time of measurement (Figure 1). No contours and flow directions are derived from the water-level measurements, which are sensitive to tidal fluctuations and river stage that are not uniform in space and time. SPU surveyed the location and elevation of each monitoring well in NAD 1983 and NAVD 1988 datums, respectively. The monitoring well elevation on the north side of the monitoring well PVC casing is used as the measuring point for water-level measurements.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

A quality control/quality assessment (QA/QC) review was conducted on the reported analyses (Attachment 3). The data are considered usable for the intended purpose of the project. All requested analyses were performed and QA/QC assessments indicate that the data are considered usable for the intended purpose of the project. A field duplicate (MW-51) was collected at MW-2. PGG received the final laboratory report on November 18, 2015.

Notable results during the QA/QC review include:

- The trip blank had no VOC detections.
- The method blank had detections with no associated sample detections less than the 5 times method blank threshold value.
- A field duplicate (MW-51) was collected at MW-2. The following constituents had relative percent differences (RPDs) greater than project criteria of 35%: ferrous iron, fluoranthene, and pyrene. Other measures or laboratory quality control for these analytes (e.g. matrix and lab control spike and spike duplicates, and lab duplicates) were within acceptable ranges. No corrective action is taken.
- All lab duplicates RPDs were less than project criteria of 20%.

- The reporting limits for total and dissolved metals were elevated at MW-1 because dilutions were necessary due to high salt content in the sample. ARI reported those results to the detection limit, which is well-below the SL. Detections between the detection limit and the reporting limit are "J" flagged to indicate the value is estimated.
- No samples were analyzed outside of holding times.
- Completeness was 100% for COPCs and 100% for all analytes.

We are pleased to provide you with these monitoring services. Please call us if you have any questions.

Sincerely,

Pacific Groundwater Group

Janet N. Knox, LG
Principal Environmental Geochemist

Attachments:

Table 1. Monitoring Well and Sampling Summary, South Park Water Quality Facility, 2015 Q3
Table 2. Groundwater/Surface Water Screening Levels, South Park Water Quality Facility
Table 3. Analytical Results, South Park Water Quality Facility, 2015 Q3
Figure 1. Well Locations and Water-Levels, 2015 Q3

1. Field Notes
2. Laboratory Analytical Results
3. QA/QC Report

Table 1- Monitoring Well and Sampling Summary, South Park Water Quality Facility, 2015 Q3

	MW-1	MW-2	MW-3
Monitoring Objective			
Downgradient Monitoring Well	X	X	
Background Monitoring Well			X
Sample Summary			
Sample Date/ Time	10/1/2015 9:15:00 AM	10/1/2015 11:10:00 AM	10/1/2015 12:30:00 PM
Analysis Summary			
Field Parameters	X	X	X
VOCs	X	X	X
PAHs	X	X	X
PAHs- Filtered	X	X	X
Dissolved Metals	X	X	X
Total Metals	X	X	X
NWTPH-Dx	X	X	X
MNA Parameters	X	X	X
Well Information			
Ecology Unique ID	BIK860	BIK861	BIK862
Install Date	3/19/2015	3/19/2015	3/19/2015
Northing (ft NAD 83 State Plane)[1]	1271864	1271883	1271810
Easting (ft NAD 83 State Plane)[1]	198637	198592	198562
Measuring Point Elevation (ft NAVD88)[1,2]	11.64	11.17	11.54
Well Depth (ft)	11.3	10.6	11.3
Screen Interval (ft)	6.2-11.2	5.5-10.5	6.2-11.2

ft = feet

feet NAD 1983 State Plane, Washington, North, FIPS 4601

feet NAVD 1988 Vertical Datum

1. SPU Survey May, 2015

2. Measuring point is the top of casing on the north side

Table 2. Groundwater/Surface Water Screening Levels, South Park Water Quality Facility[1]

Chemical of Potential Concern	Analytical Method	PQL (ug/L)	Applicable Screening Levels[2] (ug/L)	Screening Level Regulatory Source[3]	Proposed Preliminary Screening Levels[4] (ug/L)
Tetrachloroethene	8260C	0.2	8.85	Surface Water, Human Health, Organisms only, National Toxics Rule	8.85
Trichloroethene	8260C	0.2	7	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	7
1,1-Dichloroethene	8260C	0.2	3.2	Surface Water, Human Health, Organisms only, National Toxics Rule	3.2
cis-1,2-Dichloroethene	8260C	0.2	NV	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	NV
trans-1,2-Dichloroethene	8260C	0.2	4,000	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	4,000
Vinyl Chloride	8260C	0.02	1.6	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	1.6
Benzo(a)anthracene	8270D-SIM	0.01	0.0013	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.01
Benzo(a)pyrene	8270D-SIM	0.01	0.00013	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.01
Benzo(b)fluoranthene	8270D-SIM	0.01	0.0013	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.01
Benzo(k)fluoranthene	8270D-SIM	0.01	0.013	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.01
Chrysene	8270D-SIM	0.01	0.031	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.0310
Dibenz(a,h)anthracene	8270D-SIM	0.01	0.00013	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.01
Indeno(1,2,3-c,d)pyrene	8270D-SIM	0.01	0.0013	Surface Water, Human Health, Organisms only, NRWQC June 2015 Updates	0.01
BaP-TTEC	NA	NA	0.00013	see note 7	0.01
Diesel	NWTPH-Dx^	100	NV	see note 5	100
Motor Oil	NWTPH-Dx^	200	NV	see note 5	200
Lead	200.8	0.1	8.1	Surface Water Aquatic Life -Marine - Chronic, SWQS:RCW 90-48; Ch. 173-201A-240 WAC 173-340-730(2)(b)(i)(A) [6]	8.1
Arsenic	200.8	0.2-0.5	5.0	State-wide natural background concentration per MTCA Method A Groundwater (Table 720-1 in WAC 173-340).	5.0

1. Screening levels are the most stringent of non-potable groundwater or surface water levels relevant to the Site as described in Department of Ecology's opinion letter regarding the proposed independent cleanup (Ecology, 2011)

2. Numeric Criteria from Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update.

3. Aquatic Life and Human Health criteria listed are based on dissolved concentrations.

4. Preliminary Screening Levels are the higher of PQL and the Applicable Screening Levels.

5. Surface water cleanup levels have not been established for these contaminants. Per Department of Ecology opinion letter regarding the proposed independent cleanup (Ecology, 2011), cleanup levels can be set at natural background or the PQL, which is lower than the MTCA Method A groundwater criteria for these constituents (500 ug/L). Accordingly, the proposed preliminary screening level is set to the PQL.

6. Marine water critieria are applicable in the Lower Duwamish Waterway (LDW) at the Site as described in the LDW Record of Decision (EPA, 2014).

7. BaP-TTEC (benzo(a)pyrene toxicity equivalent concentration) for a mixture of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) screening level is the same as the benzo(a)pyrene screening level as described in Ecology Toxicity Equivalency Factors (TEF) implementation guidance (Pub. No 15-09-049, April 2015), and so is the higher of the PQL or Applicable Screening Levels for BaP.

^ with silica gel cleanup

ug/L = micrograms per Liter

NRWQC = National Recommended Water Quality Criteria

MTCA = Model Toxics Control Act

PQL = Practical Quantitation Limit from Analytical Reources, Inc.

NV = no value

NA = not applicable

Table 3 - Analytical Results, South Park Water Quality Facility 2015 Q3

CONSTITUENT	UNITS	CAS ID	COPC	SLs*	MW-1	MW-2	MW-3	River
Field Parameters								
Depth to Water	feet				4.99	4.48	7.02	
Oxidation-Reduction Potential	mV				75	-10.	-2.	-6.
pH, Field	std. units				5.77	6.73	6.12	7.13
Specific Conductance, Field	umhos/cm				14700	8230	416	4960
Temperature	Degrees C				17.4	18.8	16.3	13.7
Turbidity	NTU				3.43	23.8	49.5	3.32
Metals								
Arsenic, Dissolved	ug/L	7440382	X	5	0.7J	0.7	3.9	
Lead, Dissolved	ug/L	7439921	X	8.1	0.2J	0.1U	0.2	
Metals, Total								
Arsenic, Total	ug/L	7440382	X	5	0.8J	0.8	4.4	
Lead, Total	ug/L	7439921	X	8.1	0.2J	0.8	0.4	
MNA								
Alkalinity as CaCO3, Total	mg/L CaCO3	471341			40.9	125	148	
Carbon, Total Organic	mg/L	7440440			2.56	4.78	10.4	
Ethane	ug/L	74840			1.2U	1.2U	1.2U	
Ethene	ug/L	74851			1.1U	1.1U	1.1U	
Ferrous Iron	ug/L	15438310			153	621	12100	
Methane	ug/L	74828			0.7U	549	2530	
Nitrate as N	mg/L as N	17778880			1.35	0.039	0.146	
Nitrate+Nitrite as N	mg/L as N	17778880			1.35	0.039	0.146	
Nitrite as N	mg/L as N	17778880			0.01U	0.01U	0.01U	
Oxygen, Dissolved	mg/L				3.0	1.0	1.0	
Sulfate	mg/L	14808798			1290	347	22.5	
Sulfide	mg/L	18496258			0.05U	0.05U	0.05U	
PAHs								

**Screening Levels (SLs) are the higher of the laboratory Practical Quantitation Limit (PQL) and the minimum of Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update. Marine criteria are applicable at this Site consistent with Lower Duwamish Superfund Site Record of Decision (EPA, 2014). Bold value indicates result is >= SL.*

BaP-TTEC is the Benzo(a)Pyrene (BaP) Total Toxicity Equivalent Concentration for mixtures of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) using BaP as the reference chemical. Non-detect values summed at half the reporting limit (ND-Half) and as zeros (ND-Zero).

COPC = Contaminant of Potential Concern

#U - compound not detected, # is detection limit, B or b - compound detected in blank,J or j - analyte detected between detection limit and reporting limit (limit of quantitation), H- holding time exceeded, r = results rejected, ^- instrument control limit exceeded, = RPD, LCS or LCSD exceeds the control limit, E - Estimated concentration calculated for an analyte response above the valid instrument calibration range, M - Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters, 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). T - Sum of constituents.*

Table 3 - Analytical Results, South Park Water Quality Facility 2015 Q3

CONSTITUENT	UNITS	CAS ID	COPC	SLs*	MW-1	MW-2	MW-3	River
1-Methylnaphthalene	ug/L	90120			0.01U	0.01U	0.01U	
2-Methylnaphthalene	ug/L	91576			0.01U	0.01U	0.01U	
Acenaphthene	ug/L	83329		90	0.01U	0.01U	0.015	
Acenaphthylene	ug/L	208968			0.01U	0.01U	0.01U	
Anthracene	ug/L	120127		400	0.01U	0.01U	0.01U	
Benzo(g,h,i)perylene	ug/L	191242			0.01U	0.01U	0.01U	
Benzo[a]anthracene	ug/L	56553	X	0.01	0.01U	0.01U	0.01U	
Benzo[a]pyrene	ug/L	50328	X	0.01	0.01U	0.01U	0.01U	
Chrysene	ug/L	218019	X	0.031	0.01U	0.011	0.01U	
Dibenzo(a,h)anthracene	ug/L	53703	X	0.01	0.01U	0.01U	0.01U	
Dibenzofuran	ug/L	132649			0.01U	0.01U	0.01U	
Fluoranthene	ug/L	206440		20	0.01U	0.01	0.013	
Fluorene	ug/L	86737		70	0.01U	0.01U	0.013	
Indeno[1,2,3-cd]pyrene	ug/L	193395	X	0.01	0.01U	0.01U	0.01U	
Naphthalene	ug/L	91203			0.01U	0.01U	0.015	
Phenanthrene	ug/L	85018			0.01U	0.01U	0.037	
Pyrene	ug/L	129000		30	0.01U	0.011	0.01U	
Total Benzofluoranthenes	ug/L				0.02U	0.02U	0.02U	
PAHs BaP-TEQ								
BaP-TTEC_Filtered_ND-Half	ug/L			0.01	0.0066UT	0.0066UT	0.0066UT	
BaP-TTEC_Filtered_ND-zero	ug/L			0.01	0.UT	0.UT	0.UT	
BaP-TTEC_ND-Half	ug/L			0.01	0.0066UT	0.0066T	0.0066UT	
BaP-TTEC_ND-zero	ug/L			0.01	0.UT	0.00011T	0.UT	
PAHs filtered								
1-Methylnaphthalene-fil	ug/L	90120			0.01U	0.01U	0.01U	
2-Methylnaphthalene-fil	ug/L	91576			0.01U	0.01U	0.01U	
Acenaphthene-fil	ug/L	83329		90	0.01U	0.01U	0.01U	
Acenaphthylene-fil	ug/L	208968			0.01U	0.01U	0.01U	

**Screening Levels (SLs) are the higher of the laboratory Practical Quantitation Limit (PQL) and the minimum of Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update. Marine criteria are applicable at this Site consistent with Lower Duwamish Superfund Site Record of Decision (EPA, 2014). Bold value indicates result is >= SL.*

BaP-TTEC is the Benzo(a)Pyrene (BaP) Total Toxicity Equivalent Concentration for mixtures of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) using BaP as the reference chemical. Non-detect values summed at half the reporting limit (ND-Half) and as zeros (ND-Zero).

COPC = Contaminant of Potential Concern

#U - compound not detected, # is detection limit, B or b - compound detected in blank,J or j - analyte detected between detection limit and reporting limit (limit of quantitation), H- holding time exceeded, r = results rejected, ^- instrument control limit exceeded, = RPD, LCS or LCSD exceeds the control limit, E - Estimated concentration calculated for an analyte response above the valid instrument calibration range, M - Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters, 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). T - Sum of constituents.*

Table 3 - Analytical Results, South Park Water Quality Facility 2015 Q3

CONSTITUENT	UNITS	CAS ID	COPC	SLs*	MW-1	MW-2	MW-3	River
Anthracene-fil	ug/L	120127		400	0.01U	0.01U	0.01U	
Benzo(g,h,i)perylene-fil	ug/L	191242			0.01U	0.01U	0.01U	
Benzo[a]anthracene-fil	ug/L	56553	X	0.01	0.01U	0.01U	0.01U	
Benzo[a]pyrene-fil	ug/L	50328	X	0.01	0.01U	0.01U	0.01U	
Chrysene-fil	ug/L	218019	X	0.031	0.01U	0.01U	0.01U	
Dibenzo(a,h)anthracene-fil	ug/L	53703	X	0.01	0.01U	0.01U	0.01U	
Dibenzofuran-fil	ug/L	132649			0.01U	0.01U	0.01U	
Fluoranthene-fil	ug/L	206440		20	0.01U	0.01U	0.01U	
Fluorene-fil	ug/L	86737		70	0.01U	0.01U	0.01U	
Indeno[1,2,3-cd]pyrene-fil	ug/L	193395	X	0.01	0.01U	0.01U	0.01U	
Naphthalene-fil	ug/L	91203			0.01U	0.01U	0.012	
Phenanthrene-fil	ug/L	85018			0.01U	0.01U	0.021	
Pyrene-fil	ug/L	129000		30	0.01U	0.01U	0.01U	
Total Benzofluoranthenes-fil	ug/L				0.02U	0.02U	0.02U	
TPH								
Diesel Range Hydrocarbons	ug/L		X	100	100U	100U	100U	
Motor Oil	ug/L		X	200	200U	200U	200U	
VOC								
1,1,1,2-Tetrachloroethane	ug/L	630206			0.2U	0.2U	0.2U	
1,1,1-Trichloroethane (TCA)	ug/L	71556		200000	0.2U	0.2U	0.2U	
1,1,2,2-Tetrachloroethane	ug/L	79345		3	0.2U	0.2U	0.2U	
1,1,2-Trichloroethane	ug/L	79005		8.9	0.2U	0.2U	0.2U	
1,1,2-Trichlorotrifluoroethane	ug/L	76131			0.2U	1.1	0.2U	
1,1-Dichloroethane	ug/L	75343			0.2U	0.2U	0.2U	
1,1-Dichloroethene	ug/L	75354	X	3.2	0.2U	0.22	0.2U	
1,1-Dichloropropene	ug/L	563586			0.2U	0.2U	0.2U	
1,2,3-Trichlorobenzene	ug/L	87616			0.5U	0.5U	0.5U	
1,2,3-Trichloropropane	ug/L	96184			0.5U	0.5U	0.5U	

**Screening Levels (SLs) are the higher of the laboratory Practical Quantitation Limit (PQL) and the minimum of Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update. Marine criteria are applicable at this Site consistent with Lower Duwamish Superfund Site Record of Decision (EPA, 2014). Bold value indicates result is >= SL.*

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Table 3 - Analytical Results, South Park Water Quality Facility 2015 Q3

CONSTITUENT	UNITS	CAS ID	COPC	SLs*	MW-1	MW-2	MW-3	River
1,2,4-Trichlorobenzene	ug/L	120821		0.5	0.5U	0.5U	0.5U	
1,2,4-Trimethylbenzene	ug/L	95636			0.2U	0.2U	0.2U	
1,2-Dibromo-3-chloropropane	ug/L	96128			0.5U	0.5U	0.5U	
1,2-Dichlorobenzene	ug/L	95501		3000	0.2U	0.2U	0.2U	
1,2-Dichloroethane (EDC)	ug/L	107062		99	0.2U	0.2U	0.2U	
1,2-Dichloropropane	ug/L	78875		31	0.2U	0.2U	0.2U	
1,3,5-Trimethylbenzene	ug/L	108678			0.2U	0.2U	0.2U	
1,3-Dichlorobenzene	ug/L	541731		10	0.2U	0.2U	0.2U	
1,3-Dichloropropane	ug/L	142289			0.2U	0.2U	0.2U	
1,4-Dichlorobenzene	ug/L	106467		900	0.2U	0.2U	0.2U	
2,2-Dichloropropane	ug/L	594207			0.2U	0.2U	0.2U	
2-Butanone (MEK)	ug/L	78933			5.0U	5.0U	5.0U	
2-Chloroethyl Vinyl Ether	ug/L	110758			1.0U	1.0U	1.0U	
2-Chlorotoluene	ug/L	95498			0.2U	0.2U	0.2U	
2-Hexanone	ug/L	591786			5.0U	5.0U	5.0U	
4-Chlorotoluene	ug/L	106434			0.2U	0.2U	0.2U	
4-Isopropyltoluene	ug/L	99876			0.2U	0.2U	0.2U	
4-Methyl-2-Pentanone (MIBK)	ug/L	108101			5.0U	5.0U	5.0U	
Acetone	ug/L	67641			5.0U	5.0U	5.0U	
Acrolein	ug/L	107028		400	5.0U	5.0U	5.0U	
Acrylonitrile	ug/L	107131		1	1.0U	1.0U	1.0U	
Benzene	ug/L	71432		16	0.2U	0.2U	0.2U	
Bromobenzene	ug/L	108861			0.2U	0.2U	0.2U	
Bromochloromethane	ug/L	74975			0.2U	0.2U	0.2U	
Bromodichloromethane	ug/L	75274		22	0.2U	0.2U	0.2U	
Bromoethane	ug/L	74964			0.2U	0.2U	0.2U	
Bromoform	ug/L	75252		120	0.2U	0.2U	0.2U	
Bromomethane	ug/L	74839		4000	1.0U	1.0U	1.0U	
Carbon Disulfide	ug/L	75150			0.2U	0.2U	0.2U	

**Screening Levels (SLs) are the higher of the laboratory Practical Quantitation Limit (PQL) and the minimum of Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update. Marine criteria are applicable at this Site consistent with Lower Duwamish Superfund Site Record of Decision (EPA, 2014). Bold value indicates result is >= SL.*

BaP-TTEC is the Benzo(a)Pyrene (BaP) Total Toxicity Equivalent Concentration for mixtures of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) using BaP as the reference chemical. Non-detect values summed at half the reporting limit (ND-Half) and as zeros (ND-Zero).

