

**BIRDS EYE FOODS, TACOMA
MONITORING WELL INSTALLATION AND
MAY 2012 GROUNDWATER QUALITY REPORT
VCP SITE NUMBER SW1187**

October 18, 2012

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October 18, 2012

J11001.04

BirdsEye_WellInstall_ECYSubmit.docx

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1.0 INTRODUCTION

This report summarizes the installation and sampling of monitoring wells during April and May 2012 at the Birds Eye Foods facility in Tacoma, Washington. Petroleum-related contamination in soil has been identified in a portion of the facility, referred to as the “Boiler Room Site,” which is the subject of a 2011 Remedial Investigation/Feasibility Study (2011 RI/FS; Pacific Groundwater Group, 2011). The preferred remedial alternative identified in the 2011 RI/FS includes long-term groundwater quality monitoring in a network of four well pairs.

The April 2012 well installation program was designed to add three new well pairs to the Boiler Room Site to be consistent with the monitoring network described in the preferred remedial alternative. Groundwater quality samples were collected from the long-term well network in May 2012, which represents the first monitoring event described in the preferred remedial alternative.

This work was performed, and this report prepared, in accordance with hydrogeologic practices generally accepted at this time and in this area for the exclusive use of Pinnacle Foods Group, LLC, for specific application to the project site. No other warranty, express or implied, is made.

2.0 WELL INSTALLATION SUMMARY

One of the findings of the 2011 RI/FS is that groundwater flow directions in the vicinity of the Boiler Room Site are influenced by seasonal recharge and by pumping. Groundwater flow directions can vary by over 180 degrees. So, for the purposes of groundwater monitoring, there is not one consistently downgradient direction from the contaminant mass in soil at the Boiler Room Site. In addition, groundwater gradients in the vicinity of the Boiler Room Site include a downward component of vertical flow within the Shallow Aquifer. Therefore, the long-term monitoring well network recommended in the preferred remedial alternative included shallow and deep well pairs to the north, east, south, and west sides of the extent of soil contamination.

Site geology is described in the Birds Eye Foods Tacoma, WA 2011 Remedial Investigation/Feasibility Study (PGG, 2011). In order from shallowest to deepest, three stratigraphic units have been identified during drilling investigations at the Boiler Room Site:

- Fill: a layer of structural fill approximately 4 to 12 feet thick consisting of sand and gravel occurs at ground surface.
- Upper Sand: the shallowest naturally occurring unit at the Site is a 30 to 50 foot thick layer of fine to medium sand with minor gravel. At the Boiler Room Site the water table occurs in the Upper Sand unit.
- Upper Gravel: approximately 50 to 100 feet of sandy gravel with significant interbeds of sand that range in thickness from 3 to 30 feet.

2.1 LONG-TERM MONITORING WELL NETWORK

For the Boiler Room Site long-term monitoring well pairs, shallow wells have the added suffix “S”; deep wells have the added suffix “D”. At each pair, the shallow and deep wells are approximately five feet from each other. The long-term monitoring well network is presented in Figure 1 and consists of:

MW-9S	MW-12S	MW-13S	MW-14S
MW-9D	MW-12D	MW-13D	MW-14D

Monitoring well pair MW-9S and MW-9D was installed in the southern portion of the Boiler Room Site during remedial investigations performed in the 1990s.

The remaining well pairs were installed in April 2012. Ecology was consulted regarding the locations of the three new well pairs. There are significant underground utilities at the Boiler Room Site, which were considered during the selection of drilling locations. Other considerations included potential facility truck traffic through the Boiler Room Site and areas of the Site that have had limited access in the past.

2.2 DRILLING AND GEOLOGIC SAMPLING

Drilling services were provided by Cascade Drilling and Development of Woodinville, Washington. A Washington State licensed driller installed the monitoring wells in accordance with WAC 173-160, Minimum Standards for the Construction of Wells. A Pacific Groundwater Group (PGG) hydrogeologist was onsite to observe drilling activities, describe soil samples, maintain geologic logs, and direct well installation. Drilling, well installation, and development are described in the following sections. Well construction information is summarized in Table 1 and depicted in as-built diagrams (Figures 2 through 9).

The new monitoring well pairs at MW-12, MW-13, and MW-14 were drilled between April 23 and 26, 2012 using a hollow stem auger drilling rig. Boreholes for the shallow monitoring wells were advanced into the Upper Sand unit to approximately 35 feet below ground surface. Boreholes for the deep monitoring wells were advanced through the Upper Sand unit and into the Upper Gravel unit to approximately 75 feet below ground surface. Very silty or clayey gravel was encountered in the bottom of each deep borehole, which is consistent with drilling observations made at MW-9D.

During drilling, split spoon samples were driven into undisturbed material in advance of the auger flights. Split spoon samples were inspected in the field by a PGG hydrogeologist and the soil types were field classified and recorded in the geologic log. No lab analyses were performed. At each well pair, split spoon samples were collected continuously from 20 to 35 feet below ground, which is generally the depth interval of petroleum-contaminated soil at the Boiler Room Site. Split spoon samples were collected at 5 foot intervals from ground surface to 20 feet below ground and from 35 feet below ground to total depth, which was typically 75 feet below ground.

Field observations (including visual and odor inspections and sheen tests) did not indicate that petroleum-contaminated soil or groundwater was encountered during drilling. Occasional wood fragments were observed during drilling. Soil cuttings and water used to decontaminate auger flights and split spoons between uses were drummed and temporarily stored onsite.

2.3 WELL INSTALLATION

Monitoring wells constructed of new, 2-inch PVC, flush-threaded screen and riser pipe were installed in each borehole. The new shallow wells are screened in the Upper Sand unit from approximately 20 to 35 feet below ground; which is comparable to shallow wells installed at the Site during previous investigations. The new deep wells are screened in lower portions of the Upper Gravel unit from approximately 63 to 73 feet below ground, which is comparable to the nearby emergency municipal supply Well 2B and slightly shallower than MW-9D.

The PVC well assemblies were installed through the hollow stem auger flights. Sand packs were installed as the auger flights were removed. The sand packs extend approximately 3 feet above the tops of the well screens. Bentonite chips were placed above the sand packs to seal the borehole to about 2 feet below ground surface and concrete was then used to seal the boreholes to ground surface. High traffic, flush-to-ground surface, 8-inch monuments were installed in concrete pads to protect the wellheads.

2.4 WELL DEVELOPMENT

Cascade Drilling representatives developed the 4 long-term monitoring well pairs using portable, submersible pumps. The objectives of well development are to improve the hydraulic connection between the well and surrounding aquifer materials and to minimize turbidity in water produced by the well. This is accomplished by stressing the formation around the well screen to remove mobile, fine-grained material.

A minimum of 50 gallons of water was pumped from each well during development and drummed for temporary storage onsite. During development, the pumps were raised and lowered in a surging action to further stress the aquifer and remove fine grained material from the formation. Cascade Drilling reported that turbidity at each well was visibly reduced during development and that groundwater cleared up by the end of the process.

During the groundwater sampling event (Section 3), groundwater initially produced from wells MW-12D and MW-13D was very turbid; therefore, PGG used a submersible pump to remove an additional 50 gallons of development water from these wells prior purging and sampling. Turbidity was significantly reduced during the second round of development; however, the pump length was insufficient to reach the bottom of the wells. MW-12D and MW-13D may require redevelopment before the next sampling event to produce an effectively graded zone surrounding the well to hold back fine grained material from entering the wells.

2.5 WELLHEAD SURVEY

Professional Land Survey, Inc surveyed the locations of the long-term monitoring wells and the elevations of the measuring points on the tops of the well casings. Survey results are summarized in Table 1.

3.0 2012 Q2 GROUNDWATER SAMPLING SUMMARY

Groundwater quality samples were collected from the Boiler Room Site long-term well network on May 7 and 8, 2012. This represents the first groundwater quality monitoring event performed in compliance with the 2011 RI/FS preferred remedial alternative and satisfies the monitoring requirement for the second quarter of 2012 (2012 Q2).

PGG representatives purged and sampled the monitoring wells using new, disposable tubing and peristaltic pumps. Low flow purging and sampling techniques were used to minimize turbidity in the groundwater samples. During purging, field meters were used to monitor pH, specific conductance, temperature, and turbidity. Samples were collected when the parameters had stabilized or after a minimum of three casing volumes had been purged. Purge water was drummed and temporarily stored onsite. Groundwater samples were delivered to Analytical Resources, Inc. (ARI), a Washington State certified laboratory on May 8, 2012 in ice chests following standard chain-of-custody procedures.

3.1 CHEMICALS OF CONCERN

Groundwater samples were analyzed according to the Washington State Department of Ecology and/or U.S. Environmental Protection Agency methods for the following parameters:

- Northwest Total Petroleum Hydrocarbons – Gasoline Range Organics (NWTPH-G), and Diesel-Range and Heavy Oil-Range Organics (NWTPH-Dx)
- BTEX Compounds: Benzene, Toluene, Ethylbenzene, and Xylenes (EPA Method 8021)
- PAHs: Polynuclear Aromatic Hydrocarbons (EPA Method 8270D with selected ion monitoring modification to achieve required reporting limits)

To be consistent with groundwater samples collected at the Boiler Room Site previously, the NWTPH-Dx analyses were performed with silica gel cleanup.

3.2 BOILER ROOM SITE GROUNDWATER CLEANUP LEVELS

As described in the 2011 RI/FS, standard MTCA Method A Unrestricted Land Use cleanup levels are applicable to the Boiler Room Site to evaluate the relative chemical effects from the Site on groundwater quality. MTCA Method A meets the criteria of WAC 173-340-704(1) because there are few hazardous substances at the Site and numerical Method A standards have been established. Groundwater cleanup levels are presented in Tables 2 and 3, and are consistent with the 2011 RI/FS.

3.3 ANALYTICAL RESULTS

The 2012 Q2 groundwater monitoring analytical results are summarized in Tables 2 and 3. Analytical lab reports are presented in Appendix A. Site contaminants of concern were not detected in the groundwater samples. The analytical reporting limits were less than corresponding Site cleanup levels.

Quality assurance/quality control (QA/QC) data associated with the Boiler Room Site 2012 Q2 groundwater samples were reviewed by PGG. All requested analyses were performed and the QA/QC assessments indicated acceptable results with the following exception:

- The PAH continuing calibration for dibenzo(a,h)anthracene was lower than acceptable limits for the analytical batch associated with samples MW-9D, MW-9S, MW-12S, and MW-12D. Dibenzo(a,h)anthracene was not detected in the Boiler Room Site groundwater samples; therefore the data did not require qualification based on the unacceptable continuing calibration.

3.4 GROUNDWATER FLOW DIRECTION

Water levels measured in the shallow well network during the 2012 Q2 sampling event (Table 1, measurements made May 7 and 8, 2012) were used to generate elevation contours of the water table (Figure 1). The contours reflect a very flat water table, varying only 0.35 feet across the Site. Groundwater flow direction during the 2012 Q2 event was toward the north.

4.0 REFERENCES

- Pacific Groundwater Group, 2011. Birds Eye Foods Tacoma, WA 2011 Remedial Investigation/Feasibility Study. Consultant's report prepared for Pinnacle Foods Group, LLC. December 16, 2011.
- Washington State Department of Ecology, 2012. Cleanup Levels and Risk Calculations (CLARC) tool. Online database accessed July 6, 2012.
- Washington State Department of Ecology, 2007. Model Toxics Control Act Statute and Regulation. WAC 173-340. Publication No. 94-06. Revised November 2007.

Table 1. Monitoring Well Construction Details, Birds Eye Boiler Room Site

Units, Datum		MW-9S	MW-9D	MW-12S	MW-12D	MW-13S	MW-13D	MW-14S	MW-14D
Unique Well ID (UWID)				BHL 104	BHL 103	BHL 106	BHL 105	BHL 108	BHL 107
Location Information									
Township/Range-Section		21N/R3E-07	21N/R3E-07	21N/R3E-07	21N/R3E-07	21N/R3E-07	21N/R3E-07	21N/R3E-07	21N/R3E-07
Northing	feet, NAD 83/91 WA South	697261.9	697257.9	697590.9	697585.0	697449.3	697457.4	697375.4	697375.0
Easting	feet, NAD 83/91 WA South	1148195.0	1148194.9	1148259.2	1148259.1	1148109.1	1148110.2	1148314.6	1148326.9
Ground Surface Elevation	feet, NAVD 88	247.67	247.64	248.24	248.19	247.23	247.24	249.45	249.43
Measuring Point Elevation	feet, NAVD 88	246.99	247.14	247.86	247.90	246.89	246.98	249.08	249.10
Construction Information									
Date Completed		10/22/1991	8/24/1992	4/23/2012	4/23/2012	4/24/2012	4/24/2012	4/26/2012	4/25/2012
Diameter	inches	2	2	2	2	2	2	2	2
Depth Drilled	feet bgs	37	82	35	75	35	75	35	75
Top of Screen	feet bgs	22	77	20	63	20	63	20	63
Bottom of Screen	feet bgs	37	82	35	73	35	73	35	73
Depth Completed	feet bgs	37	82	35	73	35	73	35	73
Monument Type		← Sherwood High Traffic Flush Monument →							
Water Level Information									
Water Level Date		5/8/2012	5/8/2012	4/26/2012	4/26/2012	4/26/2012	4/26/2012	5/7/2012	5/7/2012
Depth to Water	feet bmp	16.74	17.14	17.81	18.03	16.76	17.25	19.03	19.16
Water Level Elevation	feet NAVD 88	230.25	230.00	230.05	229.87	230.13	229.73	230.05	229.94

Vertical and Horizontal Datums use the Washington State Reference Network

bgs = below ground surface

bmp = below measuring point

Table 2: Summary of Groundwater Quality Data, Birds Eye Foods, 2012 Q2

CONSTITUENT	UNITS	Site Cleanup	MW-9S	MW-9D	MW-12S	MW-12D	MW-13S	MW-13D	MW-14S	MW-14D
		Levels*								
Field Parameters										
Depth to Water	feet		16.74	17.14	17.96	18.07	16.87	17.08	19.03	19.16
pH, Field	std. units		6.79	6.84	7.15	6.98	6.1	7.48	6.47	6.43
Specific Conductance, Field	umhos/cm		193	249	761	965	293	493	559	475
Temperature	F		55.4	48.2	57.6	63.5	59.5	62.8	55.6	62.6
Turbidity, Field	NTU		7.2	9.0	14.2	54.1	2.8	17.3	13.1	17.8
NWTPH Analytes										
Diesel Range Organics	mg/L	0.5	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Gasoline Range Organics	mg/L	0.8	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Oil Range Organics	mg/L	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
BTEX (EPA 8021)										
Benzene	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene Isomers, m+p	ug/L		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

*Cleanup Levels based on MTCA Method A.

MTCA Cleanup Levels: Gasoline Range Organics 0.8 mg/L if benzene present, 1.0 mg/L if benzene not present; Xylenes 1000 ug/L (individual cleanup levels for m+p xylenes and o-xylenes not established); Benzo(a)pyrene 0.1 ug/L, this represents the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency method in WAC 173-340-708(8) - see Table 3 if carcinoqenic PAHs detected in groundwater samples for this annual event.

Lower case qualifiers assigned by PGG QA/QC data reviewer.

Upper case qualifiers assigned by lab.

Bold text indicates constituent detected at or above method reporting limit.

U - Compound not detected

J - Concentration estimated

B - Compound detected in blank

Table 3: Summary of Polynuclear Aromatic Hydrocarbon (PAH, SW8270D) Data, Birds Eye Foods, 2012 Q2

Site Cleanup										
CONSTITUENT	UNITS	Levels*	MW-9S	MW-9D	MW-12S	MW-12D	MW-13S	MW-13D	MW-14S	MW-14D
Carcinogenic PAHs										
Benzo(a)anthracene	ug/L	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(a)pyrene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzo(a,h)anthracene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Non-Carcinogenic PAHs										
Acenaphthene	ug/L	160	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Acenaphthylene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Anthracene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluorene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Naphthalene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Phenanthrene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	ug/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

**Cleanup Levels based on MTCA Method A.*

MTCA Cleanup Levels: Gasoline Range Organics 0.8 mg/L if benzene present, 1.0 mg/L if benzene not present; Xylenes 1000 ug/L (individual cleanup levels for m+p xylenes and o-xylenes not established); Benzo(a)pyrene 0.1 ug/L, this represents the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency method in WAC 173-340-708(8) - see Table 3 if carcinogenic PAHs detected in groundwater samples for this annual event.

Lower case qualifiers assigned by PGG QA/QC data reviewer.

Upper case qualifiers assigned by lab.

Bold text indicates constituent detected at or above method reporting limit.

U - Compound not detected

J - Concentration estimated

B - Compound detected in blank



RI/FS Preferred Alternative

- Long-Term Monitoring Well Network with Water Table Elevation in Feet
- Water Table Elevation Contours in Feet
- ➔ Groundwater Flow Direction

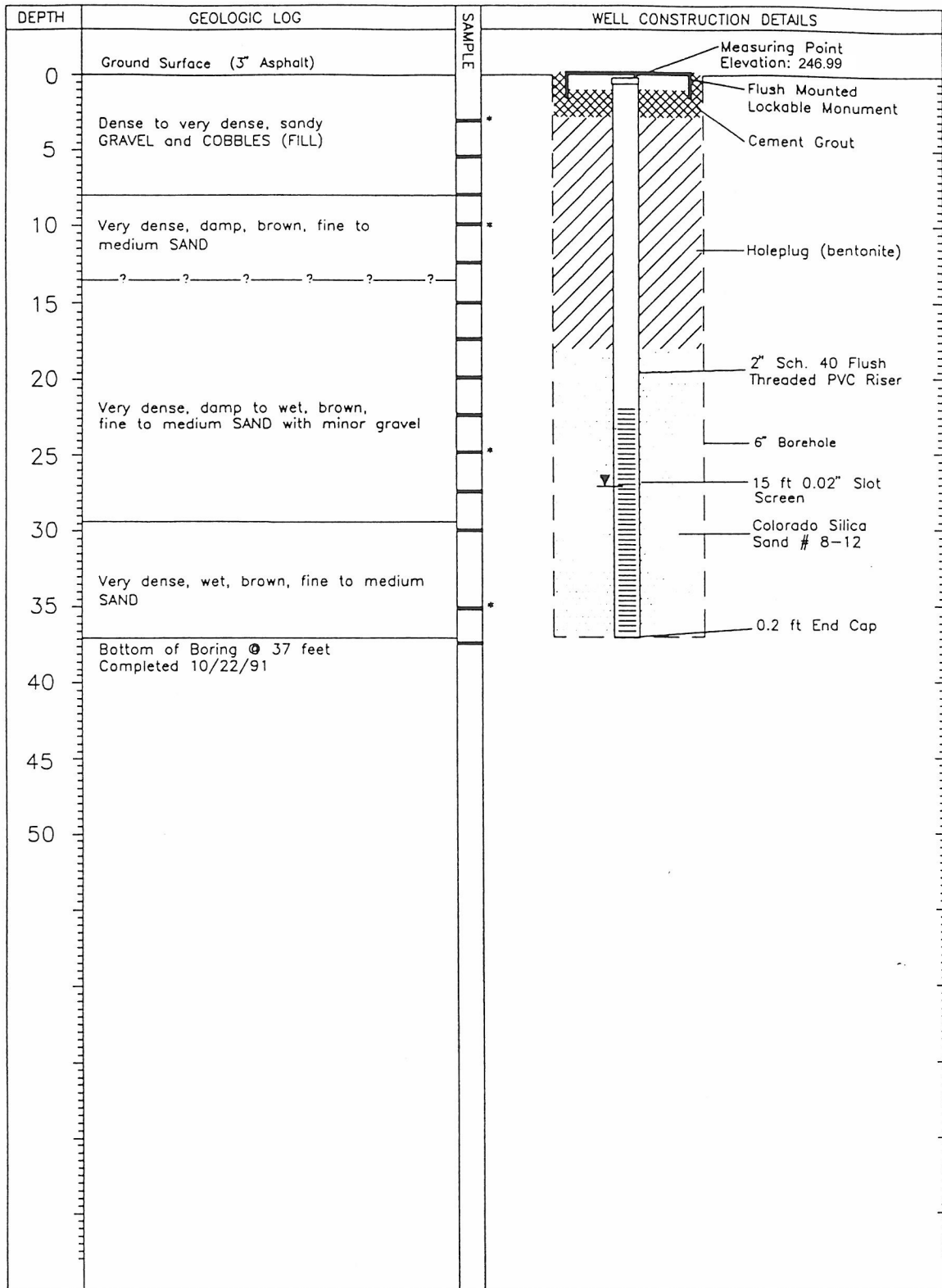


Figure 1

Long-Term Monitoring Well Network & 2012 Q2 Water Table Contours

Birds Eye Well Install and 2012 Q2 Monitoring Report

FIGURE 2 MW-9S GEOLOGIC LOG AND AS-BUILT

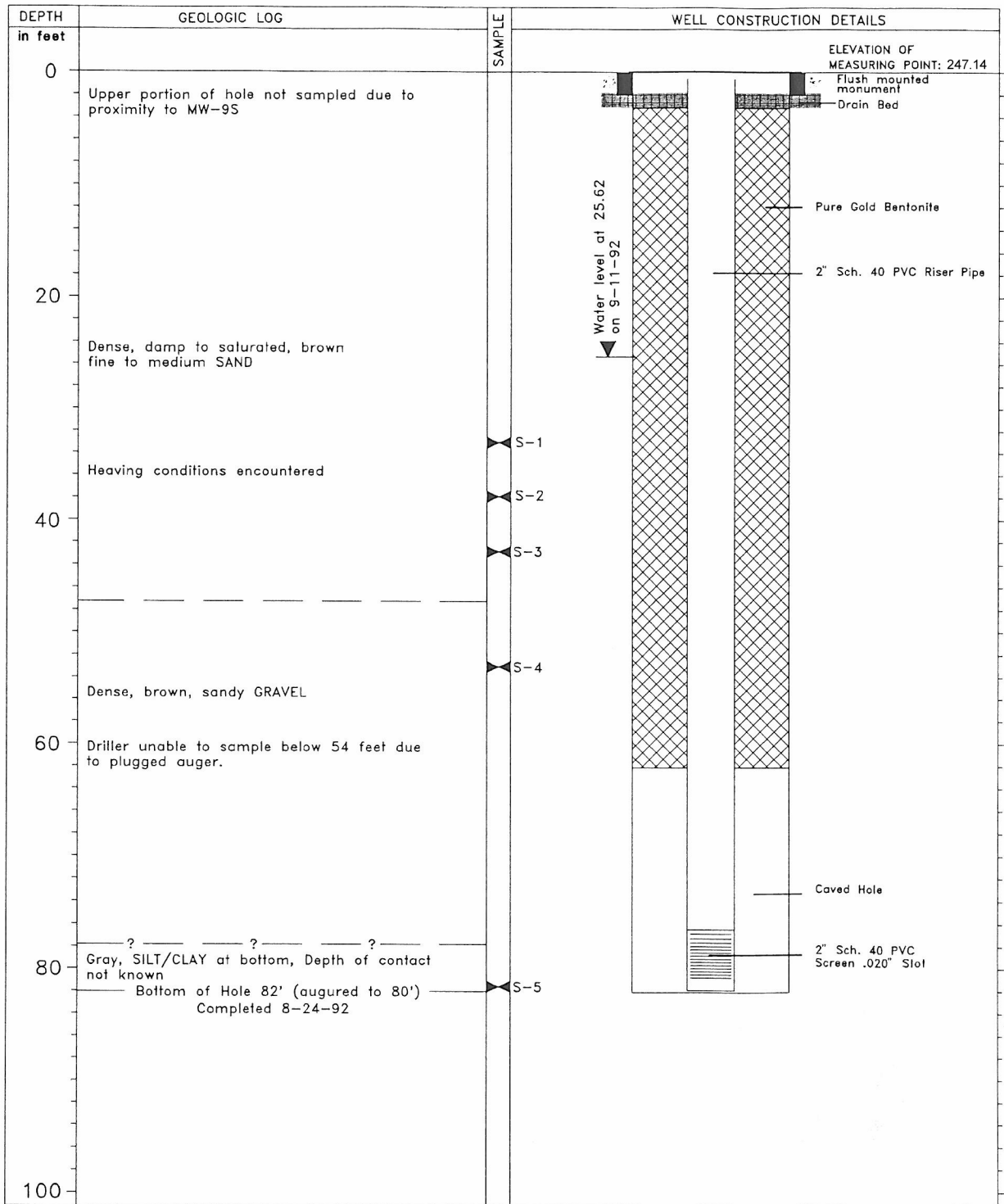


* Laboratory Chemical Analysis Performed on Sample

PROJECT NAME: Nalleys Fine Foods
 WELL IDENTIFICATION NUMBER: MW-9S
 DRILLING METHOD: Hollow Stem Auger
 DRILLER: Virgil Atkins
 FIRM: Geoboring & Development, Inc.
 CONSULTING FIRM: Pacific Groundwater Group
 REPRESENTATIVE: Peter Schwartzman

LOCATION: SE 1/4, SE 1/4, Sec. 7, T 20 N, R 3 E
 DATUM: NGVD
 WATER LEVEL ELEVATION: 216.76 on 11/5/91
 INSTALLED: October 1991
 DEVELOPED: November 1991

FIGURE 3 MW-9D GEOLOGIC LOG AND AS-BUILT



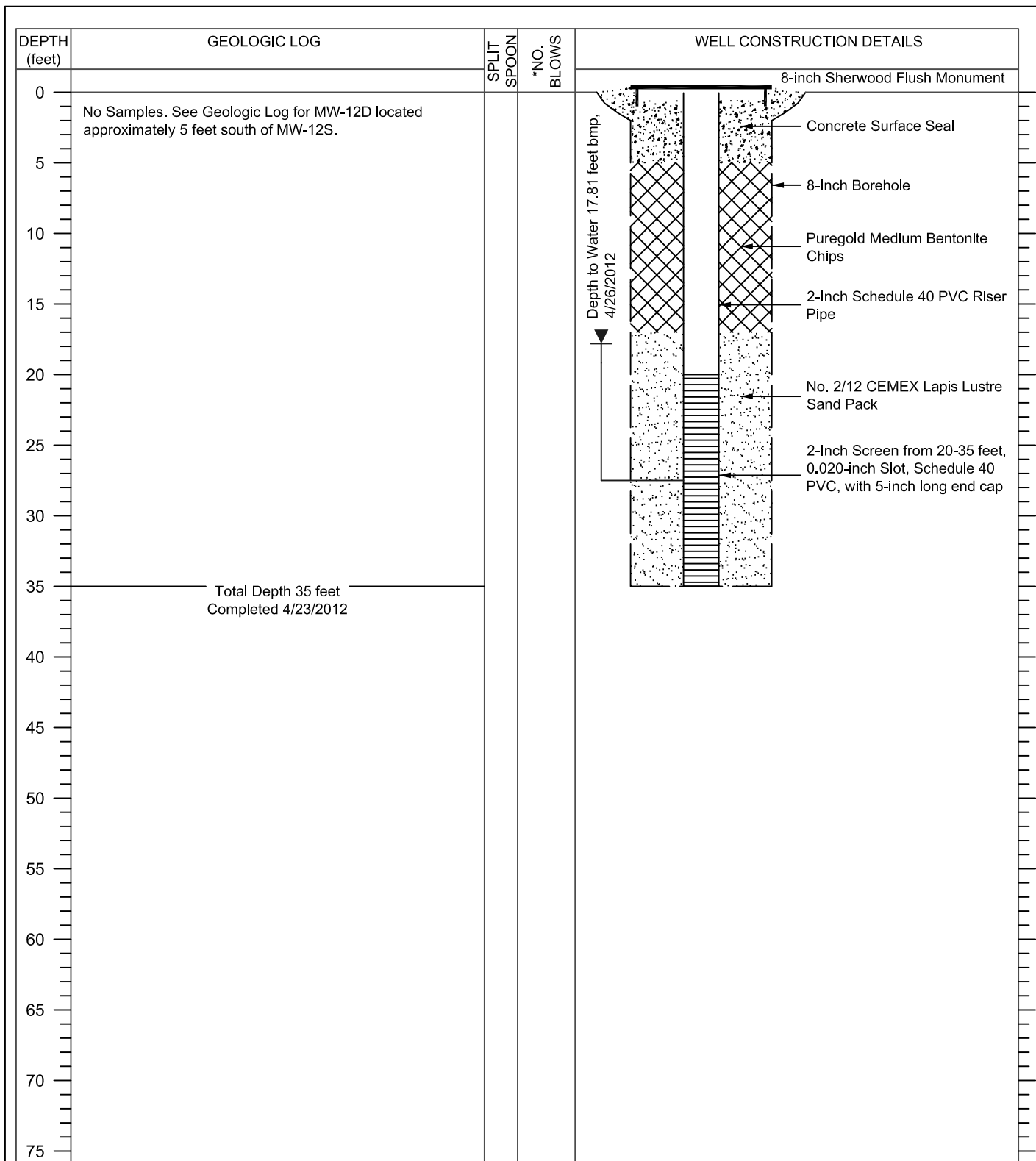
* Sample Submitted for Chemical Analysis

FIGURE 3

PROJECT NAME: Nalley's Fine Foods
WELL IDENTIFICATION NUMBER: MW-9D
DRILLING METHOD: Hollow Stem Auger
DRILLER: Dale
FIRM: GeoBoring and Development
CONSULTING FIRM: Nowicki & Assoc. / PGG
REPRESENTATIVE: Ron Nowicki / Chad Bring

LOCATION: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec.7, R3E, T21N
DATUM: NGVD
WATER LEVEL ELEVATION:
INSTALLED: 8-24-92
DEVELOPED: 9-9-92





WELL IDENTIFICATION: MW-12S
 UWID: BHL 104
 DRILLING METHOD: Hollow Stem Auger
 DRILLER: Scott Krueger
 DRILLING FIRM: Cascade Drilling, L.P.
 INSTALLED: 4/23/2012
 DEVELOPED: 4/26/2012
 CONSULTANT: Inger Jackson
 CONSULTING FIRM: Pacific Groundwater Group
 Split Spoon Sample Drive, hatching represents recovery

LOCATION: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 7, R3E., T21N
 MEASURING POINT:
 DESCRIPTION: Mark on 2-inch Casing
 ELEVATION: 247.86 feet NAVD 88 (WRSN)
 NORTHING: 697590.9 NAD 83/91 WA South
 EASTING: 1148259.2 NAD 83/91 WA South
 SURVEY FIRM: PLS, Inc
 SURVEY DATE: 5/21/2012

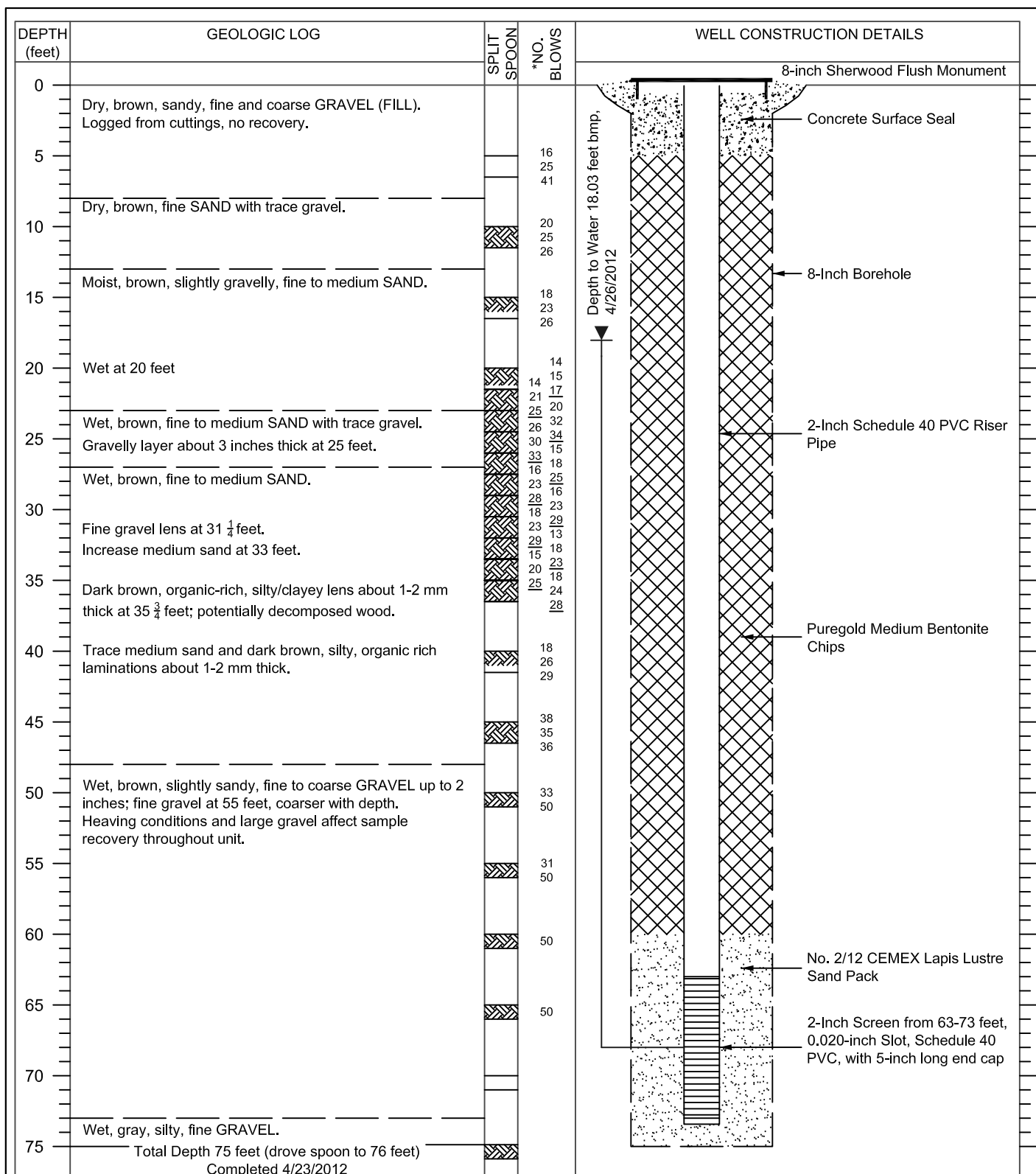
FIGURE 4
 WELL LOG AND AS-BUILT FOR
 BIRDS EYE MW-12S

Birds Eye Groundwater Monitoring Network
 Birds Eye Foods Boiler Room Site, Tacoma



*No. Blows: Provided for relative purposes only, Standard Penetration Test not performed

J11001.04, MW12S.DWG, 06/2012



WELL IDENTIFICATION: MW-12D
 UWID: BHL 103
 DRILLING METHOD: Hollow Stem Auger
 DRILLER: Scott Krueger
 DRILLING FIRM: Cascade Drilling, L.P.
 INSTALLED: 4/23/2012
 DEVELOPED: 4/26/2012
 CONSULTANT: Inger Jackson
 CONSULTING FIRM: Pacific Groundwater Group

LOCATION: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 7, R3E., T21N
 MEASURING POINT:
 DESCRIPTION: Mark on 2-inch Casing
 ELEVATION: 247.90 feet NAVD 88 (WRSN)
 NORTHING: 697585.0 NAD 83/91 WA South
 EASTING: 1148259.1 NAD 83/91 WA South
 SURVEY FIRM: PLS, Inc
 SURVEY DATE: 5/21/2012

Split Spoon Sample Drive, hatching represents recovery

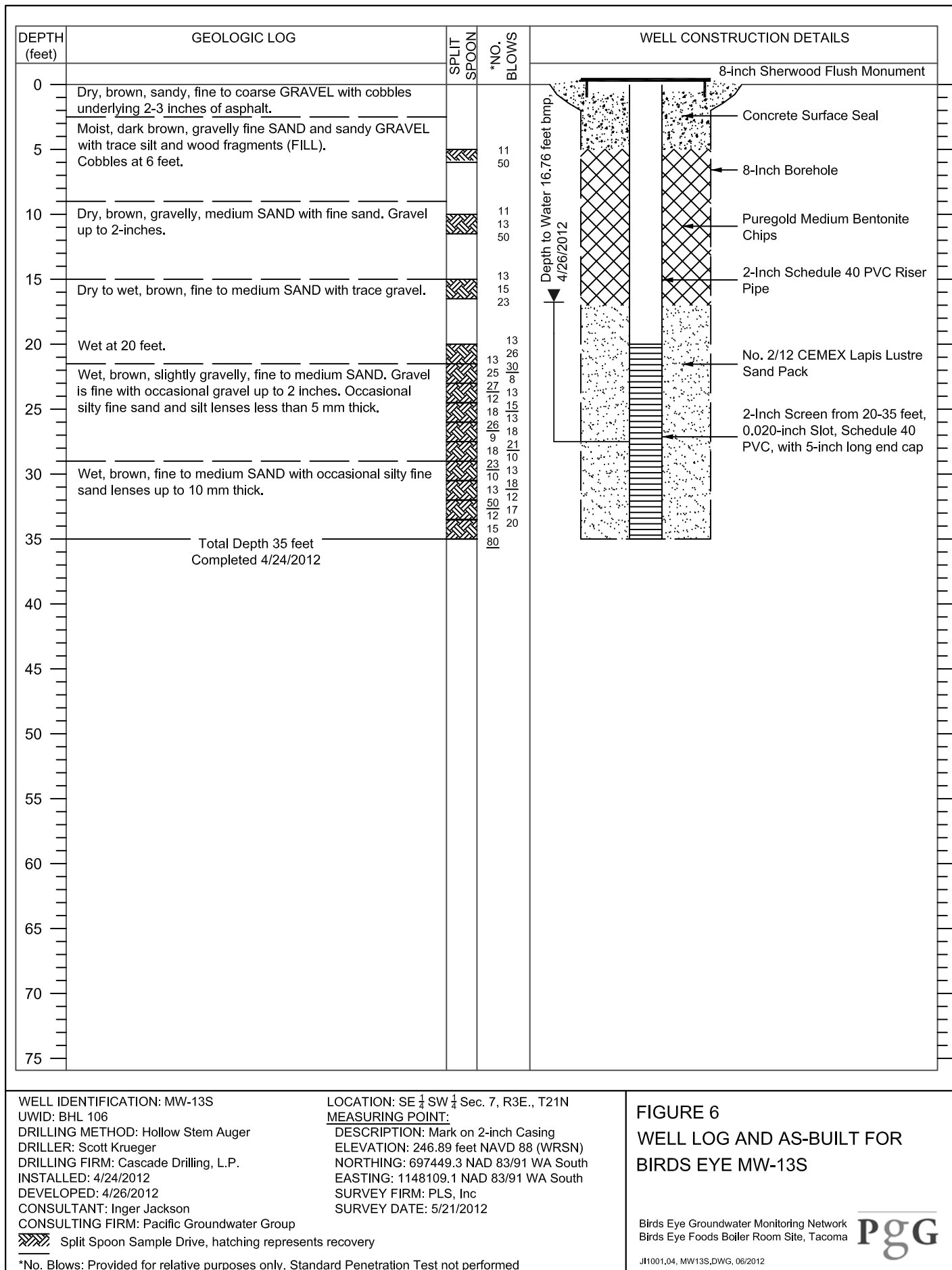
*No. Blows: Provided for relative purposes only, Standard Penetration Test not performed

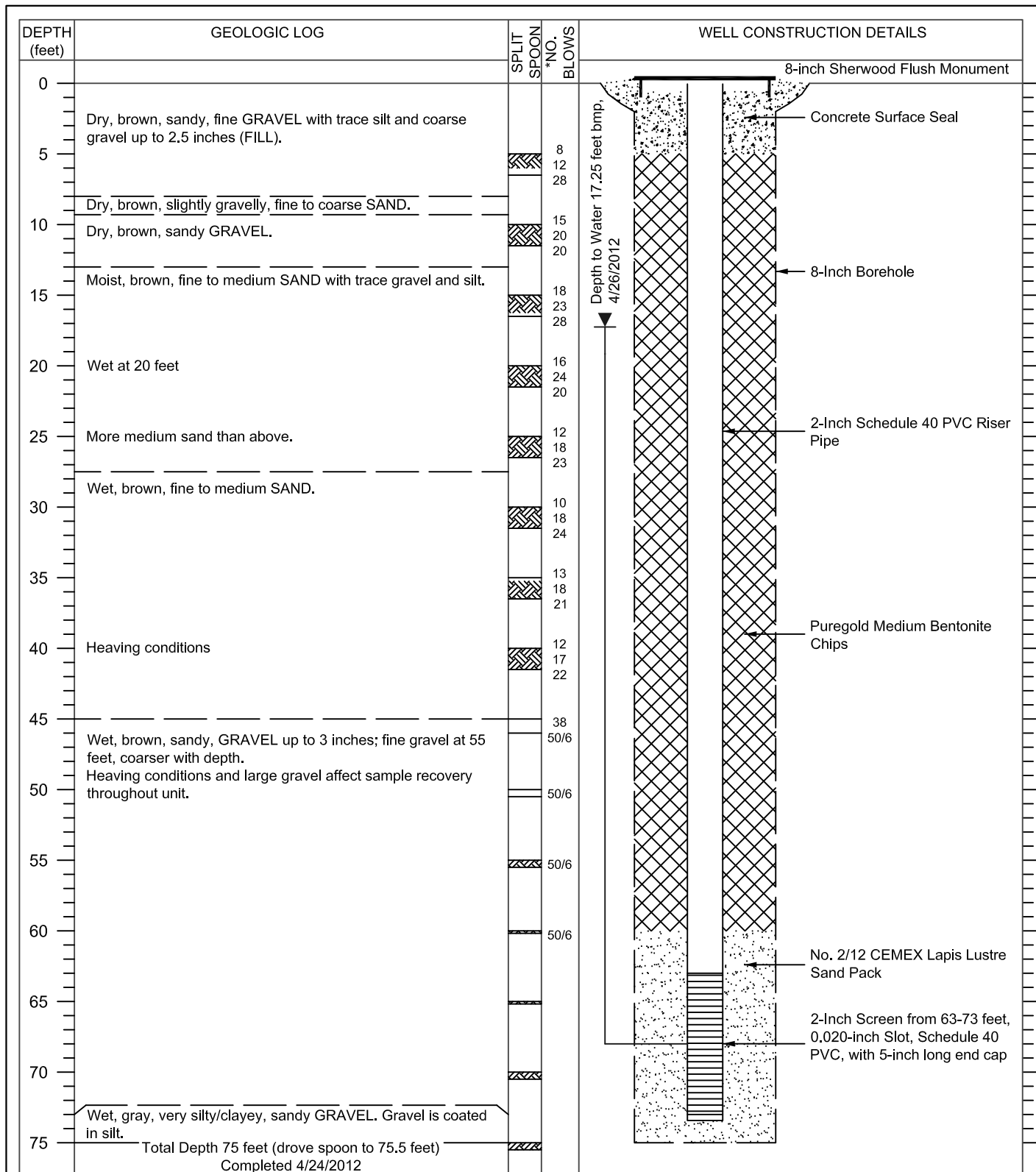
FIGURE 5
 WELL LOG AND AS-BUILT FOR
 BIRDS EYE MW-12D

Birds Eye Groundwater Monitoring Network
 Birds Eye Foods Boiler Room Site, Tacoma

pgg

JH001.04, MW12D.DWG, 06/2012





WELL IDENTIFICATION: MW-13D
 UWID: BHL 105
 DRILLING METHOD: Hollow Stem Auger
 DRILLER: Scott Krueger
 DRILLING FIRM: Cascade Drilling, L.P.
 INSTALLED: 4/24/2012
 DEVELOPED: 4/26/2012
 CONSULTANT: Inger Jackson
 CONSULTING FIRM: Pacific Groundwater Group

LOCATION: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 7, R3E., T21N
 MEASURING POINT:
 DESCRIPTION: Mark on 2-inch Casing
 ELEVATION: 246.98 feet NAVD 88 (WRSN)
 NORTHING: 697457.4 NAD 83/91 WA South
 EASTING: 1148110.2 NAD 83/91 WA South
 SURVEY FIRM: PLS, Inc
 SURVEY DATE: 5/21/2012

Split Spoon Sample Drive, hatching represents recovery

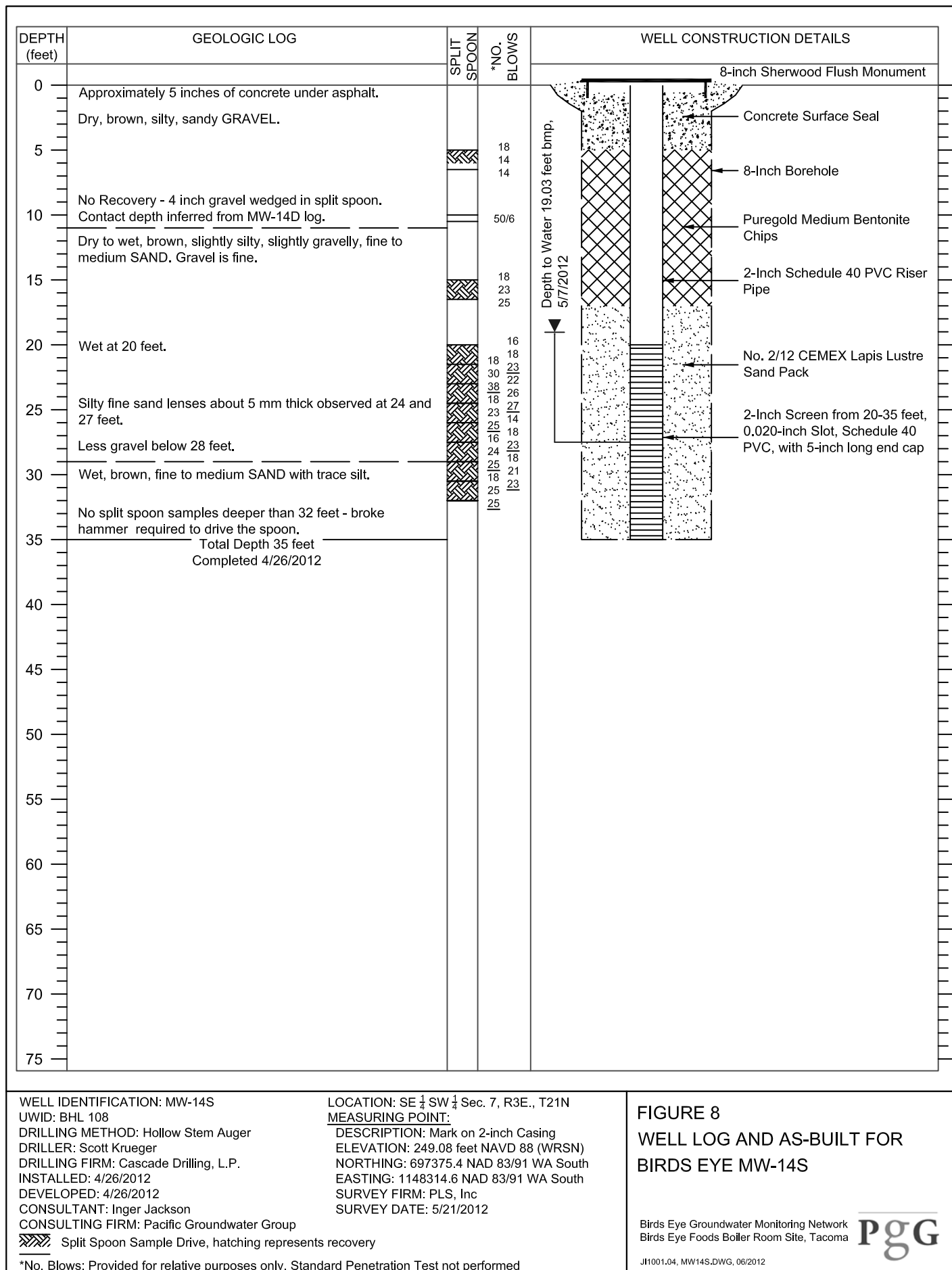
*No. Blows: Provided for relative purposes only, Standard Penetration Test not performed

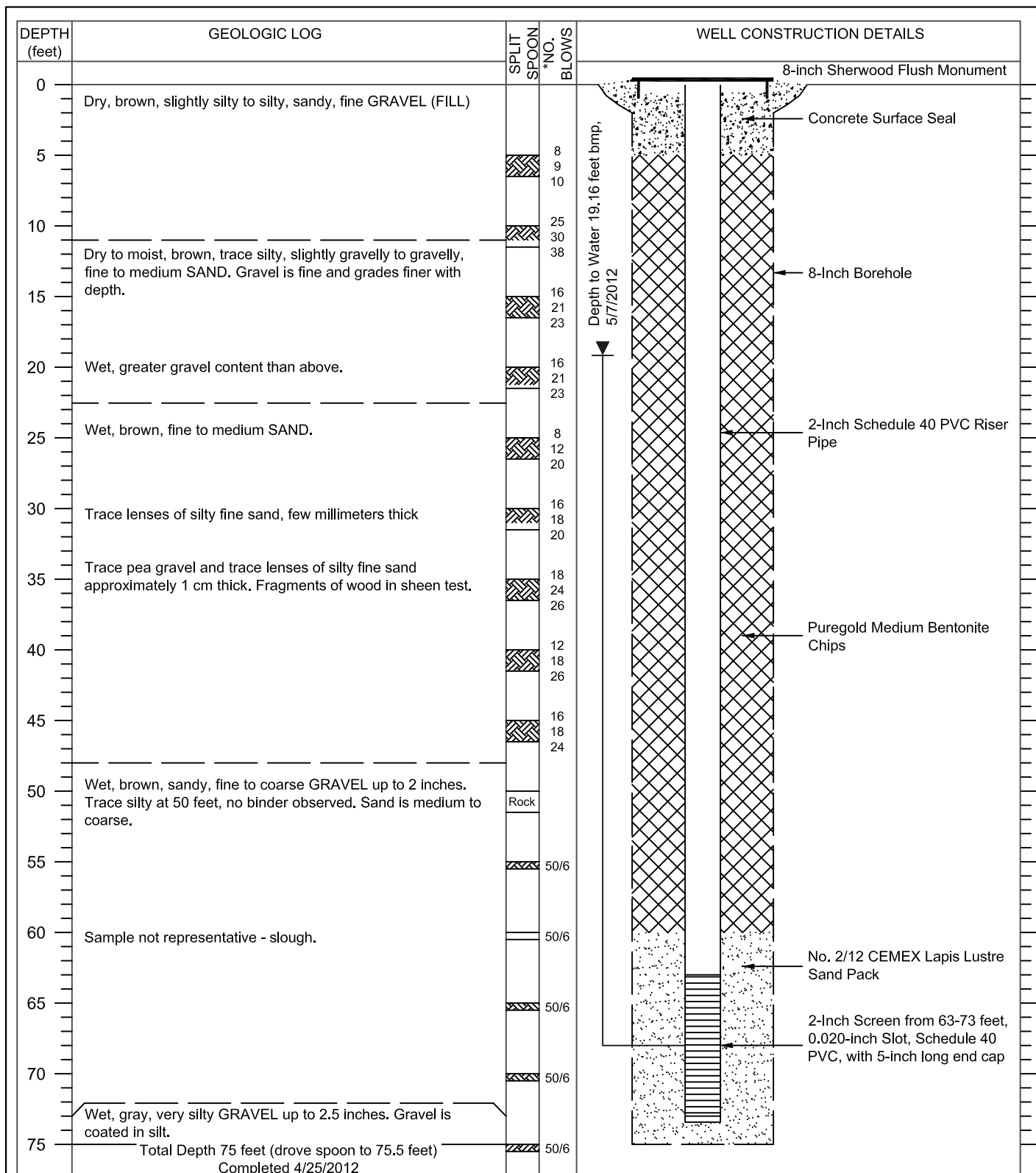
FIGURE 7
WELL LOG AND AS-BUILT FOR
BIRDS EYE MW-13D

Birds Eye Groundwater Monitoring Network
 Birds Eye Foods Boiler Room Site, Tacoma

PgG

JH1001.04, MW13D.DWG, 06/2012





WELL IDENTIFICATION: MW-14D
 UWID: BHL 107
 DRILLING METHOD: Hollow Stem Auger
 DRILLER: Scott Krueger
 DRILLING FIRM: Cascade Drilling, L.P.
 INSTALLED: 4/25/2012
 DEVELOPED: 4/26/2012
 CONSULTANT: Inger Jackson
 CONSULTING FIRM: Pacific Groundwater Group

LOCATION: SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 7, R3E., T21N
 MEASURING POINT:
 DESCRIPTION: Mark on 2-inch Casing
 ELEVATION: 249.10 feet NAVD 88 (WRSN)
 NORTHING: 697375.0 NAD 83/91 WA South
 EASTING: 1148326.9 NAD 83/91 WA South
 SURVEY FIRM: PLS, Inc
 SURVEY DATE: 5/21/2012

Split Spoon Sample Drive, hatching represents recovery

*No. Blows: Provided for relative purposes only, Standard Penetration Test not performed

FIGURE 9
WELL LOG AND AS-BUILT FOR
BIRDS EYE MW-14D

Birds Eye Groundwater Monitoring Network
 Birds Eye Foods Boiler Room Site, Tacoma

pgg

J11001.04, MW14D.DWG, 06/2012

APPENDIX A
ANALYTICAL LAB REPORTS UT38 AND UT66



Analytical Resources, Incorporated
Analytical Chemists and Consultants

May 10, 2012

Inger Jackson
Pacific Groundwater Group
2377 Eastlake Ave. East, Suite 200
Seattle, WA 98102

Project: Birds Eye I JI1001.04
ARI ID: UT38

Dear Ms. Jackson:

Please find enclosed the original Chain of Custody record, sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this package will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,

ANALYTICAL RESOURCES INC.

Eric Branson
Project Manager
(206) 695-6213
eric@arilabs.com
www.arilabs.com



Case Narrative

- Sample Receipt & Analytical Details -

Sample Receipt

Analytical Resources, Inc. accepted five water samples and one trip blank in good condition on May 7, 2012. The samples were received with a temperature measured at 4.4°C. There were discrepancies between the containers received and the Chain of Custody. For further details regarding sample receipt please refer to the enclosed Cooler Receipt Form.

Selected samples were analyzed for the parameters listed below, as requested on the Chain of Custody.

PNA's by EPA Method 8270D SIM (Select Ion Monitoring)

There were no irregularities with this analysis.

Diesel Range Hydrocarbons (Extended) by NWTPH-Dx

There were no irregularities with this analysis.

8021 BETX + Gasoline Range Hydrocarbons by NWTPH-G

There were no irregularities with this analysis.

Sample ID Cross Reference Report



ARI Job No: UT38
Client: Pacific Groundwater Group
Project Event: JI1001.04
Project Name: Birds Eye I

Sample ID	ARI		Matrix	Sample Date/Time	VTSR
	Lab ID	LIMS ID			
1. MW-12S	UT38A	12-8238	Water	05/07/12 10:30	05/07/12 17:35
2. MW-13S	UT38B	12-8239	Water	05/07/12 12:50	05/07/12 17:35
3. MW-13D	UT38C	12-8240	Water	05/07/12 16:00	05/07/12 17:35
4. MW-14S	UT38D	12-8241	Water	05/07/12 14:00	05/07/12 17:35
5. MW-14D	UT38E	12-8242	Water	05/07/12 15:25	05/07/12 17:35
6. Trip Blank	UT38F	12-8243	Water	05/07/12	05/07/12 17:35

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

Page: 1	of 1
Date: 5/7/12	Ice Present? Y
No. of Coolers: 1	Cooler Temps: 4.4

ARI Assigned Number:	UT38	Turn-around Requested:	5 bus day
ARI Client Company:	Pacific Groundwater		
Client Contact:	Inger Jackson		
Client Project Name:	Birdseye I		
Client Project #:	JI 1001.04		
	Samplers:		

Sample ID	Date	Time	Matrix	No Containers
MW-12S	5/7/12	10:30	GWL	6
MW-13S		12:50		6
MW-13D		16:00		6
MW-14S		14:00		6
MW-14D		15:25		6
Comments/Special Instructions				Received by (Signature) Printed Name Company: Date & Time
				TW Travis Klaars PGK 5/7/12 17:35

Analysis Requested				Notes/Comments	
PAH SIM	NWTH BTFX	NWTH-PAH silica/acid cleaned			
X	X	X			
X	X	X			
X	X	X			
X	X	X			
X	X	X			
			Relinquished by: (Signature)	Received by (Signature)	
Jorgensen			Printed Name	Printed Name	
24			Company	Company	
2 1735			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.



Cooler Receipt Form

ARI Client: PGG

COC No(s) NA

Assigned ARI Job No UT38

Project Name: Birds eye I

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: NA

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) 4.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 909411619

Cooler Accepted by: AV Date 5/7/12 Time 1735

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 5/1/12

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

Samples Logged by JM Date 5/8/12 Time: 705

**** 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-123 had 5 containers, COC says 6. Trip Blank received, not on COC.
Trip Blank = 3min 2.02
 By JM Date 5/8/12

Small Air Bubbles ~2mm 	Peabubbles 2-4 mm 	LARGE Air Bubbles > 4 mm 	Small → "sm" Peabubbles → "pb" Large → "lg" Headspace → "hs"
--------------------------------------	---------------------------------	--	---

Sample ID: MW-12S
SAMPLE

Lab Sample ID: UT38A
LIMS ID: 12-8238
Matrix: Water
Data Release Authorized: 
Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: 05/07/12
Date Received: 05/07/12

Date Extracted: 05/08/12
Date Analyzed: 05/09/12 18:27
Instrument/Analyst: NT4/JZ

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

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 63.3%
d14-Dibenzo(a,h)anthracene 68.3%

ORGANICS ANALYSIS DATA SHEET**PNA's by SW8270D-SIM GC/MS**

Page 1 of 1

**Sample ID: MW-13S****SAMPLE**

Lab Sample ID: UT38B

LIMS ID: 12-8239

Matrix: Water

Data Release Authorized: 

Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/07/12

Date Received: 05/07/12

Date Extracted: 05/08/12

Date Analyzed: 05/09/12 18:56

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 69.0%

d14-Dibenzo(a,h)anthracene 87.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1



Sample ID: MW-13D

SAMPLE

Lab Sample ID: UT38C

LIMS ID: 12-8240

Matrix: Water

Data Release Authorized: *AS*

Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/07/12

Date Received: 05/07/12

Date Extracted: 05/08/12

Date Analyzed: 05/09/12 19:24

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 59.0%

d14-Dibenzo(a,h)anthracene 71.3%

Sample ID: MW-14S
SAMPLE

Lab Sample ID: UT38D
LIMS ID: 12-8241
Matrix: Water
Data Release Authorized: *AB*
Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: 05/07/12
Date Received: 05/07/12

Date Extracted: 05/08/12
Date Analyzed: 05/09/12 19:53
Instrument/Analyst: NT4/JZ

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

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 64.3%
d14-Dibenzo(a,h)anthracene 87.0%

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



Sample ID: MW-14D
SAMPLE

Lab Sample ID: UT38E
LIMS ID: 12-8242
Matrix: Water
Data Release Authorized: 
Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: 05/07/12
Date Received: 05/07/12

Date Extracted: 05/08/12
Date Analyzed: 05/09/12 20:22
Instrument/Analyst: NT4/JZ

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

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 62.0%
d14-Dibenzo(a,h)anthracene 79.7%

Sample ID: MB-050812
METHOD BLANK

Lab Sample ID: MB-050812
LIMS ID: 12-8238
Matrix: Water
Data Release Authorized: 
Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: NA
Date Received: NA

Date Extracted: 05/08/12
Date Analyzed: 05/09/12 17:00
Instrument/Analyst: NT4/JZ

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

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 63.0%
d14-Dibenzo(a,h)anthracene 82.3%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
JI1001.04

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MB-050812	63.0%	82.3%	0
LCS-050812	58.3%	89.3%	0
LCSD-050812	66.7%	97.0%	0
MW-12S	63.3%	68.3%	0
MW-13S	69.0%	87.3%	0
MW-13D	59.0%	71.3%	0
MW-14S	64.3%	87.0%	0
MW-14D	62.0%	79.7%	0

LCS/MB LIMITS QC LIMITS

(MNP) = d10-2-Methylnaphthalene (40-110) (33-107)
(DBA) = d14-Dibenzo(a,h)anthracene (33-140) (10-142)

Prep Method: SW3520C
Log Number Range: 12-8238 to 12-8242

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: LCS-050812

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050812

LIMS ID: 12-8238

Matrix: Water

Data Release Authorized: *B*

Reported: 05/10/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 05/08/12

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 05/09/12 17:28

Final Extract Volume LCS: 0.50 mL

LCSD: 05/09/12 17:57

LCSD: 0.50 mL

Instrument/Analyst LCS: NT4/JZ

Dilution Factor LCS: 1.00

LCSD: NT4/JZ

LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	1.45	3.00	48.3%	1.68	3.00	56.0%	14.7%
Acenaphthylene	1.47	3.00	49.0%	1.70	3.00	56.7%	14.5%
Acenaphthene	1.59	3.00	53.0%	1.84	3.00	61.3%	14.6%
Fluorene	1.68	3.00	56.0%	1.93	3.00	64.3%	13.9%
Phenanthrene	2.08	3.00	69.3%	2.25	3.00	75.0%	7.9%
Anthracene	1.66	3.00	55.3%	2.03	3.00	67.7%	20.1%
Fluoranthene	1.96	3.00	65.3%	2.06	3.00	68.7%	5.0%
Pyrene	2.02	3.00	67.3%	2.19	3.00	73.0%	8.1%
Benzo(a)anthracene	1.70	3.00	56.7%	1.80	3.00	60.0%	5.7%
Chrysene	2.10	3.00	70.0%	2.20	3.00	73.3%	4.7%
Benzo(a)pyrene	1.77	3.00	59.0%	1.92	3.00	64.0%	8.1%
Indeno(1,2,3-cd)pyrene	2.38	3.00	79.3%	2.66	3.00	88.7%	11.1%
Dibenz(a,h)anthracene	2.32	3.00	77.3%	2.50	3.00	83.3%	7.5%
Benzo(g,h,i)perylene	2.45	3.00	81.7%	2.56	3.00	85.3%	4.4%
Total Benzofluoranthenes	4.83	6.00	80.5%	4.96	6.00	82.7%	2.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-2-Methylnaphthalene	58.3%	66.7%
d14-Dibenzo(a,h)anthracene	89.3%	97.0%

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONSNWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1
Matrix: WaterQC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
JI1001.04Data Release Authorized: *mm*
Reported: 05/10/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
MB-050812 12-8238	Method Blank HC ID: ---	05/08/12	05/09/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 79.4%
UT38A 12-8238	MW-12S HC ID: ---	05/08/12	05/09/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 75.0%
UT38B 12-8239	MW-13S HC ID: ---	05/08/12	05/09/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 74.0%
UT38C 12-8240	MW-13D HC ID: ---	05/08/12	05/09/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 75.7%
UT38D 12-8241	MW-14S HC ID: ---	05/08/12	05/09/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 75.9%
UT38E 12-8242	MW-14D HC ID: ---	05/08/12	05/09/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 74.0%

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 Inc.
407S TPH Quantitation Report

MH
5/10/12

Data file: /chem3/fid4a.i/20120509.b/0509a029.d

ARI ID: UT38MBW1

Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m

Client ID: UT38MBW1

Instrument: fid4a.i

Injection: 09-MAY-2012 17:47

Operator: MH

Report Date: 05/10/2012

Dilution Factor: 1

Macro: 08-MAY-2012

Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.308	0.006	5567	6118	GAS (Tol-C12)	70916	5.16
C8	1.452	-0.090	1409	10231	DIESEL (C12-C24)	123988	8.22
C10	3.139	-0.004	335	174	M.OIL (C24-C38)	165788	14.30
C12	4.165	0.002	232	102	AK-102 (C10-C25)	144861	8.11
C14	4.899	-0.017	332	526	AK-103 (C25-C36)	109542	14.12
C16	5.556	0.003	799	621			
C18	6.122	-0.012	1434	2404			
C20	6.707	-0.009	1968	4312	MIN.OIL (C24-C38)	165788	12.37
C22	7.272	0.012	462	761			
C24	7.770	0.001	303	404			
C25	8.024	0.008	453	843			
C26	8.255	0.001	296	343			
C28	8.705	0.000	614	734			
C32	9.651	0.012	834	796			
C34	10.088	-0.030	729	1753	CREOSOT (C12-C22)	115147	31.34
Filter Peak	10.504	-0.020	371	504			
C36	10.563	-0.035	3073	4951			
C38	11.083	-0.002	1145	4733			
C40	11.581	-0.007	446	567			
o-terph	6.308	-0.001	512311	704610	JET-A (C10-C18)	79401	5.35
Triacon Surr	9.165	-0.008	407363	632844			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	704610	35.7	79.4
Triacontane	632844	43.2	95.9

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38:00015

Data File: /chem3/fid4a.i/20120509.b/0509a029.d

Date : 09-MAY-2012 17:47

Client ID: UT38HBM4

Sample Info: UT38HBM4

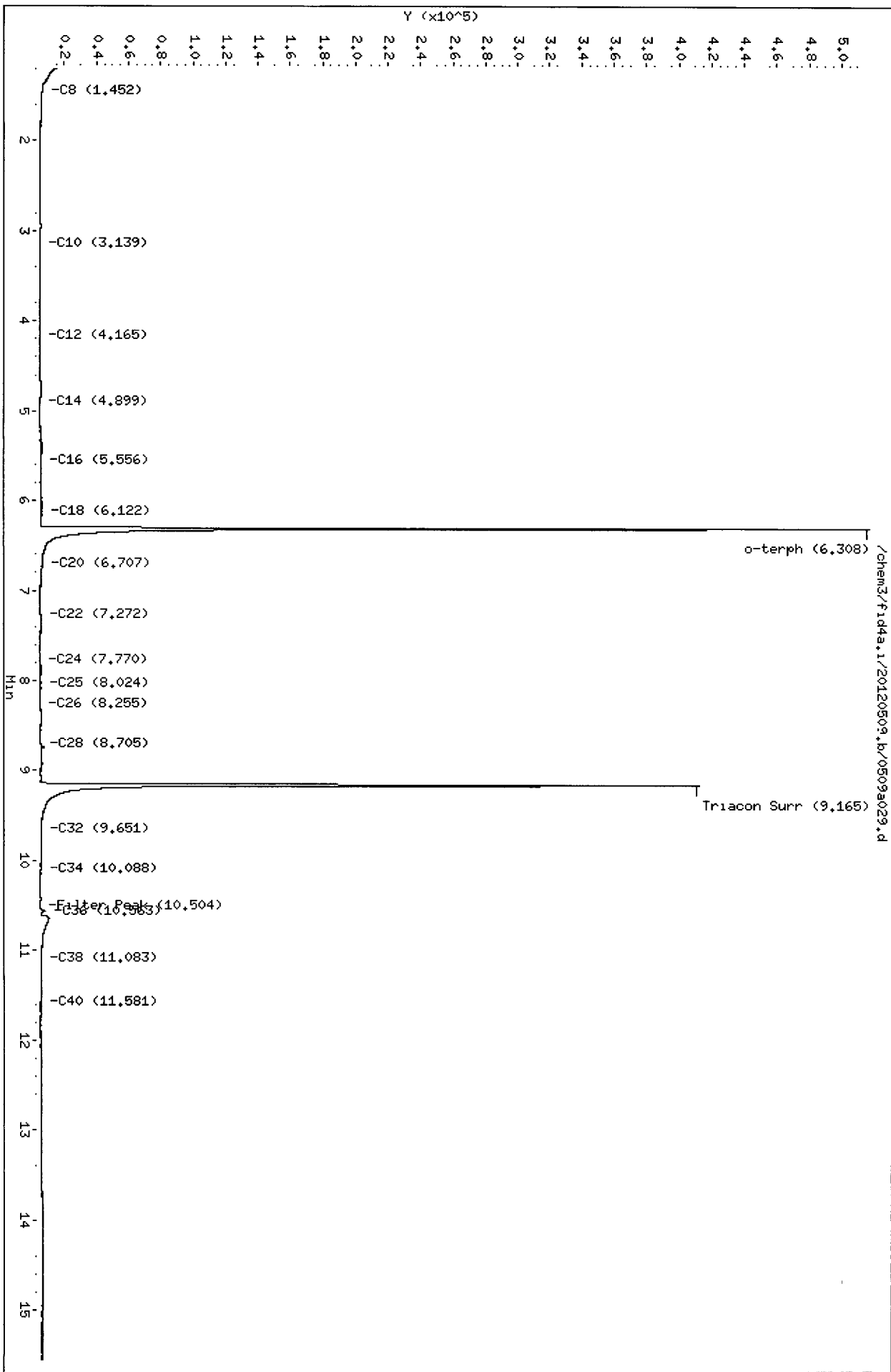
Column phase: RTX-1

Instrument: fid4a.i

Operator: MH

Column diameter: 0.25

Page 1



UT38 00016

MH
5/10/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120509.b/0509a032.d ARI ID: UT38A
Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m Client ID: MW-12S
Instrument: fid4a.i Injection: 09-MAY-2012 19:00
Operator: MH
Report Date: 05/10/2012 Dilution Factor: 1
Macro: 08-MAY-2012
Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS							
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.328	0.026	6951	17451	GAS (Tol-C12)	60660	4.42
C8	1.590	0.048	706	1333	DIESEL (C12-C24)	92763	6.15
C10	3.149	0.005	336	677	M.OIL (C24-C38)	160318	13.82
C12	4.162	-0.001	241	612	AK-102 (C10-C25)	109265	6.11
C14	4.932	0.016	246	345	AK-103 (C25-C36)	114325	14.73
C16	5.543	-0.011	740	1064			
C18	6.143	0.008	695	516			
C20	6.709	-0.007	1786	3689	MIN.OIL (C24-C38)	160318	11.96
C22	7.254	-0.006	280	180			
C24	7.761	-0.009	225	328			
C25	8.014	-0.002	249	311			
C26	8.265	0.010	2966	4335			
C28	8.704	-0.001	3716	3833			
C32	9.641	0.003	1012	1779			
C34	10.138	0.019	384	89	CREOSOT (C12-C22)	84660	23.04
Filter Peak	10.532	0.007	299	194			
C36	10.569	-0.030	1408	3039			
C38	11.081	-0.004	1065	3766			
C40	11.591	0.003	377	436			
o-terph	6.308	-0.002	454380	665610	JET-A (C10-C18)	54968	3.70
Triacon Surr	9.163	-0.010	352754	546257			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	665610	33.7	75.0
Triacontane	546257	37.2	82.8

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38: 00017

Data File: /chem3/fid4a.i/20120509.b/0509a032.d

Date : 09-MAY-2012 19:00

Client ID: MH-12S

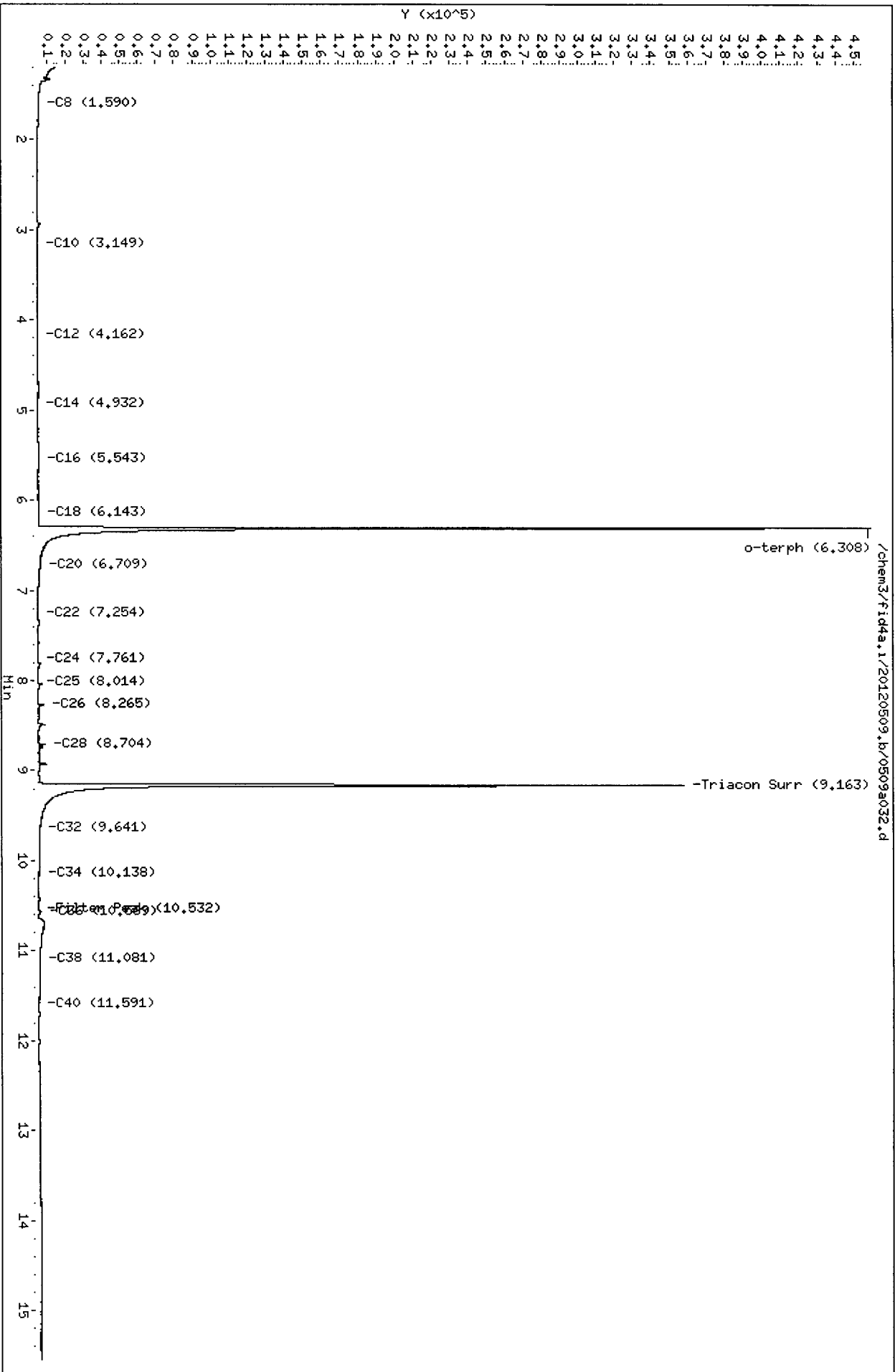
Sample Info: UT38A

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



MH
5/10/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120509.b/0509a033.d ARI ID: UT38B
Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m Client ID: MW-13S
Instrument: fid4a.i Injection: 09-MAY-2012 19:24
Operator: MH
Report Date: 05/10/2012 Dilution Factor: 1
Macro: 08-MAY-2012
Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS							
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.324	0.021	6201	3446	GAS (Tol-C12)	59555	4.34
C8	1.585	0.043	720	1861	DIESEL (C12-C24)	74283	4.93
C10	3.138	-0.005	274	171	M.OIL (C24-C38)	131603	11.35
C12	4.161	-0.003	226	192	AK-102 (C10-C25)	89289	5.00
C14	4.910	-0.006	224	340	AK-103 (C25-C36)	82657	10.65
C16	5.546	-0.008	550	581			
C18	6.145	0.010	425	386			
C20	6.708	-0.009	1875	3427	MIN.OIL (C24-C38)	131603	9.82
C22	7.260	0.000	184	186			
C24	7.762	-0.007	234	512			
C25	8.025	0.009	869	814			
C26	8.269	0.015	466	935			
C28	8.718	0.013	1310	1915			
C32	9.655	0.017	854	767			
C34	10.087	-0.032	1118	2434	CREOSOT (C12-C22)	69205	18.84
Filter Peak	10.529	0.004	241	360			
C36	10.569	-0.029	1003	2126			
C38	11.072	-0.012	1398	4414			
C40	11.583	-0.005	382	488			
o-terph	6.307	-0.002	444254	657150	JET-A (C10-C18)	45482	3.06
Triacon Surr	9.164	-0.009	327699	557002			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	657150	33.3	74.0
Triacontane	557002	38.0	84.4