COPC = Contaminant of Potential Concern

#U - compound not detected, # is detection limit, B or b - compound detected in blank,J or j - analyte detected between detection limit and reporting limit (limit of quantitation), H- holding time exceeded, r = results rejected, ^- instrument control limit exceeded, = RPD, LCS or LCSD exceeds the control limit, E - Estimated concentration calculated for an analyte response above the valid instrument calibration range, M - Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters, 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). T - Sum of constituents.*

Table 3 - Analytical Results, South Park Water Quality Facility 2015 Q3

CONSTITUENT	UNITS	CAS ID	COPC	SLs*	MW-1	MW-2	MW-3	River
Carbon Tetrachloride	ug/L	56235		4.4	0.2U	0.2U	0.2U	
Chlorobenzene	ug/L	108907		800	0.2U	0.2U	0.2U	
Chloroethane	ug/L	75003			0.2U	0.2U	0.2U	
Chloroform	ug/L	67663		470	0.2U	0.2U	0.2U	
Chloromethane	ug/L	74873			0.5U	0.5U	0.5U	
cis-1,2-Dichloroethene	ug/L	156592	X		1.5	20	0.59	
cis-1,3-Dichloropropene	ug/L	10061015			0.2U	0.2U	0.2U	
Dibromochloromethane	ug/L	124481		21	0.2U	0.2U	0.2U	
Dibromomethane	ug/L	74953			0.2U	0.2U	0.2U	
Dichloromethane	ug/L	75092		1000	1.0U	1.0U	1.0U	
Ethylbenzene	ug/L	100414		130	0.2U	0.2U	0.2U	
Ethylene Dibromide	ug/L	106934			0.2U	0.2U	0.2U	
Hexachlorobutadiene	ug/L	87683		0.5	0.5U	0.5U	0.5U	
Isopropylbenzene (Cumene)	ug/L	98828			0.2U	0.2U	0.2U	
m+p-Xylene	ug/L	179601231			0.4U	0.4U	0.4U	
Methyl Iodide	ug/L	74884			1.0U	1.0U	1.0U	
Naphthalene-8260	ug/L	91203			0.5U	0.5U	0.5U	
n-Butylbenzene	ug/L	104518			0.2U	0.2U	0.2U	
n-Propylbenzene	ug/L	103651			0.2U	0.2U	0.2U	
o-Xylene	ug/L	95476			0.2U	0.2U	0.2U	
sec-Butylbenzene	ug/L	135988			0.2U	0.2U	0.2U	
Styrene	ug/L	100425			0.2U	0.2U	0.2U	
tert-Butylbenzene	ug/L	98066			0.2U	0.2U	0.2U	
Tetrachloroethene (PCE)	ug/L	127184	X	8.85	6.8	1.2	0.2U	
Toluene	ug/L	108883		520	0.24	0.25	0.32	
trans-1,2-Dichloroethene	ug/L	156605	X	4000	0.2U	0.59	0.2U	
trans-1,3-Dichloropropene	ug/L	10061026			0.2U	0.2U	0.2U	
trans-1,4-Dichloro-2-butene	ug/L	110576			1.0U	1.0U	1.0U	
Trichloroethene (TCE)	ug/L	79016	X	7	1.0	5.0	0.2U	

**Screening Levels (SLs) are the higher of the laboratory Practical Quantitation Limit (PQL) and the minimum of Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update. Marine criteria are applicable at this Site consistent with Lower Duwamish Superfund Site Record of Decision (EPA, 2014). Bold value indicates result is >= SL.*

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Table 3 - Analytical Results, South Park Water Quality Facility 2015 Q3

CONSTITUENT	UNITS	CAS ID	COPC	SLs*	MW-1	MW-2	MW-3	River
Trichlorofluoromethane (CFC 11)	ug/L	75694			0.2U	0.2U	0.2U	
Vinyl Acetate	ug/L	108054			0.2U	0.2U	0.2U	
Vinyl Chloride	ug/L	75014	X	1.6	0.2U	**2.4**	0.82	
Vinyl Chloride-SIM	ug/L	75014	X	1.6	0.046	**3.6**	1.2	

**Screening Levels (SLs) are the higher of the laboratory Practical Quantitation Limit (PQL) and the minimum of Department of Ecology CLARC database for non-potable groundwater and surface water (accessed 9/29/15), updated per National Recommended Water Quality Criteria 6/2015 Update. Marine criteria are applicable at this Site consistent with Lower Duwamish Superfund Site Record of Decision (EPA, 2014). Bold value indicates result is >= SL.*

BaP-TTEC is the Benzo(a)Pyrene (BaP) Total Toxicity Equivalent Concentration for mixtures of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) using BaP as the reference chemical. Non-detect values summed at half the reporting limit (ND-Half) and as zeros (ND-Zero).

COPC = Contaminant of Potential Concern

#U - compound not detected, # is detection limit, B or b - compound detected in blank,J or j - analyte detected between detection limit and reporting limit (limit of quantitation), H- holding time exceeded, r = results rejected, ^- instrument control limit exceeded, = RPD, LCS or LCSD exceeds the control limit, E - Estimated concentration calculated for an analyte response above the valid instrument calibration range, M - Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters, 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). T - Sum of constituents.*

K:\JANET\JK0707SouthParkRiverside\GIS\mxds\MW_Results_2015Q3.mxd 10/1/2015

Monitoring Well Locations

Other Monitoring Well

Facility Parcel

Notes:
1) Samples Collected October 1, 2015
2) Water-Level snapshot collected between 7:45 - 7:50 am during rising tide
3) Water-Level elevations in feet NAVD88

2013 Aerial Photo from King County

Figure 1

Groundwater Elevations, Q3 2015

Seattle Public Utilities
Seattle, WA

PgG

GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: MW-1

Sampling Event: October 2015

Sample #: MW-1

Project Number: JK0707
Project Name: SPU Riverside
Project Address: 7th Ave S & Riverside Dr
Client Name: SPU
Laboratory: ARI
Chain-of-Custody (yes/no): Yes
Shipment Method: hand delivered

Date: 10/1/15
Location: SPU Riverside Dr
Sampled By: JB
Purged By: JB
Date Sent to Lab: 10/1/15
Field CC Sample Number: —
Sample Split: —

Depth of Well (feet): 11.30
Depth to Water (feet): 4.99
WL Measuring Point: ft toc Notch
Water Level Probe Used: waterline

Purge Volume Measurement Method: cal. bucket
Purge Date/Time: 10/1/15 828
Purging Equipment: peristaltic pump
Sampling Equipment: dedicated tubing

Casing Volume Constants (CVC): 2-inch = **0.16** gpf ; 4-inch = **0.656** gpf ; 6-inch = **1.47** gpf CVC=($\pi r^2 h$) (7.48 gal/ft³)

Purge Volume = ft of water _____ x CVC _____ x Casing Volumes _____ = _____ gallons

Field Parameters

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	~~umhos~~ mS EC /cm 25 c)	Temp. (C)	TURBIDITY (visual/ NTU)	Water Level (feet)	ORP (mV)
830	1/4	5.77	12.89	17.0	25.2 orange floaters	5.91	+12
833	1/2	5.70	13.77	17.2	21.9	6.11	+24
837	3/4	5.70	14.25	17.2	17.3	6.24	+43
845	1	5.76	14.63	17.2	11.16	6.26	+56
850	1 1/4	5.78	14.67	17.2	11.87	6.27	+62
854	1 1/2	5.79	14.68	17.3	8.26	6.28	+68
858	1 3/4	5.78	14.69	17.3	6.41	6.31	+70
901	2	5.77	14.71	17.3	8.83	6.28	+72
903	2 1/4	5.77	14.67	17.4	6.92	6.28	+75
906	2 1/2	5.77	14.70	17.4	5.52	6.27	+75
907 – begin sampling	—	—	—	—	—	—	—
945 – end sampling	—	—	—	—	3.43	6.28	—
RIVER near well							
950	—	7.13	4.96	13.7	3.32	—	-6

Well Integrity/Notes:

GOOD

DO = 3 mg/L

Q = 300 ml/min

Bottle Inventory

Day/Time Sampled: 915 10/1/15

Quantity:	Container:	Preserve:	Filter:	Remarks (turbidity, bubbles, etc):
				See attached list
				+ QC bottles

* field NTU: 0.00

Signature: [signature]

GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: MW-2

Sampling Event: October 2015

Sample #: MW-2

Project Number: JK0707
Project Name: SPU Riverside
Project Address: 7th Ave S & Riverside Dr
Client Name: SPU
Laboratory: ARI
Chain-of-Custody (yes/no): Yes
Shipment Method: hand-delivered

Date: 10/1/15
Location: SPU Riverside
Sampled By: JB
Purged By: JB
Date Sent to Lab: 10/1/15
Field CC Sample Number: —
Sample Split: —

Depth of Well (feet): 10.6
Depth to Water (feet): 4.48
WL Measuring Point: toc N. side
Water Level Probe Used: Waterline

Purge Volume Measurement Method: cal. bucket
Purge Date/Time: 10/1/15 1007
Purging Equipment: peristaltic pump
Sampling Equipment: dedicated tubing

Casing Volume Constants (CVC): 2-inch = **0.16** gpf ; 4-inch = **0.656** gpf ; 6-inch = **1.47** gpf CVC=(π r² h) (7.48 gal/ft³)

Purge Volume = ft of water _____ x CVC _____ x Casing Volumes _____ = _____ gallons

Field Parameters

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	µS EC (~~umhos~~/cm 25 c)	Temp. (C)	TURBIDITY (visual/ NTU)	Water Level (feet)	ORP (mV)
1012	1/4	6.67	10.65	17.6	49.40 orange floaties	6.24	+4
1016	1/2	6.67	10.59	17.6	53.3	7.11	+7
1018	3/4	6.63	10.49	17.7	76.8	7.75	+6
1022	1	6.73	10.27	17.7	83.6	8.65	-2
1026	1 1/4	6.62	9.79	17.8	26.33 orange floaties	9.20	-6 Q↓
1030	1 1/2	6.65	9.68	17.8	123.4	9.28	-6
1035	1 3/4	6.70	9.14	17.9	83.9	9.34	-7
1038	2	6.69	8.60	18.1	55.2	9.32	-4
1044	2 1/4	6.72	8.62	18.1	42.5	9.47	-6
1048	2 1/2	6.73	8.62	18.1	49.8	9.55	-7
1053	2 3/4	6.74	8.52	18.4	40.0	9.62	>7
1059	3	6.73	8.23	18.8	23.8	9.60	-10
1100	start sampling						
1215	end sampling				25.7	10.4 at pump at day	—

Well Integrity/Notes: GOOD DO = 1 mg/L Q = 250 ml/min

Bottle Inventory

Day/Time Sampled: 1110 10/1/15

Quantity:	Container:	Preserve:	Filter:	Remarks (turbidity, bubbles, etc):
				See attached list
				+ Duplicate MW-51 @ 1110 10/1/15

Signature: JB

Page 1 of 1

GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: MW-3

Sampling Event: October 2015

Sample #: MW-3

Project Number: JK0707	Date: 10/1/15
Project Name: SPU Riverside	Location: SPU & Riverside Dr
Project Address: 7th Ave S & Riverside Dr	Sampled By: JP
Client Name: SPU	Purged By: JP
Laboratory: ARI	Date Sent to Lab:
Chain-of-Custody (yes/no): YES	Field CC Sample Number: —
Shipment Method: hand-delivered	Sample Split: —

Depth of Well (feet): 11.23	Purge Volume Measurement Method: cal. bucket
Depth to Water (feet): 7.02 @ 7:56	Purge Date/Time: 10/01/15 758
WL Measuring Point: TOC N side	Purging Equipment: peristaltic pump
Water Level Probe Used: waterline	Sampling Equipment: dedicated tubing

Casing Volume Constants (CVC): 2-inch = **0.16** gpf ; 4-inch = **0.656** gpf ; 6-inch = **1.47** gpf CVC=(π r² h) (7.48 gal/ft³)

Purge Volume = ft of water _____ x CVC _____ x Casing Volumes _____ = _____ gallons

Field Parameters

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	EC (umhos/cm 25 c)	Temp. (C)	TURBIDITY (visual/ NTU)	Water Level (feet)	ORP (mV)
802	1/8	6.36	456	15.7	5.85	8.34	+9
804	1/4	6.27	442	15.8	6.91	8.80	+1
806	3/8	6.26	431	16.0	16.0	8.96	-3
808	1/2	6.21	422	16.0	36.9	9.62	-2
813	3/4	6.16	410	16.2	54.0	10.40	-2
815	5/8	6.12	416	16.3	49.5	10.91	-2
816	5/8 +	—	—	—	—	710.94	—
	purged dry + let recover						
return							
1230					42.3		
1300	Dry during sulfide fill, TOC Fe2 ALK remaining. let recover & return 30 min, top off sulfide, fill TOC + Fe2 + half ALK; let recover & return 15 min. top off ALK bottle.						

Well Integrity/Notes: GOOD DO = 1 mg/L 200 ml/min in sulfur odor

Bottle Inventory

Day/Time Sampled: 1230 10/1/15

Quantity:	Container:	Preserve:	Filter:	Remarks (turbidity, bubbles, etc):
				See attached list
				only → 1 LL DAH FF @0.45µm bottle

Signature: _____

Page 1 of 1

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: std	Page: 1 of 1	
ARI Client Company: PGT	Phone: 206 329 0141	Date: 10/1/15	Ice Present?
Client Contact: JEFF PARKER		No of Coolers	Cooler Temps:
Client Project Name: South Riverside Drive SPU			
Client Project #: JK0707	Samplers: Jeff Parker		

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: VOCs (8260 VOCs)	Dx cleaned	MEE	Sulfide	Fe2	TOC	ALK	NO3 NO2 SO4	LL PAHs	LL PAHs Field Filtered		Notes/Comments
MW-1	10/1/15	915	Aq	3	X	X	X	X	X	X	X	X	X	X	X	
MW-2		1110		9	X	X	X	X	X	X	X	X	X	X	X	
MW-3		1230		18	X	X	X	X	X	X	X	X	X	X	X	1 LL PAH F.F. 0.45µm bottle.
MW-51		1110		9	X	X	X	X	X	X	X	X	X	X	X	

Notes/Comments: 1 bottle for Dx cleaned

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
dissolved metals 1 LL PAH FF bottle field filtered @ 0.45µm	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name: JEFF PARKER	Printed Name: EMILY LITWIN	Printed Name:	Printed Name:
	Company: PGT	Company: ARI	Company:	Company:
	Date & Time: 10/1/15 1410	Date & Time: 10/1/15 1410	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.

Bottle Request

Analytical Resources, Inc.

Needs By Date: 9/24/15 or 9/25/15

Project Name:	*South Riverside Drive*
Project Number:	Standard TAT
Client:	PGG
Contact:	Jeff Parker
ARI PM:	Kelly Bottem
Date of Request:	9/23/2015
Request Taken By:	Kelly Bottem
Estimated Date Samples Will Return:	

	Time & Date of Client Pick Up:
X	Time/Date Courier Deliver by: 9/24/15 or 9/25/15
	Time/Date Commercial Shipper By:
Completed By: KB	
Date: 9/24/15	# of Coolers Sent: 2 +2 bags

X	Sending in Boxes is OK	X	Include COCs (1 per 10 Samples)	X	Put Labels on Bottles
X	Coolers are Needed		Blue Ice	X	Include Loose Labels
	# of Coolers: as needed	X	Extra Bubble Wrap		Individually Wrap Bottles

# of Trip Blanks: 1 set with HCL (2 per Set)

Total Bottles for All Analyses: 103

# of Samples	# for QC	# for Breakage	Analysis Requested	Sample Matrix	Bottle Size	Bottles Per Sample	Total Bottles	Preservation Lot Number	Bottle Lot Number
4	2	1	VOCs	Water	40 mL Vial	3	21 ✓	HCL	
4	2	1	SIM VOCs	Water	40 mL Vial	2	14 ✓	NO PRES	
4	2		Dx (cleaned)	Water	500 mL amber	3	12 ✓		0006020
4	2	1	LL PAHs	Water	500 mL amber	2	14 ✓		
4			Total metals Lead only	Water	~~500mL~~ 250 HDPE	1	4 ✓	HN03	0006023
4			Dissolved metals Arsenic only, Client to filter	Water	~~500mL~~ 250 HDPE	1	4 ✓	HN03	
4	2	1	MEE	Water	40 mL Vial	2	14 ✓	NO PRES	
4			Sulfide	Water	~~500 mL HDPE~~ Small OJ (No headspace)	1	4 ✓	Zinc acetate, ~~NaOH~~	
4			Fe2	Water	250 mL amber	1	4 ✓	2 mL of HCL per 100 mL of sample	[illegible] 0006230
4			TOC	Water	250 mL amber	1	4 ✓	H2so4	
4			No3, No2, SO4	Water	Small OJ	1	4 ✓		
4			Alkalinity	Water	Large OJ	1	4 ✓		

Comments:

Shipping Address: Jeff Parker
PGG Seattle

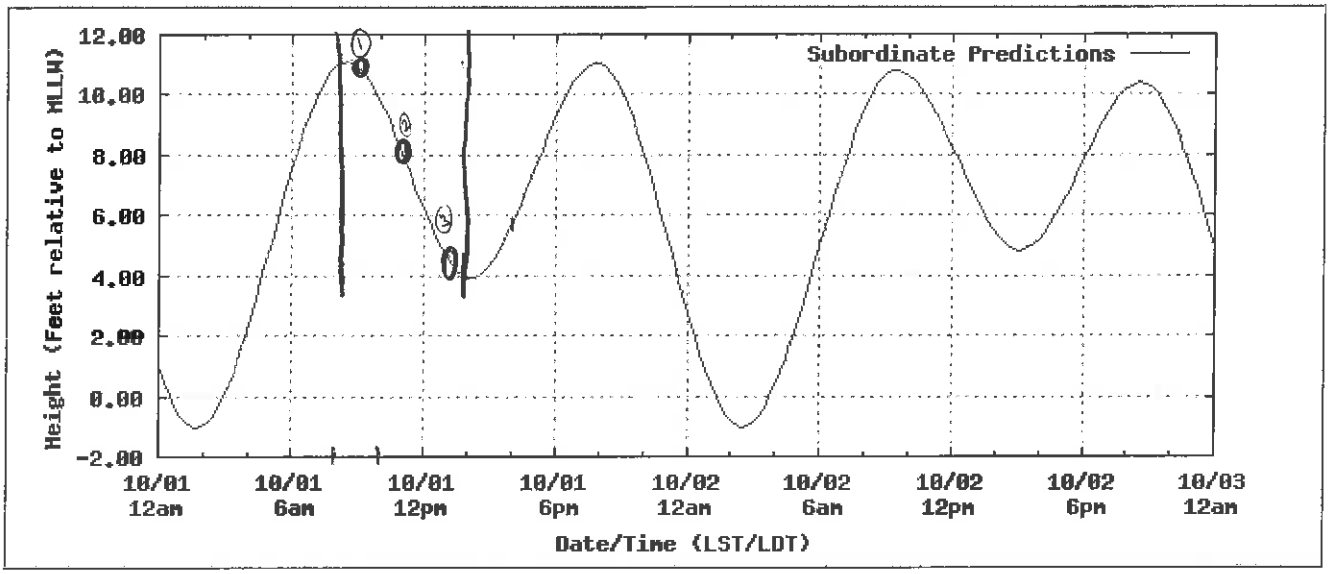
Phone:

Help Print

NOAA/NOS/CO-OPS
Daily Tide Prediction for Duwamish Waterway, Eighth Ave. South,WA

StationId 9447029
From: 2015/10/01 - 2015/10/02
Units: Feet Time Zone: LST/LDT Datum: MLLW

Referenced to Station: Seattle (9447130)
Time offset in mins (high:10 low: 11) Height offset in feet (high:* 0.97 low: *0.95)



Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

Note: For predictions of Subordinate stations, the solid blue line depicts a curve fit between the high and low values and approximates the segments between.