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38:00019

Data File: /chem3/fid4a.i/20120509.b/0509a033.d

Date : 09-MAY-2012 19:24

Client ID: HU-13S

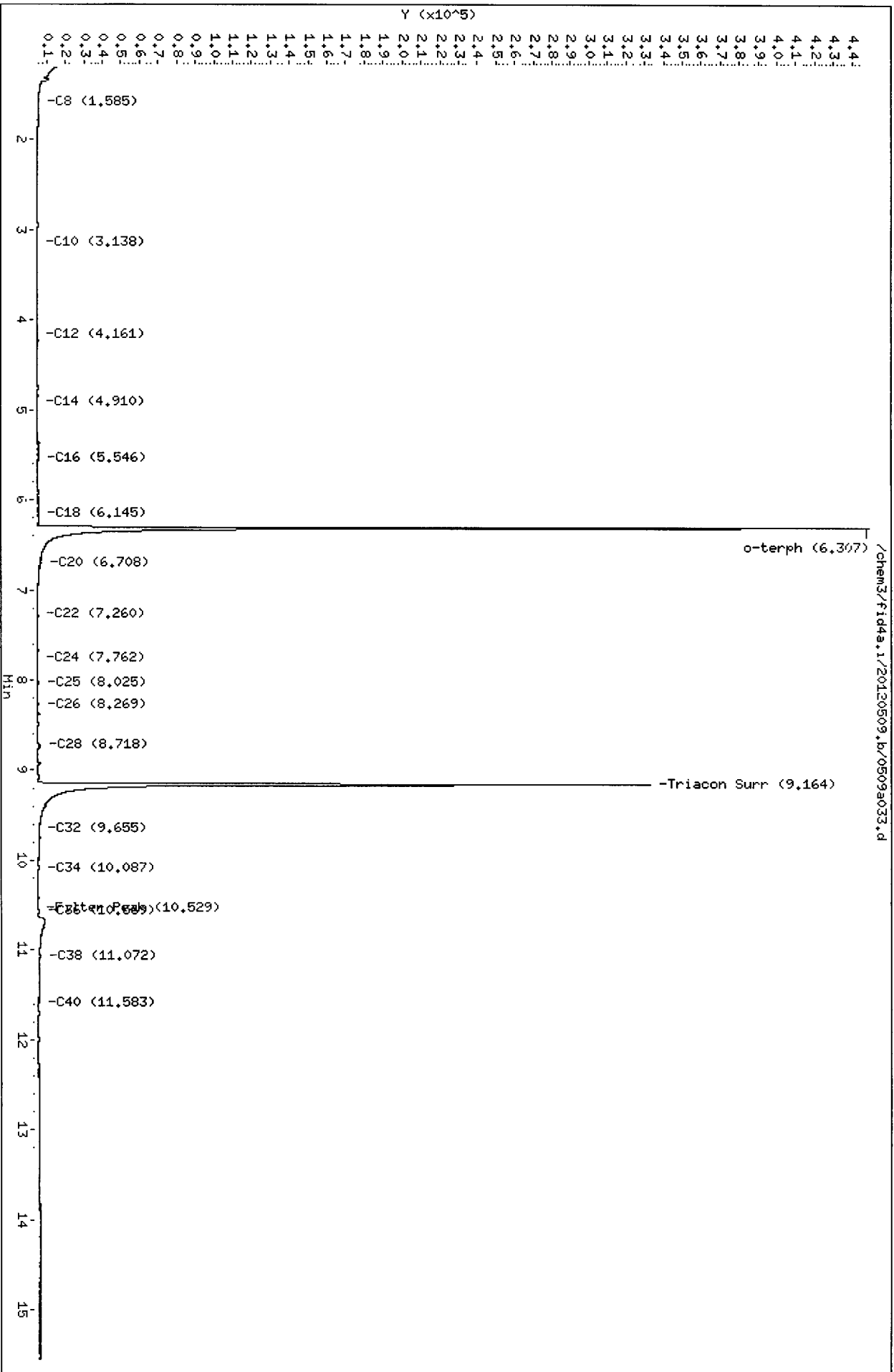
Sample Info: UT38B

Column phase: RTX-1

Instrument: fid4a.1

Operator: HH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/10/12

Data file: /chem3/fid4a.i/20120509.b/0509a034.d ARI ID: UT38C
Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m Client ID: MW-13D
Instrument: fid4a.i Injection: 09-MAY-2012 19:48
Operator: MH
Report Date: 05/10/2012 Dilution Factor: 1
Macro: 08-MAY-2012
Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS							
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.329	0.026	4997	4831	GAS (Tol-C12)	54525	3.97
C8	1.516	-0.026	935	2254	DIESEL (C12-C24)	74513	4.94
C10	3.138	-0.005	324	187	M.OIL (C24-C38)	137646	11.87
C12	4.152	-0.011	222	217	AK-102 (C10-C25)	89755	5.02
C14	4.906	-0.010	170	237	AK-103 (C25-C36)	97110	12.52
C16	5.544	-0.010	511	649			
C18	6.143	0.008	328	252			
C20	6.709	-0.008	1926	3607	MIN.OIL (C24-C38)	137646	10.27
C22	7.266	0.007	170	103			
C24	7.767	-0.003	118	173			
C25	8.011	-0.006	116	56			
C26	8.251	-0.003	107	90			
C28	8.707	0.002	468	579			
C32	9.630	-0.008	1095	1538			
C34	10.095	-0.023	647	1469	CREOSOT (C12-C22)	70944	19.31
Filter Peak	10.525	0.001	206	206			
C36	10.623	0.025	229	225			
C38	11.079	-0.006	1077	3437			
C40	11.593	0.005	345	469			
o-terph	6.308	-0.002	458591	672224	JET-A (C10-C18)	38135	2.57
Triacon Surr	9.163	-0.010	356363	551934			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	672224	34.1	75.7
Triacontane	551934	37.6	83.6

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38 : 00021

Data File: /chem3/fid4a.i/20120509.b/0509a034.d

Date : 09-MAY-2012 19:48

Client ID: MM-13D

Sample Info: UT38C

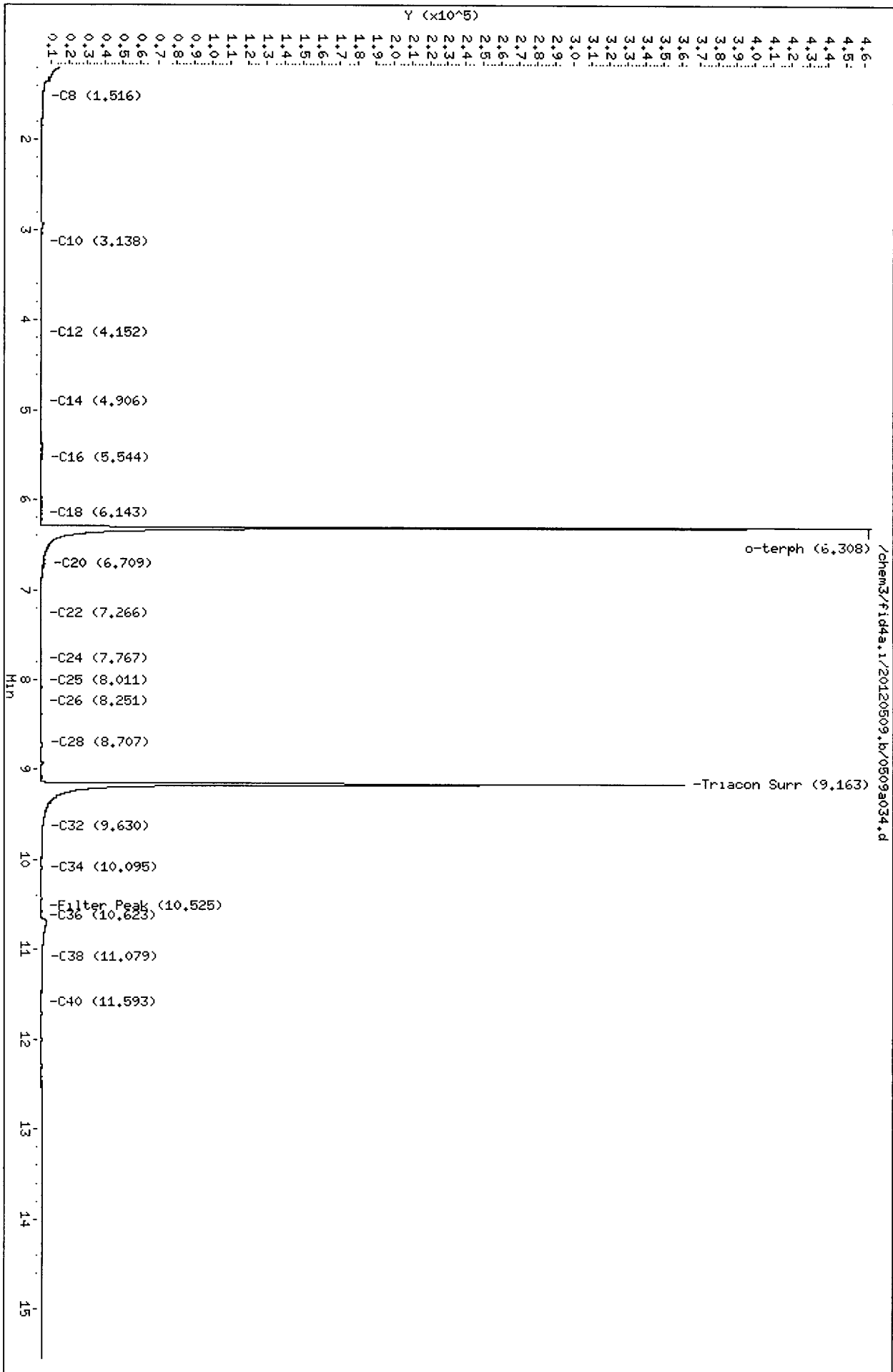
Column phase: RTX-1

Instrument: fid4a.i

Operator: HH

Column diameter: 0.25

Page 1



UT38 00022

Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/10/12

Data file: /chem3/fid4a.i/20120509.b/0509a035.d

ARI ID: UT38D

Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m

Client ID: MW-14S

Instrument: fid4a.i

Injection: 09-MAY-2012 20:12

Operator: MH

Report Date: 05/10/2012

Dilution Factor: 1

Macro: 08-MAY-2012

Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.327	0.025	5067	6629	GAS (Tol-C12)	52202	3.80
C8	----				DIESEL (C12-C24)	76583	5.08
C10	3.146	0.003	378	586	M.OIL (C24-C38)	134981	11.64
C12	4.165	0.001	194	191	AK-102 (C10-C25)	91408	5.11
C14	4.910	-0.006	150	228	AK-103 (C25-C36)	86771	11.18
C16	5.559	0.005	328	204			
C18	6.144	0.009	433	363			
C20	6.709	-0.008	1872	3721	MIN.OIL (C24-C38)	134981	10.07
C22	7.246	-0.013	212	356			
C24	7.757	-0.012	130	222			
C25	8.024	0.007	274	306			
C26	8.266	0.012	666	1110			
C28	8.704	-0.001	1247	1621			
C32	9.636	-0.003	697	891			
C34	10.118	0.000	290	722	CREOSOT (C12-C22)	72116	19.63
Filter Peak	10.517	-0.008	162	43			
C36	10.623	0.025	7657	10570			
C38	11.079	-0.006	1176	2877			
C40	11.588	0.000	340	337			
o-terph	6.308	-0.002	510135	674100	JET-A (C10-C18)	38460	2.59
Triacon Surr	9.164	-0.010	385073	595303			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	674100	34.2	75.9
Triacontane	595303	40.6	90.2

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38:00023

Data File: /chem3/fid4a.1/20120509.b/0509a035.d

Date: 09-MAY-2012 20:12

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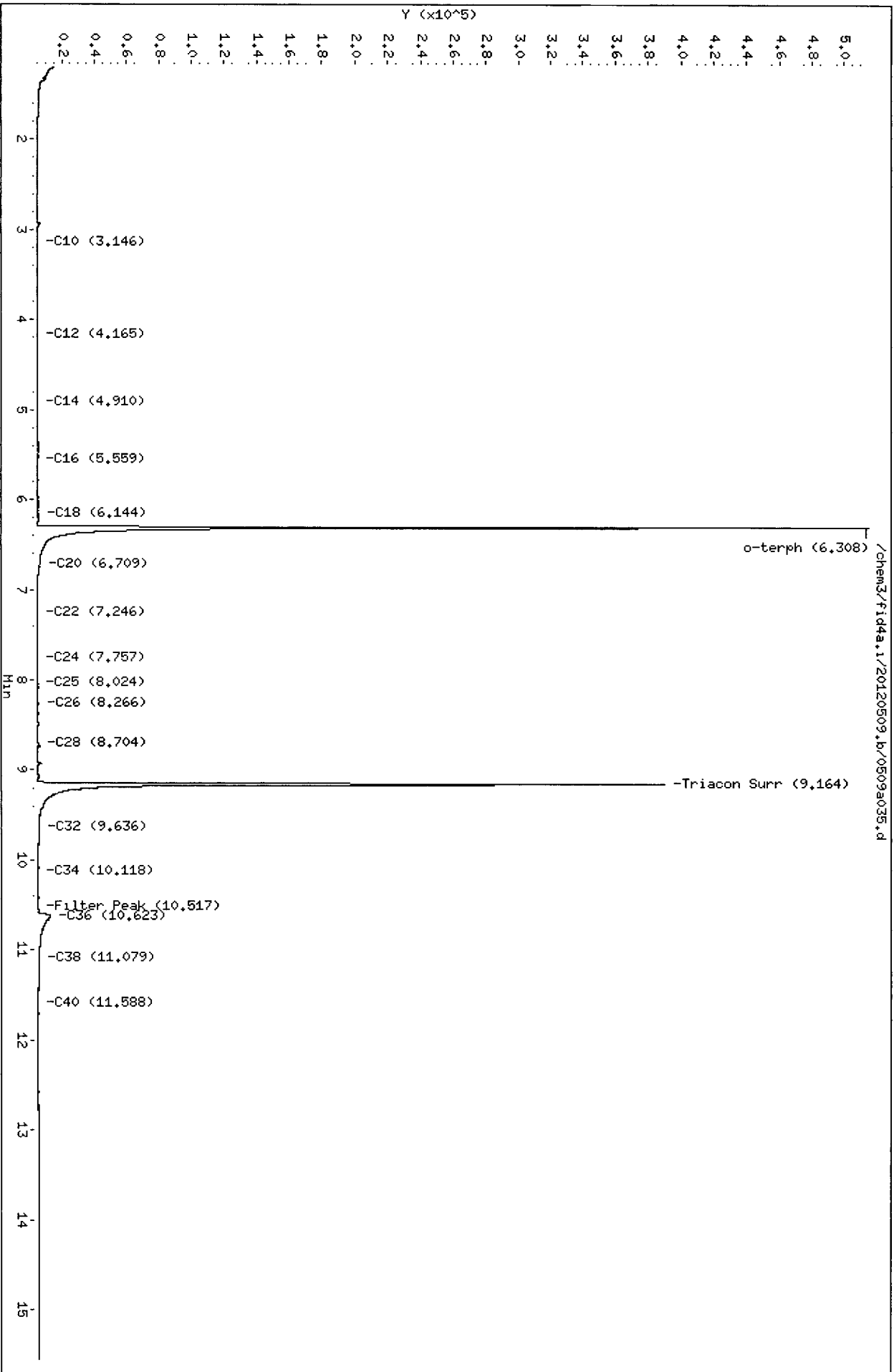
Sample Info: UT38D

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



MH
5/10/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120509.b/0509a036.d

ARI ID: UT38E

Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m

Client ID: MW-14D

Instrument: fid4a.i

Injection: 09-MAY-2012 20:36

Operator: MH

Report Date: 05/10/2012

Dilution Factor: 1

Macro: 08-MAY-2012

Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.329	0.026	6451	24130	GAS (Tol-C12)	56445	4.11
C8	1.597	0.055	687	1248	DIESEL (C12-C24)	68231	4.52
C10	3.153	0.010	309	323	M.OIL (C24-C38)	132122	11.39
C12	4.167	0.004	212	127	AK-102 (C10-C25)	82632	4.62
C14	4.922	0.006	167	152	AK-103 (C25-C36)	96846	12.48
C16	5.546	-0.008	409	530			
C18	6.143	0.008	302	222			
C20	6.709	-0.007	1883	3473	MIN.OIL (C24-C38)	132122	9.86
C22	7.266	0.007	190	98			
C24	7.764	-0.005	171	326			
C25	8.011	-0.006	121	99			
C26	8.251	-0.003	123	93			
C28	8.706	0.001	855	942			
C32	9.638	-0.001	1224	1657			
C34	10.099	-0.020	754	1877	CREOSOT (C12-C22)	63534	17.29
Filter Peak	10.527	0.002	233	116			
C36	10.574	-0.025	626	1495			
C38	11.085	0.001	1079	3872			
C40	11.589	0.001	335	195			
o-terph	6.308	-0.001	433772	657356	JET-A (C10-C18)	36261	2.44
Triacon Surr	9.162	-0.011	326766	531232			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	657356	33.3	74.1
Triacontane	531232	36.2	80.5

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38:00025

Data File: /chem3/fid4a.1/20120509.b/0509a036.d

Date : 09-MAY-2012 20:36

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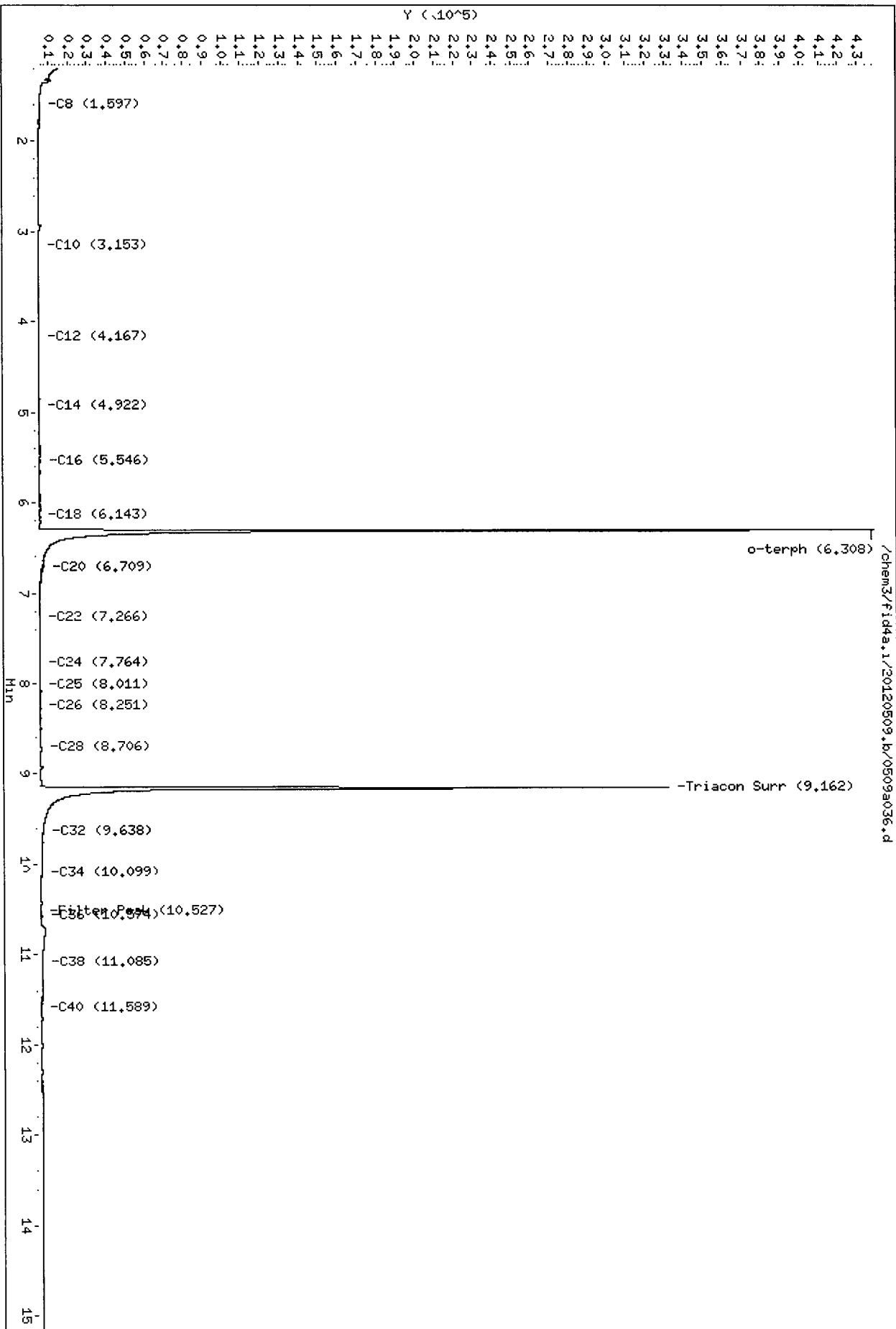
Sample Info: UT38E

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
JI1001.04

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-050812	79.4%	0
LCS-050812	83.4%	0
LCSD-050812	80.9%	0
MW-12S	75.0%	0
MW-13S	74.0%	0
MW-13D	75.7%	0
MW-14S	75.9%	0
MW-14D	74.0%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3510C
Log Number Range: 12-8238 to 12-8242

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Sample ID: LCS-050812

Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-050812

QC Report No: UT38-Pacific Groundwater Group

LIMS ID: 12-8238

Project: Birds Eye I

Matrix: Water

JII1001.04

Data Release Authorized: *mw*

Date Sampled: 05/07/12

Reported: 05/10/12

Date Received: 05/07/12

Date Extracted LCS/LCSD: 05/08/12

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 05/09/12 18:12

Final Extract Volume LCS: 1.0 mL

LCSD: 05/09/12 18:36

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MH

Dilution Factor LCS: 1.00

LCSD: FID/MH

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	1.99	3.00	66.3%	2.02	3.00	67.3%	1.5%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	83.4%	80.9%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

MH
5/10/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120509.b/0509a030.d

ARI ID: UT38LCSW1

Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m

Client ID: UT38LCSW1

Instrument: fid4a.i

Injection: 09-MAY-2012 18:12

Operator: MH

Report Date: 05/10/2012

Dilution Factor: 1

Macro: 08-MAY-2012

Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.332	0.029	5269	6043	GAS (Tol-C12)	3287775	239.32
C8	1.543	0.001	3122	4327	DIESEL (C12-C24)	15002843	994.95
C10	3.150	0.007	46911	69568	M.OIL (C24-C38)	217611	18.76
C12	4.140	-0.024	144442	177925	AK-102 (C10-C25)	17405123	973.82 M
C14	4.928	0.013	93381	120097	AK-103 (C25-C36)	152340	19.63
C16	5.544	-0.010	452550	418887			
C18	6.138	0.003	375799	426128			
C20	6.707	-0.010	272562	290058	MIN.OIL (C24-C38)	217611	16.23
C22	7.254	-0.006	102858	187362			
C24	7.786	0.017	19920	64499			
C25	8.031	0.014	11871	23328			
C26	8.260	0.006	5420	9900			
C28	8.703	-0.002	1347	1943			
C32	9.649	0.010	891	506			
C34	10.099	-0.019	445	936	CREOSOT (C12-C22)	14483826	3942.08 M
Filter Peak	10.523	-0.002	41	36			
C36	10.574	-0.024	546	907			
C38	11.084	-0.001	726	1945			
C40	11.596	0.007	93	120			
o-terph	6.312	0.002	876293	740145	JET-A (C10-C18)	12848667	865.70
Triacon Surr	9.164	-0.009	380441	599607			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	740145	37.5	83.4
Triacontane	599607	40.9	90.9

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38:00029

Data File: /chem3/fid4a.i/20120509.b/0509a030.d

Date : 09-MAY-2012 18:12

Client ID: UT38LCSM1

Sample Info: UT38LCSM1

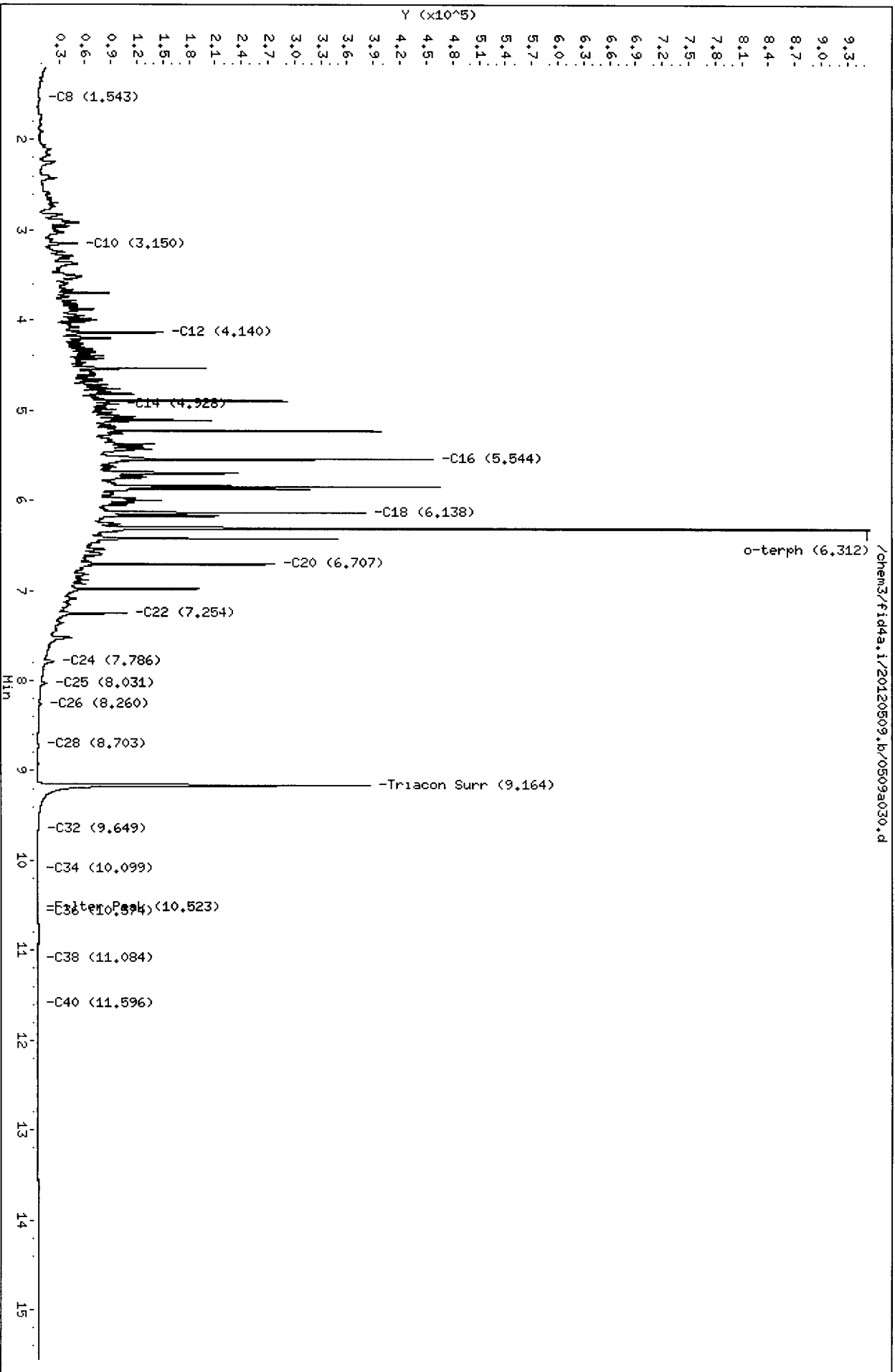
Column phase: RTX-1

Instrument: fid4a.1

Operator: HH

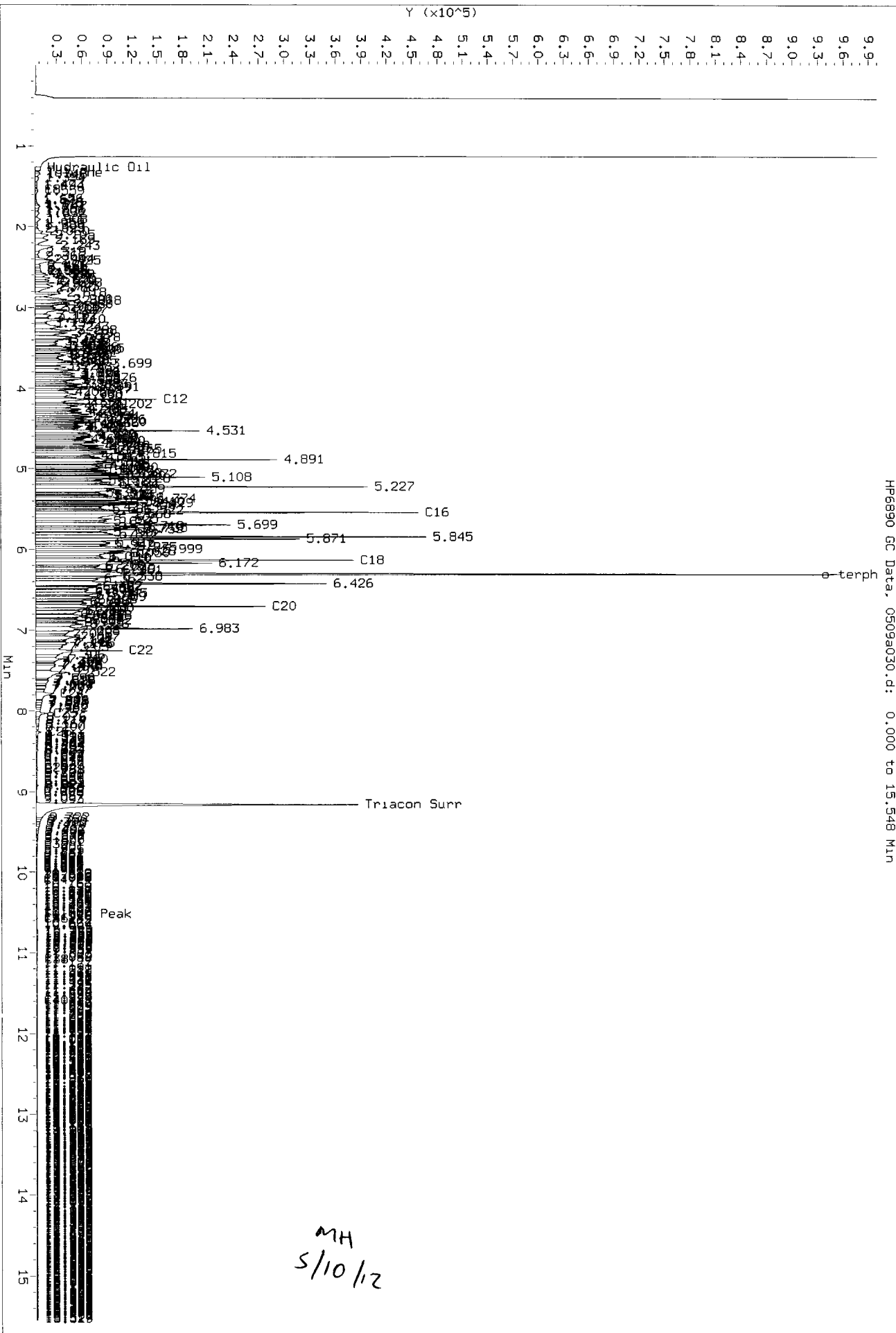
Column diameter: 0.25

Page 1

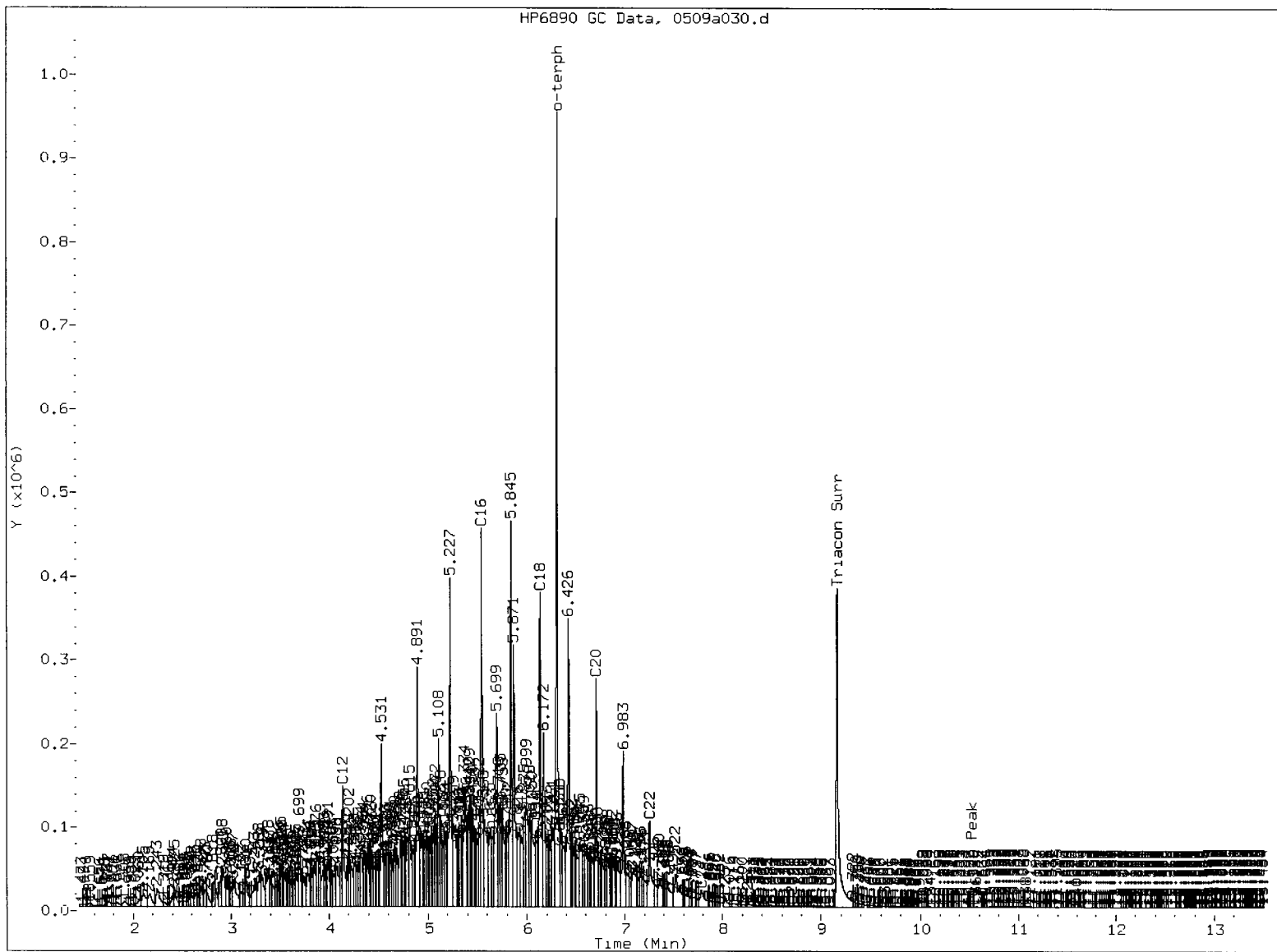


UT38 : 00030

Data File: /chem3/fid4a.1/20120509.b/0509a030.d
Injection Date: 09-MAY-2012 18:12
Instrument: fid4a.1
Client Sample ID: UT38LCSW1



UT38 : 00031



MANUAL INTEGRATION

- ☒ 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: MHDate: 5/10/12

Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/10/12

Data file: /chem3/fid4a.i/20120509.b/0509a031.d

ARI ID: UT38LCSDW1

Method: /chem3/fid4a.i/20120509.b/ftphfid4a.m

Client ID: UT38LCSDW1

Instrument: fid4a.i

Injection: 09-MAY-2012 18:36

Operator: MH

Report Date: 05/10/2012

Dilution Factor: 1

Macro: 08-MAY-2012

Calibration Dates: Gas:08-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.324	0.022	5618	5468	GAS (Tol-C12)	3345506	243.52
C8	1.539	-0.003	3720	4353	DIESEL (C12-C24)	15263425	1012.23
C10	3.145	0.002	56352	62448	M.OIL (C24-C38)	260728	22.48
C12	4.139	-0.025	149188	176716	AK-102 (C10-C25)	17688169	989.66 M
C14	4.909	-0.006	84105	58992	AK-103 (C25-C36)	160350	20.67
C16	5.544	-0.009	483739	430535			
C18	6.137	0.002	404436	422594			
C20	6.708	-0.009	277812	367912	MIN.OIL (C24-C38)	260728	19.45
C22	7.254	-0.005	109508	178707			
C24	7.753	-0.016	9474	5519			
C25	8.029	0.013	12600	24218			
C26	8.261	0.007	5859	11125			
C28	8.704	-0.001	1460	1792			
C32	9.654	0.016	590	729			
C34	10.130	0.012	132	101	CREOSOT (C12-C22)	14735733	4010.65 M
Filter Peak	10.518	-0.007	49	30			
C36	10.569	-0.029	908	1211			
C38	11.083	-0.002	843	2067			
C40	11.587	-0.001	120	143			
o-terph	6.311	0.002	890561	717781	JET-A (C10-C18)	13015198	876.92
Triacon Surr	9.165	-0.008	403572	619981			

M Indicates manual integration within range.

Range Times: NW Diesel(4.164 - 7.769) AK102(3.14 - 8.02) Jet A(3.14 - 6.13)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.60) OR Diesel(3.14 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	717781	36.4	80.9
Triacontane	619981	42.3	93.9

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	13737.9	08-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13405.9	18-JAN-2011
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

UT38:00033

Data File: /chem3/fid4a.i/20120509.b/0509a031.d

Date : 09-MAY-2012 18:36

Client ID: UT38LCSDM4

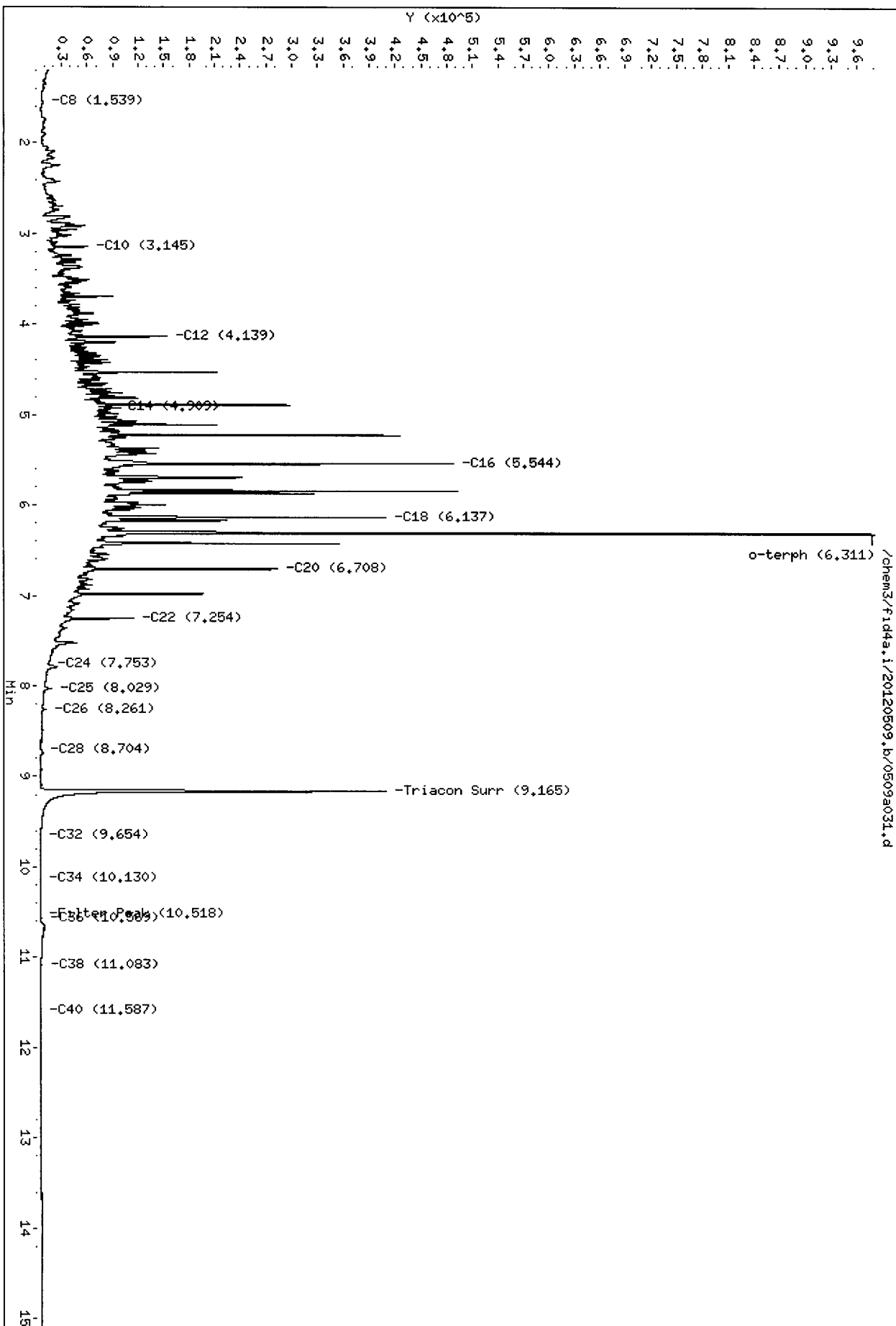
Sample Info: UT38LCSDM4

Column phase: RTX-1

Instrument: fid4a.1

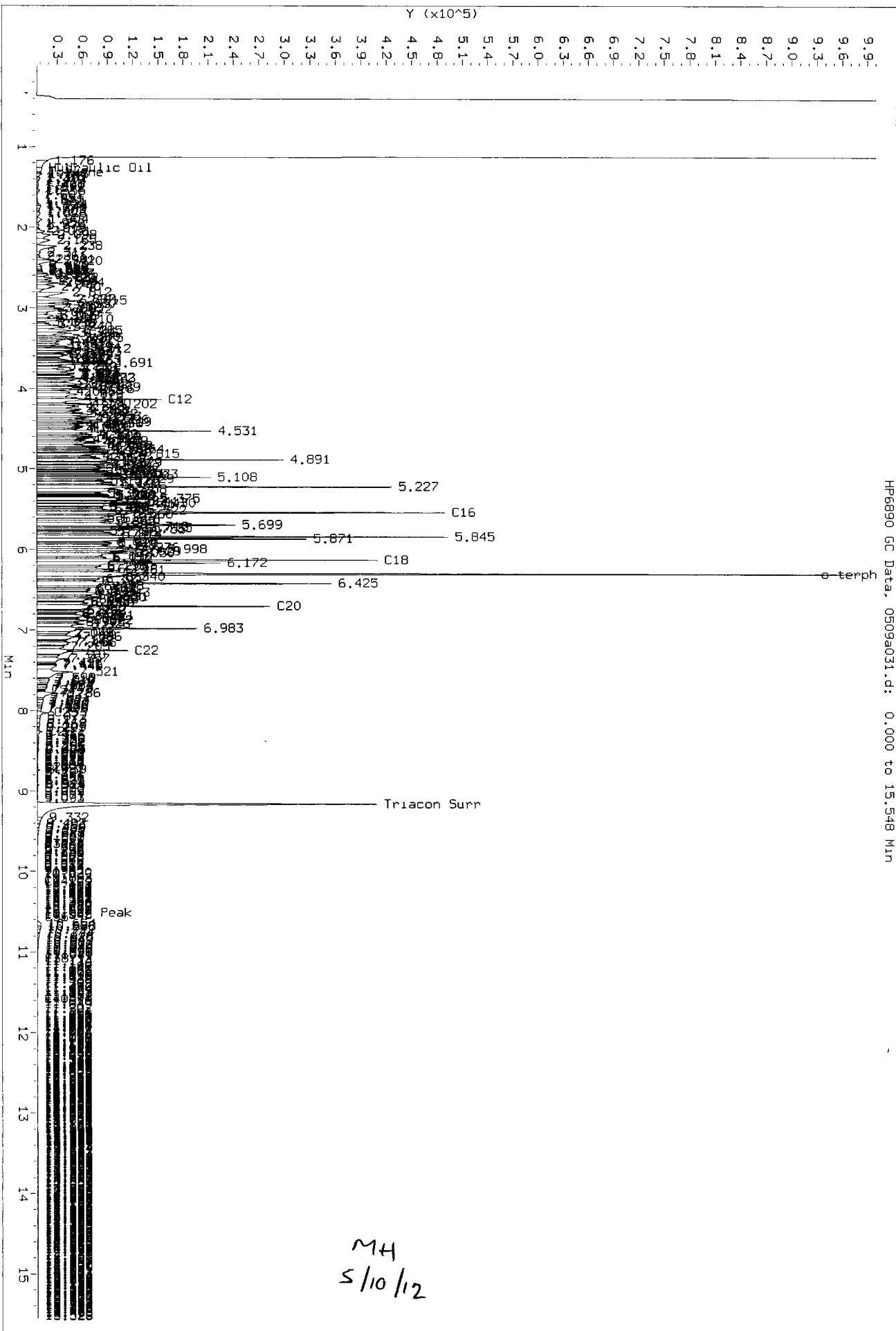
Operator: HH

Column diameter: 0.25



UT38: 00034

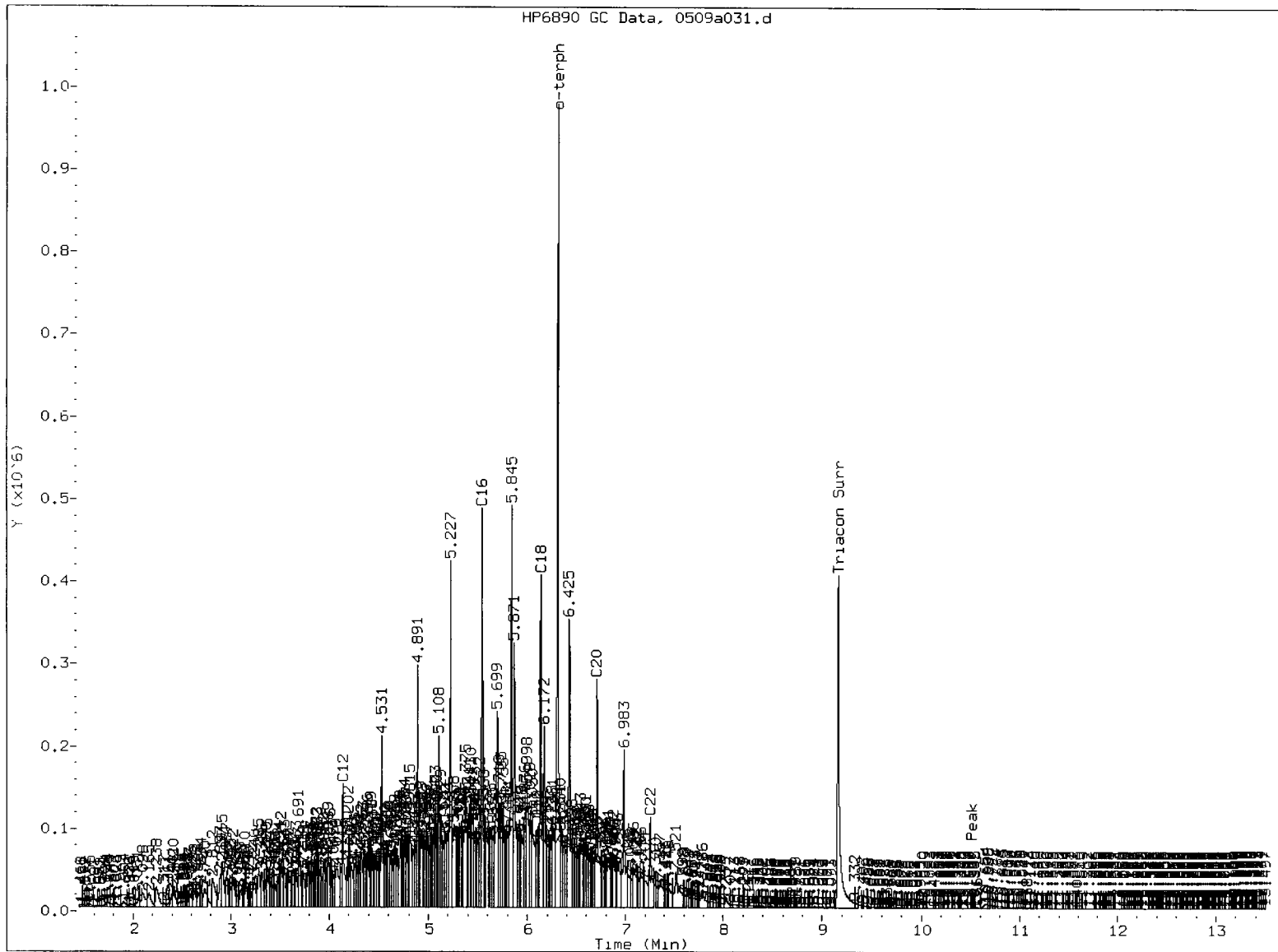
Data File: /chem3/fid4a.1/20120509.b/0509a031.d
Injection Date: 09-MAY-2012 18:36
Instrument: fid4a.1
Client Sample ID: UT38LCS001



M4
5/10/12

UT38: 00035

HP6890 GC Data, 0509a031.d



MANUAL INTEGRATION

- ☒ 1. Baseline correction
- ☐ 2. Poor chromatography
- ☐ 3. Peak not found
- ☐ 4. Totals calculation

5. Other _____

Analyst: MHDate: 5/10/12
5/17/12

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
 Date Received: 05/07/12

ARI Job: UT38
 Project: Birds Eye I
 JI1001.04

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
12-8238-050812MB1	Method Blank	500 mL	1.00 mL	05/08/12
12-8238-050812LCS1	Lab Control	500 mL	1.00 mL	05/08/12
12-8238-050812LCSD1	Lab Control Dup	500 mL	1.00 mL	05/08/12
12-8238-UT38A	MW-12S	500 mL	1.00 mL	05/08/12
12-8239-UT38B	MW-13S	500 mL	1.00 mL	05/08/12
12-8240-UT38C	MW-13D	500 mL	1.00 mL	05/08/12
12-8241-UT38D	MW-14S	500 mL	1.00 mL	05/08/12
12-8242-UT38E	MW-14D	500 mL	1.00 mL	05/08/12

ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1



Sample ID: MW-12S
SAMPLE

Lab Sample ID: UT38A
LIMS ID: 12-8238
Matrix: Water
Data Release Authorized: *AB*
Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: 05/07/12
Date Received: 05/07/12

Date Analyzed: 05/08/12 13:39
Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	97.2%

Gasoline Surrogate Recovery

Trifluorotoluene	99.4%
Bromobenzene	96.9%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/9/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050812-1.b/0508a008.d ARI ID: UT38A
Data file 2: /chem3/pid1.i/vpcc050812-2.b/0508a008.d Client ID: MW-12S
Method: /chem3/pid1.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 13:39
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.002	2952	36429	99.4	TFT(Surr)
15.406	0.002	1885	15708	96.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	457	0.001 M
8015C 2MP-TMB (4.19 to 16.22)	689188	1	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	0	0.000
NWTPHG Tol-Nap (9.80 to 18.92)	354347	641	0.002 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.002	3727	100.2	TFT(Surr)
15.413	0.002	8071	97.2	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

UT38 : 00039

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a008.d

Date : 08-MAY-2012 13:39

Client ID: MW-12S

Sample Info: UT38A

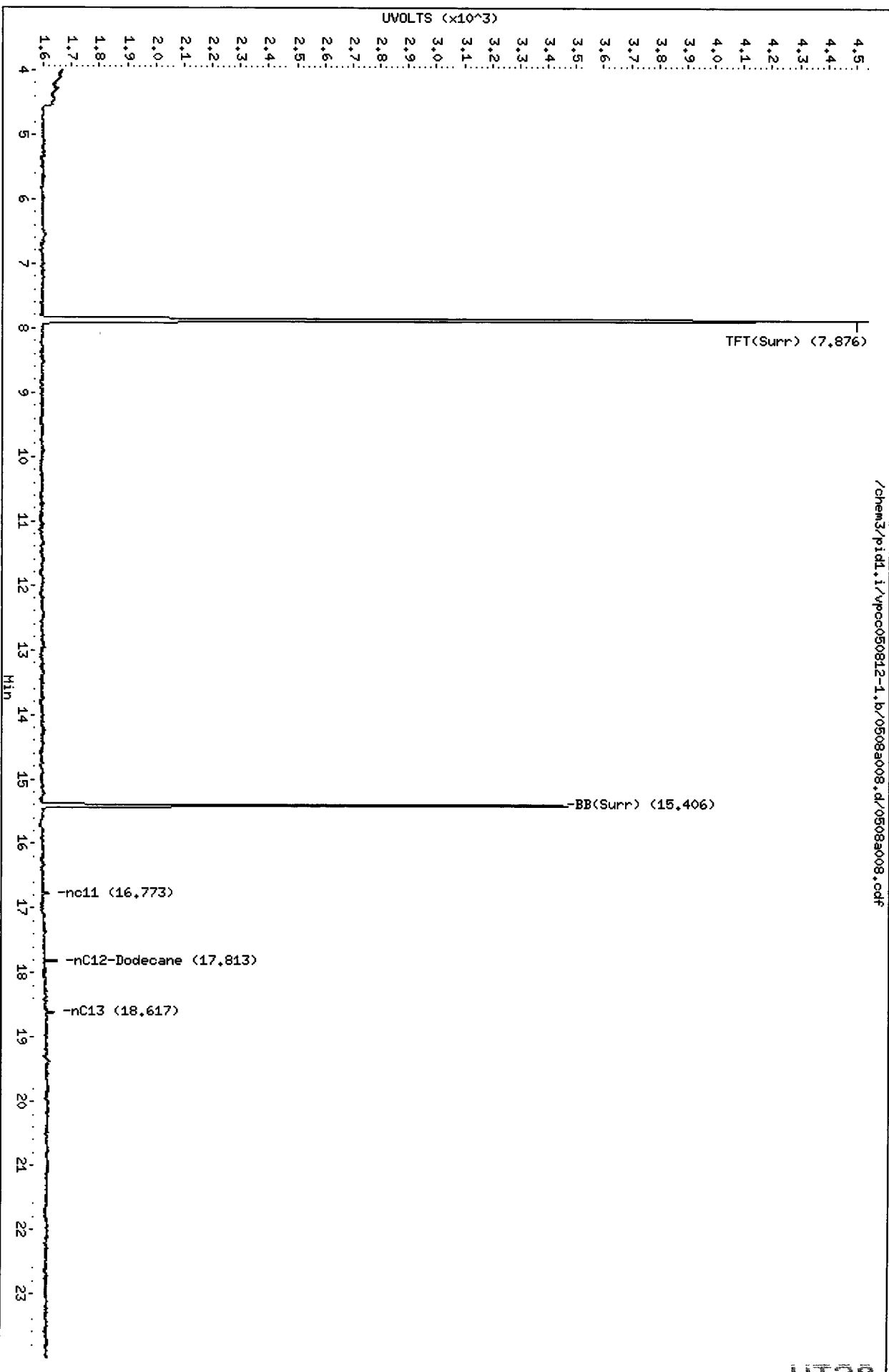
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

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Data File: /chem3/pidl.i/vpcc050812-2.b/0508a008.d

Date : 08-MAY-2012 13:39

Client ID: MW-12S

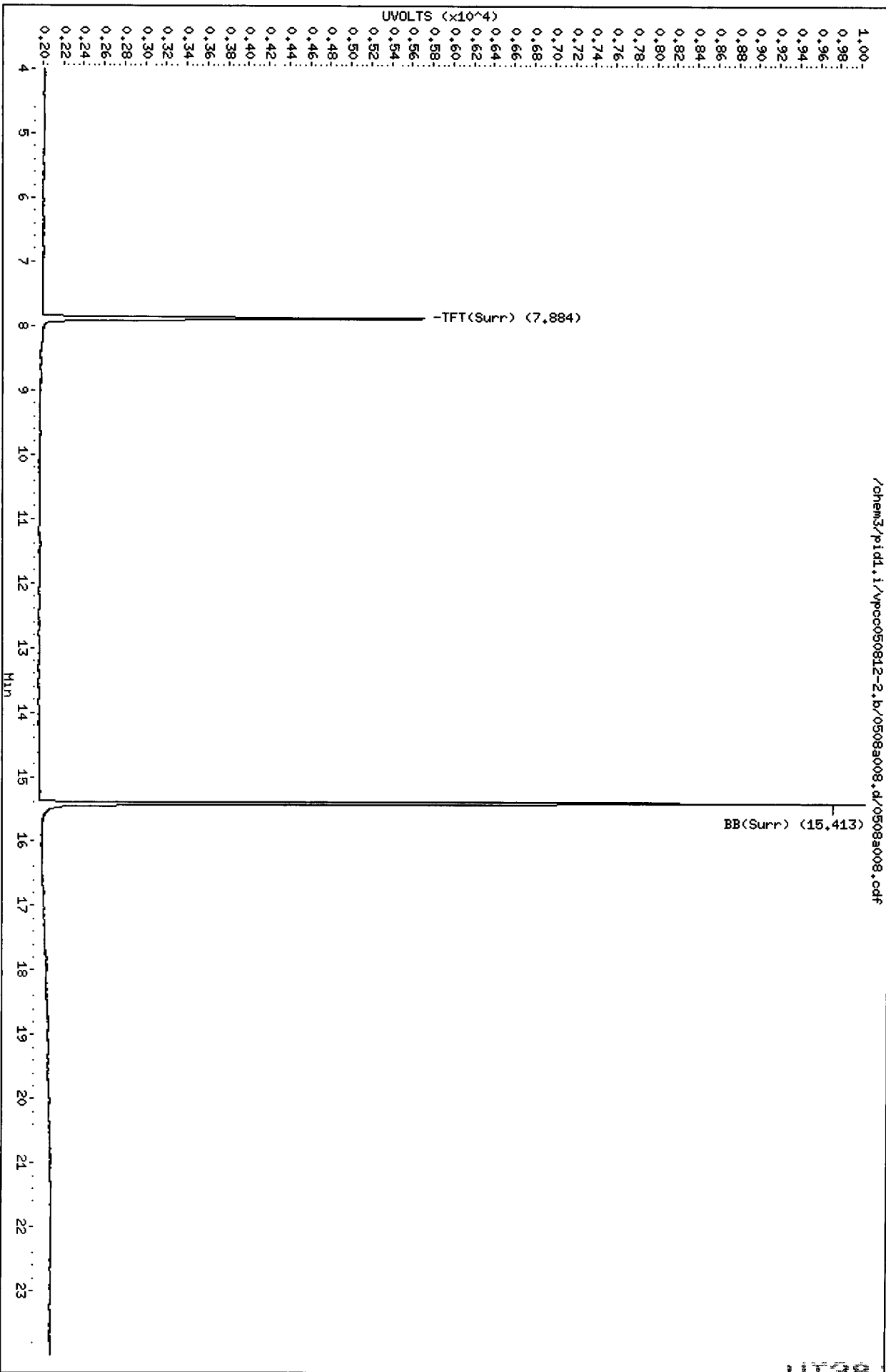
Sample Info: UT38A

Column phase: RTX 502-2 PID

Instrument: pidl.i

Operator: JM

Column diameter: 0.18



ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-13S

SAMPLE

Lab Sample ID: UT38B

LIMS ID: 12-8239

Matrix: Water

Data Release Authorized: 

Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/07/12

Date Received: 05/07/12

Date Analyzed: 05/08/12 14:08

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	112%
Bromobenzene	98.3%

Gasoline Surrogate Recovery

Trifluorotoluene	102%
Bromobenzene	97.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/9/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050812-1.b/0508a009.d ARI ID: UT38B
Data file 2: /chem3/pid1.i/vpcc050812-2.b/0508a009.d Client ID: MW-13S
Method: /chem3/pid1.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 14:08
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.876	0.002	3014	37574	101.5	TFT(Surr)
15.406	0.002	1898	15779	97.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	421	0.001 M
8015C 2MP-TMB (4.19 to 16.22)	689188	1	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	1	0.000
NWTPHG Tol-Nap (9.80 to 18.92)	354347	630	0.002 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.002	4158	111.8	TFT(Surr)
15.413	0.002	8158	98.3	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

UT38:00043

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a009.d

Date : 08-MAY-2012 14:08

Client ID: MW-13S

Sample Info: UT38B

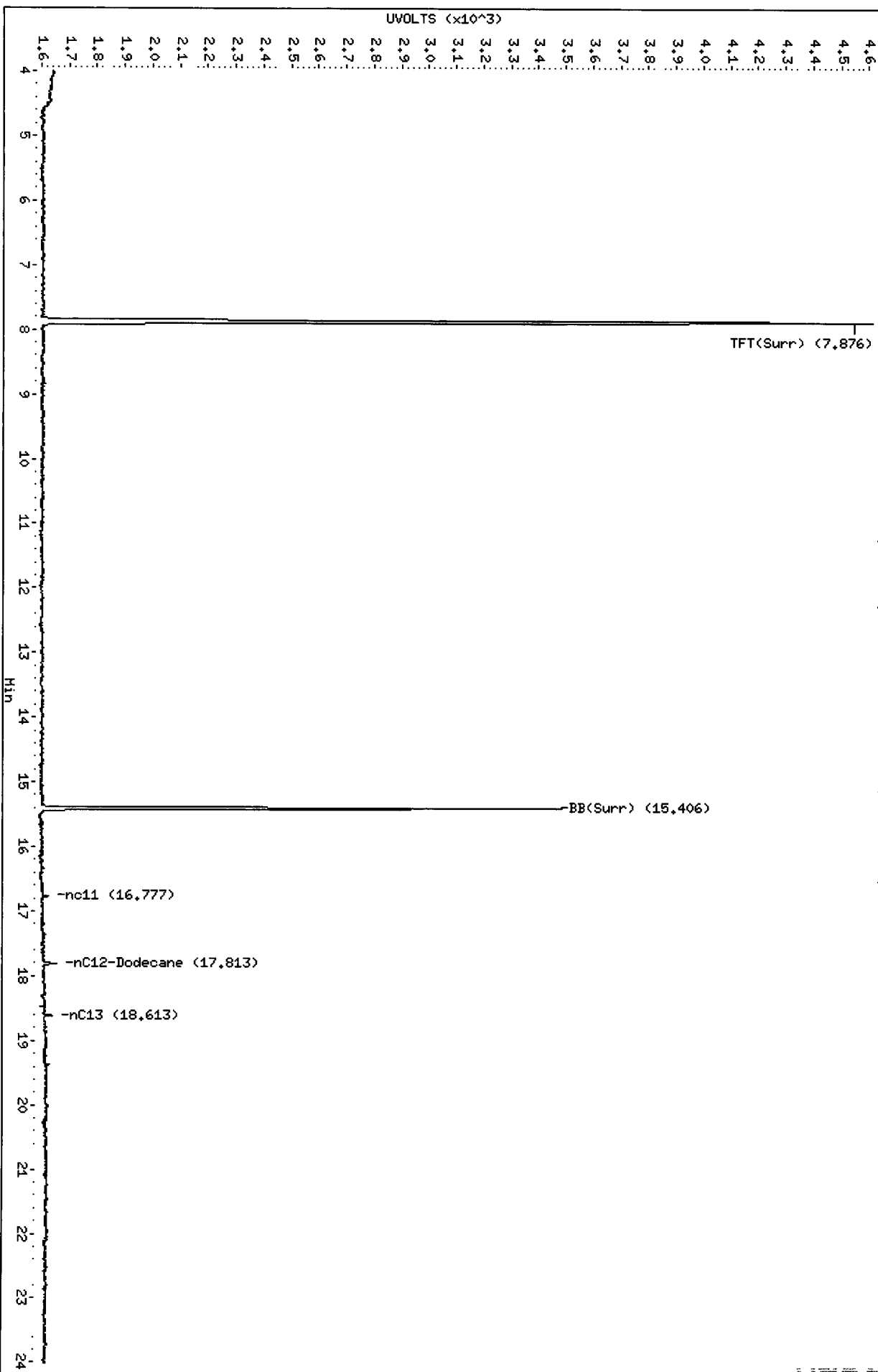
Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID

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Data File: /chem3/pid1.i/vpoc050812-2.b/0508a009.d

Date : 08-MAY-2012 14:08

Client ID: MW-13S

Sample Info: UT38B

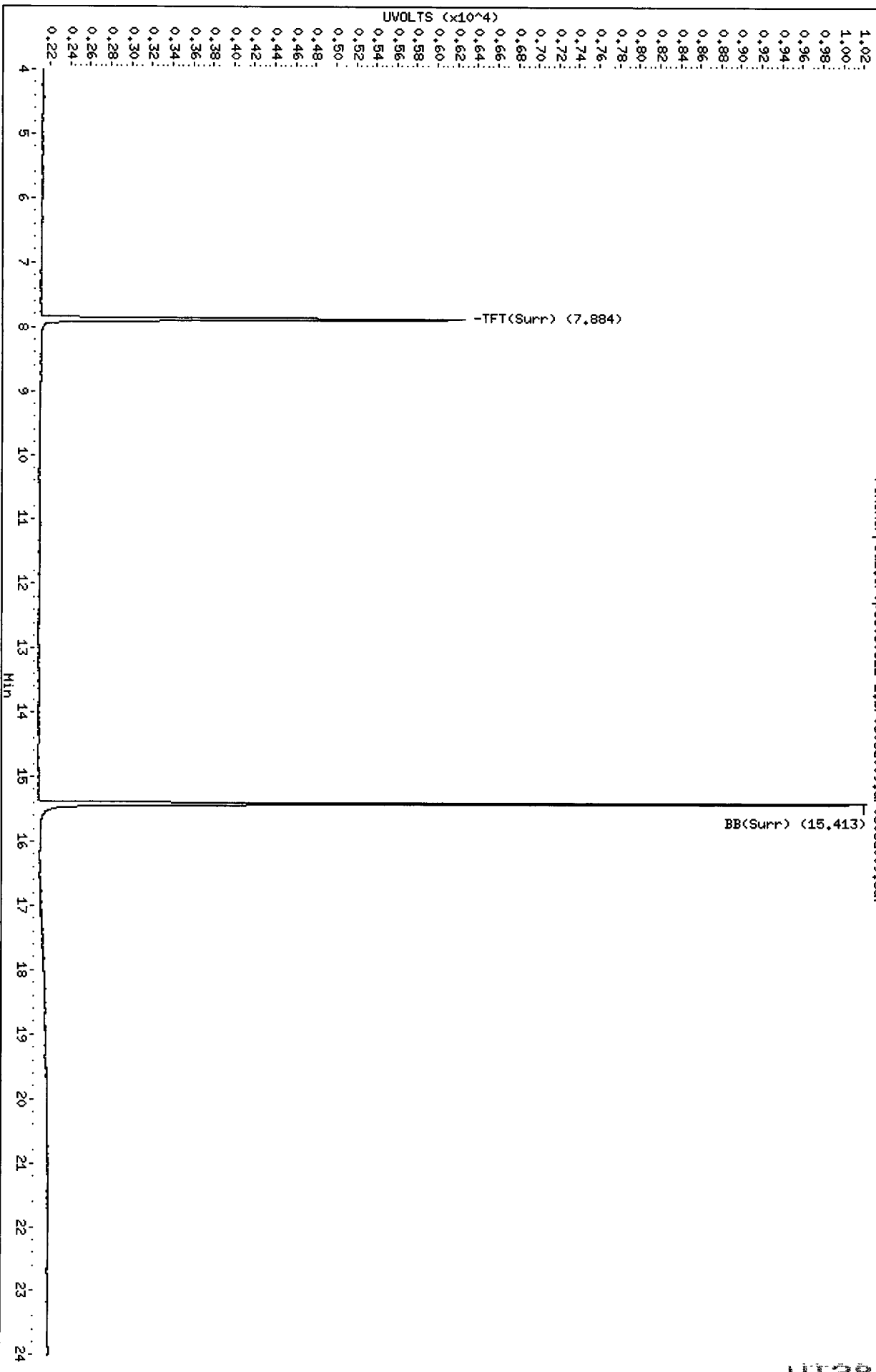
Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

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Sample ID: MW-13D
SAMPLE

Lab Sample ID: UT38C

LIMS ID: 12-8240

Matrix: Water

Data Release Authorized: 

Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/07/12

Date Received: 05/07/12

Date Analyzed: 05/08/12 14:38

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.1%
Bromobenzene	94.8%

Gasoline Surrogate Recovery

Trifluorotoluene	95.9%
Bromobenzene	95.6%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/9/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/vpcc050812-1.b/0508a010.d ARI ID: UT38C
Data file 2: /chem3/pidl.i/vpcc050812-2.b/0508a010.d Client ID: MW-13D
Method: /chem3/pidl.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 14:38
Instrument: pidl.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.878	0.004	2850	35660	95.9	TFT(Surr)
15.406	0.002	1861	15486	95.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	384	0.001 M
8015C 2MP-TMB (4.19 to 16.22)	689188	0	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	0	0.000
NWTPHG Tol-Nap (9.80 to 18.92)	354347	526	0.001 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.886	0.004	3575	96.1	TFT(Surr)
15.413	0.002	7871	94.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

UT38:00047

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a010.d

Date : 08-MAY-2012 14:38

Client ID: MW-13D

Sample Info: UT38C

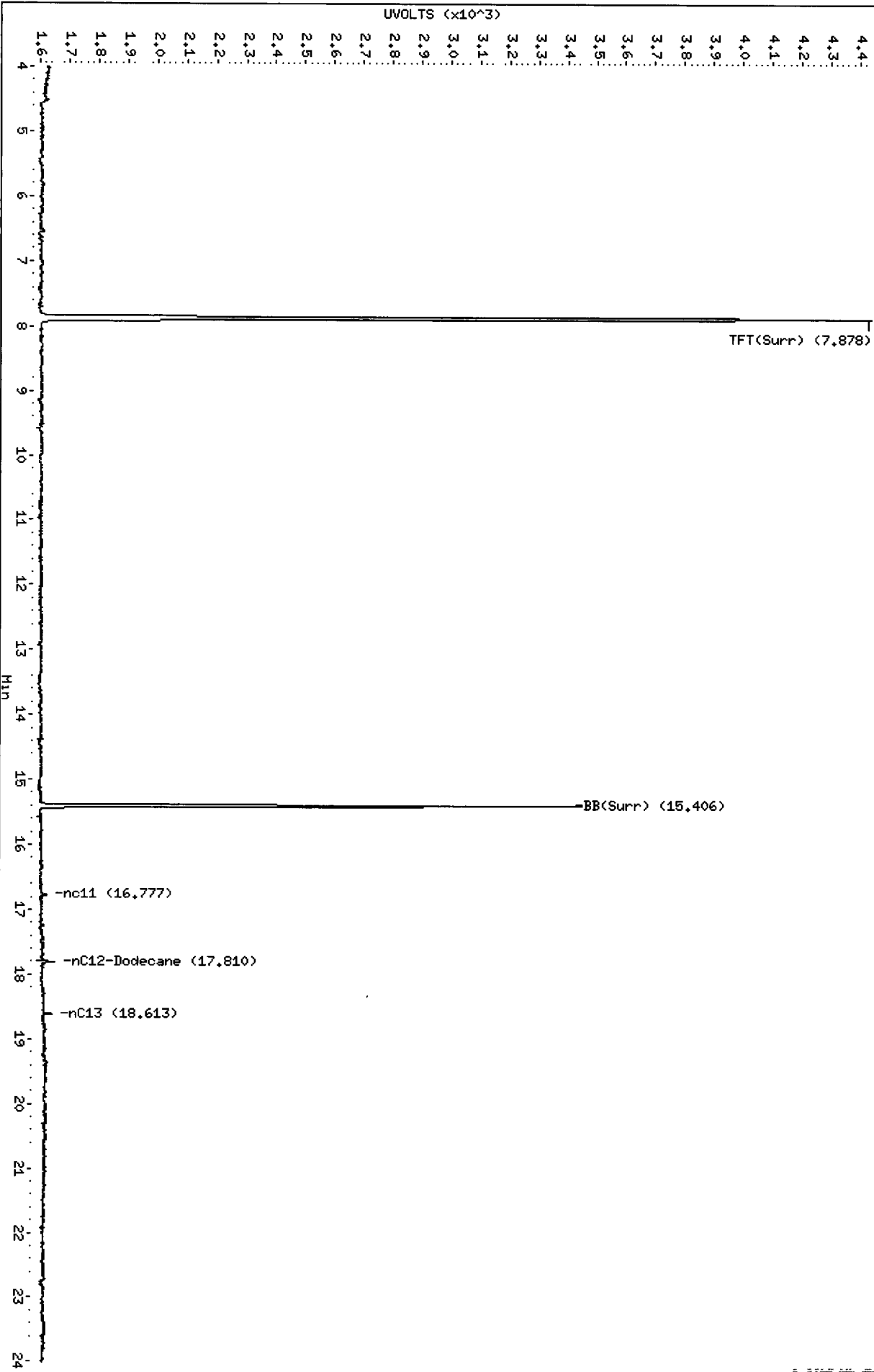
Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID

/chem3/pid1.i/vpcc050812-1.b/0508a010.d/0508a010.cdf



Data File: /chem3/pid1.i/vpcc050812-2.b/0508a010.d

Date : 08-MAY-2012 14:38

Client ID: MM-13D

Sample Info: UT38C

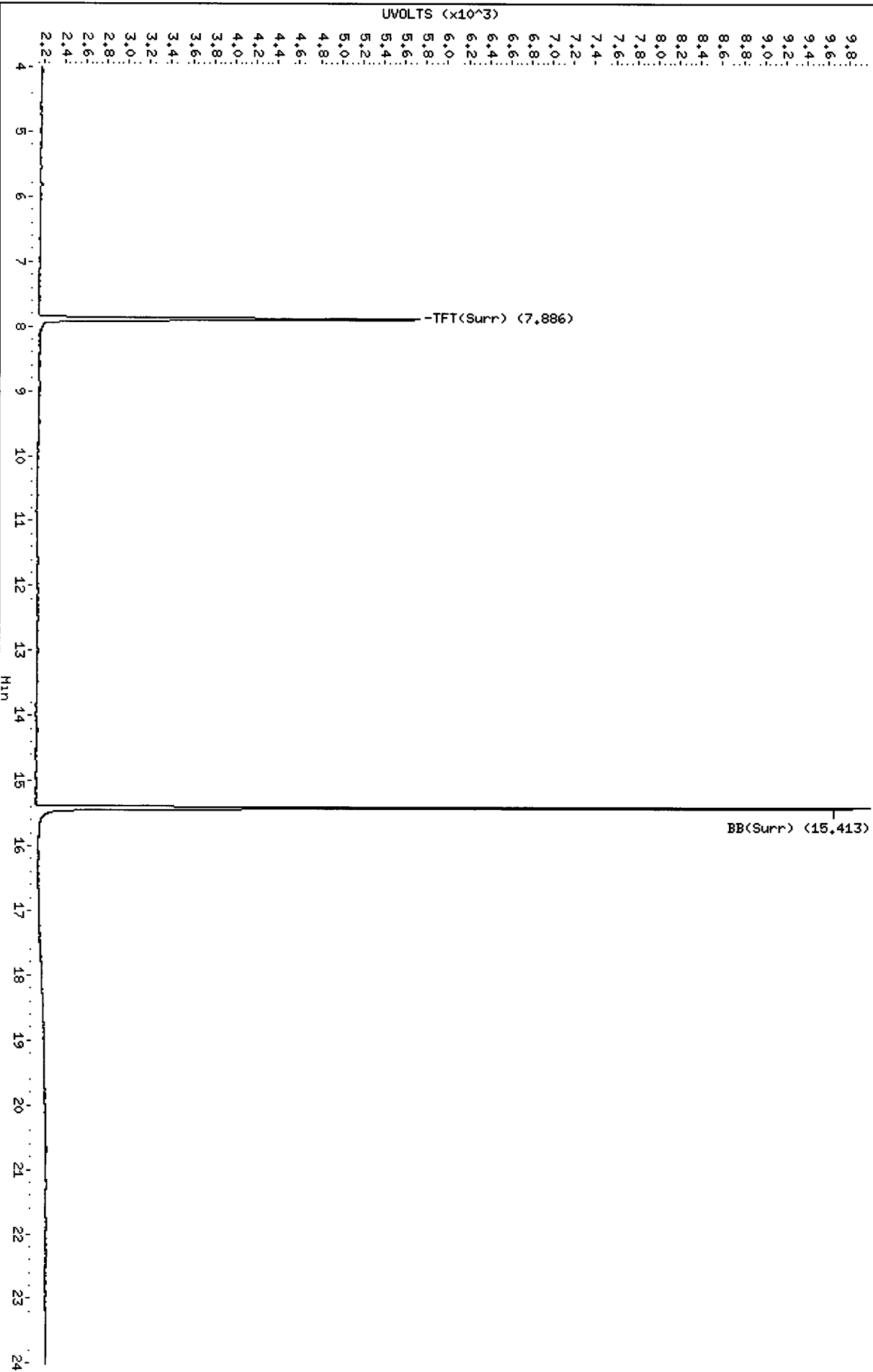
Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