High/Low Tide Predictions

Station Name: Duwamish Waterway, Eighth Ave. South,WA
Source: NOAA/NOS /CO-OPS
Parameter: Daily
Prediction Type: Subordinate
Product: Tide Prediction
Datum: MLLW
Start Date & Time: 2015/10/01 12:00AM
Height Units: Feet
End Date & Time: 2015/10/02 11:59PM
Time Zone: LST/LDT

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2015/10/01	Thu	01:42 AM	-1.04 L	08:22 AM	11.09 H	02:10 PM	3.93 L	07:50 PM	11.05 H
2015/10/02	Fri	02:31 AM	-1.02 L	09:24 AM	10.8 H	03:08 PM	4.83 L	08:38 PM	10.4 H

PUMPING TEST DATA REPORT

Date 10/1/15 Sheet 1 of 1

Project SPU RIVERSIDE Job. No. JK0907

Well Identification

Pump Co. / Pump Type

Obsever Static Water Level Computer Data?

(Date) Time	Elapsed Time (MINUTES)			WATER LEVEL MEASURMENT (FEET)		PUMPING RATE		REMARKS
10/1/15	t	t'	t/t'	Reading	Drawdown	Q	Reading	pull ops 730
748	MW-1			5.46				High tide
750	MW-2			4.89				@ ~9:24
746	MW-3			7.11				rising
752	MW-3			7.04				

Analytical Resources, Incorporated
Analytical Chemists and Consultants

October 13, 2015

Jeff Parker
Pacific Groundwater Group
2377 Eastlake Avenue E, Suite 200
Seattle, WA 98102

Client Project: South Riverside Drive
ARI Job ID: ANP3

Dear Mr. Parker:

Please find enclosed the original Chain of Custody record (COC) and the final results for samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted four water samples on October 1, 2015. There were no discrepancies between the paperwork and the sample containers' labels. All associated PAH samples that were field filtered are logged as ARI samples ANP3E, F, G and H..

The samples were analyzed for total and dissolved metals, VOCs, NWTPH-Dx, SIM VOCs, PAHs, MEE and general chemistry parameters referencing EPA and standard methods listed on the reports. Quality control analysis results are included for your review.

The SIM VOCs surrogate DCE is out of control high in the associated method blank and LCSD. The method blank is non-detect and the LCSD spike recovery is in control.

The VOCs CCAL is out of control low for all associated FORM III "Q" flagged analytes. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The VOCs method blank contained 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene and Naphthalene. All associated samples that contain analyte have been flagged with a "B" qualifier.

The VOCs LCS and/or LCSD are out of control low for 1,2,3-Trichlorobenzene and/or Hexachlorobutadiene.

The VOCs matrix spike and/or matrix spike duplicate are out of control low for several analytes.

The sulfide matrix spike is out of control low.

No other analytical complications were noted for the analyses. Quality control analysis results are included for your review.

A copy of this report and all associated raw data will remain on file with ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES INC.

Kelly Bottem
Client Services Manager
206/695-6211

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: ANP3	Turn-around Requested: std	Page: 1 of 1	
ARI Client Company: PGG	Phone: 206 3290141	Date: 10/1/15	Ice Present?
Client Contact: JEFF PARKER		No. of Coolers:	Cooler Temps:
Client Project Name: South Riverside Drive SPU			
Client Project #: JK0707	Samplers: Jeff Parker		

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: VOCs	SIM VOCs	Dx Cleaned MEE	Sulfide	Fe2	TOC	ALK	NO3 NO2 SO4	cPAHs	LL PAHs Field Filtered	Total Cu Pb Ni Zn	Notes/Comments
MW-1	10/1/15	915	Aq	3	X	X	X	X	X	X	X	X	X	X	X	1 bottle for Dx cleared
MW-2		1110		19	X	X	X	X	X	X	X	X	X	X	X	
MW-3		1230		18	X	X	X	X	X	X	X	X	X	X	X	1 LL PAH F.F. @ 0.45µm bottle.
MW-51		1110		19	X	X	X	X	X	X	X	X	X	X	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
dissolved metals 1 LL PAH FF bottle field filtered @ 0.45µm	Printed Name: JEFF PARKER	Printed Name: EMILY LITWIN	Printed Name:	Printed Name:
	Company: PGG	Company: ARI	Company:	Company:
	Date & Time: 10/1/15 1410	Date & Time: 10/1/15 1410	Date & Time:	Date & Time:

ANP3 : 00002

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.

PRESERVATION VERIFICATION 10/02/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ANP3**

Inquiry Number: NONE
Analysis Requested: 10/01/15
Contact: Wallace, Glen
Client: Pacific Groundwater Group
Logged by: CA
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Kelly
VTSR: 10/01/15

Project #: JK0707
Project: South Riverside Drive SPU
Sample Site:
SDG No:
Analytical Protocol: In-house

Unpreserved for NO2 NO3. W 10-2-15

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-17894 **ANP3A**	MW-1						TOT				F	P	F									
15-17895 **ANP3B**	MW-2						TOT				F	P	F									
15-17896 **ANP3C**	MW-3						TOT				F	P	F									
15-17897 **ANP3D**	MW-51						TOT				F	P	F									
15-17898 **ANP3E**	MW-1						DIS									Y						
15-17899 **ANP3F**	MW-2						DIS									Y						
15-17900 **ANP3G**	MW-3						DIS									Y						
15-17902 **ANP3H**	MW-51						DIS									Y						

S^2 now preserved NaOH
13:25 10-2-15

ANP3 : 00003

Checked By CA Date 10-7-15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ANP3
Client: Pacific Groundwater Group
Project Event: JK0707
Project Name: South Riverside Drive SPU

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	MW-1	ANP3A	15-17894	Water	10/01/15 09:15	10/01/15 14:10
2.	MW-2	ANP3B	15-17895	Water	10/01/15 11:10	10/01/15 14:10
3.	MW-3	ANP3C	15-17896	Water	10/01/15 12:30	10/01/15 14:10
4.	MW-51	ANP3D	15-17897	Water	10/01/15 11:10	10/01/15 14:10
5.	MW-1	ANP3E	15-17898	Water	10/01/15 09:15	10/01/15 14:10
6.	MW-2	ANP3F	15-17899	Water	10/01/15 11:10	10/01/15 14:10
7.	MW-3	ANP3G	15-17900	Water	10/01/15 12:30	10/01/15 14:10
8.	MW-51	ANP3H	15-17902	Water	10/01/15 11:10	10/01/15 14:10

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: PGG

COC No(s): _____ (NA)

Assigned ARI Job No: ANP3

Project Name: _____

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to 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): 2.4 3.3 0.5

Time: _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D00285ES

Cooler Accepted by: _____ Date: 10/1/15 Time: 1410

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
Were all bottles sealed in individual plastic bags?		YES	(NO)
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)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: CA Date: 10-2-15 Time: 1150

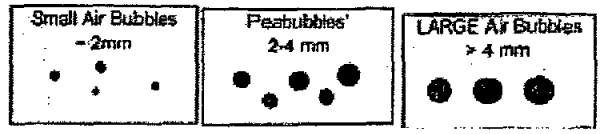
***** Notify Project Manager of discrepancies or concerns *****

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

Additional Notes, Discrepancies, & Resolutions:

MW-1 received 32 Jars COC Says 31
MW-2 received 20 Jars COC Says 19
MW-51 received 18 Jars COC Says 19

By: CA Date: 10-2-15



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-1**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ANP3A
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 13:07

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	**cis-1,2-Dichloroethene**	**0.20**	**1.5**	
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	**Trichloroethene**	**0.20**	**1.0**	
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	**Tetrachloroethene**	**0.20**	**6.8**	
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	**Toluene**	**0.20**	**0.24**	
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-1**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ANP3A
LIMS ID: 15-17894
Matrix: Water
Date Analyzed: 10/06/15 13:07

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.4%
d8-Toluene	101%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-2**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ANP3B
LIMS ID: 15-17895
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 13:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	**Vinyl Chloride**	**0.20**	**2.4**	
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	**1,1-Dichloroethene**	**0.20**	**0.22**	
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	**trans-1,2-Dichloroethene**	**0.20**	**0.59**	
156-59-2	**cis-1,2-Dichloroethene**	**0.20**	**20**	
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	**Trichloroethene**	**0.20**	**5.0**	
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	**Tetrachloroethene**	**0.20**	**1.2**	
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	**Toluene**	**0.20**	**0.25**	
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	**1,1,2-Trichloro-1,2,2-trifluoroethane**	**0.20**	**1.1**	
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-2**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ANP3B
LIMS ID: 15-17895
Matrix: Water
Date Analyzed: 10/06/15 13:33

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	98.3%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 13:59

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	**Vinyl Chloride**	**0.20**	**0.82**	
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	**cis-1,2-Dichloroethene**	**0.20**	**0.59**	
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	**Toluene**	**0.20**	**0.32**	
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Date Analyzed: 10/06/15 13:59

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.7%
d8-Toluene	103%
Bromofluorobenzene	99.3%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-51**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ANP3D
LIMS ID: 15-17897
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 14:24

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	**Vinyl Chloride**	**0.20**	**2.4**	
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	**1,1-Dichloroethene**	**0.20**	**0.24**	
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	**trans-1,2-Dichloroethene**	**0.20**	**0.53**	
156-59-2	**cis-1,2-Dichloroethene**	**0.20**	**20**	
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	**Trichloroethene**	**0.20**	**5.2**	
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	**Tetrachloroethene**	**0.20**	**1.3**	
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	**Toluene**	**0.20**	**0.21**	
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	**1,1,2-Trichloro-1,2,2-trifluoroethane**	**0.20**	**1.2**	
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-51**
Page 2 of 2 **SAMPLE**

Lab Sample ID: ANP3D
LIMS ID: 15-17897
Matrix: Water
Date Analyzed: 10/06/15 14:24

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	99.3%
Bromofluorobenzene	96.2%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst MS: NT3/LH
MSD: NT3/LH
Date Analyzed MS: 10/06/15 18:43
MSD: 10/06/15 19:09

Sample Amount MS: 10.0 mL
MSD: 10.0 mL
Purge Volume MS: 10.0 mL
MSD: 10.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Chloromethane	< 0.50 U	9.59	10.0	95.9%	10.2	10.0	102%	6.2%
Bromomethane	< 1.0 U	9.65	10.0	96.5%	10.2	10.0	102%	5.5%
Vinyl Chloride	0.82	10.5	10.0	96.8%	10.8	10.0	99.8%	2.8%
Chloroethane	< 0.20 U	9.53	10.0	95.3%	10.1	10.0	101%	5.8%
Methylene Chloride	< 1.0 U	9.90	10.0	99.0%	9.92	10.0	99.2%	0.2%
Acetone	< 5.0 U	46.3	50.0	92.6%	47.8	50.0	95.6%	3.2%
Carbon Disulfide	< 0.20 U	10.0	10.0	100%	10.2	10.0	102%	2.0%
1,1-Dichloroethene	< 0.20 U	9.67	10.0	96.7%	9.80	10.0	98.0%	1.3%
1,1-Dichloroethane	< 0.20 U	9.73	10.0	97.3%	9.85	10.0	98.5%	1.2%
trans-1,2-Dichloroethene	< 0.20 U	9.51	10.0	95.1%	9.91	10.0	99.1%	4.1%
cis-1,2-Dichloroethene	0.59	10.2	10.0	96.1%	10.7	10.0	101%	4.8%
Chloroform	< 0.20 U	9.60	10.0	96.0%	9.87	10.0	98.7%	2.8%
1,2-Dichloroethane	< 0.20 U	9.29	10.0	92.9%	9.64	10.0	96.4%	3.7%
2-Butanone	< 5.0 U	47.5	50.0	95.0%	49.2	50.0	98.4%	3.5%
1,1,1-Trichloroethane	< 0.20 U	9.77	10.0	97.7%	10.2	10.0	102%	4.3%
Carbon Tetrachloride	< 0.20 U	9.96	10.0	99.6%	10.0	10.0	100%	0.4%
Vinyl Acetate	< 0.20 U	7.07 Q	10.0	70.7%	7.03 Q	10.0	70.3%	0.6%
Bromodichloromethane	< 0.20 U	9.35	10.0	93.5%	9.63	10.0	96.3%	3.0%
1,2-Dichloropropane	< 0.20 U	9.50	10.0	95.0%	9.60	10.0	96.0%	1.0%
cis-1,3-Dichloropropene	< 0.20 U	9.38	10.0	93.8%	9.52	10.0	95.2%	1.5%
Trichloroethene	< 0.20 U	11.2	10.0	112%	10.7	10.0	107%	4.6%
Dibromochloromethane	< 0.20 U	8.77	10.0	87.7%	8.86	10.0	88.6%	1.0%
1,1,2-Trichloroethane	< 0.20 U	9.47	10.0	94.7%	9.24	10.0	92.4%	2.5%
Benzene	< 0.20 U	9.48	10.0	94.8%	9.91	10.0	99.1%	4.4%
trans-1,3-Dichloropropene	< 0.20 U	9.15	10.0	91.5%	9.68	10.0	96.8%	5.6%
2-Chloroethylvinylether	< 1.0 U	< 1.00 U	10.0	NA	< 1.00 U	10.0	NA	NA
Bromoform	< 0.20 U	9.05	10.0	90.5%	9.25	10.0	92.5%	2.2%
4-Methyl-2-Pentanone (MIBK)	< 5.0 U	47.7	50.0	95.4%	48.6	50.0	97.2%	1.9%
2-Hexanone	< 5.0 U	48.4	50.0	96.8%	47.5	50.0	95.0%	1.9%
Tetrachloroethene	< 0.20 U	9.37	10.0	93.7%	9.69	10.0	96.9%	3.4%
1,1,2,2-Tetrachloroethane	< 0.20 U	8.87	10.0	88.7%	8.74	10.0	87.4%	1.5%
Toluene	0.32	9.59	10.0	92.7%	9.91	10.0	95.9%	3.3%
Chlorobenzene	< 0.20 U	9.22	10.0	92.2%	9.29	10.0	92.9%	0.8%
Ethylbenzene	< 0.20 U	9.20	10.0	92.0%	9.61	10.0	96.1%	4.4%
Styrene	< 0.20 U	9.51	10.0	95.1%	9.59	10.0	95.9%	0.8%
Trichlorofluoromethane	< 0.20 U	9.69	10.0	96.9%	9.90	10.0	99.0%	2.1%
1,1,2-Trichloro-1,2,2-trifl	< 0.20 U	9.57	10.0	95.7%	10.6	10.0	106%	10.2%
m,p-Xylene	< 0.40 U	18.4	20.0	92.0%	18.9	20.0	94.5%	2.7%
o-Xylene	< 0.20 U	9.54	10.0	95.4%	9.53	10.0	95.3%	0.1%
1,2-Dichlorobenzene	< 0.20 U	9.16	10.0	91.6%	9.32	10.0	93.2%	1.7%
1,3-Dichlorobenzene	< 0.20 U	9.15	10.0	91.5%	9.16	10.0	91.6%	0.1%
1,4-Dichlorobenzene	< 0.20 U	8.92	10.0	89.2%	9.28	10.0	92.8%	4.0%
Acrolein	< 5.0 U	34.2 Q	50.0	68.4%	33.1 Q	50.0	66.2%	3.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Iodomethane	< 1.0 U	9.97	10.0	99.7%	10.1	10.0	101%	1.3%
Bromoethane	< 0.20 U	9.95	10.0	99.5%	10.2	10.0	102%	2.5%
Acrylonitrile	< 1.0 U	8.79	10.0	87.9%	9.56	10.0	95.6%	8.4%
1,1-Dichloropropene	< 0.20 U	9.11	10.0	91.1%	9.53	10.0	95.3%	4.5%
Dibromomethane	< 0.20 U	9.41	10.0	94.1%	9.35	10.0	93.5%	0.6%
1,1,1,2-Tetrachloroethane	< 0.20 U	9.70	10.0	97.0%	9.68	10.0	96.8%	0.2%
1,2-Dibromo-3-chloropropane	< 0.50 U	8.00	10.0	80.0%	8.42	10.0	84.2%	5.1%
1,2,3-Trichloropropane	< 0.50 U	9.06	10.0	90.6%	9.10	10.0	91.0%	0.4%
trans-1,4-Dichloro-2-butene	< 1.0 U	7.93	10.0	79.3%	7.92	10.0	79.2%	0.1%
1,3,5-Trimethylbenzene	< 0.20 U	9.24	10.0	92.4%	9.50	10.0	95.0%	2.8%
1,2,4-Trimethylbenzene	< 0.20 U	9.18	10.0	91.8%	9.49	10.0	94.9%	3.3%
Hexachlorobutadiene	< 0.50 U	8.19	10.0	81.9%	8.55	10.0	85.5%	4.3%
1,2-Dibromoethane	< 0.20 U	9.70	10.0	97.0%	10.1	10.0	101%	4.0%
Bromochloromethane	< 0.20 U	9.50	10.0	95.0%	9.36	10.0	93.6%	1.5%
2,2-Dichloropropane	< 0.20 U	8.51	10.0	85.1%	8.60	10.0	86.0%	1.1%
1,3-Dichloropropane	< 0.20 U	9.44	10.0	94.4%	9.36	10.0	93.6%	0.9%
Isopropylbenzene	< 0.20 U	9.32	10.0	93.2%	9.56	10.0	95.6%	2.5%
n-Propylbenzene	< 0.20 U	9.51	10.0	95.1%	9.59	10.0	95.9%	0.8%
Bromobenzene	< 0.20 U	9.18	10.0	91.8%	9.30	10.0	93.0%	1.3%
2-Chlorotoluene	< 0.20 U	9.18	10.0	91.8%	9.38	10.0	93.8%	2.2%
4-Chlorotoluene	< 0.20 U	9.33	10.0	93.3%	9.50	10.0	95.0%	1.8%
tert-Butylbenzene	< 0.20 U	9.17	10.0	91.7%	9.42	10.0	94.2%	2.7%
sec-Butylbenzene	< 0.20 U	9.36	10.0	93.6%	9.44	10.0	94.4%	0.9%
4-Isopropyltoluene	< 0.20 U	9.18	10.0	91.8%	9.52	10.0	95.2%	3.6%
n-Butylbenzene	< 0.20 U	9.21	10.0	92.1%	9.56	10.0	95.6%	3.7%
1,2,4-Trichlorobenzene	< 0.50 U	8.10 B	10.0	81.0%	8.80 B	10.0	88.0%	8.3%
Naphthalene	< 0.50 U	7.74 QB	10.0	77.4%	8.54 QB	10.0	85.4%	9.8%
1,2,3-Trichlorobenzene	< 0.50 U	6.75 QB	10.0	67.5%	7.31 QB	10.0	73.1%	8.0%

Reported in µg/L (ppb)

NA-No recovery due to high concentration of analyte in original sample, calculated negative recovery, or undetected spike.
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 1 of 2 **MATRIX SPIKE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 18:43

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	---	
74-83-9	Bromomethane	1.0	---	
75-01-4	Vinyl Chloride	0.20	---	
75-00-3	Chloroethane	0.20	---	
75-09-2	Methylene Chloride	1.0	---	
67-64-1	Acetone	5.0	---	
75-15-0	Carbon Disulfide	0.20	---	
75-35-4	1,1-Dichloroethene	0.20	---	
75-34-3	1,1-Dichloroethane	0.20	---	
156-60-5	trans-1,2-Dichloroethene	0.20	---	
156-59-2	cis-1,2-Dichloroethene	0.20	---	
67-66-3	Chloroform	0.20	---	
107-06-2	1,2-Dichloroethane	0.20	---	
78-93-3	2-Butanone	5.0	---	
71-55-6	1,1,1-Trichloroethane	0.20	---	
56-23-5	Carbon Tetrachloride	0.20	---	
108-05-4	Vinyl Acetate	0.20	---	
75-27-4	Bromodichloromethane	0.20	---	
78-87-5	1,2-Dichloropropane	0.20	---	
10061-01-5	cis-1,3-Dichloropropene	0.20	---	
79-01-6	Trichloroethene	0.20	---	
124-48-1	Dibromochloromethane	0.20	---	
79-00-5	1,1,2-Trichloroethane	0.20	---	
71-43-2	Benzene	0.20	---	
10061-02-6	trans-1,3-Dichloropropene	0.20	---	
110-75-8	2-Chloroethylvinylether	1.0	---	
75-25-2	Bromoform	0.20	---	
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	---	
591-78-6	2-Hexanone	5.0	---	
127-18-4	Tetrachloroethene	0.20	---	
79-34-5	1,1,2,2-Tetrachloroethane	0.20	---	
108-88-3	Toluene	0.20	---	
108-90-7	Chlorobenzene	0.20	---	
100-41-4	Ethylbenzene	0.20	---	
100-42-5	Styrene	0.20	---	
75-69-4	Trichlorofluoromethane	0.20	---	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	---	
179601-23-1	m,p-Xylene	0.40	---	
95-47-6	o-Xylene	0.20	---	
95-50-1	1,2-Dichlorobenzene	0.20	---	
541-73-1	1,3-Dichlorobenzene	0.20	---	
106-46-7	1,4-Dichlorobenzene	0.20	---	

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 2 of 2 **MATRIX SPIKE**

Lab Sample ID: ANP3C QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17896 Project: South Riverside Drive SPU
Matrix: Water JK0707
Date Analyzed: 10/06/15 18:43

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	---	
74-88-4	Iodomethane	1.0	---	
74-96-4	Bromoethane	0.20	---	
107-13-1	Acrylonitrile	1.0	---	
563-58-6	1,1-Dichloropropene	0.20	---	
74-95-3	Dibromomethane	0.20	---	
630-20-6	1,1,1,2-Tetrachloroethane	0.20	---	
96-12-8	1,2-Dibromo-3-chloropropane	0.50	---	
96-18-4	1,2,3-Trichloropropane	0.50	---	
110-57-6	trans-1,4-Dichloro-2-butene	1.0	---	
108-67-8	1,3,5-Trimethylbenzene	0.20	---	
95-63-6	1,2,4-Trimethylbenzene	0.20	---	
87-68-3	Hexachlorobutadiene	0.50	---	
106-93-4	1,2-Dibromoethane	0.20	---	
74-97-5	Bromochloromethane	0.20	---	
594-20-7	2,2-Dichloropropane	0.20	---	
142-28-9	1,3-Dichloropropane	0.20	---	
98-82-8	Isopropylbenzene	0.20	---	
103-65-1	n-Propylbenzene	0.20	---	
108-86-1	Bromobenzene	0.20	---	
95-49-8	2-Chlorotoluene	0.20	---	
106-43-4	4-Chlorotoluene	0.20	---	
98-06-6	tert-Butylbenzene	0.20	---	
135-98-8	sec-Butylbenzene	0.20	---	
99-87-6	4-Isopropyltoluene	0.20	---	
104-51-8	n-Butylbenzene	0.20	---	
120-82-1	1,2,4-Trichlorobenzene	0.50	---	
91-20-3	Naphthalene	0.50	---	
87-61-6	1,2,3-Trichlorobenzene	0.50	---	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.1%
d8-Toluene	100%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 1 of 2 **MATRIX SPIKE DUP**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 19:09

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	---	
74-83-9	Bromomethane	1.0	---	
75-01-4	Vinyl Chloride	0.20	---	
75-00-3	Chloroethane	0.20	---	
75-09-2	Methylene Chloride	1.0	---	
67-64-1	Acetone	5.0	---	
75-15-0	Carbon Disulfide	0.20	---	
75-35-4	1,1-Dichloroethene	0.20	---	
75-34-3	1,1-Dichloroethane	0.20	---	
156-60-5	trans-1,2-Dichloroethene	0.20	---	
156-59-2	cis-1,2-Dichloroethene	0.20	---	
67-66-3	Chloroform	0.20	---	
107-06-2	1,2-Dichloroethane	0.20	---	
78-93-3	2-Butanone	5.0	---	
71-55-6	1,1,1-Trichloroethane	0.20	---	
56-23-5	Carbon Tetrachloride	0.20	---	
108-05-4	Vinyl Acetate	0.20	---	
75-27-4	Bromodichloromethane	0.20	---	
78-87-5	1,2-Dichloropropane	0.20	---	
10061-01-5	cis-1,3-Dichloropropene	0.20	---	
79-01-6	Trichloroethene	0.20	---	
124-48-1	Dibromochloromethane	0.20	---	
79-00-5	1,1,2-Trichloroethane	0.20	---	
71-43-2	Benzene	0.20	---	
10061-02-6	trans-1,3-Dichloropropene	0.20	---	
110-75-8	2-Chloroethylvinylether	1.0	---	
75-25-2	Bromoform	0.20	---	
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	---	
591-78-6	2-Hexanone	5.0	---	
127-18-4	Tetrachloroethene	0.20	---	
79-34-5	1,1,2,2-Tetrachloroethane	0.20	---	
108-88-3	Toluene	0.20	---	
108-90-7	Chlorobenzene	0.20	---	
100-41-4	Ethylbenzene	0.20	---	
100-42-5	Styrene	0.20	---	
75-69-4	Trichlorofluoromethane	0.20	---	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	---	
179601-23-1	m,p-Xylene	0.40	---	
95-47-6	o-Xylene	0.20	---	
95-50-1	1,2-Dichlorobenzene	0.20	---	
541-73-1	1,3-Dichlorobenzene	0.20	---	
106-46-7	1,4-Dichlorobenzene	0.20	---	

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MW-3**
Page 2 of 2 **MATRIX SPIKE DUP**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Date Analyzed: 10/06/15 19:09

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	---	
74-88-4	Iodomethane	1.0	---	
74-96-4	Bromoethane	0.20	---	
107-13-1	Acrylonitrile	1.0	---	
563-58-6	1,1-Dichloropropene	0.20	---	
74-95-3	Dibromomethane	0.20	---	
630-20-6	1,1,1,2-Tetrachloroethane	0.20	---	
96-12-8	1,2-Dibromo-3-chloropropane	0.50	---	
96-18-4	1,2,3-Trichloropropane	0.50	---	
110-57-6	trans-1,4-Dichloro-2-butene	1.0	---	
108-67-8	1,3,5-Trimethylbenzene	0.20	---	
95-63-6	1,2,4-Trimethylbenzene	0.20	---	
87-68-3	Hexachlorobutadiene	0.50	---	
106-93-4	1,2-Dibromoethane	0.20	---	
74-97-5	Bromochloromethane	0.20	---	
594-20-7	2,2-Dichloropropane	0.20	---	
142-28-9	1,3-Dichloropropane	0.20	---	
98-82-8	Isopropylbenzene	0.20	---	
103-65-1	n-Propylbenzene	0.20	---	
108-86-1	Bromobenzene	0.20	---	
95-49-8	2-Chlorotoluene	0.20	---	
106-43-4	4-Chlorotoluene	0.20	---	
98-06-6	tert-Butylbenzene	0.20	---	
135-98-8	sec-Butylbenzene	0.20	---	
99-87-6	4-Isopropyltoluene	0.20	---	
104-51-8	n-Butylbenzene	0.20	---	
120-82-1	1,2,4-Trichlorobenzene	0.50	---	
91-20-3	Naphthalene	0.50	---	
87-61-6	1,2,3-Trichlorobenzene	0.50	---	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.7%
d8-Toluene	103%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	103%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MB-100615A**
 METHOD BLANK

Lab Sample ID: MB-100615A
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/LH
Date Analyzed: 10/06/15 09:16

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MB-100615A**
Page 2 of 2 **METHOD BLANK**

Lab Sample ID: MB-100615A QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17894 Project: South Riverside Drive SPU
Matrix: Water JK0707
Date Analyzed: 10/06/15 09:16

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	**1,2,4-Trichlorobenzene**	**0.50**	**0.50**	
91-20-3	**Naphthalene**	**0.50**	**0.63**	**Q**
87-61-6	**1,2,3-Trichlorobenzene**	**0.50**	**0.64**	**Q**

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	102%
Bromofluorobenzene	99.2%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-100615A	Method Blank	10	101%	102%	99.2%	101%	0
LCS-100615A	Lab Control	10	101%	104%	104%	100%	0
LCSD-100615A	Lab Control Dup	10	98.5%	99.2%	98.8%	102%	0
ANP3A	MW-1	10	99.4%	101%	96.8%	102%	0
ANP3B	MW-2	10	101%	98.3%	98.2%	104%	0
ANP3C	MW-3	10	97.7%	103%	99.3%	102%	0
ANP3CMS	MW-3	10	98.1%	100%	101%	101%	0
ANP3CMSD	MW-3	10	98.7%	103%	101%	103%	0
ANP3D	MW-51	10	102%	99.3%	96.2%	102%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-128)	(80-128)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-17894 to 15-17897

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: LCS-100615A**
Page 1 of 2 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-100615A
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 10/08/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/LH
LCSD: NT3/LH
Date Analyzed LCS: 10/06/15 08:24
LCSD: 10/06/15 08:50

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.0		10.0	100%	10.1		10.0	101%	1.0%
Bromomethane	9.89		10.0	98.9%	9.97		10.0	99.7%	0.8%
Vinyl Chloride	10.1		10.0	101%	10.0		10.0	100%	1.0%
Chloroethane	10.2		10.0	102%	9.88		10.0	98.8%	3.2%
Methylene Chloride	10.0		10.0	100%	9.83		10.0	98.3%	1.7%
Acetone	44.6		50.0	89.2%	46.9		50.0	93.8%	5.0%
Carbon Disulfide	10.2		10.0	102%	10.1		10.0	101%	1.0%
1,1-Dichloroethene	9.81		10.0	98.1%	9.96		10.0	99.6%	1.5%
1,1-Dichloroethane	9.90		10.0	99.0%	9.92		10.0	99.2%	0.2%
trans-1,2-Dichloroethene	9.59		10.0	95.9%	10.0		10.0	100%	4.2%
cis-1,2-Dichloroethene	10.1		10.0	101%	9.88		10.0	98.8%	2.2%
Chloroform	9.86		10.0	98.6%	9.92		10.0	99.2%	0.6%
1,2-Dichloroethane	9.52		10.0	95.2%	9.63		10.0	96.3%	1.1%
2-Butanone	50.6		50.0	101%	50.6		50.0	101%	0.0%
1,1,1-Trichloroethane	10.3		10.0	103%	10.3		10.0	103%	0.0%
Carbon Tetrachloride	10.3		10.0	103%	10.0		10.0	100%	3.0%
Vinyl Acetate	8.18	Q	10.0	81.8%	8.10	Q	10.0	81.0%	1.0%
Bromodichloromethane	9.77		10.0	97.7%	9.71		10.0	97.1%	0.6%
1,2-Dichloropropane	9.58		10.0	95.8%	9.52		10.0	95.2%	0.6%
cis-1,3-Dichloropropene	10.3		10.0	103%	10.1		10.0	101%	2.0%
Trichloroethene	9.87		10.0	98.7%	10.0		10.0	100%	1.3%
Dibromochloromethane	9.37		10.0	93.7%	9.14		10.0	91.4%	2.5%
1,1,2-Trichloroethane	9.36		10.0	93.6%	9.45		10.0	94.5%	1.0%
Benzene	9.77		10.0	97.7%	9.87		10.0	98.7%	1.0%
trans-1,3-Dichloropropene	10.0		10.0	100%	9.83		10.0	98.3%	1.7%
2-Chloroethylvinylether	9.77		10.0	97.7%	9.86		10.0	98.6%	0.9%
Bromoform	9.85		10.0	98.5%	9.94		10.0	99.4%	0.9%
4-Methyl-2-Pentanone (MIBK)	50.0		50.0	100%	49.0		50.0	98.0%	2.0%
2-Hexanone	49.5		50.0	99.0%	49.9		50.0	99.8%	0.8%
Tetrachloroethene	9.84		10.0	98.4%	10.0		10.0	100%	1.6%
1,1,2,2-Tetrachloroethane	8.86		10.0	88.6%	9.08		10.0	90.8%	2.5%
Toluene	9.78		10.0	97.8%	9.49		10.0	94.9%	3.0%
Chlorobenzene	9.31		10.0	93.1%	9.58		10.0	95.8%	2.9%
Ethylbenzene	9.41		10.0	94.1%	9.42		10.0	94.2%	0.1%
Styrene	9.72		10.0	97.2%	9.93		10.0	99.3%	2.1%
Trichlorofluoromethane	10.2		10.0	102%	10.3		10.0	103%	1.0%
1,1,2-Trichloro-1,2,2-trifluoroetha	10.3		10.0	103%	10.2		10.0	102%	1.0%
m,p-Xylene	19.1		20.0	95.5%	19.1		20.0	95.5%	0.0%

Lab Sample ID: LCS-100615A QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17894 Project: South Riverside Drive SPU
Matrix: Water JK0707

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.65	10.0	96.5%	9.95	10.0	99.5%	3.1%
1,2-Dichlorobenzene	8.92	10.0	89.2%	9.44	10.0	94.4%	5.7%
1,3-Dichlorobenzene	8.83	10.0	88.3%	9.58	10.0	95.8%	8.1%
1,4-Dichlorobenzene	8.77	10.0	87.7%	9.46	10.0	94.6%	7.6%
Acrolein	36.0 Q	50.0	72.0%	36.4 Q	50.0	72.8%	1.1%
Iodomethane	10.1	10.0	101%	10.1	10.0	101%	0.0%
Bromoethane	10.4	10.0	104%	9.83	10.0	98.3%	5.6%
Acrylonitrile	9.31	10.0	93.1%	9.21	10.0	92.1%	1.1%
1,1-Dichloropropene	9.37	10.0	93.7%	9.62	10.0	96.2%	2.6%
Dibromomethane	9.72	10.0	97.2%	9.85	10.0	98.5%	1.3%
1,1,1,2-Tetrachloroethane	9.97	10.0	99.7%	9.96	10.0	99.6%	0.1%
1,2-Dibromo-3-chloropropane	8.03	10.0	80.3%	8.68	10.0	86.8%	7.8%
1,2,3-Trichloropropane	8.86	10.0	88.6%	9.24	10.0	92.4%	4.2%
trans-1,4-Dichloro-2-butene	8.89	10.0	88.9%	9.73	10.0	97.3%	9.0%
1,3,5-Trimethylbenzene	9.31	10.0	93.1%	9.87	10.0	98.7%	5.8%
1,2,4-Trimethylbenzene	9.20	10.0	92.0%	9.89	10.0	98.9%	7.2%
Hexachlorobutadiene	7.49	10.0	74.9%	9.18	10.0	91.8%	20.3%
1,2-Dibromoethane	10.0	10.0	100%	10.1	10.0	101%	1.0%
Bromochloromethane	9.49	10.0	94.9%	9.45	10.0	94.5%	0.4%
2,2-Dichloropropane	10.8	10.0	108%	10.9	10.0	109%	0.9%
1,3-Dichloropropane	9.35	10.0	93.5%	9.67	10.0	96.7%	3.4%
Isopropylbenzene	9.24	10.0	92.4%	10.0	10.0	100%	7.9%
n-Propylbenzene	9.34	10.0	93.4%	9.88	10.0	98.8%	5.6%
Bromobenzene	9.05	10.0	90.5%	9.45	10.0	94.5%	4.3%
2-Chlorotoluene	9.07	10.0	90.7%	9.52	10.0	95.2%	4.8%
4-Chlorotoluene	9.44	10.0	94.4%	9.82	10.0	98.2%	3.9%
tert-Butylbenzene	8.94	10.0	89.4%	9.71	10.0	97.1%	8.3%
sec-Butylbenzene	9.02	10.0	90.2%	9.80	10.0	98.0%	8.3%
4-Isopropyltoluene	9.18	10.0	91.8%	9.86	10.0	98.6%	7.1%
n-Butylbenzene	9.28	10.0	92.8%	10.3	10.0	103%	10.4%
1,2,4-Trichlorobenzene	8.38 B	10.0	83.8%	9.06 B	10.0	90.6%	7.8%
Naphthalene	8.13 QB	10.0	81.3%	8.62 QB	10.0	86.2%	5.9%
1,2,3-Trichlorobenzene	6.88 QB	10.0	68.8%	7.64 QB	10.0	76.4%	10.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	101%	98.5%
d8-Toluene	104%	99.2%
Bromofluorobenzene	104%	98.8%
d4-1,2-Dichlorobenzene	100%	102%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-1**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ANP3A
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 15:20

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	0.046	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	124%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-2**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ANP3B
LIMS ID: 15-17895
Matrix: Water
Data Release Authorized: MW
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 15:46

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	**Vinyl Chloride**	**0.020**	**3.6**	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	125%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-3**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 16:12

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	**Vinyl Chloride**	**0.020**	**1.2**	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	127%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-3**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized: MW
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 18:42

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	---	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	125%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-3**
Page 1 of 1 **MATRIX SPIKE DUP**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized: MW
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 19:07

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	---	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	129%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-51**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ANP3D
LIMS ID: 15-17897
Matrix: Water
Data Release Authorized:
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 16:38

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	3.8	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	128%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM Sample ID: MB-100615
 METHOD BLANK

Lab Sample ID: MB-100615
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT15/PAB
Date Analyzed: 10/06/15 13:44

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	RL	Result	Q
75-01-4	Vinyl Chloride	0.020	< 0.020	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	133%

ANALYTICAL RESOURCES INCORPORATED

SW8260-SIM SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

Client ID	DCE	TOT OUT
MW-1	124%	0
MW-2	125%	0
MB-100615	133%*	1
LCS-100615	126%	0
LCSD-100615	130%*	1
MW-3	127%	0
MW-3-MS	125%	0
MW-3-MSD	129%	0
MW-51	128%	0

	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-129)	(80-129)

Prep Method: SW5030
Log Number Range: 15-17894 to 15-17897

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: LCS-100615**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-100615
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized: MW
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT15/PAB
LCSD: NT15/PAB
Date Analyzed LCS: 10/06/15 12:52
LCSD: 10/06/15 14:09

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	1.13	1.00	113%	1.05	1.00	105%	7.3%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	126%	130%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C-SIM **Sample ID: MW-3**
Page 1 of 1 **MATRIX SPIKE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 10/07/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Instrument/Analyst MS: NT15/PAB
MSD: NT15/PAB
Date Analyzed MS: 10/06/15 18:42
MSD: 10/06/15 19:07

Sample Amount MS: 10.0 mL
MSD: 10.0 mL
Purge Volume MS: 10.0 mL
MSD: 10.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Vinyl Chloride	1.17	2.08	1.00	91.0%	2.17	1.00	100%	4.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE

Modified RSK 175
Page 1 of 1
Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Received: 10/01/15