/chem3/pid1.i/vpcc050812-2.b/0508a010.d/0508a010.cdf



ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
Page 1 of 1



Sample ID: MW-14S
SAMPLE

Lab Sample ID: UT38D
LIMS ID: 12-8241
Matrix: Water
Data Release Authorized: *RB*
Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: 05/07/12
Date Received: 05/07/12

Date Analyzed: 05/08/12 15:07
Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
-----------------------------	------	----------	---------------

BETX Surrogate Recovery

Trifluorotoluene	97.3%
Bromobenzene	95.8%

Gasoline Surrogate Recovery

Trifluorotoluene	96.7%
Bromobenzene	96.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/9/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/vpcc050812-1.b/0508a011.d ARI ID: UT38D
Data file 2: /chem3/pidl.i/vpcc050812-2.b/0508a011.d Client ID: MW-14S
Method: /chem3/pidl.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 15:07
Instrument: pidl.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.879	0.005	2872	35718	96.7	TFT(Surr)
15.407	0.003	1878	15496	96.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	461	0.001 M
8015C 2MP-TMB (4.19 to 16.22)	689188	1	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	1	0.000
NWTPHG Tol-Nap (9.80 to 18.92)	354347	666	0.002 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.886	0.004	3618	97.3	TFT(Surr)
15.414	0.003	7954	95.8	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

UT38: 00051

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a011.d

Date : 08-MAY-2012 15:07

Client ID: MW-14S

Sample Info: UT38D

Page 1

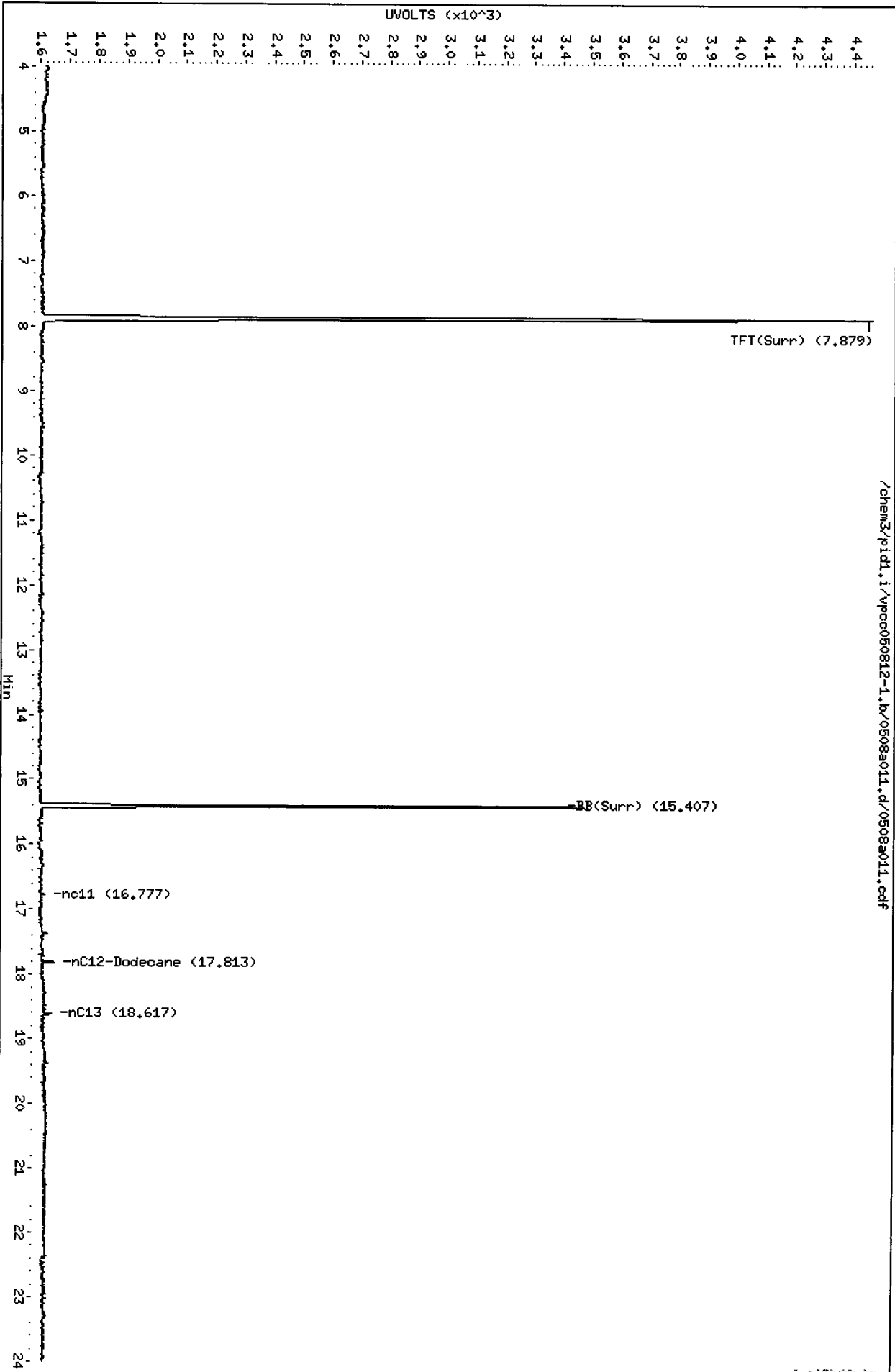
Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID

/chem3/pid1.i/vpcc050812-1.b/0508a011.d/0508a011.cdf



Data File: /chem3/pid1.i/vpcc050812-2.b/0508a011.d

Date : 08-MAY-2012 15:07

Client ID: MW-14S

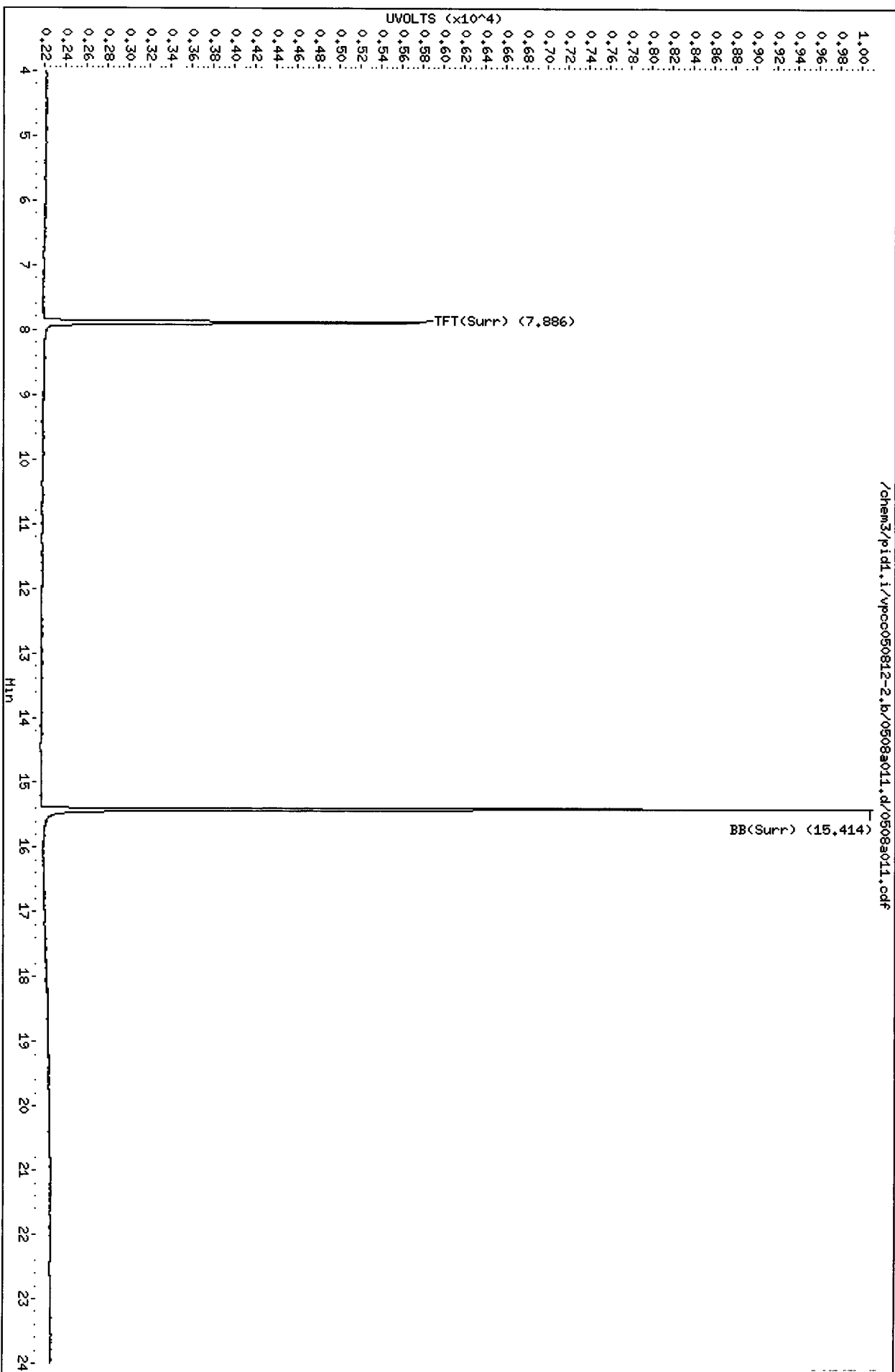
Sample Info: UT38D

Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18



Sample ID: MW-14D
SAMPLE

Lab Sample ID: UT38E
LIMS ID: 12-8242
Matrix: Water
Data Release Authorized: 
Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04
Date Sampled: 05/07/12
Date Received: 05/07/12

Date Analyzed: 05/08/12 15:36
Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL
Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
-----------------------------	------	----------	---------------

BETX Surrogate Recovery

Trifluorotoluene	100%
Bromobenzene	96.7%

Gasoline Surrogate Recovery

Trifluorotoluene	97.6%
Bromobenzene	96.8%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/9/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050812-1.b/0508a012.d ARI ID: UT38E
Data file 2: /chem3/pid1.i/vpcc050812-2.b/0508a012.d Client ID: MW-14D
Method: /chem3/pid1.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 15:36
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.878	0.004	2899	35911	97.6	TFT(Surr)
15.405	0.002	1884	15703	96.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	171	0.001 M
8015C 2MP-TMB (4.19 to 16.22)	689188	264	0.000 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	263	0.000 M
NWTPHG Tol-Nap (9.80 to 18.92)	354347	302	0.001 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.887	0.005	3727	100.2	TFT(Surr)
15.414	0.003	8027	96.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.050	0.006	44	0.17N	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

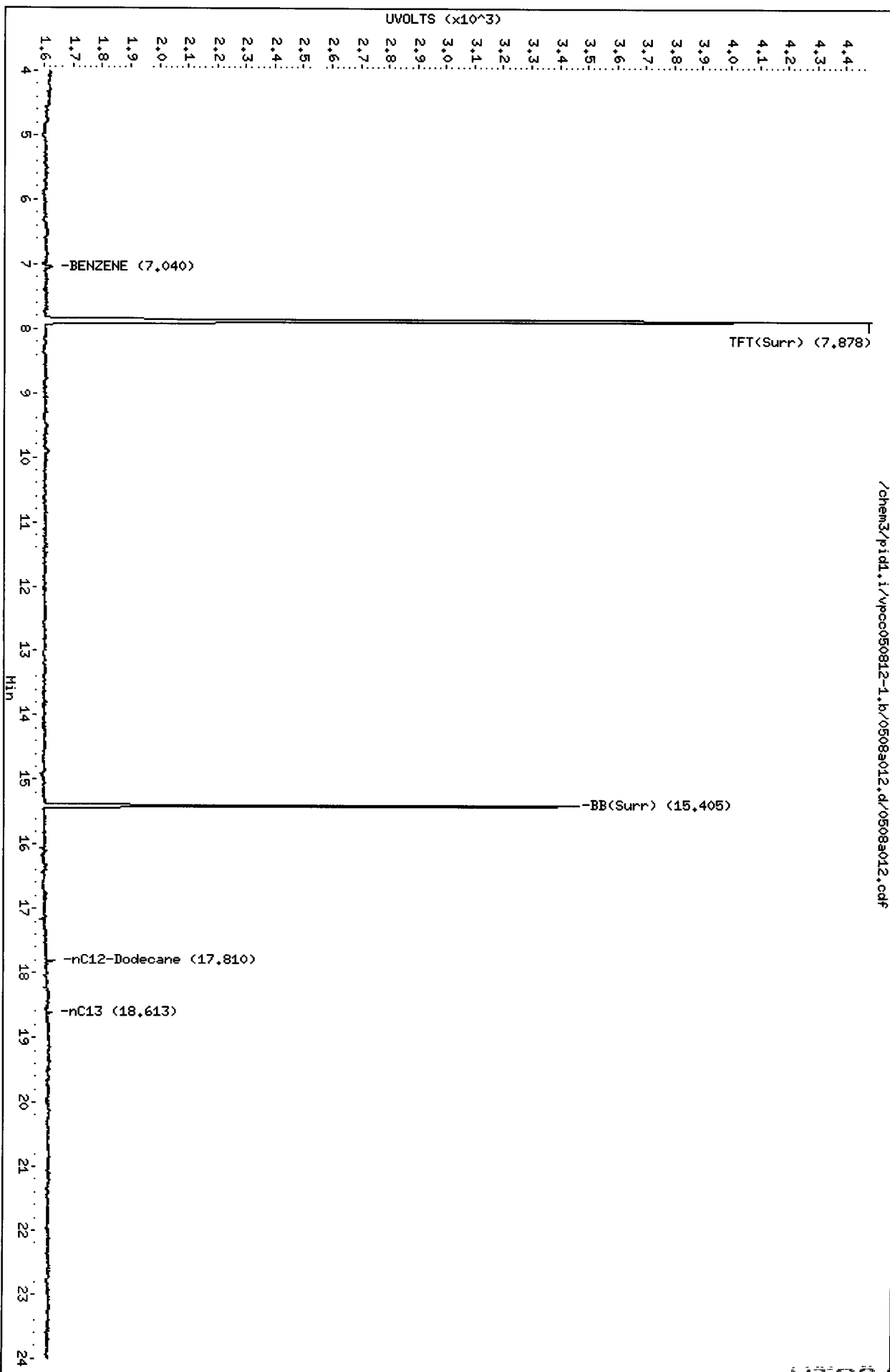
UT38 : 00055

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a012.d
Date : 08-May-2012 15:36
Client ID: MW-14D
Sample Info: UT38E

Column phase: RTX 502-2 FID

/chem3/pid1.i/vpcc050812-1.b/0508a012.d/0508a012.cdf

Instrument: pid1.i
Operator: JM
Column diameter: 0.18



Data File: /chem3/pid1.i/vpcc050812-2.b/0508a012.d

Date : 08-MAY-2012 15:36

Client ID: MM-14D

Sample Info: UT38E

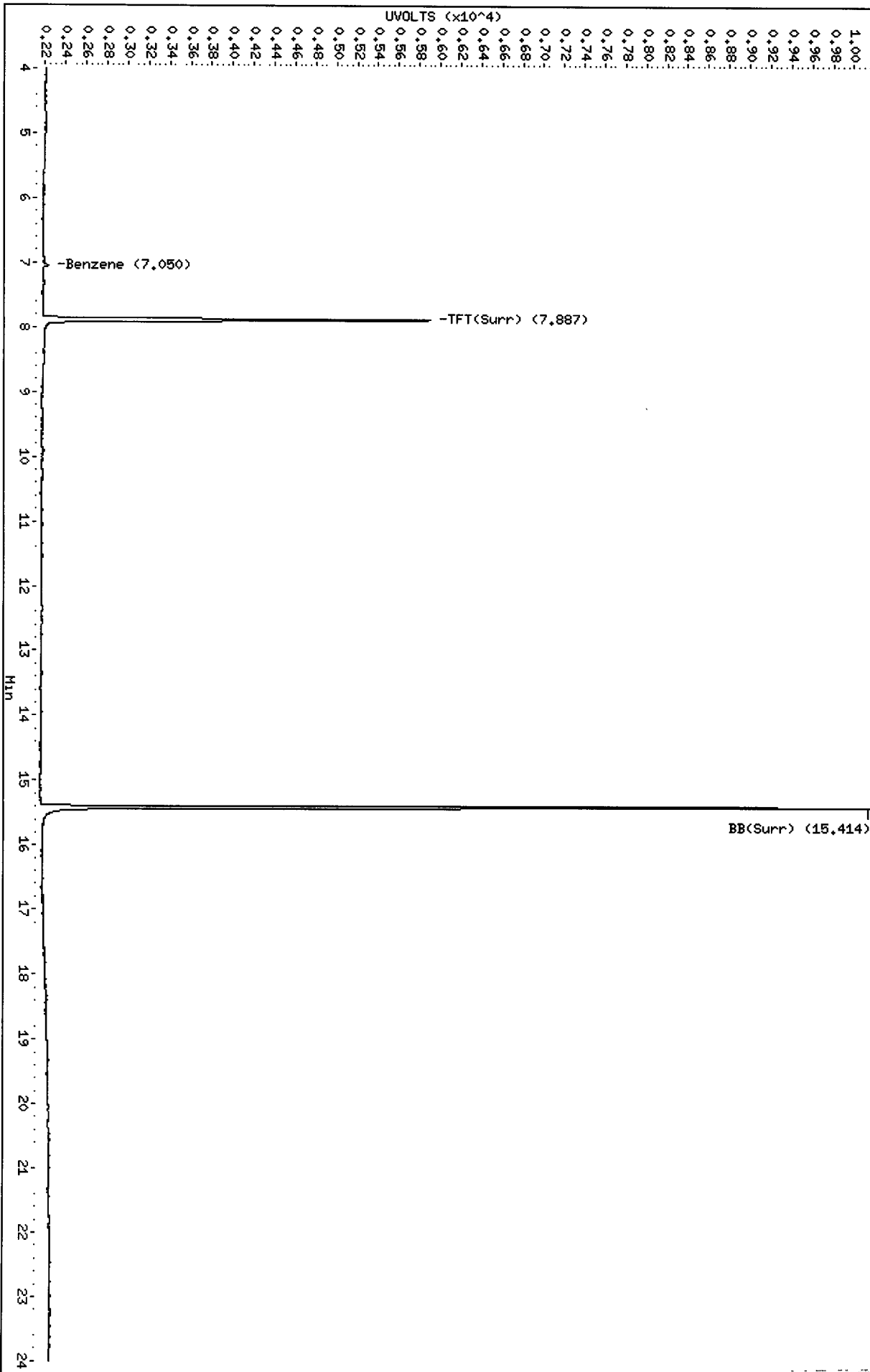
Instrument: pid1.i

Column phase: RTX 502-2 PID

Operator: JM

Column diameter: 0.18

/chem3/pid1.i/vpcc050812-2.b/0508a012.d/0508a012.cdf



ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: UT38F
 LIMS ID: 12-8243
 Matrix: Water
 Data Release Authorized: *AS*
 Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group
 Project: Birds Eye I
 Event: JI1001.04
 Date Sampled: 05/07/12
 Date Received: 05/07/12

Date Analyzed: 05/08/12 13:09
 Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	96.8%
Bromobenzene	92.1%

Gasoline Surrogate Recovery

Trifluorotoluene	94.8%
Bromobenzene	91.1%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

M4
5/9/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050812-1.b/0508a007.d ARI ID: UT38F
Data file 2: /chem3/pid1.i/vpcc050812-2.b/0508a007.d Client ID: Trip Blank
Method: /chem3/pid1.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 13:09
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.878	0.004	2817	34868	94.8	TFT(Surr)
15.407	0.003	1772	14682	91.1	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	869	0.003 M
8015C 2MP-TMB (4.19 to 16.22)	689188	0	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	0	0.000
NWTPHG Tol-Nap (9.80 to 18.92)	354347	1214	0.003 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.886	0.004	3601	96.8	TFT(Surr)
15.414	0.003	7643	92.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

UT38 : 00059

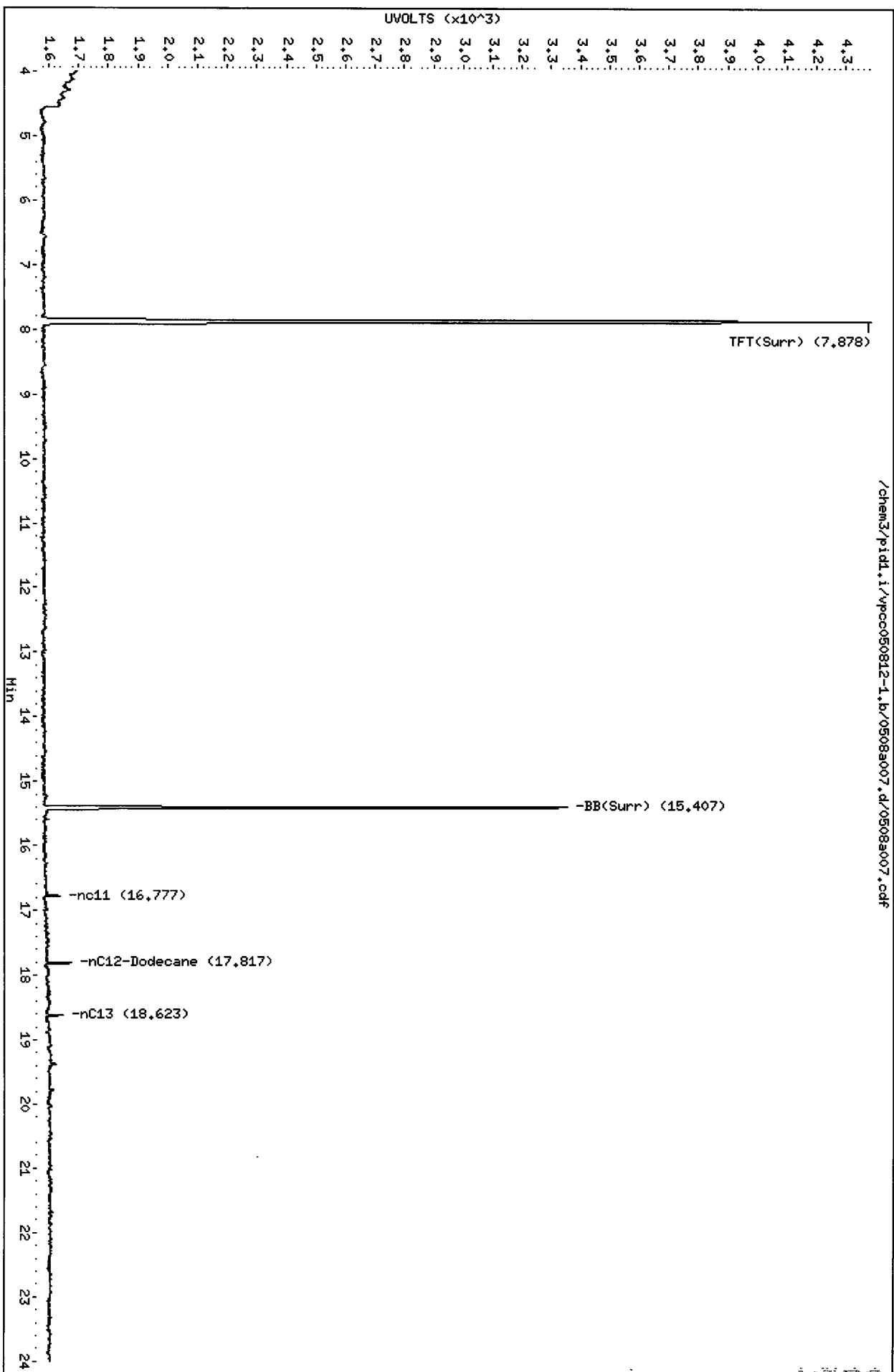
Data File: /chem3/pidl.i/vpcc050812-1.b/0508a007.d
Date : 08-MAY-2012 13:09
Client ID: Trip Blank
Sample Info: UT38F

Instrument: pidl.i

Page 1

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18



UT38 00060

Data File: /chem3/pid1.i/vpcc050812-2.b/0508a007.d

Date: 08-MAY-2012 13:09

Client ID: Trip Blank

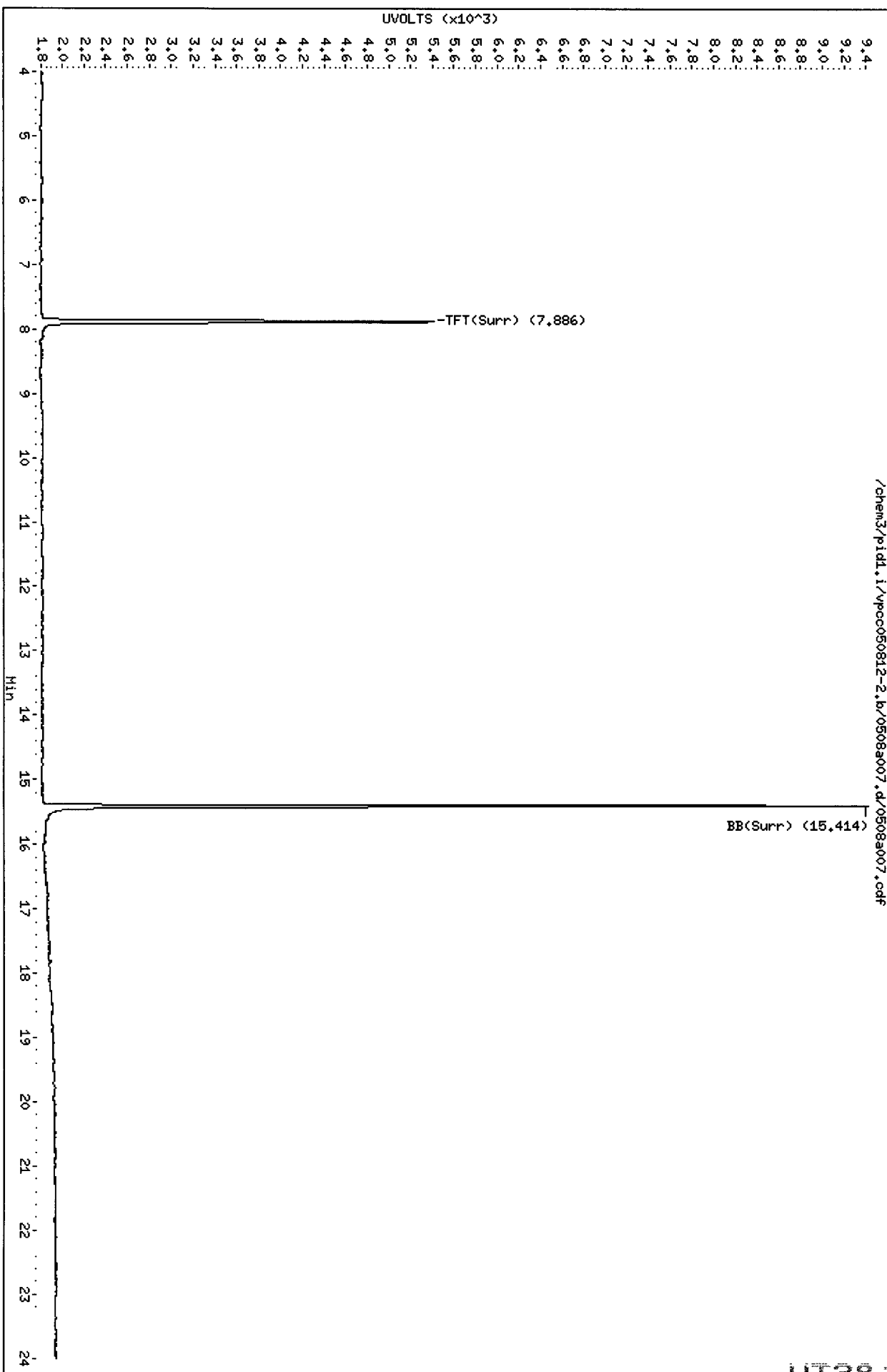
Sample Info: UT38F

Column phase: RTX 502-2 PID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18



ORGANICS ANALYSIS DATA SHEET
BETX by Method SW8021BMod
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: MB-050812
METHOD BLANK

Lab Sample ID: MB-050812
 LIMS ID: 12-8238
 Matrix: Water
 Data Release Authorized: 
 Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group
 Project: Birds Eye I
 Event: JI1001.04
 Date Sampled: NA
 Date Received: NA

Date Analyzed: 05/08/12 12:10
 Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL
 Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	98.8%
Bromobenzene	98.6%

Gasoline Surrogate Recovery

Trifluorotoluene	97.8%
Bromobenzene	98.8%

BETX values reported in µg/L (ppb)
 Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.
 GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050812-1.b/0508a006.d ARI ID: MB0508
Data file 2: /chem3/pid1.i/vpcc050812-2.b/0508a006.d Client ID:
Method: /chem3/pid1.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 12:10
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.877	0.003	2904	36077	97.8	TFT(Surr)
15.406	0.002	1922	15896	98.8	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	2114	0.006 M
8015C 2MP-TMB (4.19 to 16.22)	689188	1552	0.002 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	1114	0.002 M
NWTPHG Tol-Nap (9.80 to 18.92)	354347	2778	0.008 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.885	0.003	3676	98.8	TFT(Surr)
15.413	0.002	8188	98.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

SW
5/9/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

UT38: 00063

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a006.d

Date : 08-MAY-2012 12:10

Client ID:

Sample Info: MB0508

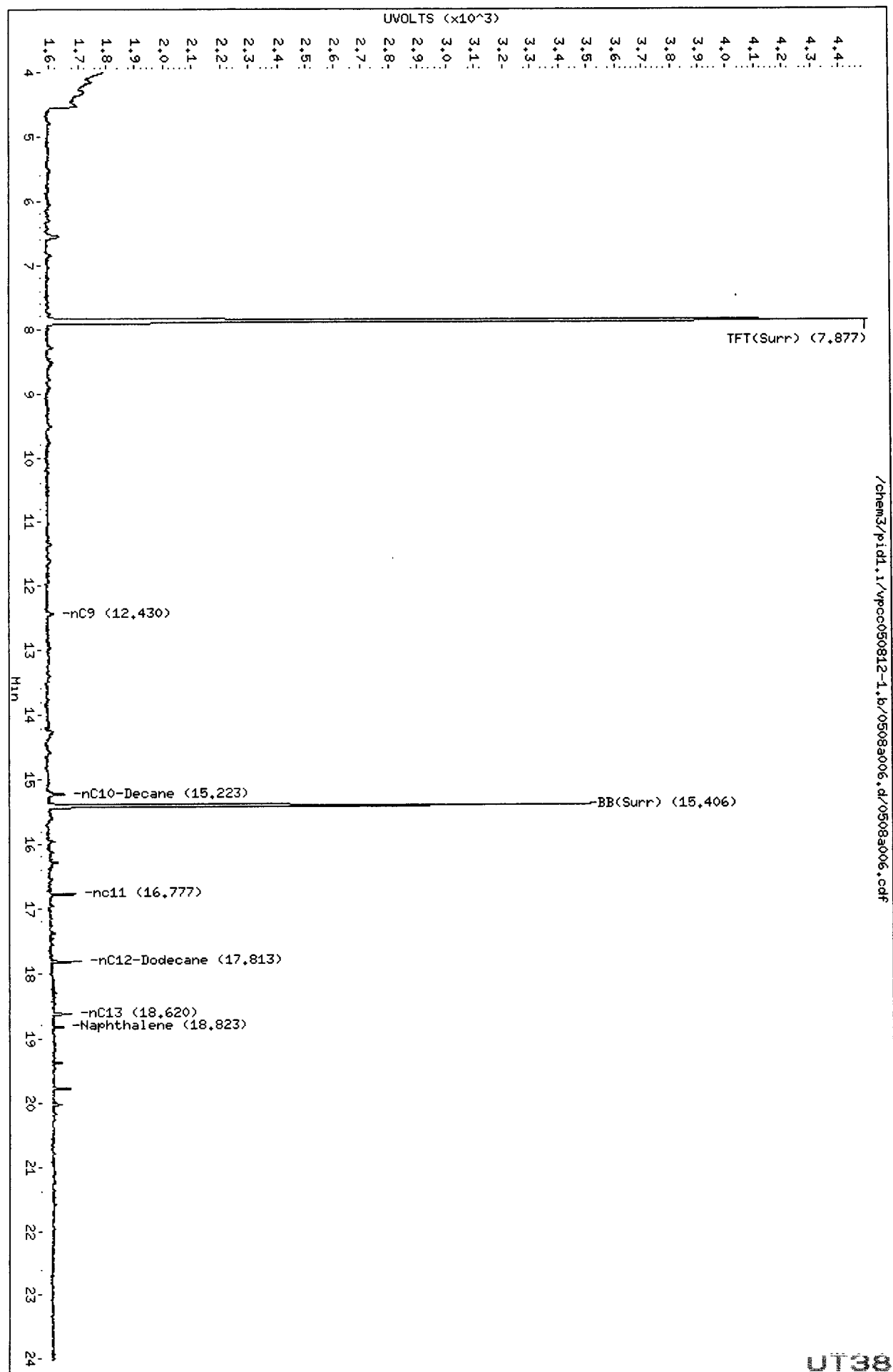
Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Page 1



UT38: 00064

Data File: /chem3/pid1.i/vpcc050812-2.b/0508a006.d

Page 1

Date : 08-MAY-2012 12:10

Client ID:

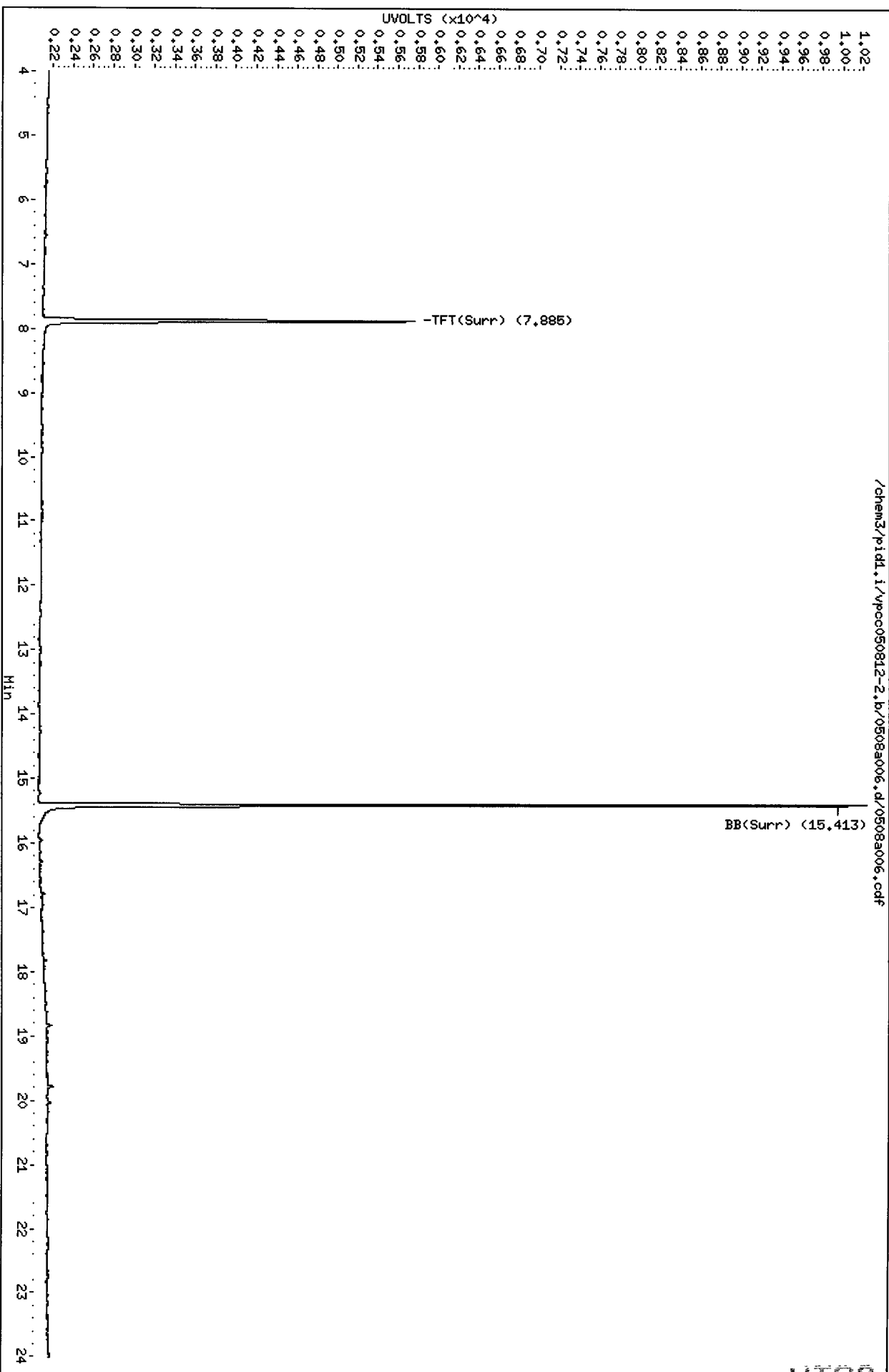
Instrument: pid1.i

Sample Info: MB0508

Operator: JM

Column phase: RTX 502-2 PID

Column diameter: 0.18



00065 UT38

BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: UT38
Matrix: Water

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04

Client ID	TFT	BBZ	TOT OUT
MB-050812	98.8%	98.6%	0
LCS-050812	88.3%	85.7%	0
LCSD-050812	97.2%	96.6%	0
MW-12S	100%	97.2%	0
MW-13S	112%	98.3%	0
MW-13D	96.1%	94.8%	0
MW-14S	97.3%	95.8%	0
MW-14D	100%	96.7%	0
Trip Blank	96.8%	92.1%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(79-120)	(80-120)
(BBZ) = Bromobenzene	(79-120)	(80-120)