Data Release Authorized:
Reported: 10/08/15

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
ANP3A	MW-1	10/06/15	1.0	Methane	0.7	< 0.7 U
15-17894				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
ANP3B	MW-2	10/06/15	1.0	**Methane**	**0.7**	**549**
15-17895				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
ANP3C	MW-3	10/06/15	1.0	**Methane**	**0.7**	**2,530**
15-17896				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
ANP3D	MW-51	10/06/15	1.0	**Methane**	**0.7**	**546**
15-17897				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
100615MB	Method Blank	10/06/15	1.0	Methane	0.7	< 0.7 U
100615MB	Method Blank	10/06/15	1.0	Ethane	1.2	< 1.2 U
100615MB	Method Blank	10/06/15	1.0	Ethene	1.1	< 1.1 U

Reported in ug/L (ppb)

ANALYTICAL RESOURCES INCORPORATED

RSK 175 WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

ARI ID	Client ID	PRP	TOT OUT
ANP3A	MW-1	98.4%	0
ANP3B	MW-2	98.9%	0
ANP3C	MW-3	95.0%	0
ANP3D	MW-51	101%	0
MB-100615	Method Blank	102%	0
LCS-100615	Lab Control	104%	0
LCSD-100615	Lab Control Dup	98.4%	0

	LCS/MB LIMITS	QC LIMITS
(PRP) = Propane	(72-122)	(72-122)

Log Number Range: 15-17894 to 15-17897

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE

Modified RSK 175
Page 1 of 1
Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Received: 10/01/15

Data Release Authorized:
Reported: 10/08/15

ARI ID	Analysis Date	Analyte	Spike	Result	Recovery	RPD
100615LCS	10/06/15	Methane	654	637	97.3%	0.9%
100615LCSD				631	96.4%	
100615LCS	10/06/15	Ethane	1,230	1,210	98.6%	1.7%
100615LCSD				1,190	97.0%	
100615LCS	10/06/15	Ethene	1,150	1,100	96.1%	1.8%
100615LCSD				1,080	94.3%	

Reported in ug/L (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID-Silica and Acid Cleaned
Extraction Method:
Page 1 of 1

QC Report No: ANP3-Pacific Groundwater Grou
Project: South Riverside Drive SPU
JK0707

Matrix: Water
Data Release Authorized: MW
Reported: 10/12/15

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-100515	Method Blank	10/05/15	10/09/15	1.00	Diesel Range	0.10	< 0.10 U
15-17894	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		88.8%
ANP3A	MW-1	10/05/15	10/09/15	1.00	Diesel Range	0.10	< 0.10 U
15-17894	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		82.6%
ANP3B	MW-2	10/05/15	10/09/15	1.00	Diesel Range	0.10	< 0.10 U
15-17895	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		81.7%
ANP3C	MW-3	10/05/15	10/09/15	1.00	Diesel Range	0.10	< 0.10 U
15-17896	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		81.9%
ANP3D	MW-51	10/05/15	10/09/15	1.00	Diesel Range	0.10	< 0.10 U
15-17897	HC ID: ---		FID3B	1.0	Motor Oil Range	0.20	< 0.20 U
					o-Terphenyl		71.9%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

Client ID	OTER	TOT OUT
MB-100515	88.8%	0
LCS-100515	83.7%	0
LCSD-100515	88.1%	0
MW-1	82.6%	0
MW-2	81.7%	0
MW-3	81.9%	0
MW-51	71.9%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-17894 to 15-17897

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned **Sample ID: LCS-100515**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-100515
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 10/12/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted LCS/LCSD: 10/05/15

Date Analyzed LCS: 10/09/15 03:06
LCSD: 10/09/15 03:27
Instrument/Analyst LCS: FID/ML
LCSD: FID/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.41	3.00	80.3%	2.54	3.00	84.7%	5.3%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	83.7%	88.1%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: ANP3
Matrix: Water Project: South Riverside Drive SPU
Date Received: 10/01/15 JK0707

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-17894-100515MB1	Method Blank	500 mL	1.00 mL	10/05/15
15-17894-100515LCS1	Lab Control	500 mL	1.00 mL	10/05/15
15-17894-100515LCSD1	Lab Control Dup	500 mL	1.00 mL	10/05/15
15-17894-ANP3A	MW-1	500 mL	1.00 mL	10/05/15
15-17895-ANP3B	MW-2	500 mL	1.00 mL	10/05/15
15-17896-ANP3C	MW-3	500 mL	1.00 mL	10/05/15
15-17897-ANP3D	MW-51	500 mL	1.00 mL	10/05/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100834.D ARI ID: ANP3MBW1
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: ANP3MBW1
Instrument: fid3b.i
Injection: 09-OCT-2015 02:44
Operator: ML
Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.506	-0.006	11874	8378	WATPHG	(Tol-C12)	80757	5.24
C8	1.754	-0.004	895	407	WATPHD	(C12-C24)	74690	5.38
C10	3.241	-0.005	409	224	WATPHM	(C24-C38)	212847	15.49
C12	4.158	0.001	284	53	AK102	(C10-C25)	93882	5.71
C14	4.845	-0.001	317	76	AK103	(C25-C36)	160138	20.27
C16	5.447	0.001	406	39				
C18	6.045	0.001	495	178				
C20	6.647	-0.003	541	99				
C22	7.246	0.003	621	191				
C24	7.806	-0.003	689	282				
C25	8.082	0.003	563	193				
C26	8.344	0.000	672	270				
C28	8.893	-0.006	1121	1026	IT.DIES	(C10-C24)	89158	5.44
C32	10.127	-0.011	6982	8911				
C34	10.786	-0.005	928	608	CREOSOT	(C8-C22)	57923	22.47
Filter Peak	11.303	0.003	1101	495				
C36	11.445	0.001	1113	539	BUNKERC	(C10-C38)	302005	31.12
o-terph	6.219	-0.000	1034095	784227				
Triacon Surr	9.515	-0.000	585013	781839				

Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	784227	40.0	88.8
Triacontane	781839	41.5	92.2

mc
10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100834.D

Date : 09-OCT-2015 02:44

Client ID: ANP3MBW1

Sample Info: ANP3MBW1

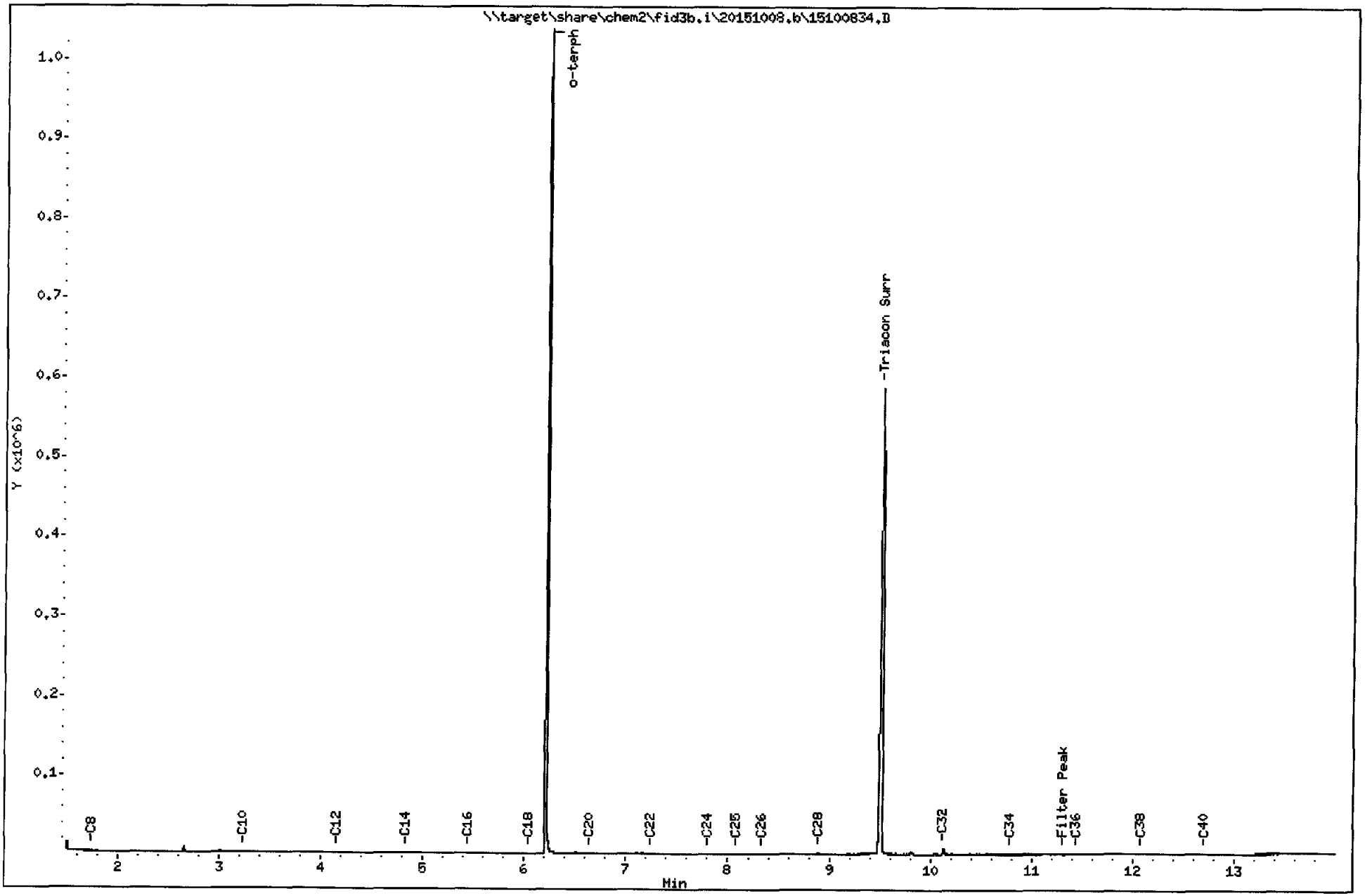
Column phase: RTX-1

Instrument: fid3b.i

Operator: ML

Column diameter: 0.25

ANP3:00043



Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100835.D ARI ID: ANP3LCSW1
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: ANP3LCSW1
Instrument: fid3b.i Injection: 09-OCT-2015 03:06
Operator: ML Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.509	-0.003	25319	16214	WATPHG	(Tol-C12)	3545015	229.96
C8	1.754	-0.004	15286	12443	WATPHD	(C12-C24)	16746015	1205.27
C10	3.244	-0.002	98567	54146	WATPHM	(C24-C38)	322586	23.48
C12	4.156	-0.001	192714	105262	AK102	(C10-C25)	19324772	1175.33 M
C14	4.845	-0.001	372946	298821	AK103	(C25-C36)	222198	28.12
C16	5.447	0.002	511055	418582				
C18	6.047	0.004	462520	408117				
C20	6.650	0.000	268880	262954				
C22	7.241	-0.003	123302	129799				
C24	7.804	-0.005	42663	40999				
C25	8.074	-0.005	22130	22305				
C26	8.338	-0.006	10822	11152				
C28	8.893	-0.007	2382	2091	IT.DIES	(C10-C24)	19250168	1175.01
C32	10.131	-0.007	6225	7492				
C34	10.790	-0.002	571	98	CREOSOT	(C8-C22)	16183173	6277.90
Filter Peak	11.299	-0.002	593	58				
C36	11.445	0.001	505	244	BUNKERC	(C10-C38)	19572753	2016.56
o-terph	6.221	0.002	975798	739297				
Triacon Surr	9.514	-0.001	569915	733866				

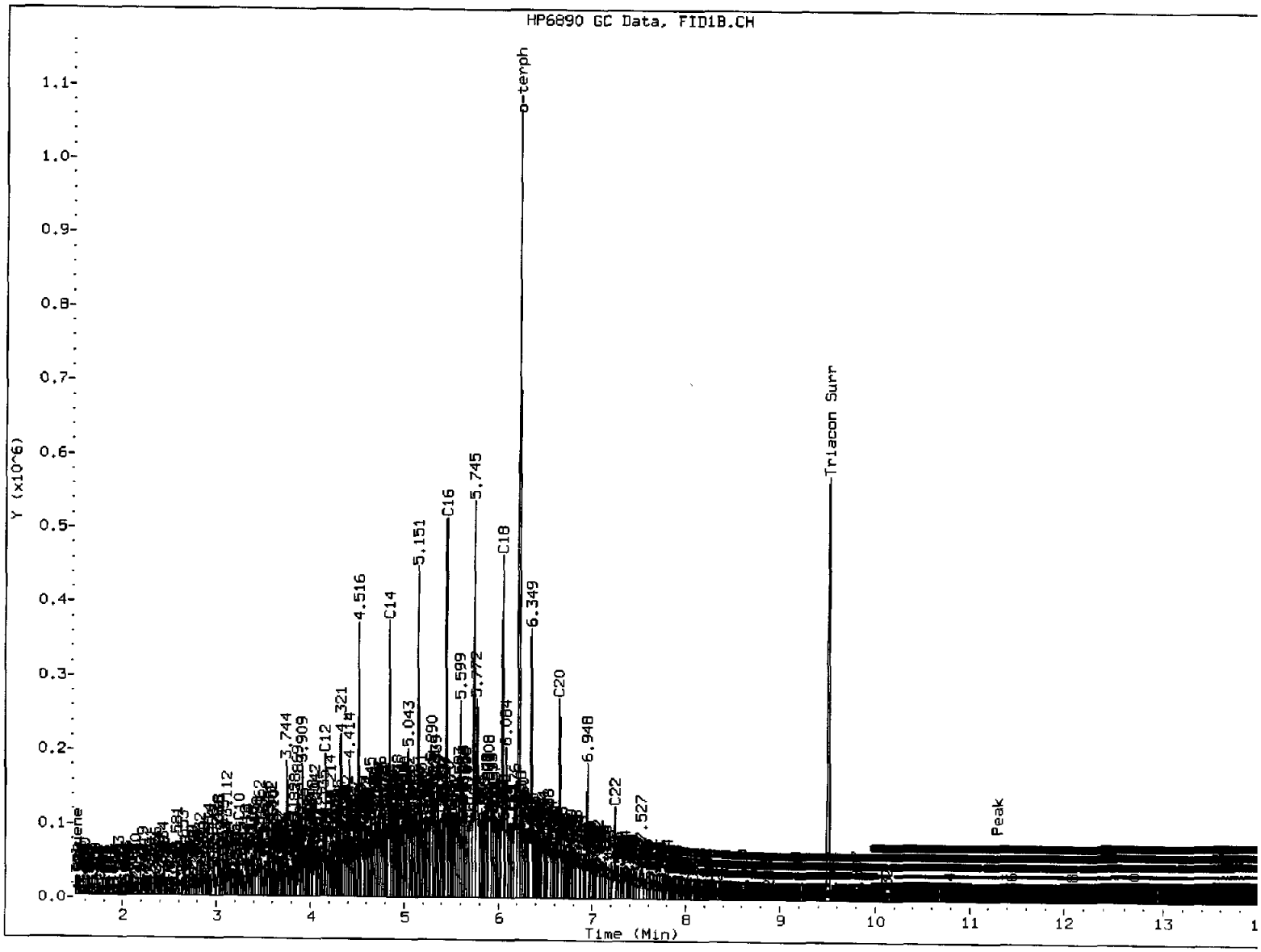
Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	739297	37.7	83.7
Triacontane	733866	38.9	86.5

mc 10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

FID:3B-2C/RTX-1 ANP3LCSW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MM Date: 10/9/15

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100835.D

Date : 09-OCT-2015 03:06

Client ID: ANP3LCSW1

Sample Info: ANP3LCSW1

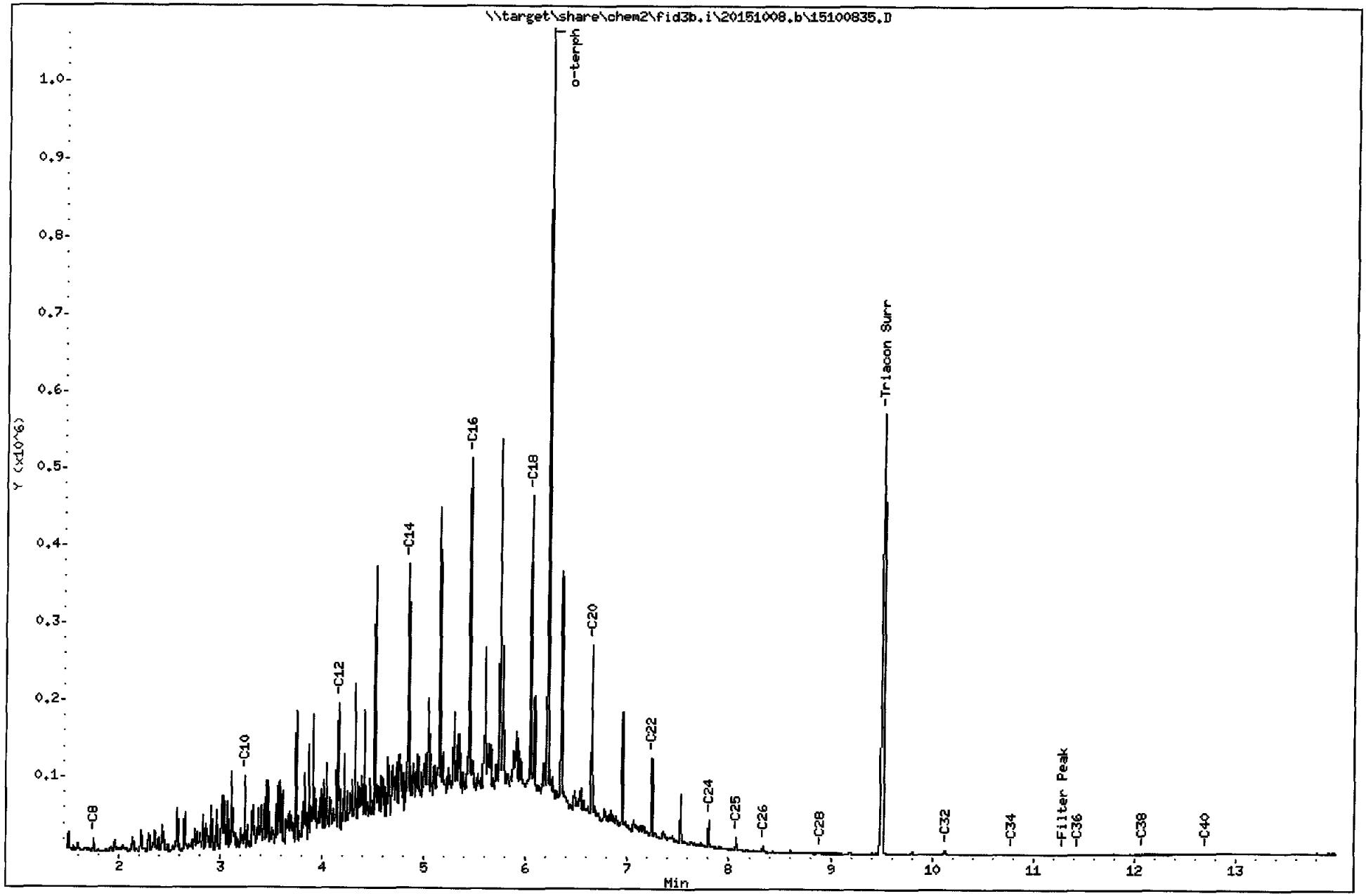
Instrument: fid3b.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25