Log Number Range: 12-8238 to 12-8243

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: UT38
Matrix: Water

QC Report No: UT38-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04

Client ID	TFT	BBZ	TOT OUT
MB-050812	97.8%	98.8%	0
LCS-050812	89.1%	86.3%	0
LCSD-050812	98.1%	96.3%	0
MW-12S	99.4%	96.9%	0
MW-13S	102%	97.5%	0
MW-13D	95.9%	95.6%	0
MW-14S	96.7%	96.5%	0
MW-14D	97.6%	96.8%	0
Trip Blank	94.8%	91.1%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 12-8238 to 12-8243

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-050812

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050812

LIMS ID: 12-8238

Matrix: Water

Data Release Authorized:

Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/08/12 11:11

LCSD: 05/08/12 11:41

Instrument/Analyst LCS: PID1/MH

LCSD: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	3.26	3.70	88.1%	3.72	3.70	101%	13.2%
Toluene	36.3	39.6	91.7%	40.9	39.6	103%	11.9%
Ethylbenzene	10.2	11.6	87.9%	11.4	11.6	98.3%	11.1%
m,p-Xylene	37.8	42.5	88.9%	42.6	42.5	100%	11.9%
o-Xylene	17.4	19.2	90.6%	19.8	19.2	103%	12.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	88.3%	97.2%
Bromobenzene	85.7%	96.6%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-050812

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050812

LIMS ID: 12-8238

Matrix: Water

Data Release Authorized: *AB*

Reported: 05/09/12

QC Report No: UT38-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/08/12 11:11

LCSD: 05/08/12 11:41

Instrument/Analyst LCS: PID1/MH

LCSD: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor LCS: 1.0

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.97	1.00	97.0%	1.08	1.00	108%	10.7%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	89.1%	98.1%
Bromobenzene	86.3%	96.3%

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/vpcc050812-1.b/0508a004.d ARI ID: LCS0508
Data file 2: /chem3/pidl.i/vpcc050812-2.b/0508a004.d Client ID:
Method: /chem3/pidl.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 11:11
Instrument: pidl.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.875	0.001	2646	37775	89.1	TFT(Surr)
15.405	0.001	1680	14997	86.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	325860	0.971 M
8015C 2MP-TMB (4.19 to 16.22)	689188	683508	0.992 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	543686	0.985 M
NWTPHG Tol-Nap (9.80 to 18.92)	354347	342416	0.966 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.883	0.001	3284	88.3	TFT(Surr)
15.413	0.002	7114	85.7	BB(Surr)

JW
5/4/12

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.043	-0.001	833	3.26N	Benzene
9.912	0.002	8183	36.29	Toluene
12.803	0.000	2048	10.20N	Ethylbenzene
12.968	0.003	8313	37.77	M/P-Xylene
13.917	0.001	2973	17.41	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height

N Indicates peak was manually integrated

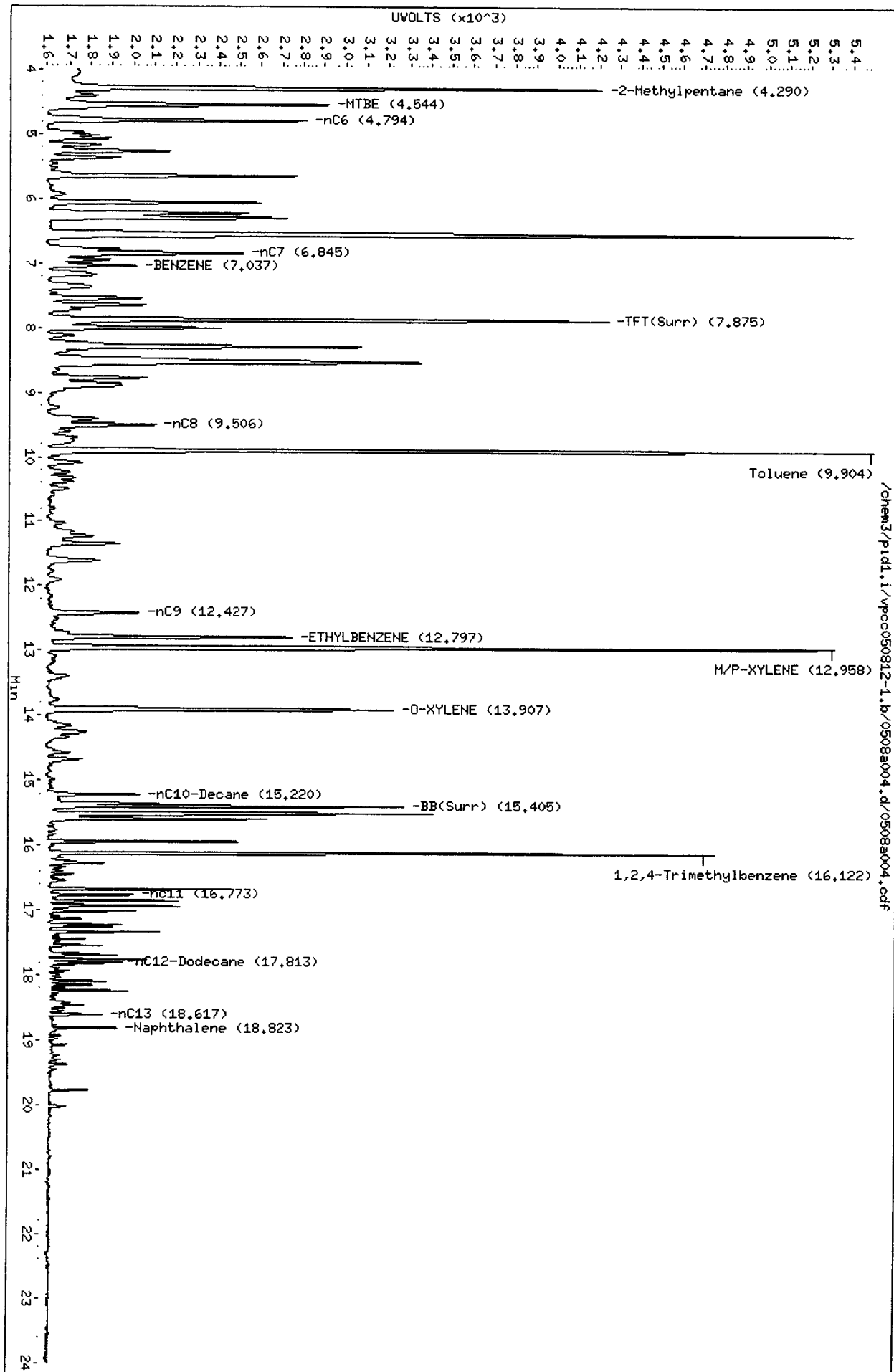
Data File: /chem3/pidl.i/vpcc050812-1.b/0508a004.d
Date: 08-MAY-2012 11:11
Client ID:
Sample Info: LCS0508

Instrument: pidl.i

Page 1

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18



0138 : 00071

Data File: /chem3/pid1.i/vpcc050812-2.b/0508a004.d

Date : 08-MAY-2012 11:11

Client ID:

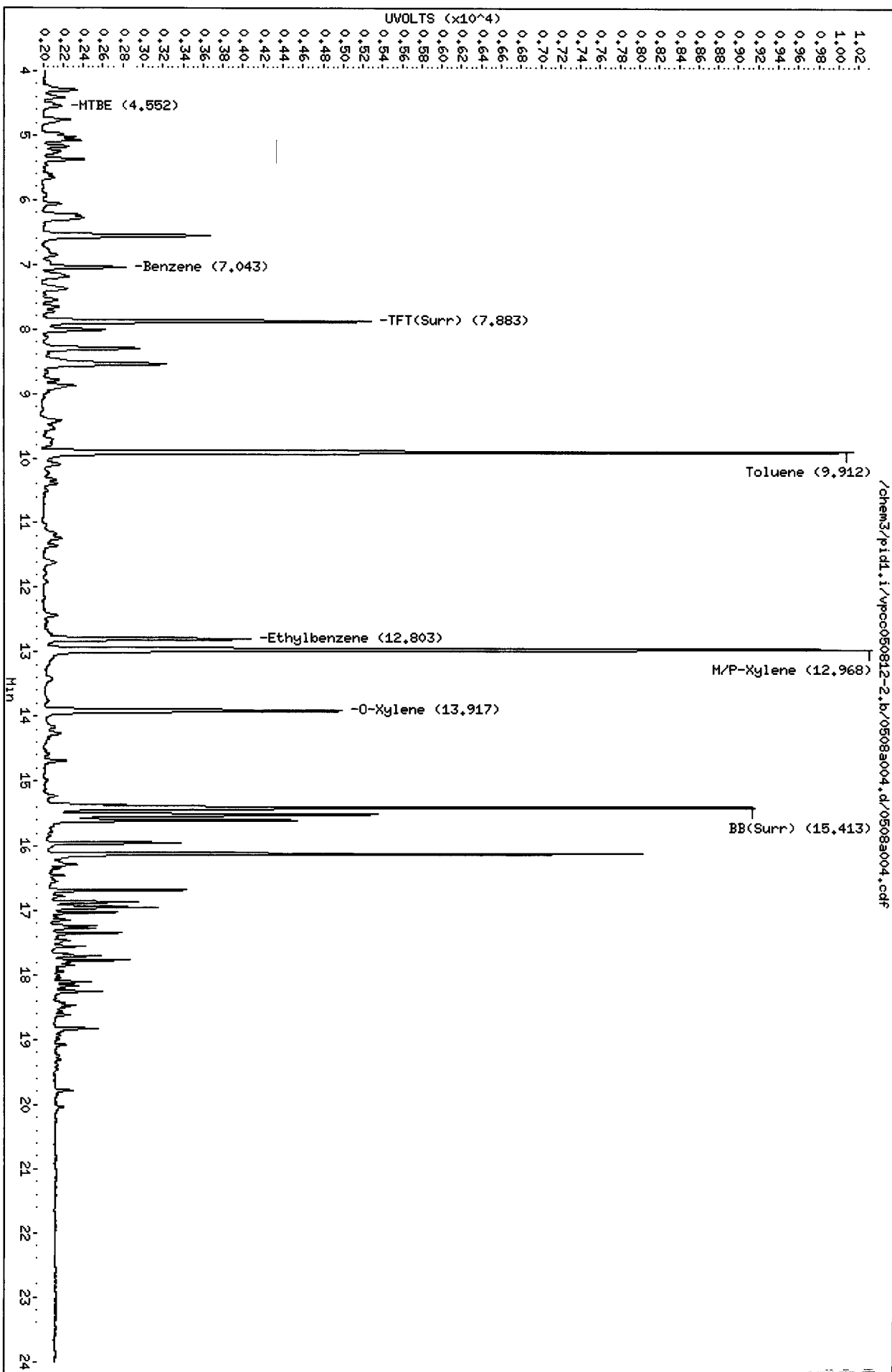
Sample Info: LCS0508

Instrument: pid1.i

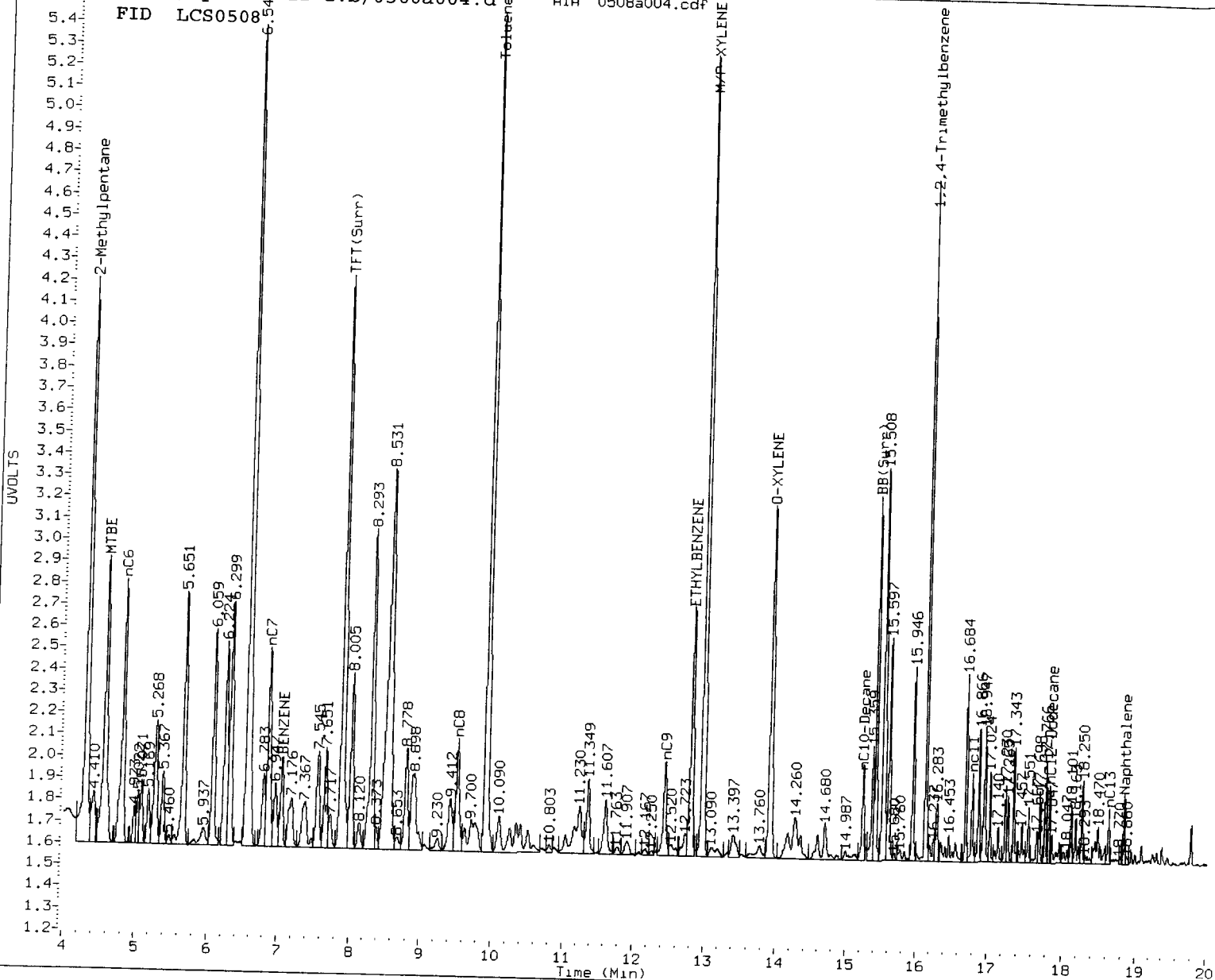
Page 1

Column phase: RTX 502-2 PID

Operator: JM
Column diameter: 0.18



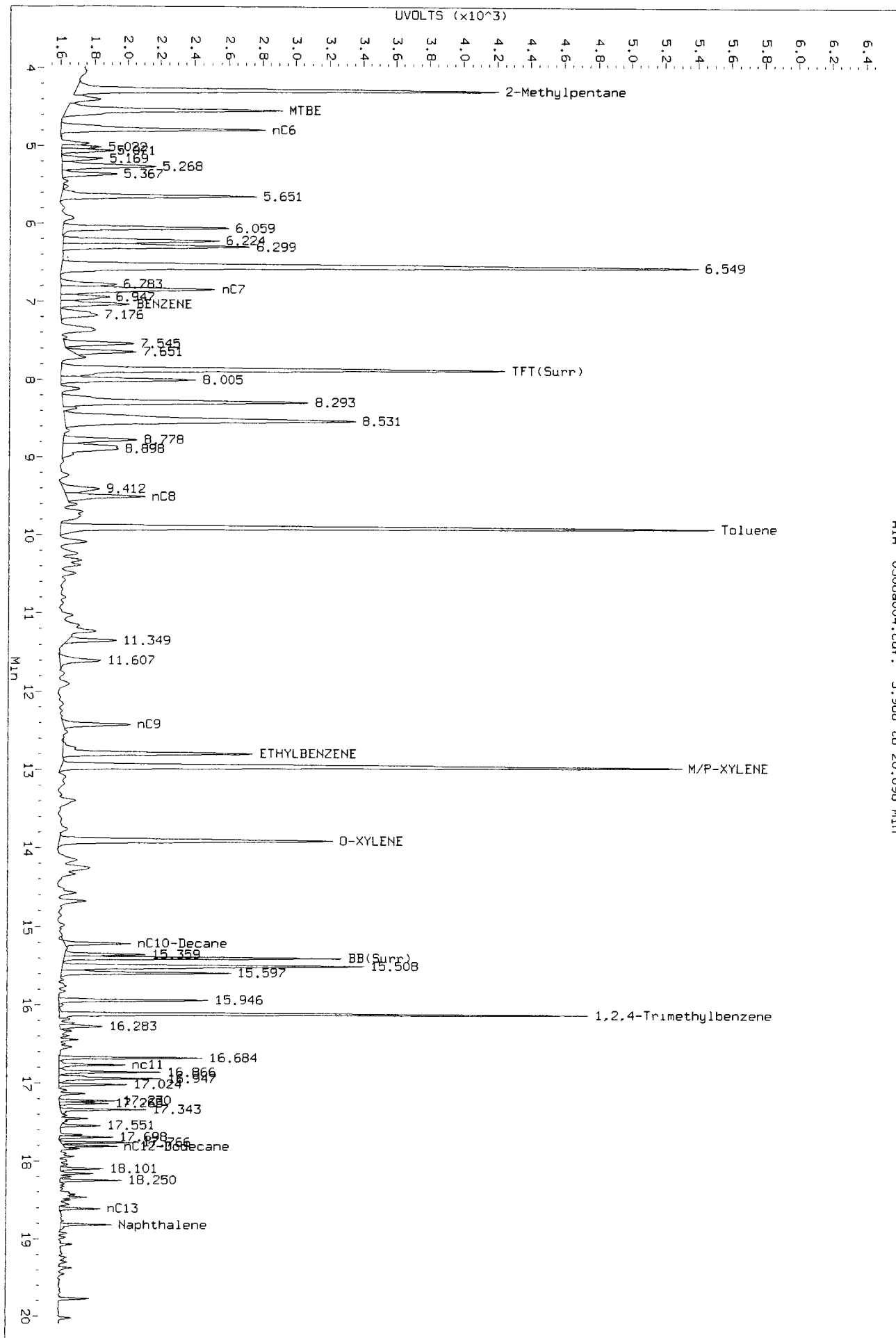
UT38 00072



Data File: /chem3/pid1.1/vpcc050812-1.b/0508a004.d/0508a004.cdf
 Injection Date: 08-MAY-2012 11:11
 Instrument: pid1.1
 Client Sample ID:

AIA 0508a004.cdf: 3.986 to 20.098 Min

Ref: 5/11/12



Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/vpcc050812-1.b/0508a005.d ARI ID: LCSD0508
Data file 2: /chem3/pidl.i/vpcc050812-2.b/0508a005.d Client ID:
Method: /chem3/pidl.i/vpcc050812-2.b/PIDB.m Injection Date: 08-MAY-2012 11:41
Instrument: pidl.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.875	0.001	2913	41856	98.1	TFT(Surr) ✓
15.405	0.002	1873	16389	96.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	364606	1.086 M
8015C 2MP-TMB (4.19 to 16.22)	689188	763880	1.108 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	605498	1.097 M
NWTPHG Tol-Nap (9.80 to 18.92)	354347	383146	1.081 M ✓

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.884	0.002	3616	97.2	TFT(Surr) ✓
15.413	0.002	8022	96.6	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
7.043	-0.001	949	3.72N	Benzene
9.913	0.002	9220	40.89	Toluene
12.803	0.000	2295	11.43N	Ethylbenzene ✓
12.969	0.004	9374	42.59	M/P-Xylene
13.918	0.002	3374	19.76	O-Xylene
ND	---	---	---	MTBE

JW
5/8/12

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050812-1.b/0508a005.d
Date: 08-MAY-2012 11:41

Client ID:

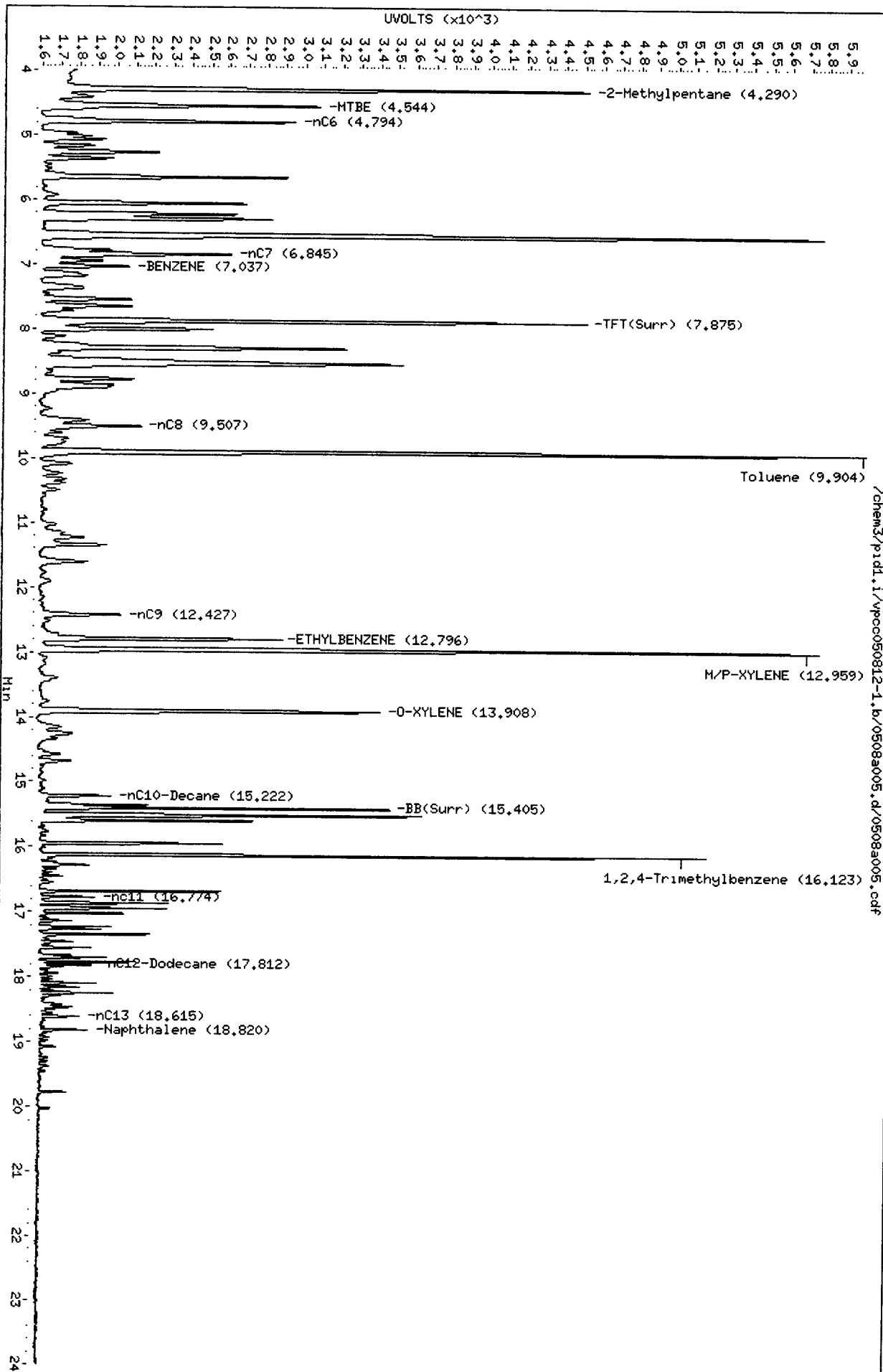
Sample Info: LCSD0508

Instrument: pid1.i

Page 1

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18



UT38 : 00076

Data File: /chem3/pid1.i/vpcc050812-2.b/0508a005.d
Date : 08-MAY-2012 11:41

Client ID:

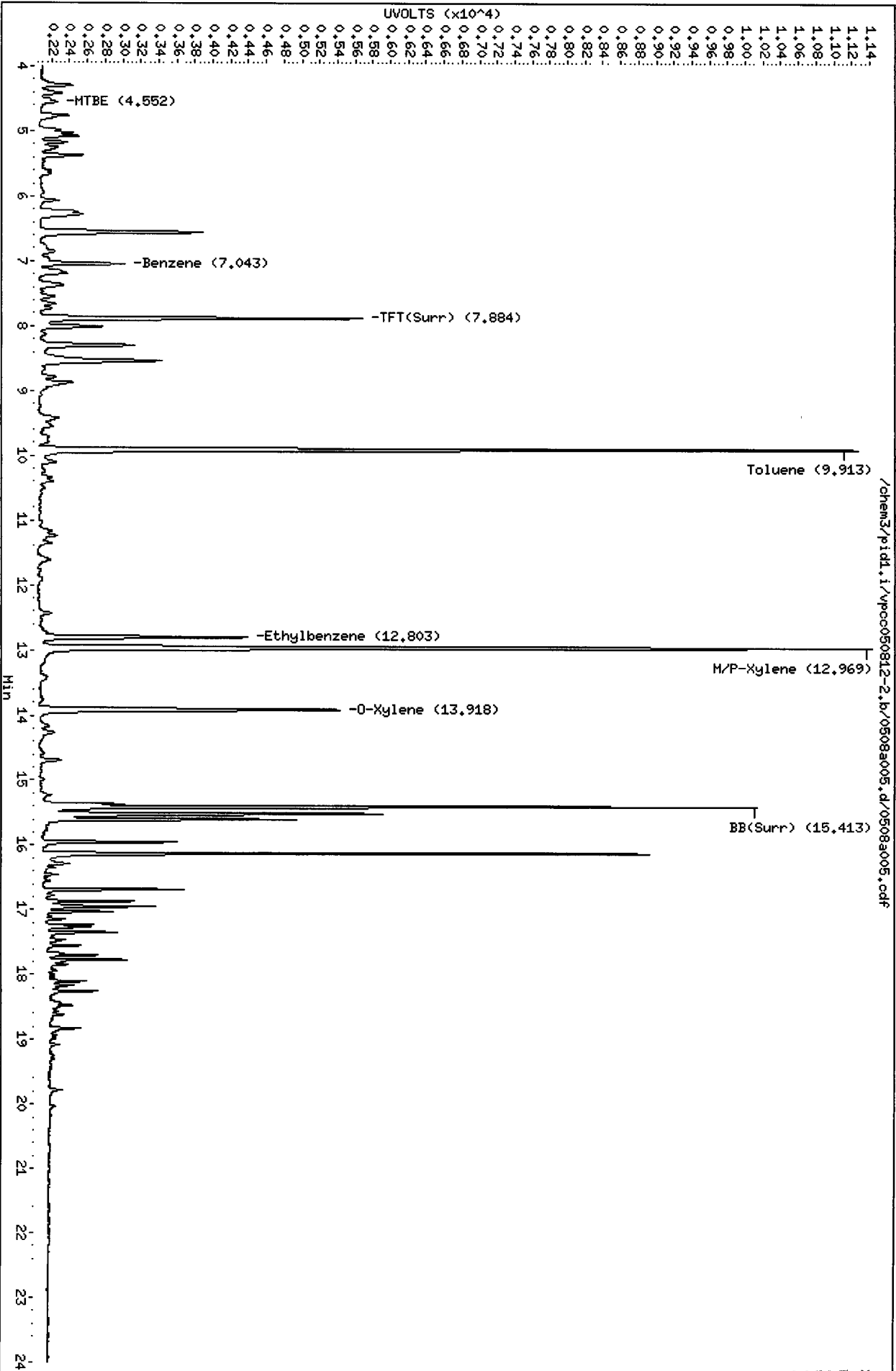
Sample Info: LCS0508

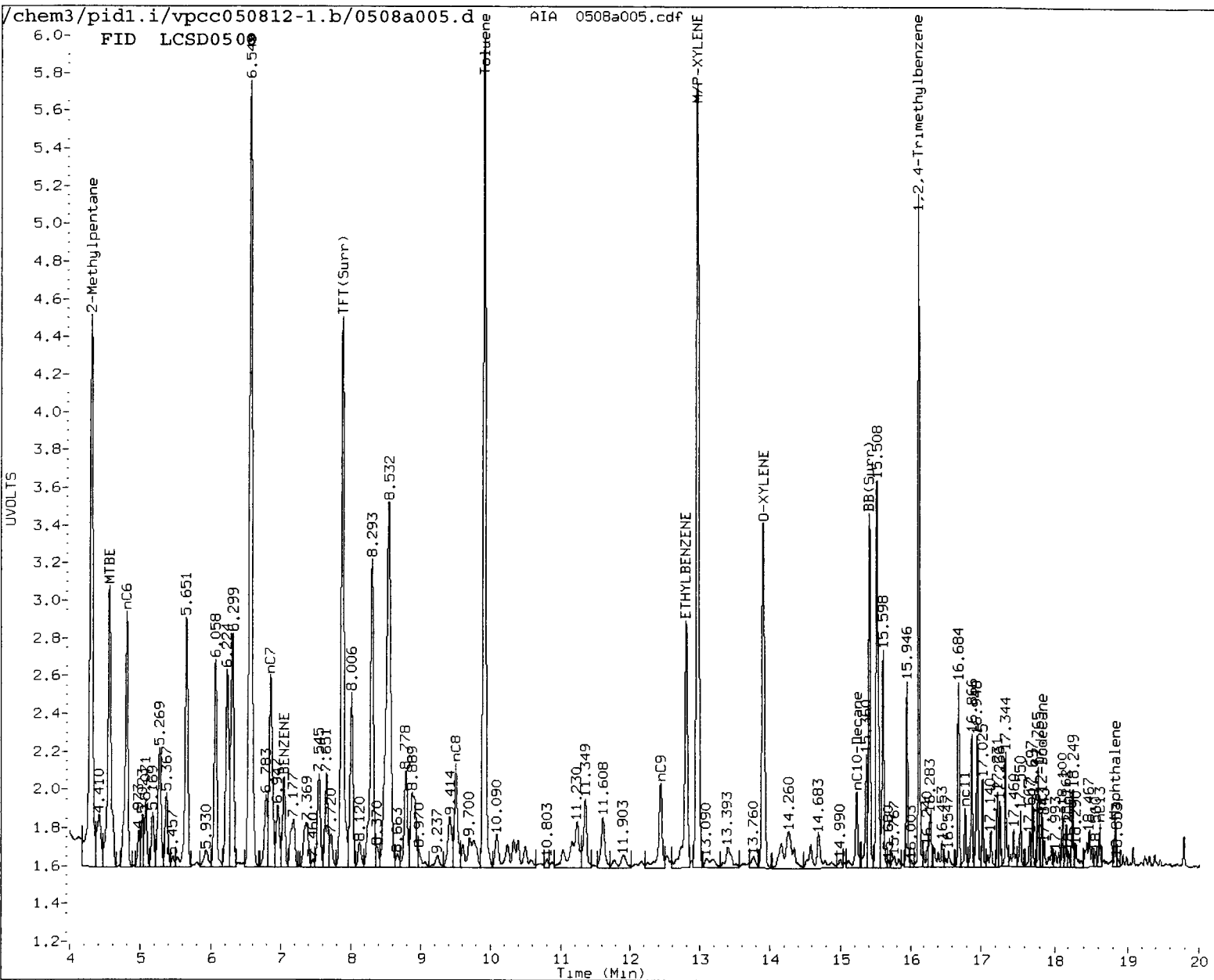
Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 PID





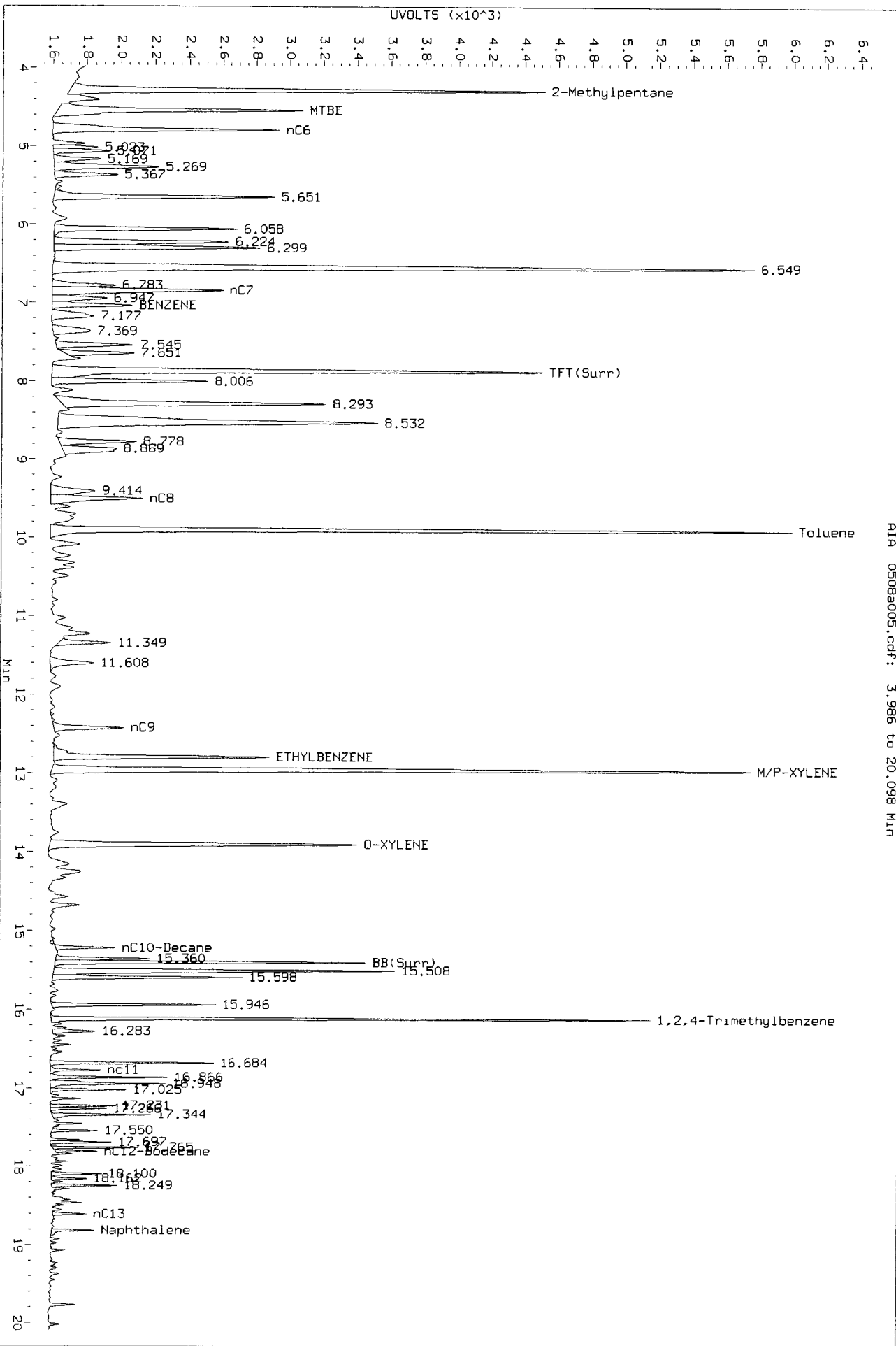
MANUAL INTEGRATION

- ① Baseline correction
2. Poor chromatography
- ③ Peak not found
4. Totals calculation

5. Other _____

Analyst: Ju Date: 5/6/12

Data File: /chem3/pid1.1/vpcc050812-1.b/0508a005.d/0508a005.cdf
Injection Date: 08-May-2012 11:41
Instrument: pid1.1
Client Sample ID:



AIA 0508a005.cdf: 3.986 to 20.098 MIN

*Base
Spk 12*



Analytical Resources, Incorporated
Analytical Chemists and Consultants

May 14, 2012

Inger Jackson
Pacific Groundwater Group
2377 Eastlake Ave. East, Suite 200
Seattle, WA 98102

Project: Birds Eye I JI1001.04
ARI ID: UT66

Dear Ms. Jackson:

Please find enclosed the original Chain of Custody record, sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this package will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com



Case Narrative

- Sample Receipt & Analytical Details -

Sample Receipt

Analytical Resources, Inc. accepted four water samples and one trip blank intact on May 8, 2012. The samples were received with temperatures measured at 2.9 and 9.9°C. For further details regarding sample receipt please refer to the enclosed Cooler Receipt Form.

Selected samples were analyzed for the parameters listed below, as requested on the Chain of Custody.

PNA's by EPA Method 8270D SIM (Select Ion Monitoring)

The SIM PNA's CCAL is out of control low for Dibenzo (a,h) anthracene. All associated samples that contain analyte have been flagged with a "Q" qualifier.

There were no other irregularities with this analysis.

Diesel Range Hydrocarbons (Extended) by NWTPH-Dx

There were no irregularities with this analysis.

8021 BETX + Gasoline Range Hydrocarbons by NWTPH-G

There were no irregularities with this analysis.

Sample ID Cross Reference Report



ARI Job No: UT66
Client: Pacific Groundwater Group
Project Event: JI1001.04
Project Name: Birds Eye I

Sample ID	ARI		Matrix	Sample Date/Time	VTSR
	Lab ID	LIMS ID			
1. MW-9S	UT66A	12-8385	Water	05/08/12 10:30	05/08/12 17:45
2. MW-9D	UT66B	12-8386	Water	05/08/12 12:00	05/08/12 17:45
3. MW-12D	UT66C	12-8387	Water	05/08/12 16:20	05/08/12 17:45
4. MW-12S	UT66D	12-8388	Water	05/07/12 10:30	05/08/12 17:45

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

[illegible]

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.



Cooler Receipt Form

ARI Client PGG

COC No(s) _____ NA

Assigned ARI Job No. UT66

Project Name Birds Eye I

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 2-6 0 °C for chemistry) 2.9 9.9

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

Temp Gun ID#: 96941614

Cooler Accepted by TS for (CA) Date: 5-8-12 Time 1745

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 TS Date: 5-9-12 Time: 732

**** 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-12 D 1 "pb"

By TS Date 5-9-12

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm	Small → "sm" Peabubbles → "pb" Large → "lg" Headspace → "hs"
-----------------------------------	------------------------------	--	--



Cooler Temperature Compliance Form

Cooler#:	1	Temperature(°C):	9.9
Sample ID		Bottle Count	Bottle Type
All 500 mL			
Ambers but			
2 of MW-120 were			
received above 6°C			

Cooler#:		Temperature(°C):	
Sample ID		Bottle Count	Bottle Type

Cooler#:		Temperature(°C):	
Sample ID		Bottle Count	Bottle Type

Cooler#:		Temperature(°C):	
Sample ID		Bottle Count	Bottle Type

Completed by: JS Date: 5-8-12 Time: 1750



Analysis Code	Analyte ⁵	DL ¹	LOD ¹	LOQ ² ppm	Spike % Recovery Control Limits ³			RPD ⁴
					LCS	MB/LCS Surrogate	Sample Surrogate	
HCIWVX	NWTPH-HCID – Water Samples	--	--	0.50 ⁷	--	--	50-150	≤ 40
HCISVX	NWTPH-HCID – Solid Samples	--	--	50 ⁷	--	--	50-150	
Aqueous Samples – No Extract Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	0.022	0.05	0.1	64-112	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C ₁₀ -C ₂₅)	0.022	0.05	0.1	75-125 ⁶	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	0.044	0.1	0.2	64-112	50-150	50-150	
AK3WSI	RRO – AK103 (C ₂₅ -C ₃₆)	0.030 ⁹	0.1	0.2	60-120 ⁶	60-120	50-150	
Aqueous Samples – With Acid and/or Silica Gel Clean-up – Separatory Funnel Extraction – 500 to 1.0 mL								
DIESWI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	0.039	0.05	0.1	61-104	50-150	50-150	≤ 40
AK2WSI	DRO – AK102 (C ₁₀ -C ₂₅)	0.042	0.05	0.1	75-125 ⁶	60-120	50-150	
OILWSI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	0.010	0.1	0.2	61-104	50-150	50-150	
AK3WSI	RRO – AK103 (C ₂₅ -C ₃₆)	0.030 ⁸	0.1	0.2	60-120 ⁶	60-120	50-150	
Solid Matrix Samples – No Extract Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	1.35	2.5	5	62-119	50-150	50-150	≤ 40
DIESMI	DRO – NWTPH-Dext Jet A	2.22 ¹¹	2.5	5	60 – 130 ⁸	50-150	50-150	
AK2SMI	DRO – AK102 (C ₁₀ -C ₂₅)	2.43	2.5	5	75-125 ⁶	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	2.48	5	10	62-119	50-150	50-150	
AK3SMI	RRO – AK103 (C ₂₅ -C ₃₆)	0.665 ⁹	5	10	60-120 ⁶	60-120	50-150	
Solid Matrix Samples – With Acid and/or Silica Gel Clean-up – Microwave Extraction – 10 g to 1 mL								
DIESMI	DRO – NWTPH-Dext (C ₁₂ -C ₂₄)	1.28	2.5	5	60-108	50-150	50-150	≤ 40
AK2SMI	DRO – AK102 (C ₁₀ -C ₂₅)	2.06	2.5	5	75-125 ⁶	60-120	50-150	
OILSMI	RRO – NWTPH-Dext (C ₂₄ -C ₃₈)	1.57	5	10	60-108	50-150	50-150	
AK3SMI	RRO – AK103 (C ₂₅ -C ₃₆)	0.665 ¹⁰	5	10	60-120 ⁶	60-120	50-150	

(1) DL (Detection Limit) and LOD (Limit of Detection) as defined in ARI SOP 1018S.

(2) Limit of Quantitation as defined in ARI SOP 1018S. The spike concentration used to determine the DL and the concentration of the lowest standard used to calibrate the GC-FID instrument.

(3) All surrogate recovery limits are specified in the published methods (AK102, AK103 & NWTPH-Dext). The surrogate standard is o-Terphenyl.

(4) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} \times 100$$

(5) DRO = Diesel Range Organics and RRO = Residual Range Organics as defined in the methods referenced in footnote 3.

(6) Method specified LCS acceptance limits.

(7) Method specified reporting limits

(8) Default LCS control limits pending calculation of historic limits

(9) MDL study QD55 completed 2/12/10

(10) MDL study QD35 completed 1/29/10

(11) LOD Study UI44 completed 2/28/12



Quality Control Criteria Gasoline and BTEX

Method	Analyte	DL ¹	LOD ¹	LOQ ¹	Spike % Recovery Control Limits			RPD ³
					LCS	MB/LCS Surrogate	Sample Surrogate	
Aqueous Samples 5 mL purge volume (DL, LOD & LOQ values in µg/L (ppb) for BTEX and mg/L (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	0.057	0.125	0.25	75 – 124	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	0.031	0.125	0.25	75 – 124	--	--	
WA-TPH-G	Toluene – nC ₁₂)	0.087	0.125	0.25	75 – 124	--	--	
AK-101	nC ₆ – nC ₁₂	0.032	0.050	0.10	75 – 124	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 - 120	80 - 120	
	Bromobenzene	--	--	--	--	80 - 120	80 - 120	
8021B	Benzene	0.094	0.5	1.0	73 – 120	--	--	≤ 40
8021B	Toluene	0.113	0.5	1.0	73 – 120	--	--	
8021B	Ethylbenzene	0.117	0.5	1.0	69 – 120	--	--	
8021B	m/p-Xylene	0.265	1.0	2.0	72 – 120	--	--	
8021B	o-Xylene	0.136	0.5	1.0	73 – 120	--	--	
8021B	MTBE	0.412	0.5	1.0	30 – 182	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	79 – 120	80 - 120	
	Bromobenzene	--	--	--	--	79 – 120	80 - 120	
Solid Samples - (DL, LOD & LOQ values in µg/kg (ppb) for BTEX and mg/kg (ppm) for gasoline								
NWTPH-G	Toluene – Naphthalene	1.66	2.5	5	74 – 124	--	--	≤ 40
8015B	2-methylpentane – 1,2,4-Trimethylbenzene	1.57	2.5	5	74 – 124	--	--	
WA-TPH-G	Toluene – nC ₁₂)	1.54	2.5	5	74 – 124	--	--	
AK-101	nC ₆ – nC ₁₂	1.84	2.5	5	74 – 124	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 - 120	66-123	
	Bromobenzene	--	--	--	--	80 - 120	62-130	
8021B	Benzene	4.59	12.5	25	72 – 120	--	--	≤ 40
8021B	Toluene	7.13	12.5	25	72 – 120	--	--	
8021B	Ethylbenzene	4.98	12.5	25	71 – 120	--	--	
8021B	m/p-Xylene	11.9	25.0	50	72 – 120	--	--	
8021B	o-Xylene	6.23	12.5	25	72 – 120	--	--	
8021B	MTBE	3.82	12.5	25	40 – 163	--	--	
	Trifluorotoluene (TFT)	--	--	--	--	80 – 120	68 – 124	
	Bromobenzene	--	--	--	--	77 – 120	62 – 134	

(1) Detection Limit (DL), Limit of Detection (LOD) and Limit of Quantitation (LOQ) as defined in ARI SOP 1018S.

(2) Highlighted control limits (bold font) are adjusted from the calculated values as follows:

a) Highlighted control limits (**bold font**) adjusted to demonstrate that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

b) Control limits for analytes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.

(3) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} \times 100$$



DL¹, LOD², LOQ³ and Control Limits Summary
Analysis of Water Samples for PNA
EPA Method 8270 – SIM
ARI Analyses: PNSWLL & PNSWSL

Separatory Funnel (EPA Method 3510C) or Liq-Liq (EPA Method 3520C) Extraction using 500 mL sample with extract concentrated to 0.5 mL final volume. ARI Bench Sheet 3053F or 3054F

LOD Spike level = LOQ = 0.1ppb

Analyte	DL ¹ µg/L	LOD ² µg/L	LOQ ³ µg/L	LCS Control Limit ^{4,5}	Replicate RPD ⁶
Naphthalene	0.020	0.050	0.1	37 – 100	≤ 40
2-Methylnaphthalene	0.020	0.050	0.1	34 – 107	≤ 40
Acenaphthylene	0.024	0.050	0.1	32 – 104	≤ 40
Acenaphthene	0.015	0.050	0.1	40 – 102	≤ 40
Dibenzofuran	0.016	0.050	0.1	44 – 104	≤ 40
Fluorene	0.019	0.050	0.1	43 – 114	≤ 40
Phenanthrene	0.026	0.050	0.1	43 – 116	≤ 40
Anthracene	0.025	0.050	0.1	30 – 121	≤ 40
Fluoranthene	0.021	0.050	0.1	46 – 138	≤ 40
Pyrene	0.028	0.050	0.1	47 – 124	≤ 40
Benzo(a)anthracene	0.023	0.050	0.1	38 – 134	≤ 40
Chrysene	0.026	0.050	0.1	52 – 112	≤ 40
Benzo(b)fluoranthene	0.027	0.050	0.1	49 – 123	≤ 40
Benzo(k)fluoranthene	0.027	0.050	0.1	50 – 127	≤ 40
Benzo(a)pyrene	0.059	0.075	0.1	24 – 118	≤ 40
Indeno(1,2,3-cd)pyrene	0.029	0.050	0.1	32 – 123	≤ 40
Dibenz(a,h)anthracene	0.042	0.050	0.1	30 – 127	≤ 40
Benzo(g,h,i)perylene	0.030	0.050	0.1	26 – 124	≤ 40
1-Methylnaphthalene	0.016	0.050	0.1	30 – 160 ⁷	≤ 40
Perylene	0.061	0.075	0.1	30 – 160 ⁷	≤ 40
Surrogate Standard Recovery			MB / LCS	Samples	RPD
2-Methylnaphthalene-d ₁₀			40 – 110	33 – 107	≤ 40
Dibenzo(a,h)anthracene-d ₁₄			33 – 140	10 – 142	≤ 40

(1) Detection Limit (DL) as defined in ARI SOP 1018S

(2) Limit of Detection (LOD) as defined in ARI SOP 1018S

(3) Limit of Quantitation (LOQ) as defined in ARI SOP 1018S

(4) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

(5) Control limits calculated using all data from 6/1/10 through 5/31/11.

(6) Relative Percent Difference between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_O - C_D|}{\frac{C_O + C_D}{2}} \times 100$$

(7) Default limits pending generation of historic limits for total benzofluoranthenes and 1-Methylnaphthalene.

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-9S
SAMPLE

Lab Sample ID: UT66A

LIMS ID: 12-8385

Matrix: Water

Data Release Authorized: *mw*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Analyzed: 05/09/12 13:06

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
-----------------------------	------	----------	---------------

BETX Surrogate Recovery

Trifluorotoluene	101%
Bromobenzene	94.7%

Gasoline Surrogate Recovery

Trifluorotoluene	95.1%
Bromobenzene	92.6%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a008.d ARI ID: UT66A
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a008.d Client ID: MW-9S
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 13:06
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.875	0.003	2825	35008	95.1	TFT(Surr)
15.404	0.002	1801	15077	92.6	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	0	0.000
8015C 2MP-TMB (4.19 to 16.22)	689188	0	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	0	0.000
NWTPHG Tol-Nap (9.80 to 18.91)	354347	0	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.883	0.003	3745	100.7	TFT(Surr)
15.411	0.002	7862	94.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050912-1.b/0509a008.d

Date : 09-MAY-2012 13:06

Client ID: MM-9S

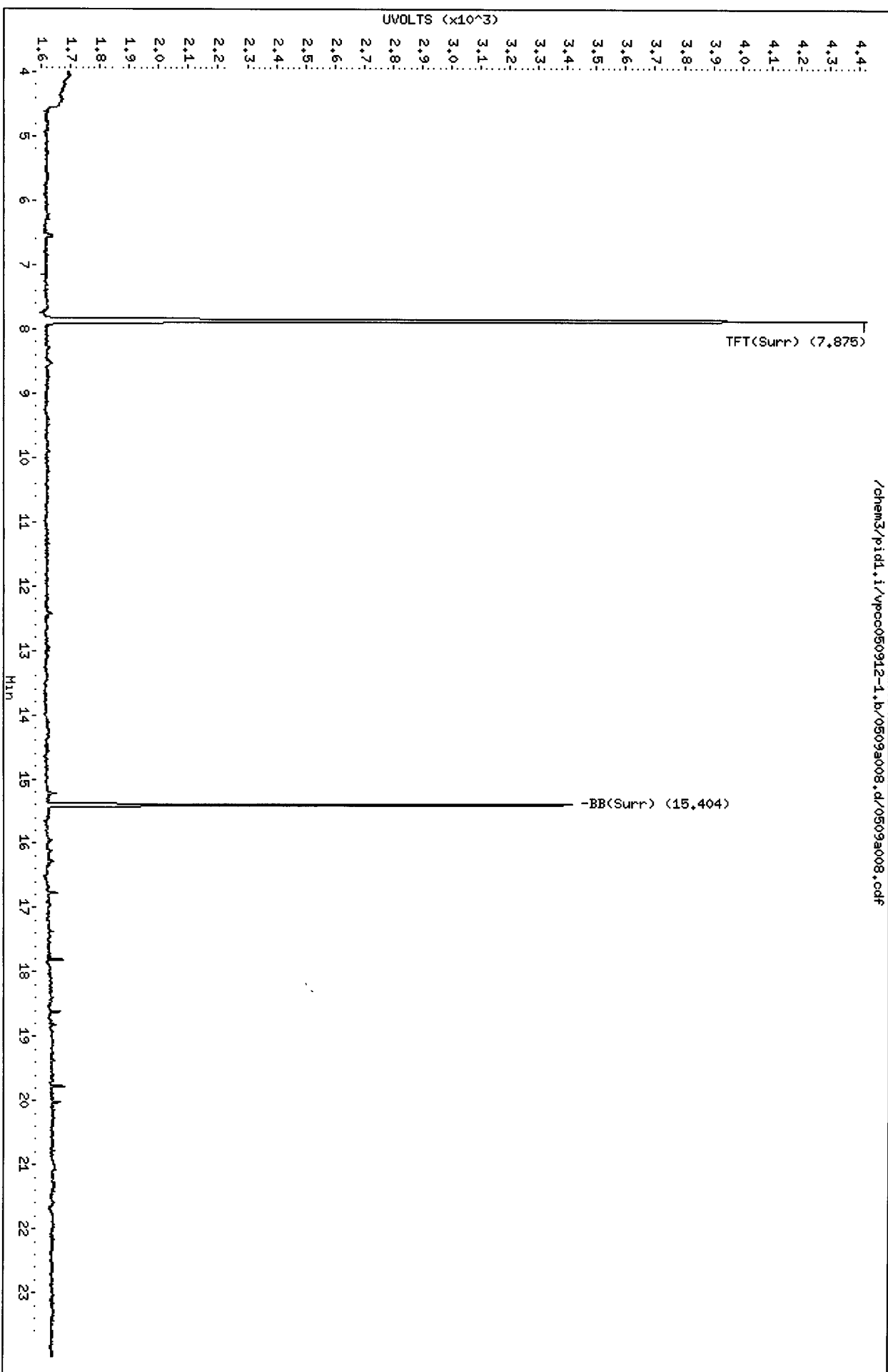
Sample Info: UT66A

Instrument: pid1.1

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/vpcc050912-2.b/05092a008.d

Date : 09-MAY-2012 13:06

Client ID: MM-9S

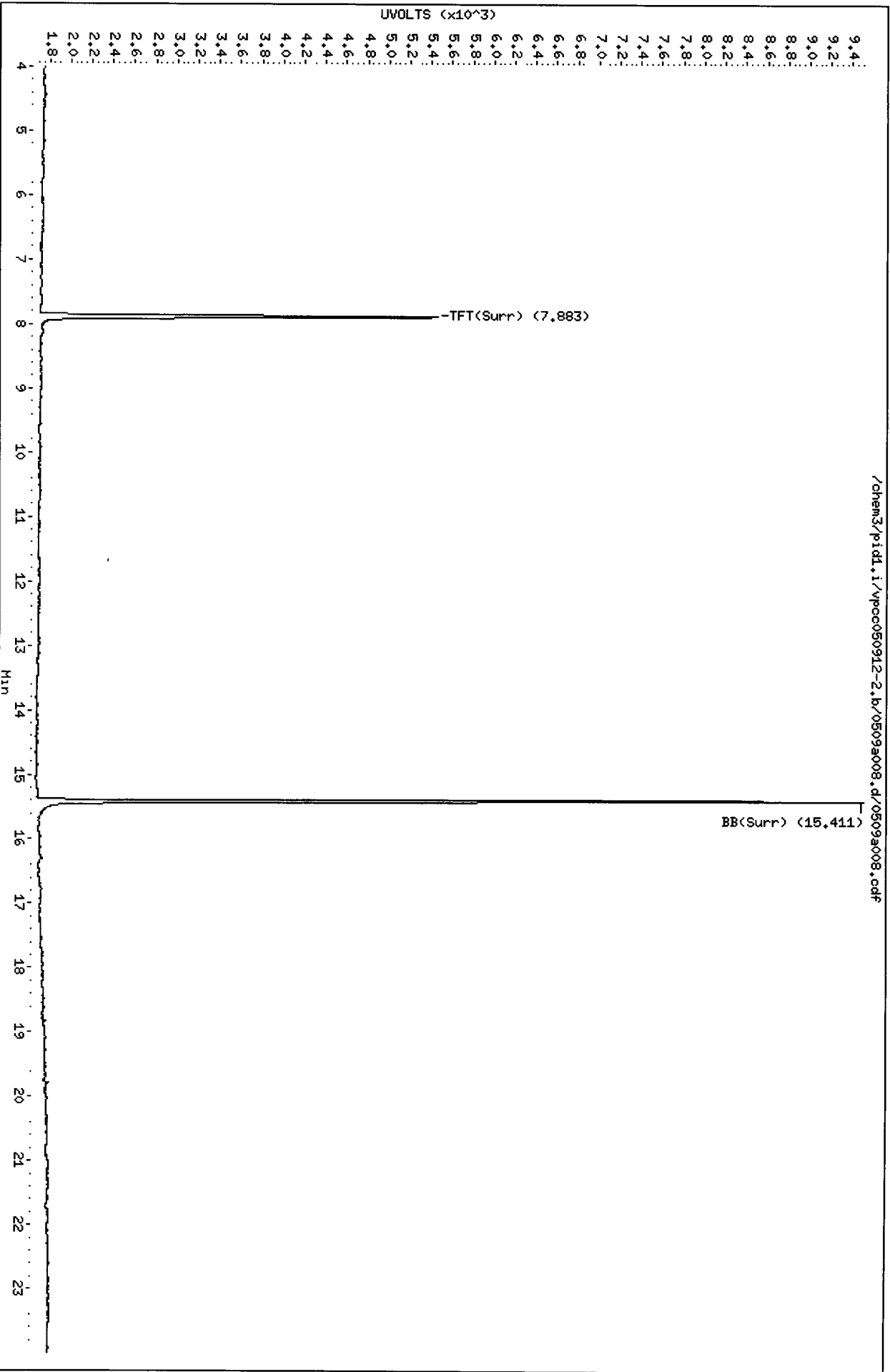
Sample Info: UT66A

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 PID



ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-9D
SAMPLE

Lab Sample ID: UT66B

LIMS ID: 12-8386

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Analyzed: 05/09/12 13:35

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
-----------------------------	------	----------	---------------

BETX Surrogate Recovery

Trifluorotoluene	99.3%
Bromobenzene	96.5%

Gasoline Surrogate Recovery

Trifluorotoluene	96.6%
Bromobenzene	95.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/vpcc050912-1.b/0509a009.d ARI ID: UT66B
Data file 2: /chem3/pidl.i/vpcc050912-2.b/0509a009.d Client ID: MW-9D
Method: /chem3/pidl.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 13:35
Instrument: pidl.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.873	0.001	2870	35604	96.6	TFT(Surr)
15.402	0.000	1859	15464	95.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	0	0.000
8015C 2MP-TMB (4.19 to 16.22)	689188	0	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	0	0.000
NWTPHG Tol-Nap (9.80 to 18.91)	354347	0	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.881	0.001	3693	99.3	TFT(Surr)
15.410	0.000	8008	96.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050912-1.b/0509a009.d

Date : 09-MAY-2012 13:35

Client ID: MW-9D

Sample Info: UT66B

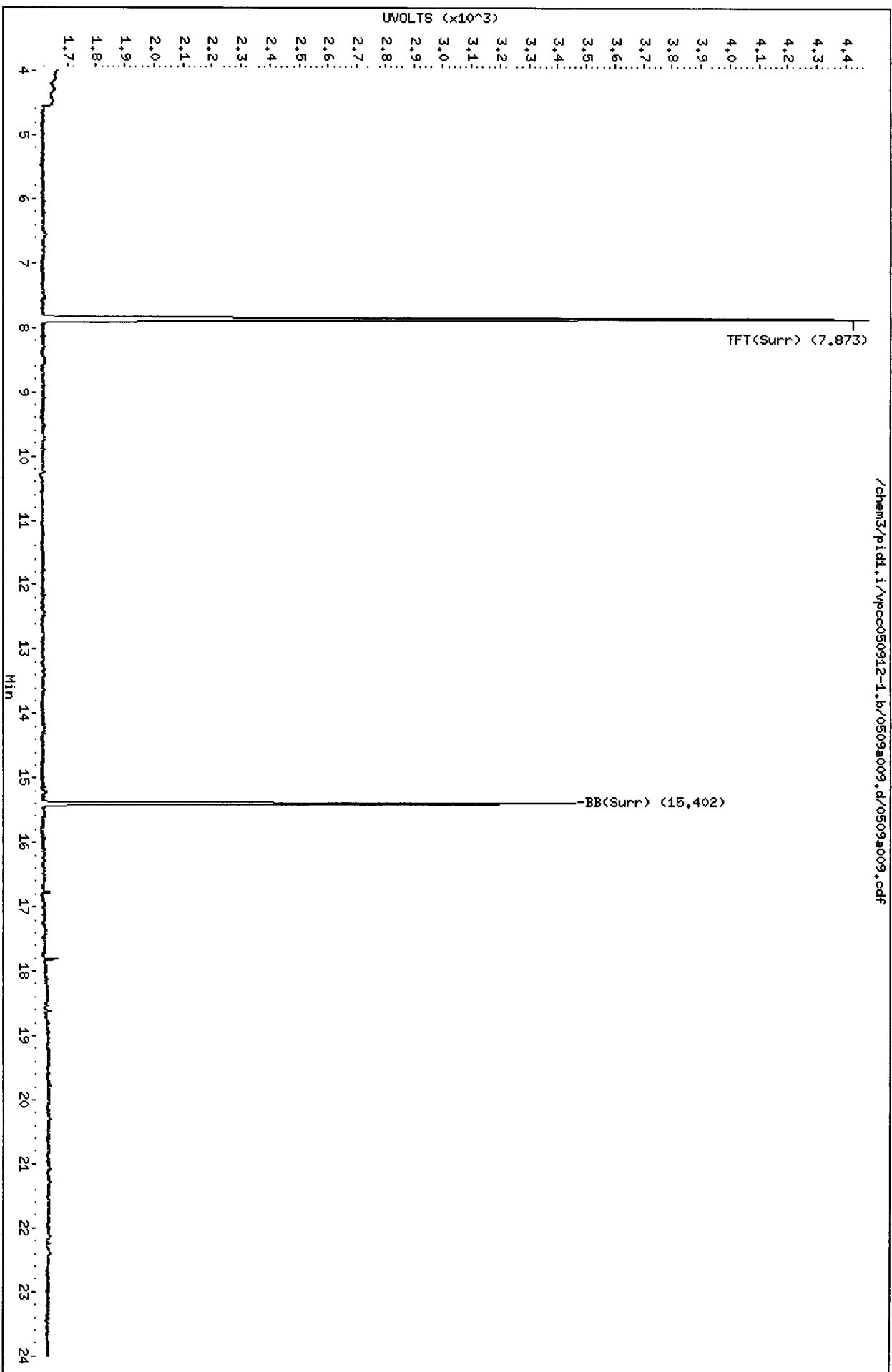
Page 1

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/vpoc050912-2.b/0509a009.d

Date : 09-MAY-2012 13:35

Client ID: MW-9D

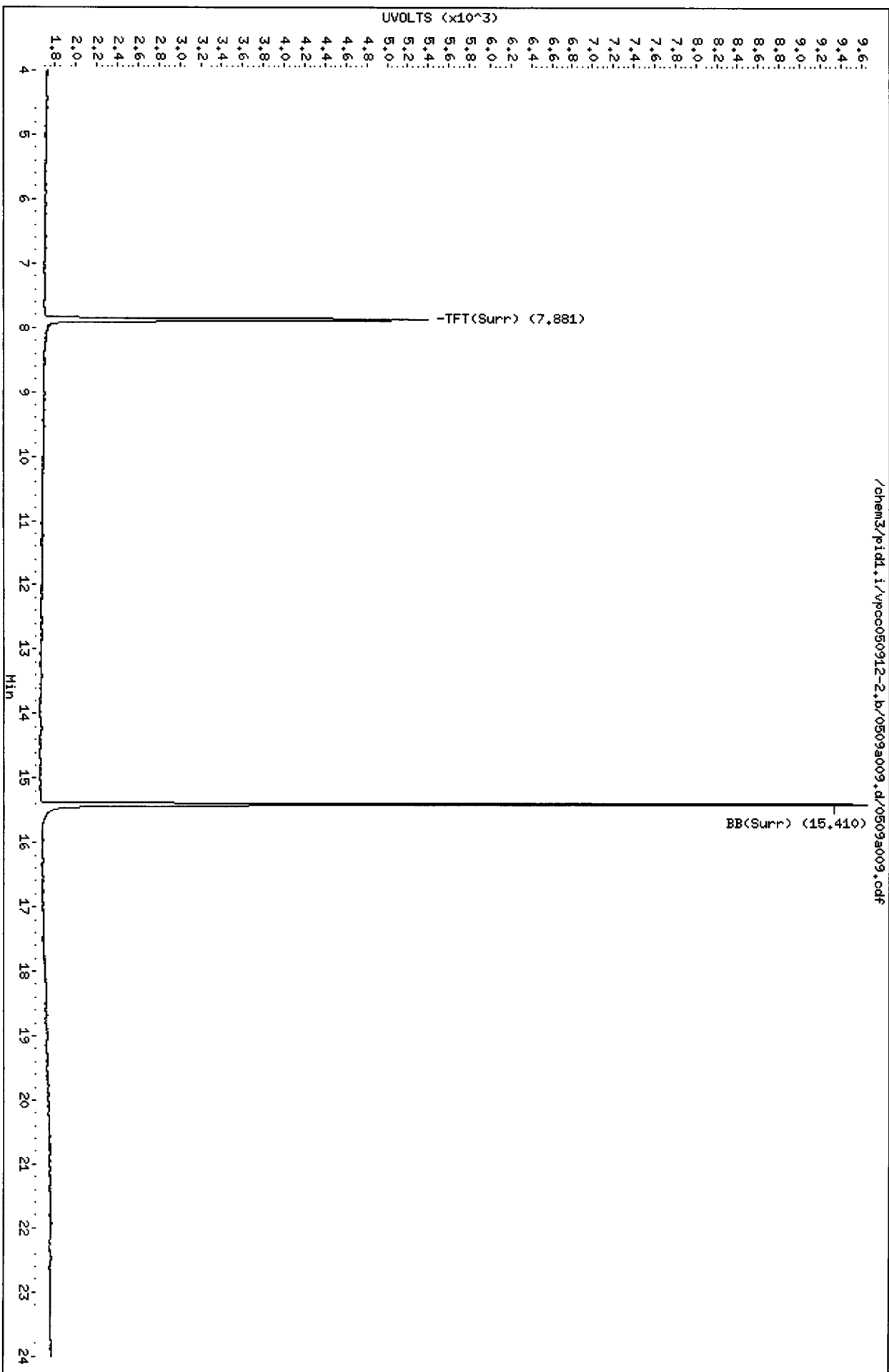
Sample Info: UT66B

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 PID



ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-12D

SAMPLE



Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *mm*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Analyzed: 05/09/12 14:04

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
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BETX Surrogate Recovery

Trifluorotoluene	95.0%
Bromobenzene	93.7%

Gasoline Surrogate Recovery

Trifluorotoluene	93.4%
Bromobenzene	92.0%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

MH
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a010.d ARI ID: UT66C
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a010.d Client ID: MW-12D
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 14:04
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.873	0.002	2774	34627	93.4	TFT(Surr)
15.403	0.001	1791	14962	92.0	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	1	0.000
8015C 2MP-TMB (4.19 to 16.22)	689188	1	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	0	0.000
NWTPHG Tol-Nap (9.80 to 18.91)	354347	1	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.881	0.002	3535	95.0	TFT(Surr)
15.410	0.001	7776	93.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050912-1.b/0509a010.d

Page 1

Date : 09-MAY-2012 14:04

Client ID: MW-12D

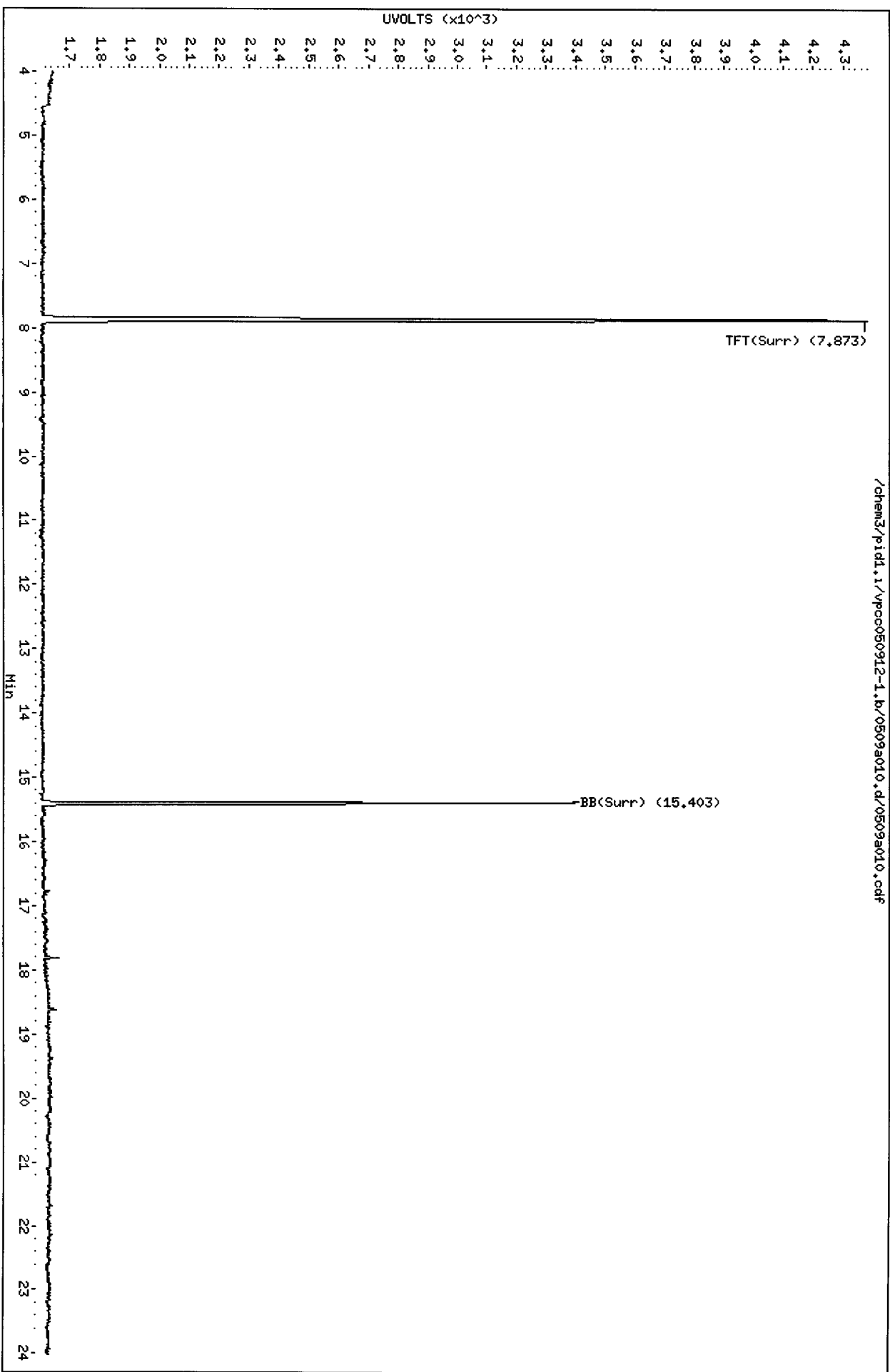
Sample Info: UT66C

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/vpcc050912-2.b/0509a010.d

Date : 09-MAY-2012 14:04

Client ID: MW-12D

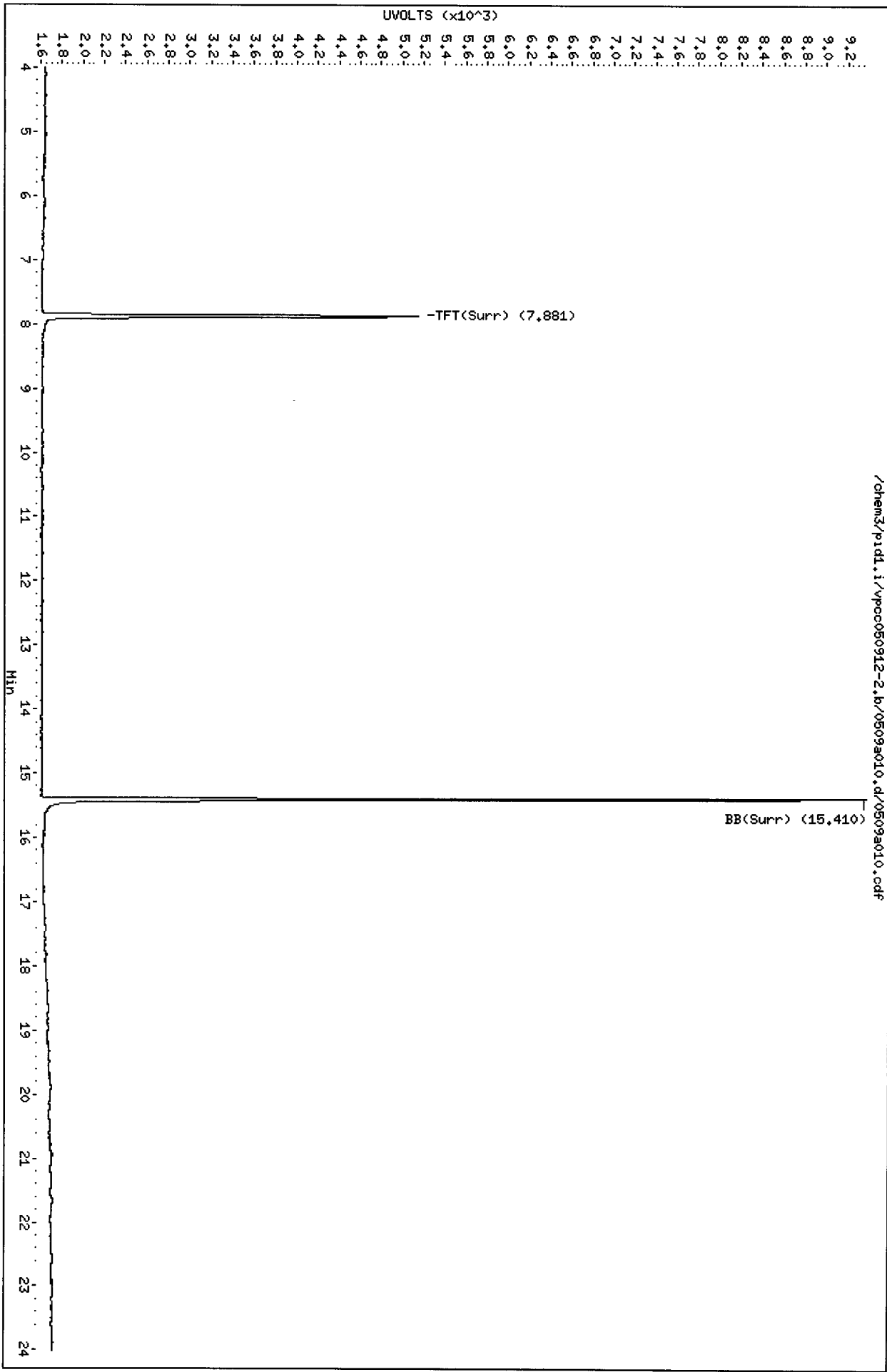
Instrument: pid1.i

Sample Info: UT66C

Operator: JM

Column phase: RTX 502-2 PID

Column diameter: 0.18



ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-12S

SAMPLE

Lab Sample ID: UT66D

LIMS ID: 12-8388

Matrix: Water

Data Release Authorized: *Ww*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/07/12

Date Received: 05/08/12

Date Analyzed: 05/09/12 15:32

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
-----------------------------	------	----------	---------------

BETX Surrogate Recovery

Trifluorotoluene	99.0%
Bromobenzene	98.9%

Gasoline Surrogate Recovery

Trifluorotoluene	97.0%
Bromobenzene	95.9%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

M4
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a013.d ARI ID: UT66D
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a013.d Client ID: MW-12S
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 15:32
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
7.874	0.002	2882	35737	97.0	TFT(Surr)
15.403	0.001	1866	15669	95.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
WAGas Tol-C12 (9.80 to 17.91)	335652	0	0.000
8015C 2MP-TMB (4.19 to 16.22)	689188	1	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	1	0.000
NWTPHG Tol-Nap (9.80 to 18.91)	354347	0	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
7.882	0.002	3683	99.0	TFT(Surr)
15.411	0.001	8215	98.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050912-1.b/0509a013.d