ANP3:000046



Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100836.D ARI ID: ANP3LCSDW1
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: ANP3LCSDW1
Instrument: fid3b.i Injection: 09-OCT-2015 03:27
Operator: ML Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.503	-0.009	25268	16156	WATPHG	(Tol-C12)	3810205	247.16
C8	1.749	-0.009	16273	13049	WATPHD	(C12-C24)	17627470	1268.71
C10	3.243	-0.003	107033	58664	WATPHM	(C24-C38)	339865	24.74
C12	4.156	-0.000	206071	112182	AK102	(C10-C25)	20416353	1241.72 M
C14	4.845	-0.001	392654	315941	AK103	(C25-C36)	234399	29.67
C16	5.447	0.002	550188	403209				
C18	6.047	0.004	490471	434701				
C20	6.650	0.001	287690	286663				
C22	7.241	-0.002	131097	116399				
C24	7.804	-0.004	46284	44490				
C25	8.075	-0.005	23534	23716				
C26	8.339	-0.005	11166	11560				
C28	8.890	-0.009	2451	2125	IT.DIES	(C10-C24)	20335275	1241.24
C32	10.130	-0.008	6358	7741				
C34	10.795	0.004	393	69	CREOSOT	(C8-C22)	17025966	6604.84
Filter Peak	11.302	0.002	490	219				
C36	11.446	0.002	567	312	BUNKERC	(C10-C38)	20675140	2130.14
o-terph	6.222	0.003	990590	777796				
Triacon Surr	9.514	-0.001	615548	768118				

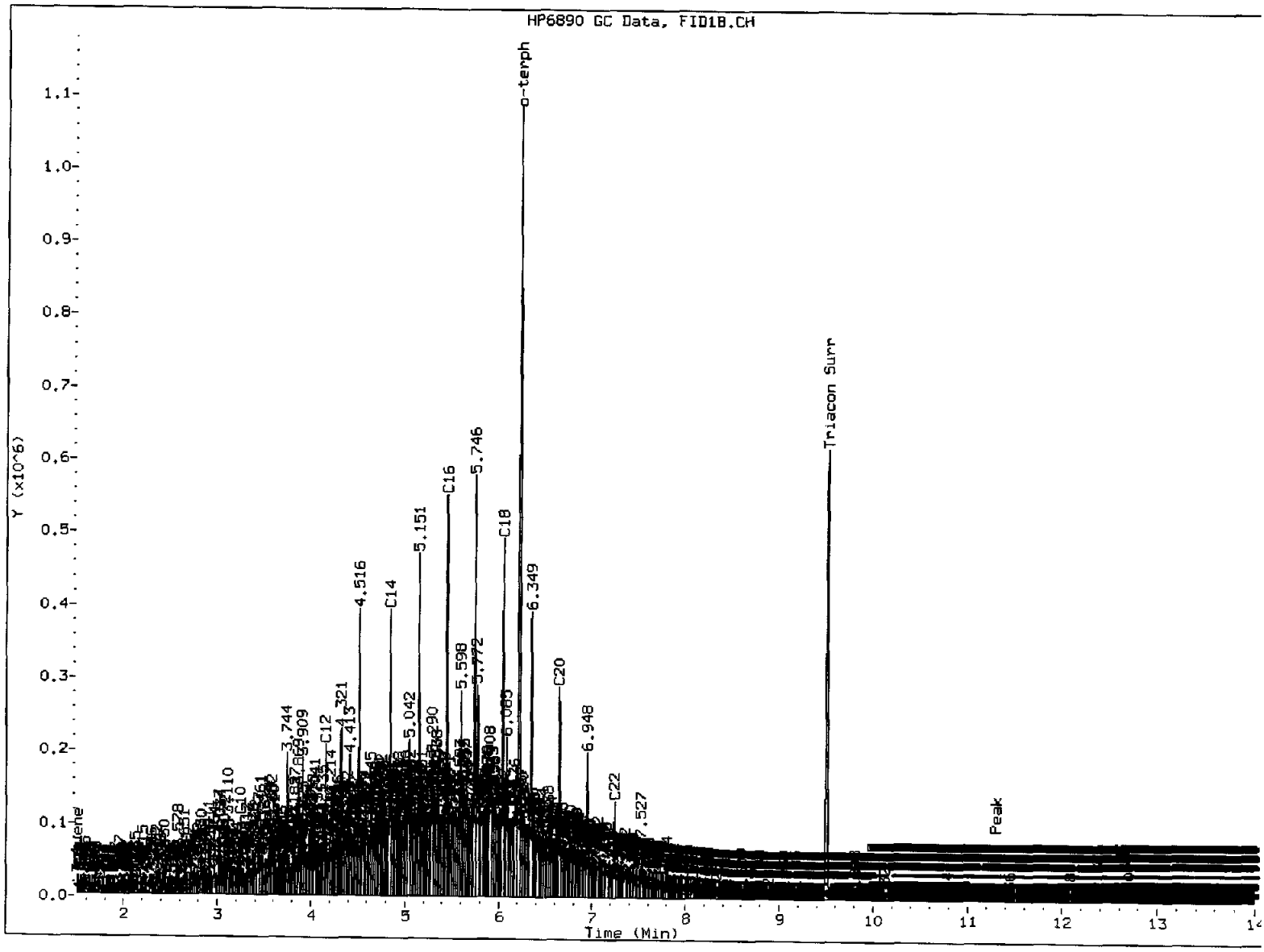
Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	777796	39.6	88.1
Triacontane	768118	40.8	90.6

mc
10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

FID:3B-2C/RTX-1 ANP3LCSDW1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: MC Date: 10/9/15

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100836.D

Date : 09-OCT-2015 03:27

Client ID: ANP3LCSDW1

Sample Info: ANP3LCSDW1

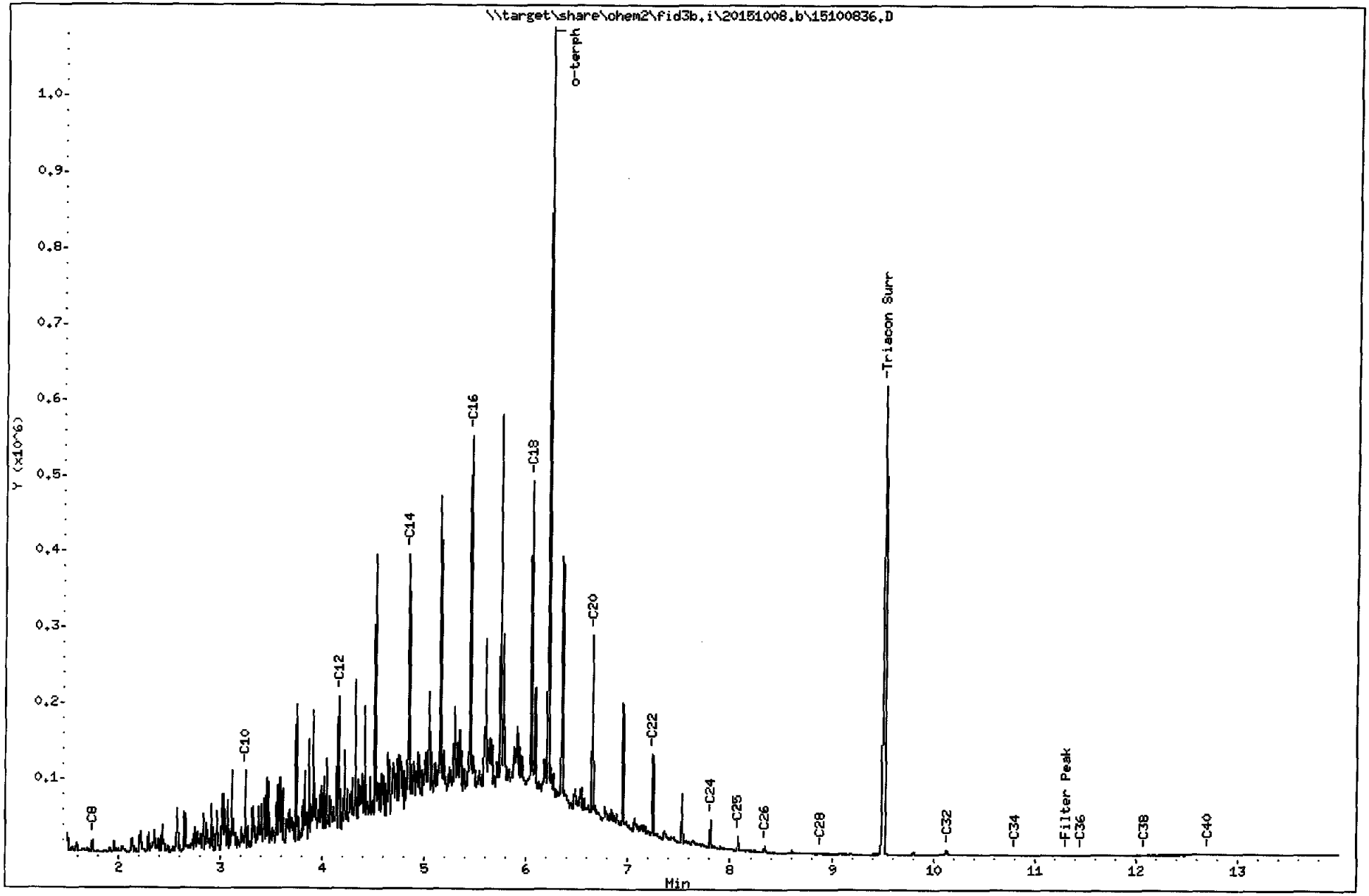
Column phase: RTX-1

Instrument: fid3b.i

Operator: ML

Column diameter: 0.25

ANP3:00049



Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100838.D ARI ID: ANP3A
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: MW-1
Instrument: fid3b.i Injection: 09-OCT-2015 04:10
Operator: ML Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.513	0.000	9872	8888	WATPHG	(Tol-C12)	82083	5.32
C8	1.748	-0.011	9176	7571	WATPHD	(C12-C24)	49320	3.55
C10	3.245	-0.001	427	167	WATPHM	(C24-C38)	139489	10.15
C12	4.154	-0.003	235	70	AK102	(C10-C25)	63687	3.87
C14	4.849	0.003	217	38	AK103	(C25-C36)	101797	12.88
C16	5.447	0.002	252	94				
C18	6.043	-0.001	498	220				
C20	6.652	0.003	371	112				
C22	7.244	0.000	422	195				
C24	7.807	-0.001	417	141				
C25	8.078	-0.001	491	219				
C26	8.347	0.003	386	127				
C28	8.898	-0.002	738	213	IT.DIES	(C10-C24)	61411	3.75
C32	10.131	-0.007	6083	7880				
C34	10.793	0.002	653	198	CREOSOT	(C8-C22)	41202	15.98
Filter Peak	11.303	0.002	803	344				
C36	11.448	0.004	835	367	BUNKERC	(C10-C38)	200901	20.70
o-terph	6.218	-0.001	970316	729957				
Triacon Surr	9.514	-0.001	583706	730103				

Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	729957	37.2	82.6
Triacontane	730103	38.7	86.1

mr 10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100838.D

Date : 09-OCT-2015 04:10

Client ID: MW-1

Sample Info: ANP3A

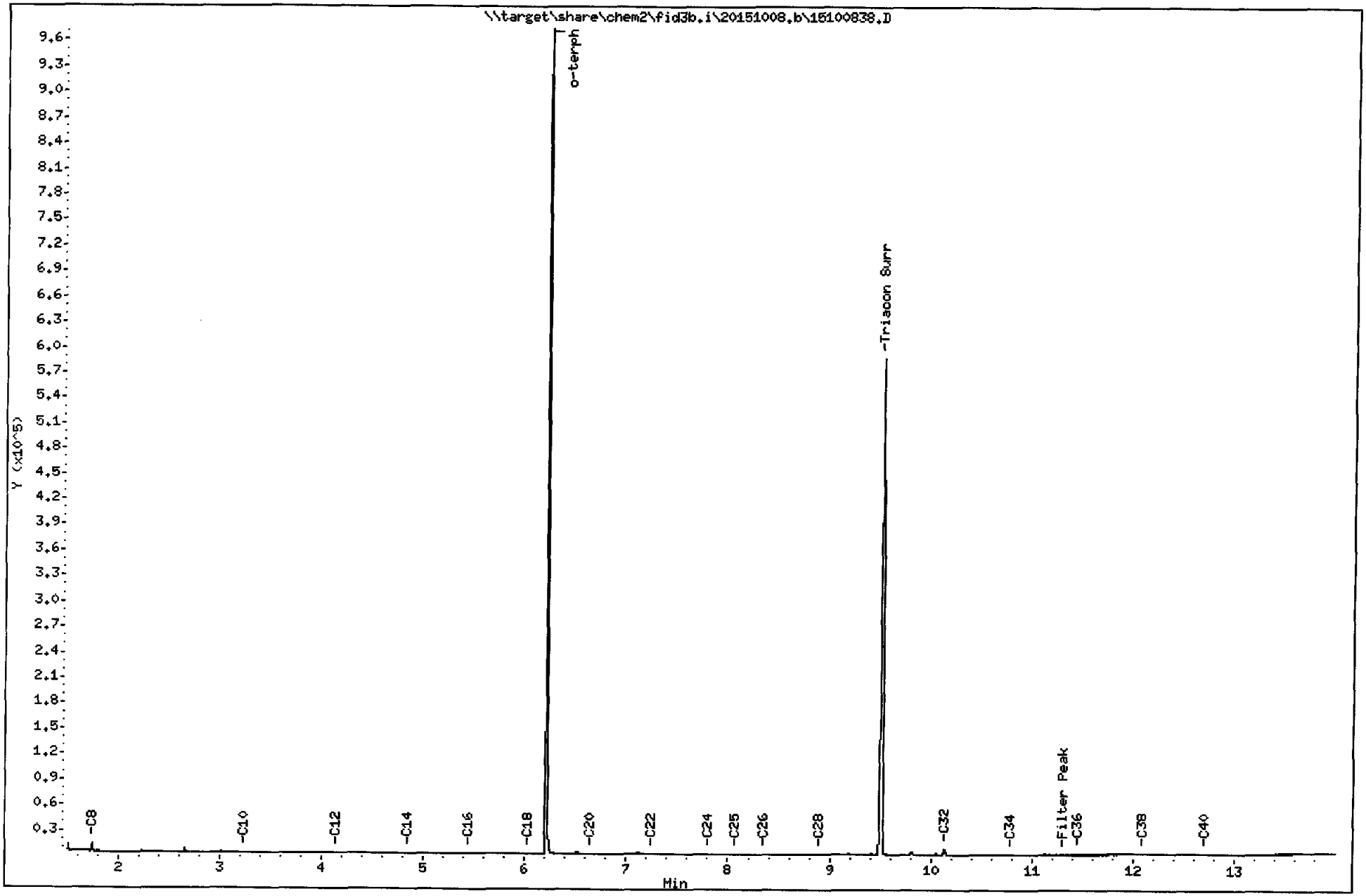
Column phase: RTX-1

Instrument: fid3b.i

Operator: ML

Column diameter: 0.25

ANP3:00051



Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100839.D ARI ID: ANP3B
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: MW-2
Instrument: fid3b.i Injection: 09-OCT-2015 04:31
Operator: ML Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.508	-0.004	11121	8459	WATPHG	(Tol-C12)	95230	6.18
C8	1.762	0.004	915	167	WATPHD	(C12-C24)	67204	4.84
C10	3.245	-0.000	538	320	WATPHM	(C24-C38)	148979	10.84
C12	4.156	-0.000	277	49	AK102	(C10-C25)	87718	5.33
C14	4.843	-0.002	320	84	AK103	(C25-C36)	110772	14.02
C16	5.441	-0.004	343	65				
C18	6.041	-0.002	460	268				
C20	6.650	0.001	356	116				
C22	7.240	-0.003	432	95				
C24	7.806	-0.002	1240	604				
C25	8.082	0.002	458	133				
C26	8.344	0.001	494	165				
C28	8.899	0.000	802	177	IT.DIES	(C10-C24)	84281	5.14
C32	10.131	-0.007	5771	6105				
C34	10.792	0.001	701	211	CREOSOT	(C8-C22)	55753	21.63
Filter Peak	11.300	-0.001	778	253				
C36	11.445	0.001	870	306	BUNKERC	(C10-C38)	233260	24.03
o-terph	6.218	-0.000	958141	721929				
Triacon Surr	9.513	-0.002	571967	708393				

Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	721929	36.8	81.7
Triacontane	708393	37.6	83.5

ML 10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100839.D

Date : 09-OCT-2015 04:31

Client ID: MW-2

Sample Info: ANP3B

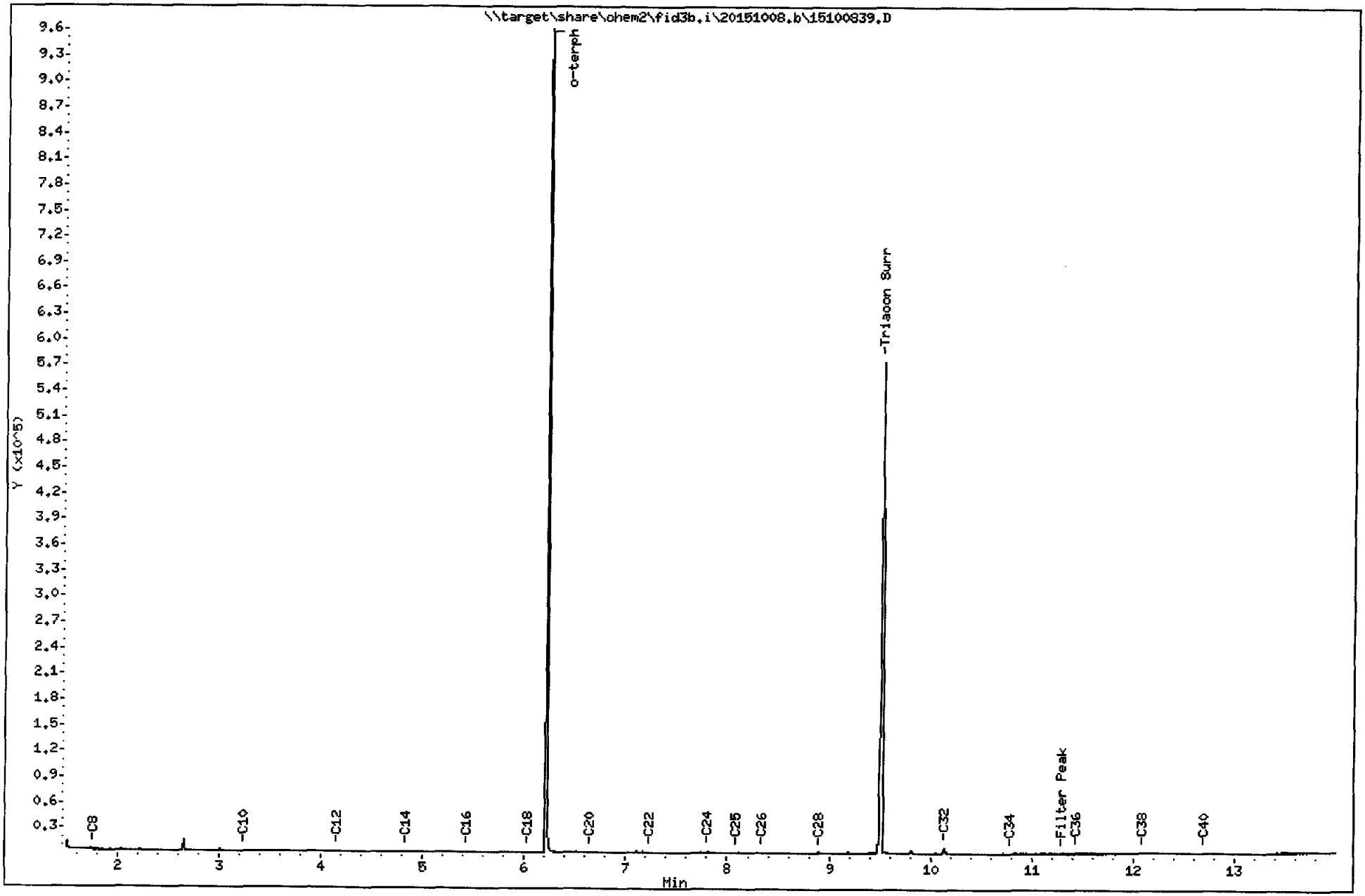
Column phase: RTX-1

Instrument: fid3b.i

Operator: ML

Column diameter: 0.25

ANP3:00053



Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100840.D ARI ID: ANP3C
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: MW-3
Instrument: fid3b.i Injection: 09-OCT-2015 04:53
Operator: ML Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.508	-0.004	11261	8956	WATPHG	(Tol-C12)	83871	5.44
C8	1.754	-0.004	890	520	WATPHD	(C12-C24)	56800	4.09
C10	3.247	0.001	639	236	WATPHM	(C24-C38)	148448	10.81
C12	4.156	-0.001	221	23	AK102	(C10-C25)	71892	4.37
C14	4.845	-0.001	338	100	AK103	(C25-C36)	112015	14.18
C16	5.444	-0.001	277	97				
C18	6.044	0.000	395	135				
C20	6.651	0.001	289	41				
C22	7.246	0.003	439	182				
C24	7.806	-0.002	448	92				
C25	8.083	0.003	386	45				
C26	8.348	0.004	478	175				
C28	8.900	0.001	677	274	IT.DIES	(C10-C24)	69299	4.23
C32	10.131	-0.007	6138	8015				
C34	10.791	-0.001	677	178	CREOSOT	(C8-C22)	46567	18.06
Filter Peak	11.303	0.002	718	121				
C36	11.445	0.000	846	395	BUNKERC	(C10-C38)	217747	22.43
o-terph	6.219	0.000	983135	723111				
Triacon Surr	9.514	-0.001	564109	711910				

Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	723111	36.8	81.9
Triacontane	711910	37.8	83.9

mc
10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100840.D

Date : 09-OCT-2015 04:53

Client ID: MW-3

Sample Info: ANP3C

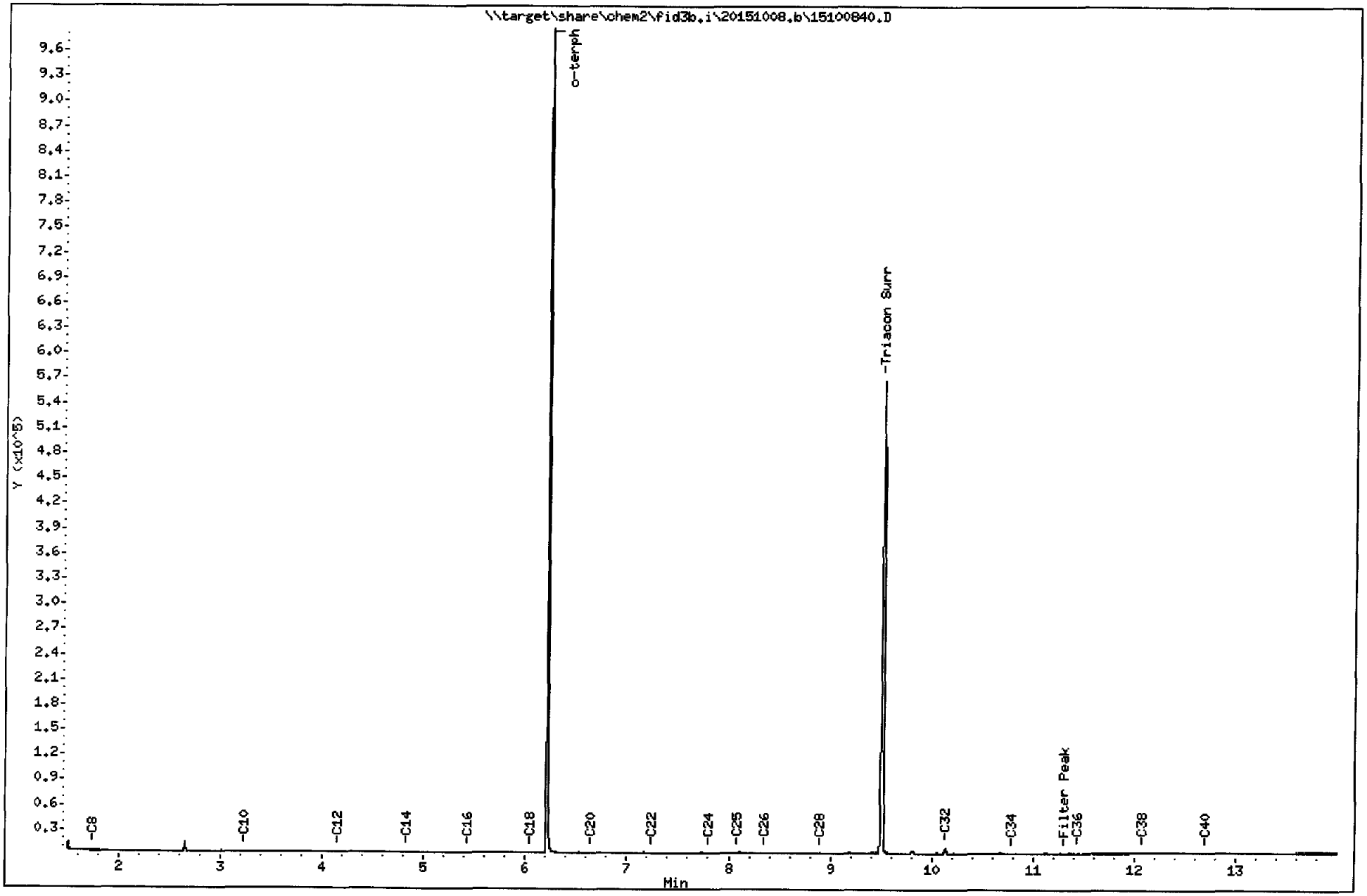
Instrument: fid3b.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25

ANP3:00055



Analytical Resources Inc.
TPH Quantitation Report

Data file: //target/share/chem2/fid3b.i/20151008.b/15100841.D ARI ID: ANP3D
Method: \\target\share\chem2\fid3b.i\20151008.b\TPHD4.mClient ID: MW-51
Instrument: fid3b.i Injection: 09-OCT-2015 05:14
Operator: ML Dilution Factor: 1
Report Date: 10/09/2015
Macro: FID:3B092415

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	1.508	-0.004	10706	8341	WATPHG	(Tol-C12)	84321	5.47
C8	1.757	-0.001	1023	167	WATPHD	(C12-C24)	85206	6.13
C10	3.248	0.002	424	124	WATPHM	(C24-C38)	202503	14.74
C12	4.153	-0.004	316	50	AK102	(C10-C25)	106282	6.46
C14	4.847	0.002	330	59	AK103	(C25-C36)	157781	19.97
C16	5.446	0.001	292	42				
C18	6.042	-0.001	460	93				
C20	6.650	0.001	521	277				
C22	7.240	-0.004	884	540				
C24	7.808	-0.001	1519	1602				
C25	8.080	0.000	984	367				
C26	8.343	-0.001	895	371				
C28	8.907	0.008	788	279	IT.DIES	(C10-C24)	99998	6.10
C32	10.128	-0.010	5949	7504				
C34	10.794	0.003	826	156	CREOSOT	(C8-C22)	63280	24.55
Filter Peak	11.302	0.002	889	322				
C36	11.447	0.002	953	314	BUNKERC	(C10-C38)	302502	31.17
o-terph	6.218	-0.001	868374	635250				
Triacon Surr	9.511	-0.004	519457	624369				

Range Times: NW Diesel(4.207 - 7.858) NW Gas(1.462 - 4.207) NW M.Oil(7.858 - 12.134)
AK102(3.196 - 8.030) AK103(8.030 - 11.494) Jet A(3.196 - 6.094)

Surrogate	Area	Amount	%Rec
o-Terphenyl	635250	32.4	71.9
Triacontane	624369	33.1	73.6

MM 10/9/15

Analyte	RF	Curve Date
o-Terph Surr	19627.0	24-SEP-2015
Triacon Surr	18844.8	24-SEP-2015
Gas	15416.0	xx-xxx-xx
Diesel	13894.0	24-SEP-2015
Motor Oil	13738.0	24-SEP-2015
AK102	16442.0	24-SEP-2015
AK103	7900.5	26-SEP-2013
IT Diesel	16383.0	24-SEP-2015
Bunker C	9706.0	29-SEP-2015
Creosote	2577.8	03-OCT-2015

Data File: \\target\share\chem2\fid3b.i\20151008.b\15100841.D

Date : 09-OCT-2015 05:14

Client ID: MW-51

Sample Info: ANP3D

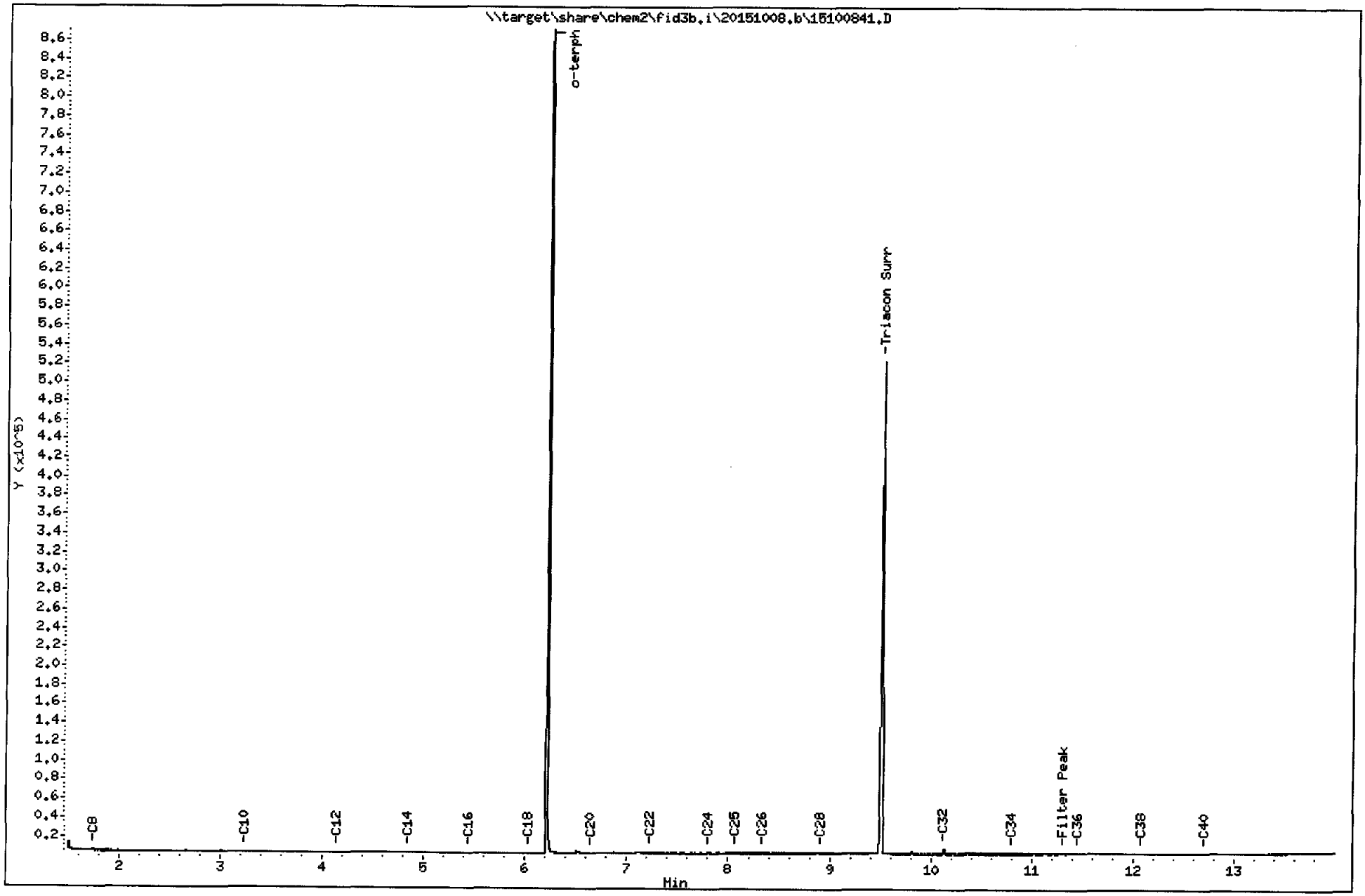
Column phase: RTX-1

Instrument: fid3b.i

Operator: ML

Column diameter: 0.25

ANP3:00057



ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-1**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3A
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 15:28
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	87.7%
d10-2-Methylnaphthalene	83.3%
d14-Dibenzo(a,h)anthracene	88.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-2**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3B
LIMS ID: 15-17895
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 15:58
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	**Fluoranthene**	**0.010**	**0.010**
129-00-0	**Pyrene**	**0.010**	**0.011**
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	**Chrysene**	**0.010**	**0.011**
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	87.7%
d10-2-Methylnaphthalene	82.3%
d14-Dibenzo(a,h)anthracene	89.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-3**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 16:28
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	**Naphthalene**	**0.010**	**0.015**
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	**Acenaphthene**	**0.010**	**0.015**
86-73-7	**Fluorene**	**0.010**	**0.013**
85-01-8	**Phenanthrene**	**0.010**	**0.037**
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	**Fluoranthene**	**0.010**	**0.013**
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	88.7%
d10-2-Methylnaphthalene	83.7%
d14-Dibenzo(a,h)anthracene	87.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-51**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3D
LIMS ID: 15-17897
Matrix: Water
Data Release Authorized:
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 16:58
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	**Phenanthrene**	**0.010**	**0.015**
120-12-7	**Anthracene**	**0.010**	**0.010**
206-44-0	**Fluoranthene**	**0.010**	**0.023**
129-00-0	**Pyrene**	**0.010**	**0.025**
56-55-3	**Benzo(a)anthracene**	**0.010**	**0.010**
218-01-9	**Chrysene**	**0.010**	**0.018**
50-32-8	**Benzo(a)pyrene**	**0.010**	**0.017**
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	**Benzo(g,h,i)perylene**	**0.010**	**0.013**
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	**Total Benzofluoranthenes**	**0.020**	**0.027**

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	75.7%
d10-2-Methylnaphthalene	69.3%
d14-Dibenzo(a,h)anthracene	71.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-1**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3E
LIMS ID: 15-17898
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 17:28
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	84.7%
d10-2-Methylnaphthalene	78.7%
d14-Dibenzo(a,h)anthracene	86.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-2**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3F
LIMS ID: 15-17899
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 17:58
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	78.7%
d10-2-Methylnaphthalene	74.7%
d14-Dibenzo(a,h)anthracene	80.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-3**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3G
LIMS ID: 15-17900
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 18:28
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	**Naphthalene**	**0.010**	**0.012**
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	**Phenanthrene**	**0.010**	**0.021**
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	81.3%
d10-2-Methylnaphthalene	71.0%
d14-Dibenzo(a,h)anthracene	83.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MW-51**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ANP3H
LIMS ID: 15-17902
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 18:58
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	86.0%
d10-2-Methylnaphthalene	78.0%
d14-Dibenzo(a,h)anthracene	87.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS **Sample ID: MB-100615**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-100615
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized: MW
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: NA
Date Received: NA

Date Extracted: 10/06/15
Date Analyzed: 10/09/15 13:28
Instrument/Analyst: NT11/JLW

Sample Amount: 500 mL
Final Extract Volume: 0.5 mL
Dilution Factor: 1.00

CAS Number	Analyte	LOQ	Result
91-20-3	Naphthalene	0.010	< 0.010 U
91-57-6	2-Methylnaphthalene	0.010	< 0.010 U
90-12-0	1-Methylnaphthalene	0.010	< 0.010 U
208-96-8	Acenaphthylene	0.010	< 0.010 U
83-32-9	Acenaphthene	0.010	< 0.010 U
86-73-7	Fluorene	0.010	< 0.010 U
85-01-8	Phenanthrene	0.010	< 0.010 U
120-12-7	Anthracene	0.010	< 0.010 U
206-44-0	Fluoranthene	0.010	< 0.010 U
129-00-0	Pyrene	0.010	< 0.010 U
56-55-3	Benzo(a)anthracene	0.010	< 0.010 U
218-01-9	Chrysene	0.010	< 0.010 U
50-32-8	Benzo(a)pyrene	0.010	< 0.010 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.010	< 0.010 U
53-70-3	Dibenz(a,h)anthracene	0.010	< 0.010 U
191-24-2	Benzo(g,h,i)perylene	0.010	< 0.010 U
132-64-9	Dibenzofuran	0.010	< 0.010 U
TOTBFA	Total Benzofluoranthenes	0.020	< 0.020 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	84.0%
d10-2-Methylnaphthalene	77.3%
d14-Dibenzo(a,h)anthracene	84.7%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707

Client ID	FLN	MNP	DBA	TOT OUT
MB-100615	84.0%	77.3%	84.7%	0
LCS-100615	88.0%	83.7%	98.3%	0
LCSD-100615	85.0%	77.7%	84.0%	0
MW-1	87.7%	83.3%	88.0%	0
MW-2	87.7%	82.3%	89.7%	0
MW-3	88.7%	83.7%	87.7%	0
MW-51	75.7%	69.3%	71.7%	0
MW-1	84.7%	78.7%	86.3%	0
MW-2	78.7%	74.7%	80.7%	0
MW-3	81.3%	71.0%	83.7%	0
MW-51	86.0%	78.0%	87.7%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(57-120)	(57-120)
(MNP) = d10-2-Methylnaphthalene	(42-120)	(42-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(29-120)	(29-120)

Prep Method: SW3510C
Log Number Range: 15-17894 to 15-17902

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Low Level SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LCS-100615
LAB CONTROL SAMPLE

Lab Sample ID: LCS-100615
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 10/13/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 10/06/15

Date Analyzed LCS: 10/09/15 13:58
LCSD: 10/09/15 14:28
Instrument/Analyst LCS: NT11/JLW
LCSD: NT11/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	0.237	0.300	79.0%	0.220	0.300	73.3%	7.4%
2-Methylnaphthalene	0.248	0.300	82.7%	0.231	0.300	77.0%	7.1%
1-Methylnaphthalene	0.245	0.300	81.7%	0.228	0.300	76.0%	7.2%
Acenaphthylene	0.234	0.300	78.0%	0.219	0.300	73.0%	6.6%
Acenaphthene	0.234	0.300	78.0%	0.220	0.300	73.3%	6.2%
Fluorene	0.242	0.300	80.7%	0.228	0.300	76.0%	6.0%
Phenanthrene	0.237	0.300	79.0%	0.226	0.300	75.3%	4.8%
Anthracene	0.242	0.300	80.7%	0.226	0.300	75.3%	6.8%
Fluoranthene	0.236	0.300	78.7%	0.224	0.300	74.7%	5.2%
Pyrene	0.238	0.300	79.3%	0.223	0.300	74.3%	6.5%
Benzo(a)anthracene	0.244	0.300	81.3%	0.228	0.300	76.0%	6.8%
Chrysene	0.239	0.300	79.7%	0.225	0.300	75.0%	6.0%
Benzo(a)pyrene	0.240	0.300	80.0%	0.219	0.300	73.0%	9.2%
Indeno(1,2,3-cd)pyrene	0.286	0.300	95.3%	0.244	0.300	81.3%	15.8%
Dibenz(a,h)anthracene	0.287	0.300	95.7%	0.244	0.300	81.3%	16.2%
Benzo(g,h,i)perylene	0.295	0.300	98.3%	0.248	0.300	82.7%	17.3%
Dibenzofuran	0.236	0.300	78.7%	0.223	0.300	74.3%	5.7%
Total Benzofluoranthenes	0.779	0.900	86.6%	0.689	0.900	76.6%	12.3%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	88.0%	85.0%
d10-2-Methylnaphthalene	83.7%	77.7%
d14-Dibenzo(a,h)anthracene	98.3%	84.0%

SAMPLE RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WJL
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Client ID: MW-1
ARI ID: 15-17894 ANP3A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/15 100515#1	SM 2320	mg/L CaCO3	1.0	40.9
Carbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Bicarbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	40.9
Hydroxide	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Ferrous Iron	10/01/15 100115#1	SM3500 FeD	mg/L	0.040	0.153
N-Nitrate	10/02/15	Calculated	mg-N/L	0.020	1.35
N-Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.020	1.35
Sulfate	10/12/15 101215#1	EPA 375.2	mg/L	100	1,290
Sulfide	10/02/15 100215#1	SM4500-S2D	mg/L	0.050	< 0.050 U
Total Organic Carbon	10/03/15 100315#1	EPA 9060	mg/L	0.50	2.56

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CWC
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Client ID: MW-2
ARI ID: 15-17895 ANP3B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/15 100515#1	SM 2320	mg/L CaCO3	1.0	125
Carbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Bicarbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	125
Hydroxide	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Ferrous Iron	10/01/15 100115#1	SM3500 FeD	mg/L	0.040	0.621
N-Nitrate	10/02/15	Calculated	mg-N/L	0.010	0.039
N-Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	0.039
Sulfate	10/12/15 101215#1	EPA 375.2	mg/L	40.0	347
Sulfide	10/02/15 100215#1	SM4500-S2D	mg/L	0.050	< 0.050 U
Total Organic Carbon	10/03/15 100315#1	EPA 9060	mg/L	0.50	4.78

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CDH
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Client ID: MW-3
ARI ID: 15-17896 ANP3C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/15 100515#1	SM 2320	mg/L CaCO3	1.0	148
Carbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Bicarbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	148
Hydroxide	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Ferrous Iron	10/01/15 100115#1	SM3500 FeD	mg/L	0.400	12.1
N-Nitrate	10/02/15	Calculated	mg-N/L	0.010	0.146
N-Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	0.146
Sulfate	10/12/15 101215#1	EPA 375.2	mg/L	2.0	22.5
Sulfide	10/02/15 100215#1	SM4500-S2D	mg/L	0.050	< 0.050 U
Total Organic Carbon	10/03/15 100315#1	EPA 9060	mg/L	0.50	10.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CP Ln
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Client ID: MW-51
ARI ID: 15-17897 ANP3D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/05/15 100515#1	SM 2320	mg/L CaCO3	1.0	160
Carbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Bicarbonate	10/05/15	SM 2320	mg/L CaCO3	1.0	160
Hydroxide	10/05/15	SM 2320	mg/L CaCO3	1.0	< 1.0 U
Ferrous Iron	10/01/15 100115#1	SM3500 FeD	mg/L	0.040	0.325
N-Nitrate	10/02/15	Calculated	mg-N/L	0.010	0.041
N-Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	10/02/15 100215#1	EPA 353.2	mg-N/L	0.010	0.041
Sulfate	10/12/15 101215#1	EPA 375.2	mg/L	40.0	343
Sulfide	10/02/15 100215#1	SM4500-S2D	mg/L	0.050	< 0.050 U
Total Organic Carbon	10/03/15 100315#1	EPA 9060	mg/L	0.50	4.81

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WL
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Ferrous Iron	SM3500 FeD	10/01/15	mg/L	< 0.040 U	
N-Nitrite	EPA 353.2	10/02/15	mg-N/L	< 0.010 U	FB
Nitrate + Nitrite	EPA 353.2	10/02/15	mg-N/L	< 0.010 U	FB
Sulfate	EPA 375.2	10/12/15	mg/L	< 2.0 U	FB
Sulfide	SM4500-S2D	10/02/15	mg/L	< 0.050 U	
Total Organic Carbon	EPA 9060	10/03/15	mg/L	< 0.50 U	

FB Filtration Blank

LAB CONTROL RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WL
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Ferrous Iron SM3500 FeD	ICVL	10/01/15	mg/L	0.502	0.500	100.4%
Sulfide SM4500-S2D	ICVL	10/02/15	mg/L	0.478	0.499	95.8%

STANDARD REFERENCE RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WL
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity	SM 2320	10/05/15	mg/L CaCO3	48.9	49.8	98.2%
ERA #P224-506		10/05/15		48.3	49.8	97.0%
N-Nitrite	EPA 353.2	10/02/15	mg-N/L	0.490	0.500	98.0%
ERA #141113						
Nitrate + Nitrite	EPA 353.2	10/02/15	mg-N/L	0.484	0.500	96.8%
ERA #320614						
Sulfate	EPA 375.2	10/12/15	mg/L	15.2	15.0	101.3%
ERA 131013						
Total Organic Carbon	EPA 9060	10/03/15	mg/L	18.9	20.0	94.5%
ERA #0408-13-02						

REPLICATE RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: dh
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: ANP3A Client ID: MW-1						
Alkalinity	SM 2320	10/05/15	mg/L CaCO3	40.9	40.6	0.7%
Carbonate	SM 2320	10/05/15	mg/L CaCO3	< 1.0	< 1.0	NA
Bicarbonate	SM 2320	10/05/15	mg/L CaCO3	40.9	40.6	0.7%
Hydroxide	SM 2320	10/05/15	mg/L CaCO3	< 1.0	< 1.0	NA
Ferrous Iron	SM3500 FeD	10/01/15	mg/L	0.153	0.151	1.3%
Sulfate	EPA 375.2	10/12/15	mg/L	1,290	1,320	2.3%
Sulfide	SM4500-S2D	10/02/15	mg/L	< 0.050	< 0.050	NA
ARI ID: ANP3C Client ID: MW-3						
Total Organic Carbon	EPA 9060	10/03/15	mg/L	10.4	10.6	1.9%

MS/MSD RESULTS-CONVENTIONALS
ANP3-Pacific Groundwater Group

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/13/15

Project: South Riverside Drive SPU
Event: JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: ANP3A Client ID: MW-1							
Ferrous Iron	SM3500 FeD	10/01/15	mg/L	0.153	0.555	0.400	100.5%
Sulfide	SM4500-S2D	10/02/15	mg/L	< 0.050	0.362	0.500	72.4%
ARI ID: ANP3C Client ID: MW-3							
Total Organic Carbon	EPA 9060	10/03/15	mg/L	10.4	30.3	20.0	99.5%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-1
SAMPLE

Lab Sample ID: ANP3A
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	7440-38-2	Arsenic	1	1	U
200.8	10/06/15	200.8	10/08/15	7439-92-1	Lead	1	1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-2
SAMPLE

Lab Sample ID: ANP3B
LIMS ID: 15-17895
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.2	**0.8**	
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.1	**0.8**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-3
SAMPLE

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.2	**4.4**	
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.1	**0.4**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-3
DUPLICATE

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	4.4	4.4	0.0%	+/- 20%	
Lead	200.8	0.4	0.4	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-3
MATRIX SPIKE

Lab Sample ID: ANP3C
LIMS ID: 15-17896
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	4.4	27.1	25.0	90.8%	
Lead	200.8	0.4	23.1	25.0	90.8%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW-51
SAMPLE

Lab Sample ID: ANP3D
LIMS ID: 15-17897
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.2	**0.9**	
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.1	**0.9**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-1
SAMPLE

Lab Sample ID: ANP3E
LIMS ID: 15-17898
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	7440-38-2	Arsenic	2	2	U
200.8	10/06/15	200.8	10/26/15	7439-92-1	Lead	1	1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-2
SAMPLE

Lab Sample ID: ANP3F
LIMS ID: 15-17899
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.2	**0.7**	
200.8	10/06/15	200.8	10/26/15	7439-92-1	Lead	0.1	0.1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-3
SAMPLE

Lab Sample ID: ANP3G
LIMS ID: 15-17900
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.2	**3.9**	
200.8	10/06/15	200.8	10/26/15	**7439-92-1**	**Lead**	0.1	**0.2**	

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-3
DUPLICATE

Lab Sample ID: ANP3G
LIMS ID: 15-17900
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	200.8	3.9	3.9	0.0%	+/- 20%	
Lead	200.8	0.2	0.2	0.0%	+/- 0.1	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-3
MATRIX SPIKE

Lab Sample ID: ANP3G
LIMS ID: 15-17900
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	200.8	3.9	27.6	25.0	94.8%	
Lead	200.8	0.2	23.6	25.0	93.6%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: MW-51
SAMPLE

Lab Sample ID: ANP3H
LIMS ID: 15-17902
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: 10/01/15
Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.2	**0.7**	
200.8	10/06/15	200.8	10/26/15	7439-92-1	Lead	0.1	0.1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: ANP3MB
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	7440-38-2	Arsenic	0.2	0.2	U
200.8	10/06/15	200.8	10/08/15	7439-92-1	Lead	0.1	0.1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ANP3LCS
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	24.2	25.0	96.8%	
Lead	200.8	25.6	25.0	102%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: ANP3MB
LIMS ID: 15-17898
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	7440-38-2	Arsenic	0.2	0.2	U
200.8	10/06/15	200.8	10/26/15	7439-92-1	Lead	0.1	0.1	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS

Sample ID: LAB CONTROL

Lab Sample ID: ANP3LCS
LIMS ID: 15-17898
Matrix: Water
Data Release Authorized:
Reported: 11/16/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	200.8	24.8	25.0	99.2%	
Lead	200.8	26.6	25.0	106%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: ANP3MB
LIMS ID: 15-17894
Matrix: Water
Data Release Authorized:
Reported: 11/18/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	7440-38-2	Arsenic	0.03	0.2	0.2	U
200.8	10/06/15	200.8	10/08/15	7439-92-1	Lead	0.008	0.1	0.1	U

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW-1**
 SAMPLE

Lab Sample ID: ANP3A QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17894 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.1	1.0	**0.8**	**J**
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.08	1.00	**0.20**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW-2**
 SAMPLE

Lab Sample ID: ANP3B QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17895 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.03	0.2	**0.8**	
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.008	0.1	**0.8**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW-3**
 SAMPLE

Lab Sample ID: ANP3C QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17896 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.03	0.2	**4.4**	
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.008	0.1	**0.4**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: MW-51**
 SAMPLE

Lab Sample ID: ANP3D QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17897 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/26/15	**7440-38-2**	**Arsenic**	0.03	0.2	**0.9**	
200.8	10/06/15	200.8	10/08/15	**7439-92-1**	**Lead**	0.008	0.1	**0.9**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS **Sample ID: METHOD BLANK**

Lab Sample ID: ANP3MB
LIMS ID: 15-17898
Matrix: Water
Data Release Authorized:
Reported: 11/18/15

QC Report No: ANP3-Pacific Groundwater Group
Project: South Riverside Drive SPU
JK0707
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	7440-38-2	Arsenic	0.03	0.2	0.2	U
200.8	10/06/15	200.8	10/26/15	**7439-92-1**	**Lead**	0.008	0.100	**0.010**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS **Sample ID: MW-1**
 SAMPLE

Lab Sample ID: ANP3E QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17898 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.3	2.0	**0.7**	**J**
200.8	10/06/15	200.8	10/26/15	**7439-92-1**	**Lead**	0.08	1.00	**0.20**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS **Sample ID: MW-2**
 SAMPLE

Lab Sample ID: ANP3F QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17899 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.03	0.2	**0.7**	
200.8	10/06/15	200.8	10/26/15	**7439-92-1**	**Lead**	0.008	0.100	**0.050**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS **Sample ID: MW-3**
 SAMPLE

Lab Sample ID: ANP3G QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17900 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.03	0.2	**3.9**	
200.8	10/06/15	200.8	10/26/15	**7439-92-1**	**Lead**	0.008	0.1	**0.2**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
DISSOLVED METALS **Sample ID: MW-51**
 SAMPLE

Lab Sample ID: ANP3H QC Report No: ANP3-Pacific Groundwater Group
LIMS ID: 15-17902 Project: South Riverside Drive SPU
Matrix: Water JK0707
Data Release Authorized: Date Sampled: 10/01/15
Reported: 11/18/15 Date Received: 10/01/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	10/06/15	200.8	10/08/15	**7440-38-2**	**Arsenic**	0.03	0.2	**0.7**	
200.8	10/06/15	200.8	10/26/15	**7439-92-1**	**Lead**	0.008	0.100	**0.040**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

PGG **Sampling Event: 2015 Q3**

Data Quality Assessment Report

Sample Summary

Date Range of Sample Collection

01-Oct-15 to 01-Oct-15

Lab Batches Included:

Batch	***Lab***	***Nominal Date***	***Samples***
anp3	ARI	26-Oct-15	
			MW-1
			MW-1
			MW-2
			MW-2
			MW-3
			MW-3
			MW-51
			MW-51
BaP-TEQ calcs			
			MW-1
			MW-2
			MW-3
Field 2015 Q3	PGG		
			MW-1
			MW-2
			MW-3
			River

Trip Blanks:

Blank Detects:

Associated Detects Less Than Max Threshold: 1

Field Blanks:

Blank Detects:

Field Blank- Associated Detects Less Than Max Threshold: 1

Method Blanks:

Blank Detects:

Batch	Constituent	Max Blank Detect	Multiplier	Threshold	Units
anp3	1,2,3-Trichlorobenzene	0.64	5	3.2	ug/L
anp3	1,2,4-Trichlorobenzene	0.5	5	2.5	ug/L
anp3	Naphthalene-8260	0.63	5	3.15	ug/L

Method Blank- Associated Data Less Than Max Threshold: 1

Field Duplicates:

Duplicate Detects:

Batch	Constituent	Limit	Result	Qualifier	Dup Result	Dup Qual	Units
anp3	1,1,2-Trichlorotrifluoroethane	0.2	1.1		1.2		ug/L
anp3	1,1-Dichloroethene	0.2	0.22		0.24		ug/L

anp3	Alkalinity as CaCO3, Total	1	125		160	mg/L CaCO3
anp3	Alkalinity, Bicarb as CaCO3	1	125		160	mg/L CaCO3
anp3	Anthracene	0.01		U	0.01	ug/L
anp3	Arsenic, Dissolved	0.2	0.7		0.7	ug/L
anp3	Arsenic, Total	0.2	0.8		0.9	ug/L
anp3	Arsenic, Total	0.2	0.8		0.9	ug/L
anp3	Benzo(g,h,i)perylene	0.01		U	0.013	ug/L
anp3	Benzo[a]anthracene	0.01		U	0.01	ug/L
anp3	Benzo[a]pyrene	0.01		U	0.017	ug/L
anp3	Carbon, Total Organic	0.5	4.78		4.81	mg/L
anp3	Chrysene	0.01	0.011		0.018	ug/L
anp3	cis-1,2-Dichloroethene	0.2	20		20	ug/L
anp3	Ferrous Iron	40	621		325	ug/L
anp3	Fluoranthene	0.01	0.01		0.023	ug/L
anp3	Lead, Total	0.1	0.8		0.9	ug/L
anp3	Methane	0.7	549		546	ug/L
anp3	Nitrate as N	0.01	0.039		0.041	mg/L as N
anp3	Nitrate+Nitrite as N	0.01	0.039		0.041	mg/L as N
anp3	Phenanthrene	0.01		U	0.015	ug/L
anp3	Pyrene	0.01	0.011		0.025	ug/L
anp3	Sulfate	40	347		343	mg/L
anp3	Tetrachloroethene (PCE)	0.2	1.2		1.3	ug/L
anp3	Toluene	0.2	0.25		0.21	ug/L
anp3	Total Benzofluoranthenes	0.02		U	0.027	ug/L
anp3	trans-1,2-Dichloroethene	0.2	0.59		0.53	ug/L
anp3	Trichloroethene (TCE)	0.2	5		5.2	ug/L
anp3	Vinyl Chloride	0.2	2.4		2.4	ug/L
anp3	Vinyl Chloride-SIM	0.02	3.6		3.8	ug/L

Field Duplicate- Associated Data Outside of QA/QC Criteria: [2]

Batch	Analysis	Constituent	Sample	Dil'n	Result	Units	Qual	RPD
anp3	SM3500 Fe	Ferrous Iron	MW-2	1	621	ug/L		62.6
		Field duplicate	MW-51	1	325	ug/L		
anp3	LL SW8270	Fluoranthene	MW-2	1	0.01	ug/L		78.8
		Field duplicate	MW-51	1	0.023	ug/L		

anp3	LL SW8270	Pyrene		MW-2	1	0.011	ug/L	77.8
			Field duplicate	MW-51	1	0.025	ug/L	

Lab Duplicates:

Duplicate Detects:

Batch	Constituent	Sample	Limit	Result	Dup Result	Units
anp3	Alkalinity as CaCO3, Total	MW-1	1	40.9	40.6	mg/L CaCO3
anp3	Alkalinity, Bicarb as CaCO3	MW-1	1	40.9	40.6	mg/L CaCO3
anp3	Arsenic, Dissolved	MW-3	0.2	3.9	3.9	ug/L
anp3	Arsenic, Total	MW-3	0.2	4.4	4.4	ug/L
anp3	Carbon, Total Organic	MW-3	0.5	10.4	10.6	mg/L
anp3	Ferrous Iron	MW-1	40	153	151	ug/L
anp3	Lead, Dissolved	MW-3	0.1	0.2	0.2	ug/L
anp3	Lead, Total	MW-3	0.1	0.4	0.4	ug/L
anp3	Sulfate	MW-1	100	1290	1320	mg/L

Lab Duplicate- Associated Data Outside of QA/QC Criteria: [2]

Reporting Limit Exceedances for non-detects: [3]

Batch	Constituent	Sample	SL	Result	Units
anp3	Vinyl Chloride	MW-1	0.18	0.2 U	ug/L

Holding Times Exceedances: [4]

Spike Recoveries Outside of QC Range: [5]

Batch	Constituent	Sample	Spike Type	% Recovery	Min%	Max%
anp3	1,2,3-Trichlorobenzene	MW-3	MD	73	80	125
anp3	1,2,3-Trichlorobenzene	MW-3	MS	68	80	125
anp3	1,2-Dichloroethane-d4	MW-1	SS	124	80	120
anp3	1,2-Dichloroethane-d4	MW-2	SS	125	80	120
anp3	1,2-Dichloroethane-d4	MW-3	MDS	129	80	120
anp3	1,2-Dichloroethane-d4	MW-3	MSS	125	80	120
anp3	1,2-Dichloroethane-d4	MW-3	SS	127	80	120
anp3	2-Chloroethyl Vinyl Ether	MW-3	MD	0	62	130
anp3	2-Chloroethyl Vinyl Ether	MW-3	MS	0	62	130
anp3	Naphthalene	MW-3	MS	77	80	128
anp3	Sulfide	MW-1	MS	72	75	125
anp3	Vinyl Acetate	MW-3	MD	70	74	120
anp3	Vinyl Acetate	MW-3	MS	71	74	120

COC:

Batch	COC Quality	Cooler Temp	Bubbles in VOAs
anp3	Good	Good	No
BaP-TEQ calc			
Field 2015 Q3			

Notes:
1. BLANKS: identifies reported constituent concentrations associated with a detected blank concentration depending on whether a constituent detected in a blank exceeds 5 times the reporting limit (or 10 times for common lab contaminants).
2. DUPLICATES: identifies reported constituent concentrations associated with a duplicate depending on a comparision with the original sample (relative percent difference > 30% if detect greater than 5 times the reporting limit, else if the absolute difference between the detects exceeds the reporting limit).
3. REPORTING LIMITS: identifies data with reporting limits exceeding project screening levels (SLs).
4. HOLDING TIMES: identifies data tested after the method holding time.
5. SPIKE RECOVERIES: identifies lab spike recoveries outside of lab specified range or default of 70 - 130%