Date : 09-MAY-2012 15:32

Client ID: MM-12S

Sample Info: UT66D

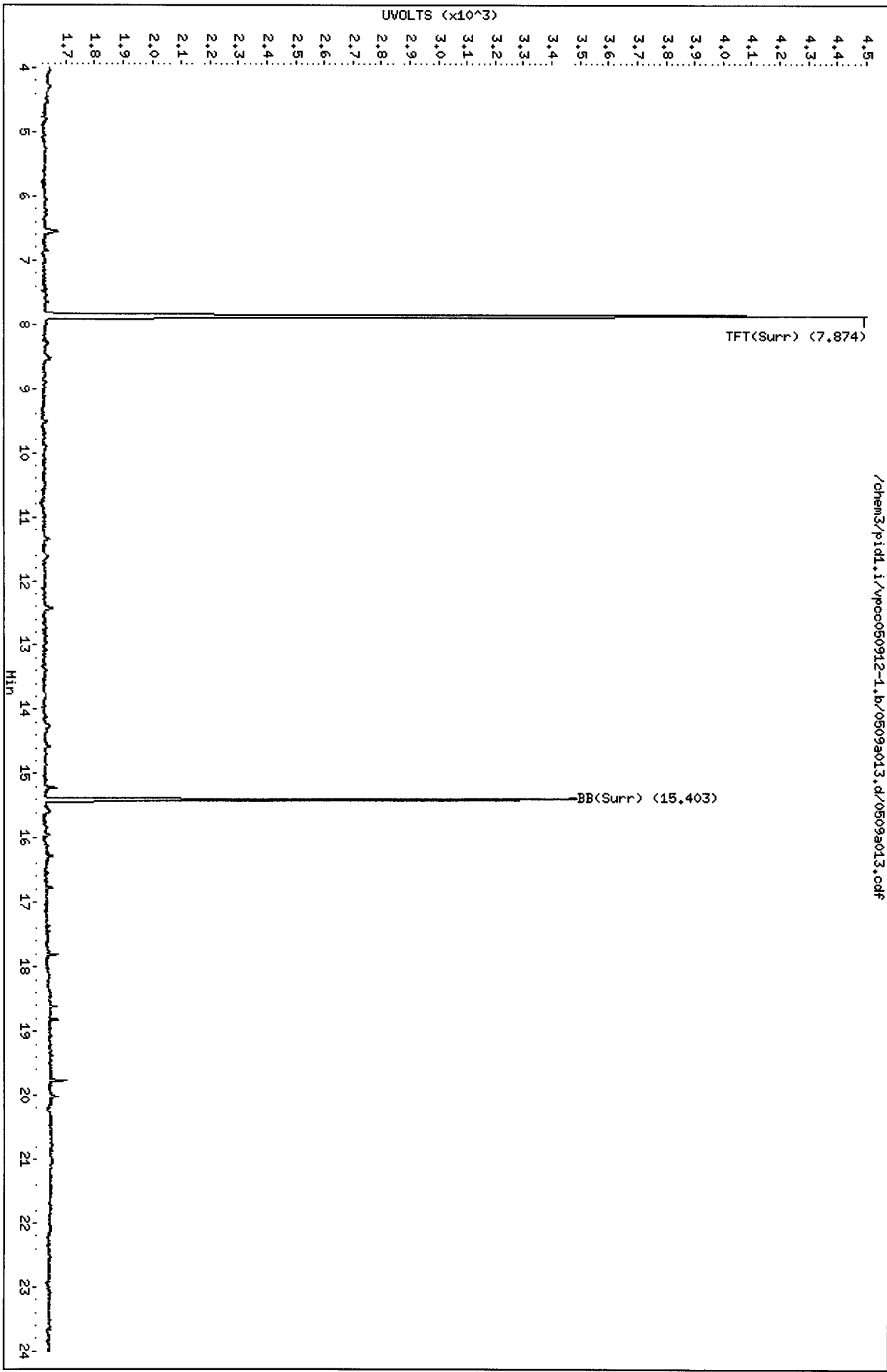
Page 1

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 FID



Data File: /chem3/pid1.i/vpoc050912-2.b/0509a013.d

Page 1

Date : 09-MAY-2012 15:32

Client ID: MM-12S

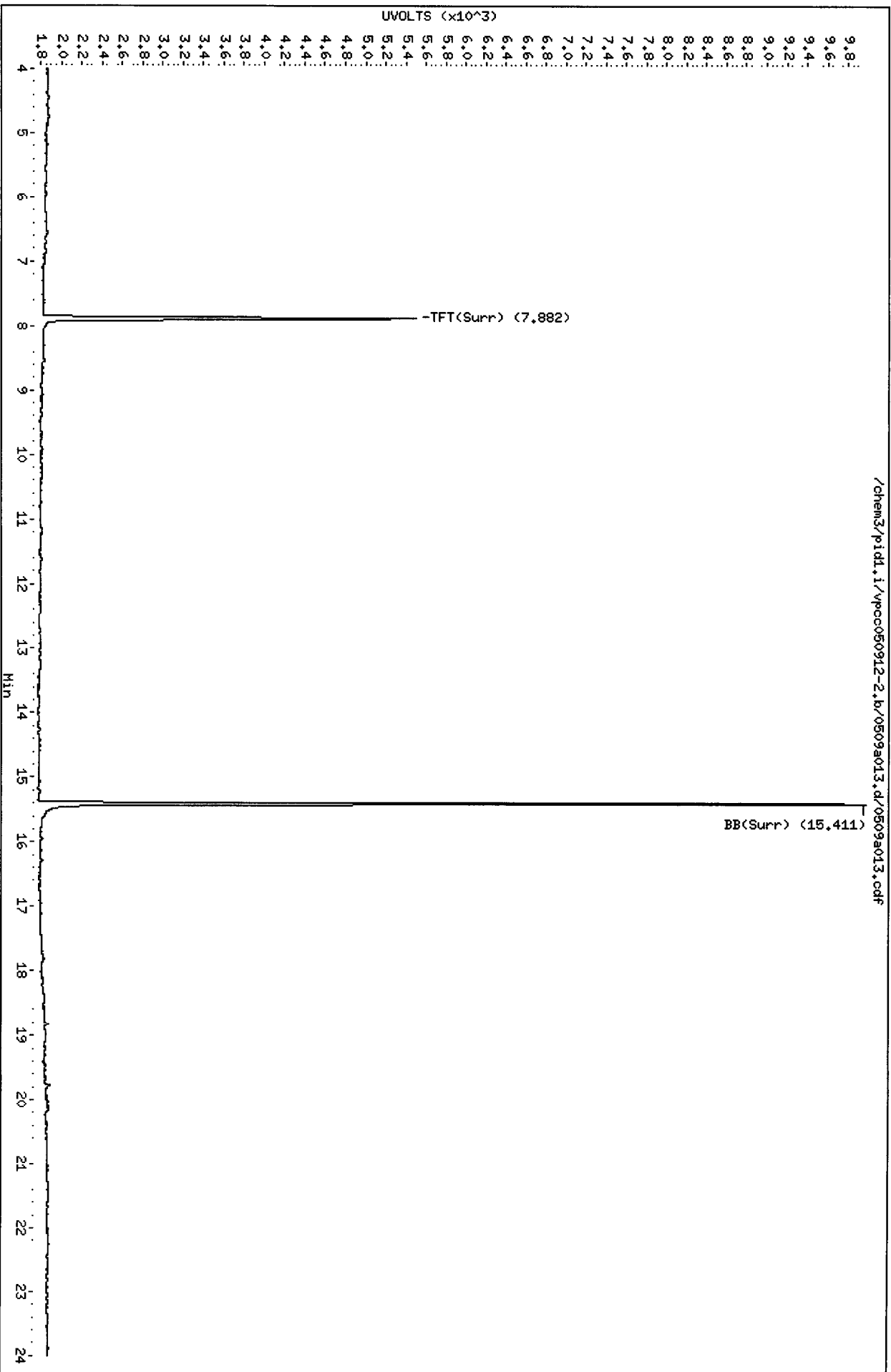
Sample Info: UT66D

Instrument: pid1.i

Operator: JM

Column diameter: 0.18

Column phase: RTX 502-2 PID



ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MB-050912

METHOD BLANK

Lab Sample ID: MB-050912

LIMS ID: 12-8385

Matrix: Water

Data Release Authorized: *MW*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Analyzed: 05/09/12 11:52

Instrument/Analyst: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
71-43-2	Benzene	1.0	< 1.0 U
108-88-3	Toluene	1.0	< 1.0 U
100-41-4	Ethylbenzene	1.0	< 1.0 U
179601-23-1	m,p-Xylene	1.0	< 1.0 U
95-47-6	o-Xylene	1.0	< 1.0 U

Gasoline Range Hydrocarbons	0.25	< 0.25 U	GAS ID ---
-----------------------------	------	----------	---------------

BETX Surrogate Recovery

Trifluorotoluene	97.8%
Bromobenzene	97.7%

Gasoline Surrogate Recovery

Trifluorotoluene	95.7%
Bromobenzene	96.5%

BETX values reported in µg/L (ppb)
Gasoline values reported in mg/L (ppm)

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

24
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a006.d ARI ID: MB0509
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a006.d Client ID:
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 11:52
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.873	0.001	2843	35494	95.7	TFT(Surr)
15.402	0.000	1877	15558	96.5	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	0	0.000
8015C 2MP-TMB (4.19 to 16.22)	689188	1	0.000
AK101 nC6-nC10 (4.69 to 15.12)	551766	1	0.000
NWTPHG Tol-Nap (9.80 to 18.91)	354347	0	0.000

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.881	0.001	3639	97.8	TFT(Surr)
15.410	0.000	8115	97.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
ND	---	---	---	Benzene
ND	---	---	---	Toluene
ND	---	---	---	Ethylbenzene
ND	---	---	---	M/P-Xylene
ND	---	---	---	O-Xylene
ND	---	---	---	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050912-1.b/0509a006.d

Page 1

Date : 09-MAY-2012 11:52

Client ID:

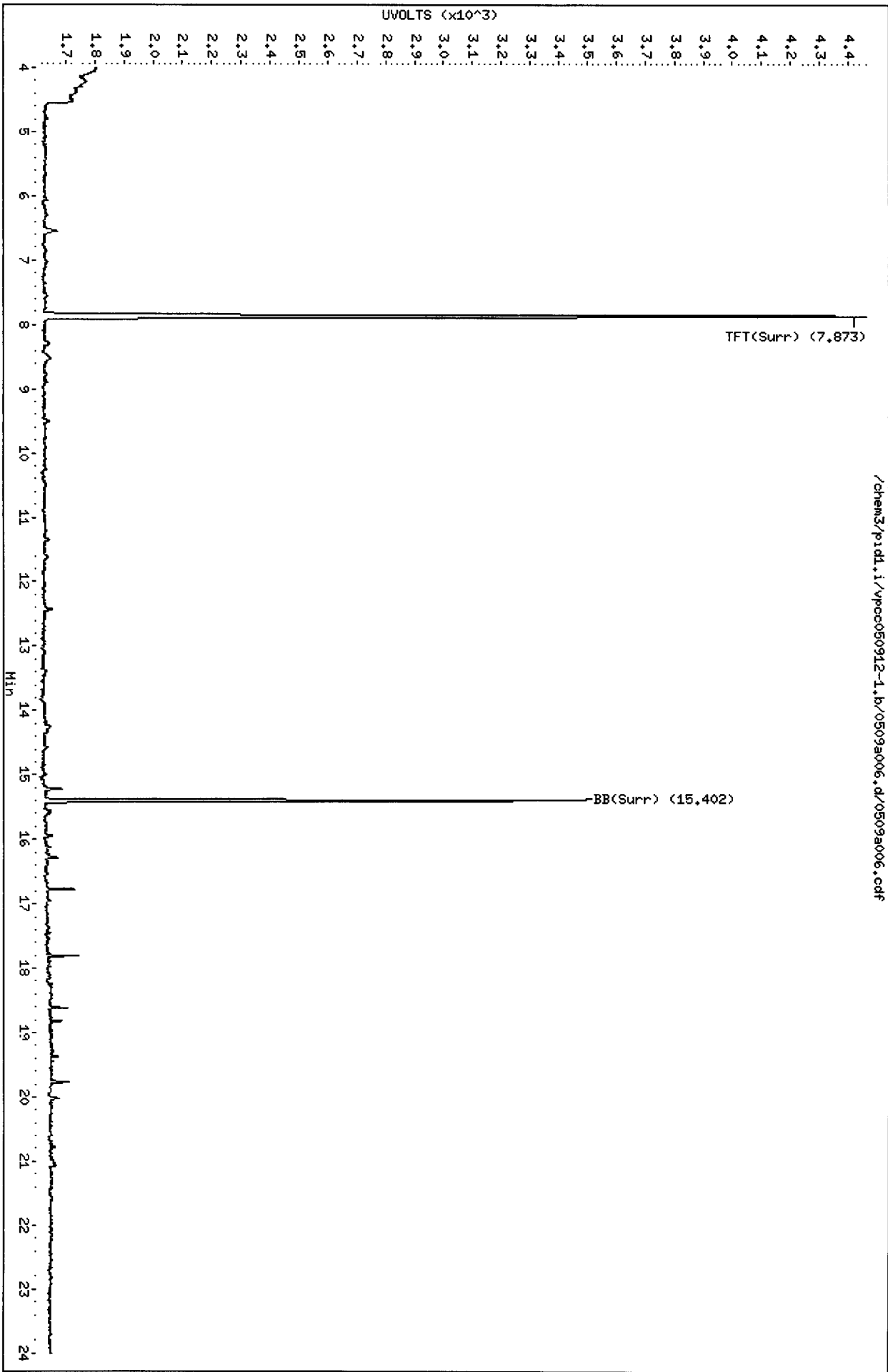
Instrument: pid1.i

Sample Info: MB0509

Operator: JM

Column phase: RTX 502-2 FID

Column diameter: 0.18



Data File: /chem3/pid1.i/vpcc050912-2.b/0509a006.d

Page 1

Date : 09-MAY-2012 11:52

Client ID:

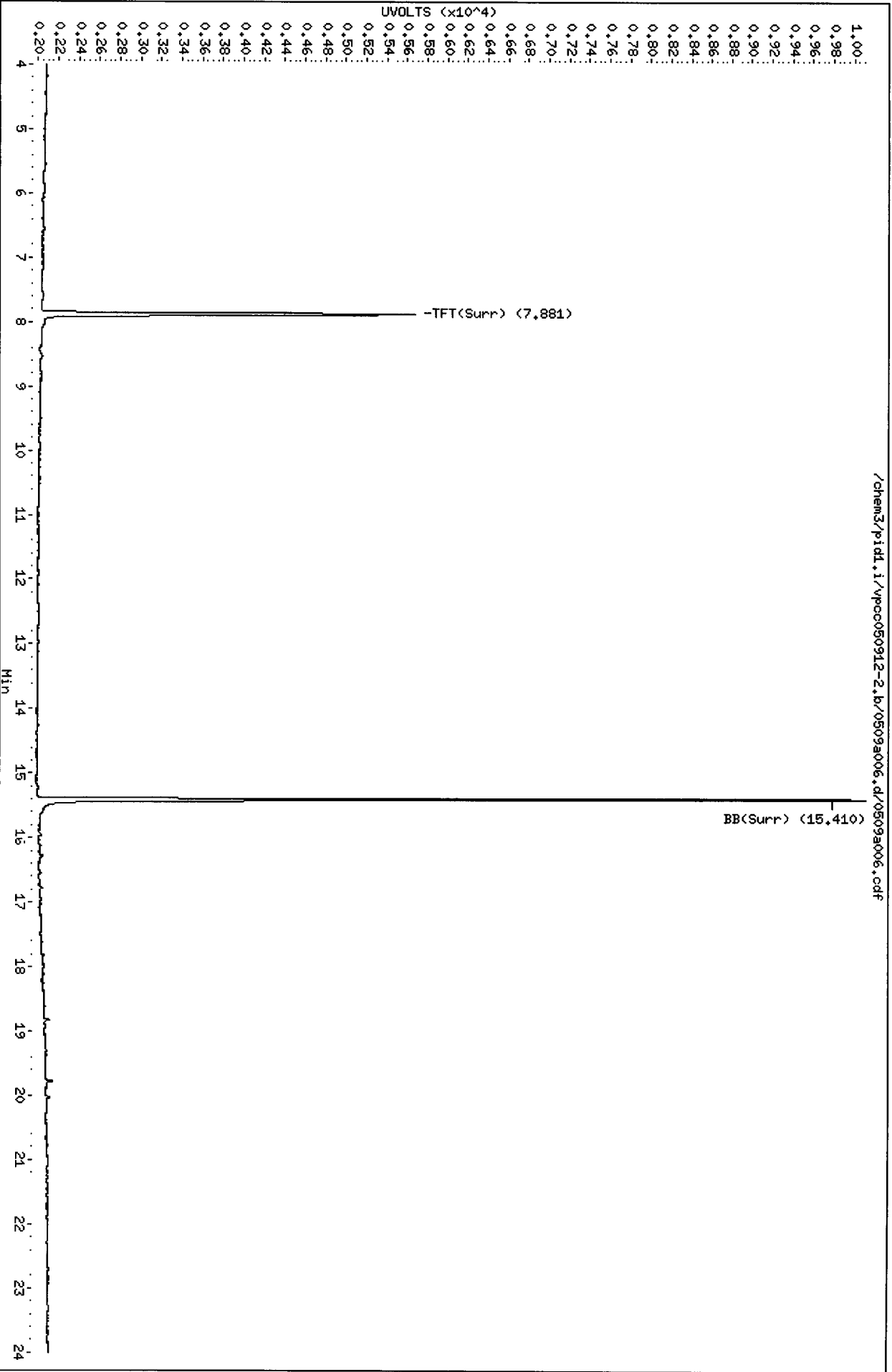
Instrument: pid1.i

Sample Info: MB0509

Operator: JM

Column phase: RTX 502-2 PID

Column diameter: 0.18



BETX WATER SURROGATE RECOVERY SUMMARY

ARI Job: UT66
Matrix: Water

QC Report No: UT66-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04

Client ID	TFT	BBZ	TOT OUT
MB-050912	97.8%	97.7%	0
LCS-050912	96.3%	96.1%	0
LCSD-050912	97.7%	95.7%	0
MW-9S	101%	94.7%	0
MW-9D	99.3%	96.5%	0
MW-12D	95.0%	93.7%	0
MW-12D MS	98.0%	96.5%	0
MW-12D MSD	99.8%	96.9%	0
MW-12S	99.0%	98.9%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(79-120)	(80-120)
(BBZ) = Bromobenzene	(79-120)	(80-120)

Log Number Range: 12-8385 to 12-8388

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: UT66
Matrix: Water

QC Report No: UT66-Pacific Groundwater Group
Project: Birds Eye I
Event: JI1001.04

Client ID	TFT	BBZ	TOT OUT
MB-050912	95.7%	96.5%	0
LCS-050912	96.1%	93.7%	0
LCSD-050912	97.5%	95.3%	0
MW-9S	95.1%	92.6%	0
MW-9D	96.6%	95.5%	0
MW-12D	93.4%	92.0%	0
MW-12D MS	97.8%	93.9%	0
MW-12D MSD	98.2%	94.7%	0
MW-12S	97.0%	95.9%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 12-8385 to 12-8388

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: LCS-050912

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050912

LIMS ID: 12-8385

Matrix: Water

Data Release Authorized: *WW*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/09/12 11:23

Purge Volume: 5.0 mL

LCSD: 05/09/12 12:21

Instrument/Analyst LCS: PID1/MH

Dilution Factor LCS: 1.0

LCSD: PID1/MH

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Benzene	3.71	3.70	100%	3.75	3.70	101%	1.1%
Toluene	40.4	39.6	102%	41.3	39.6	104%	2.2%
Ethylbenzene	11.5	11.6	99.1%	11.7	11.6	101%	1.7%
m,p-Xylene	42.4	42.5	99.8%	43.5	42.5	102%	2.6%
o-Xylene	19.6	19.2	102%	20.0	19.2	104%	2.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	96.3%	97.7%
Bromobenzene	96.1%	95.7%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-050912

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050912

LIMS ID: 12-8385

Matrix: Water

Data Release Authorized: *mm*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 05/09/12 11:23

Purge Volume: 5.0 mL

LCSD: 05/09/12 12:21

Instrument/Analyst LCS: PID1/MH

Dilution Factor LCS: 1.0

LCSD: PID1/MH

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.97	1.00	97.0%	1.04	1.00	104%	7.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	96.1%	97.5%
Bromobenzene	93.7%	95.3%

MH
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pidl.i/vpcc050912-1.b/0509a007.d ARI ID: LCS0509
Data file 2: /chem3/pidl.i/vpcc050912-2.b/0509a007.d Client ID:
Method: /chem3/pidl.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 12:21
Instrument: pidl.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.874	0.002	2897	41577	97.5	TFT(Surr)
15.403	0.001	1854	15941	95.3	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	352552	1.050 M
8015C 2MP-TMB (4.19 to 16.22)	689188	760820	1.104 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	606932	1.100 M
NWTPHG Tol-Nap (9.80 to 18.91)	354347	369740	1.043 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.882	0.002	3634	97.7	TFT(Surr)
15.410	0.001	7944	95.7	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.043	0.001	956	3.75	Benzene
9.910	0.002	9317	41.32	Toluene
12.802	0.001	2346	11.69	Ethylbenzene
12.965	0.003	9574	43.49	M/P-Xylene
13.914	0.001	3422	20.04	O-Xylene
4.552	-0.007	215	2.16	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpc050912-1.b/0509a007.d

Date: 09-MAY-2012 12:21

Client ID:

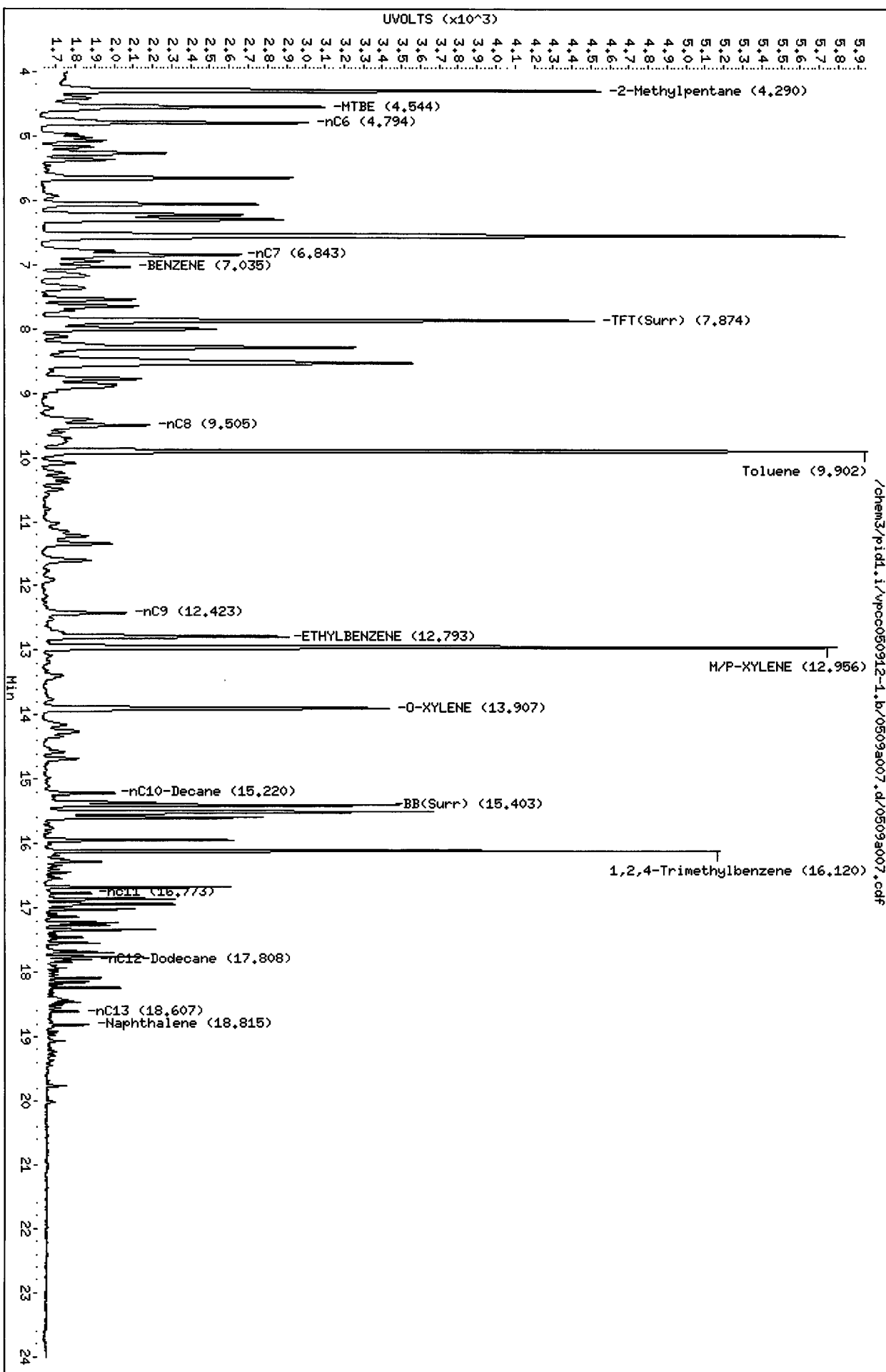
Sample Info: LCS0509

Column phase: RTX 502-2 FID

Instrument: pid1.i

Operator: JM

Column diameter: 0.18



Data File: /chem3/pid1.i/vpoc050912-2.b/0509a007.d

Date: 09-MAY-2012 12:21

Client ID:

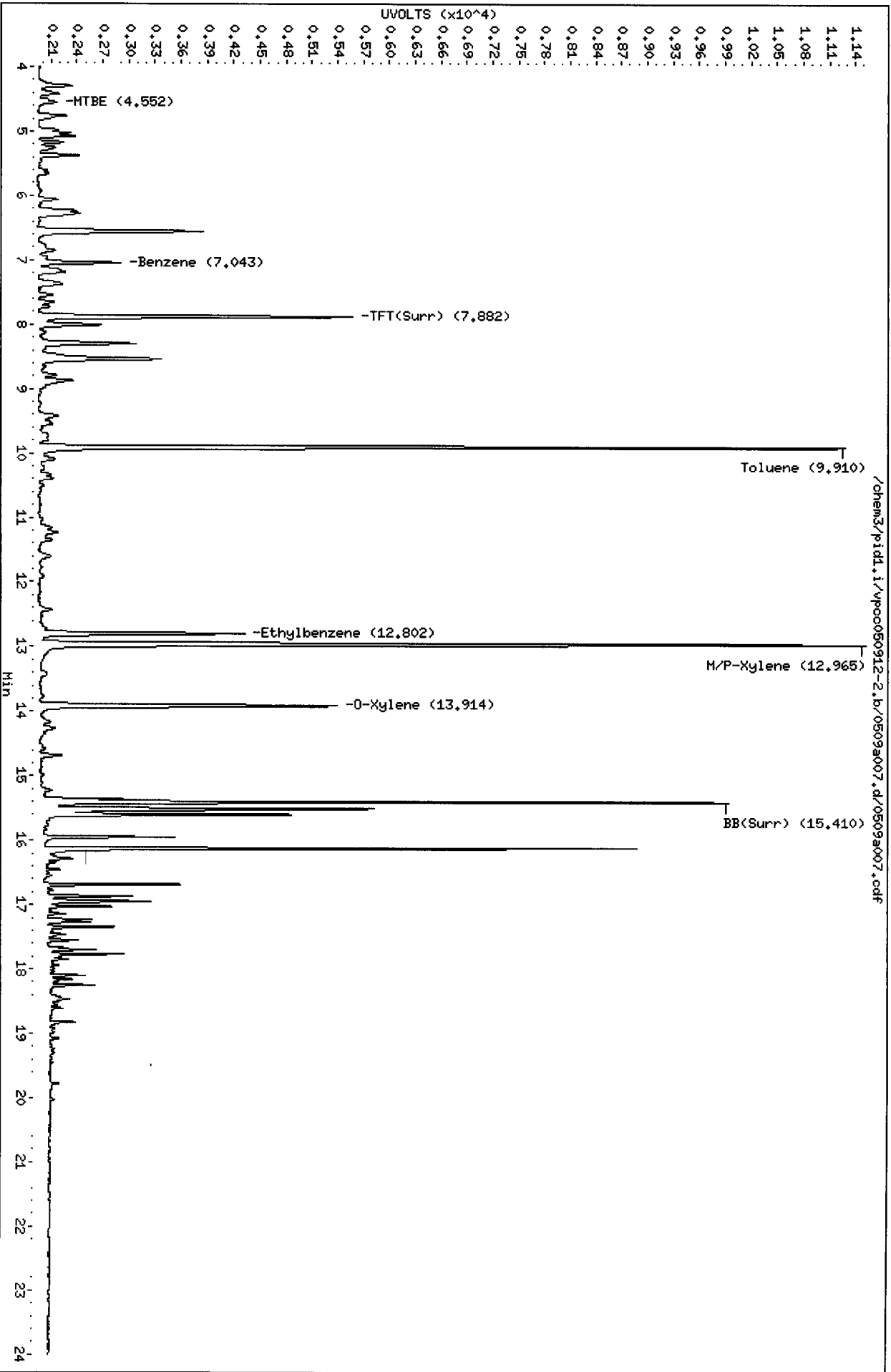
Sample Info: LCS0509

Instrument: pid1.i

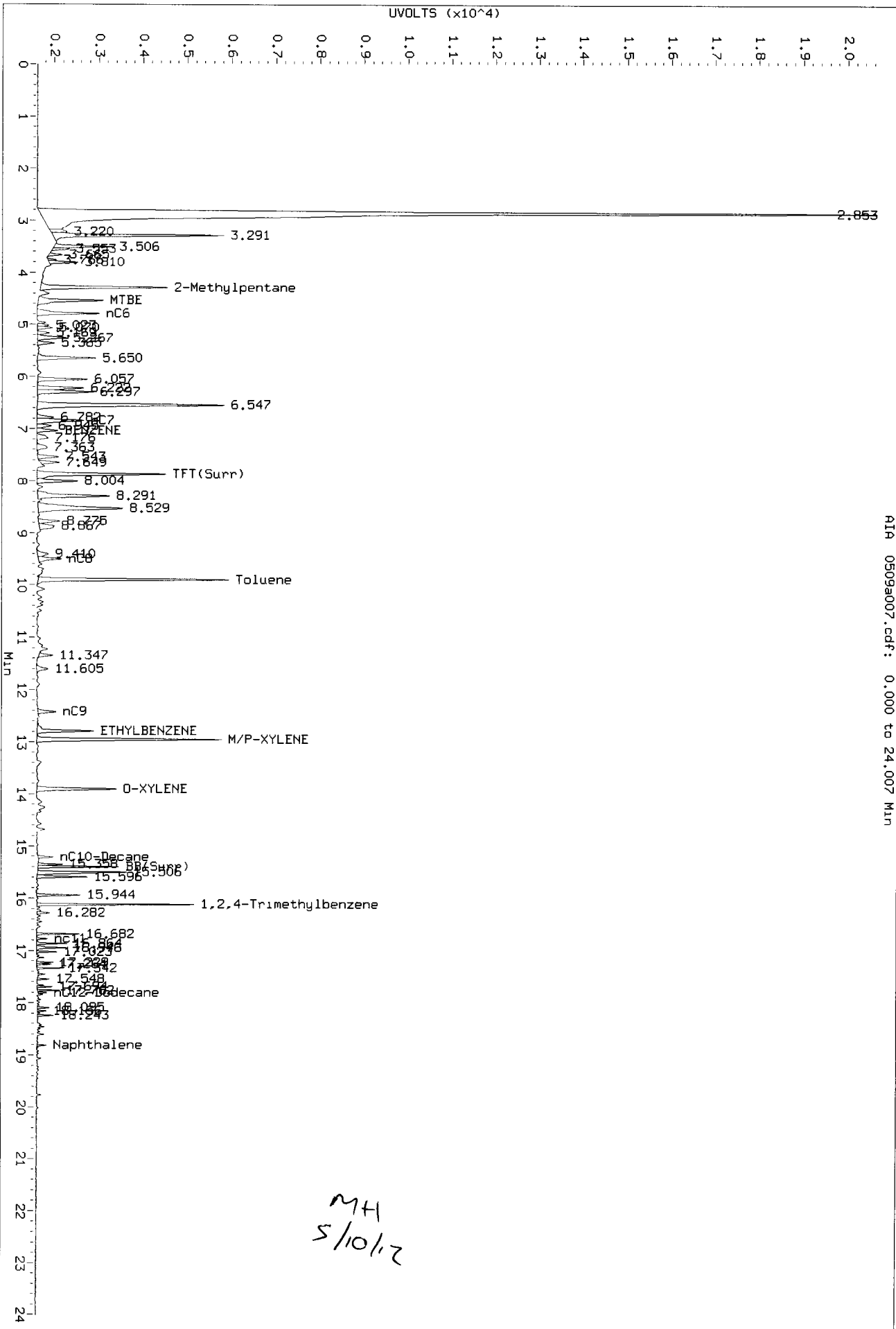
Operator: JM

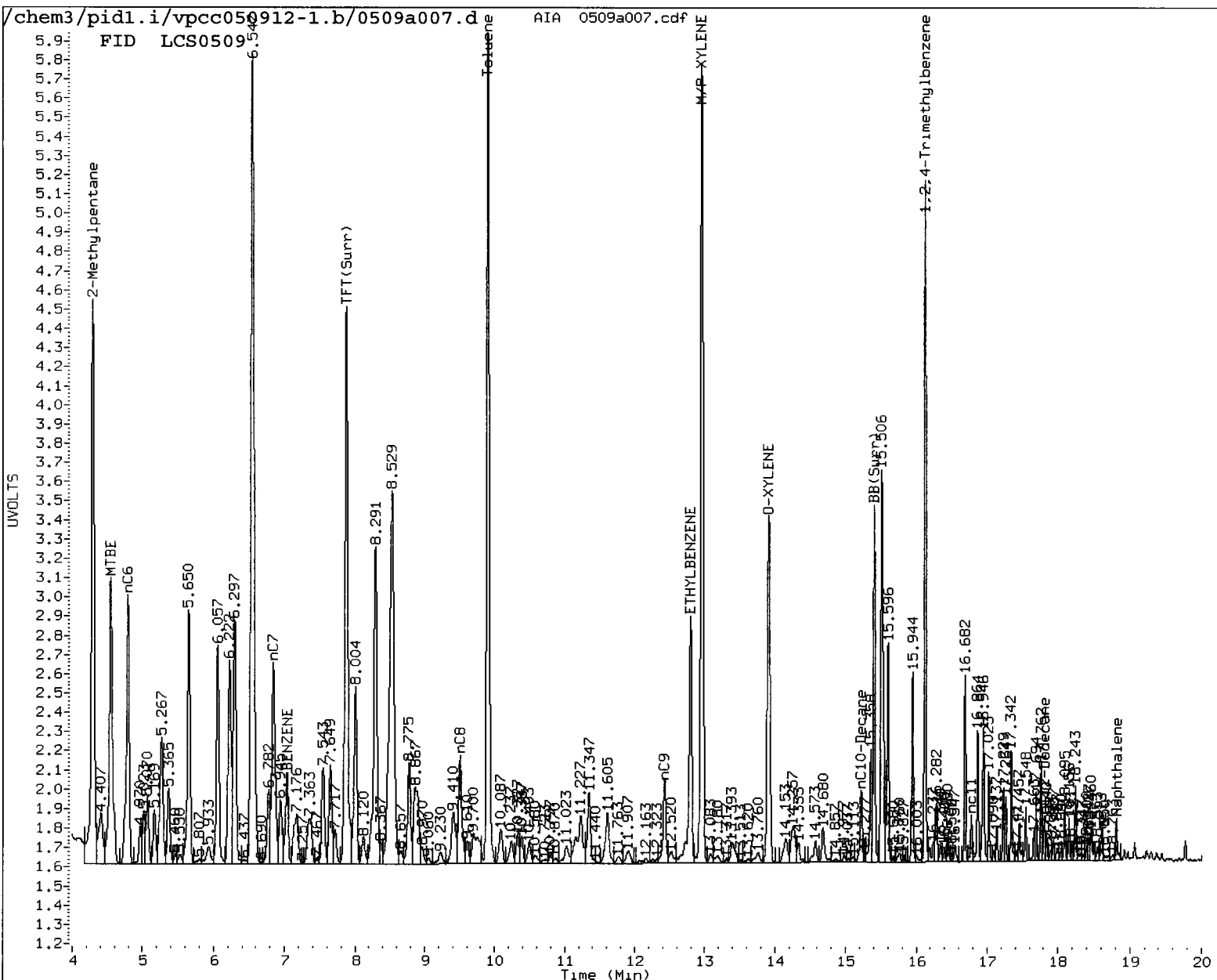
Column diameter: 0.18

Column phase: RTX 502-2 PID



Data File: /chem3/pid1.1/vpc050912-1.b/0509a007.d/0509a007.cdf
Injection Date: 09-MAY-2012 12:21
Instrument: pid1.1
Client Sample ID:





MANUAL INTEGRATION

- ☒ 1. Baseline correction
- ☐ 2. Poor chromatography
- ☐ 3. Peak not found
- ☐ 4. Totals calculation

5. Other _____

Analyst: MH

Date: 5/10/12

MH
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a005.d ARI ID: LCSD0509
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a005.d Client ID:
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 11:23
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.872	0.000	2855	40303	96.1	TFT(Surr)
15.402	0.000	1823	15708	93.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	327001	0.974 M
8015C 2MP-TMB (4.19 to 16.22)	689188	717766	1.041 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	568688	1.031 M
NWTPHG Tol-Nap (9.80 to 18.91)	354347	343337	0.969 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.880	0.000	3583	96.3	TFT(Surr)
15.410	0.000	7976	96.1	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.042	0.000	947	3.71	Benzene
9.909	0.000	9105	40.38	Toluene
12.801	0.000	2300	11.46	Ethylbenzene
12.964	0.002	9324	42.36	M/P-Xylene
13.913	0.000	3347	19.60	O-Xylene
4.550	-0.009	212	2.13	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpcc050912-1.b/0509a005.d

Date : 09-MAY-2012 11:23

Client ID:

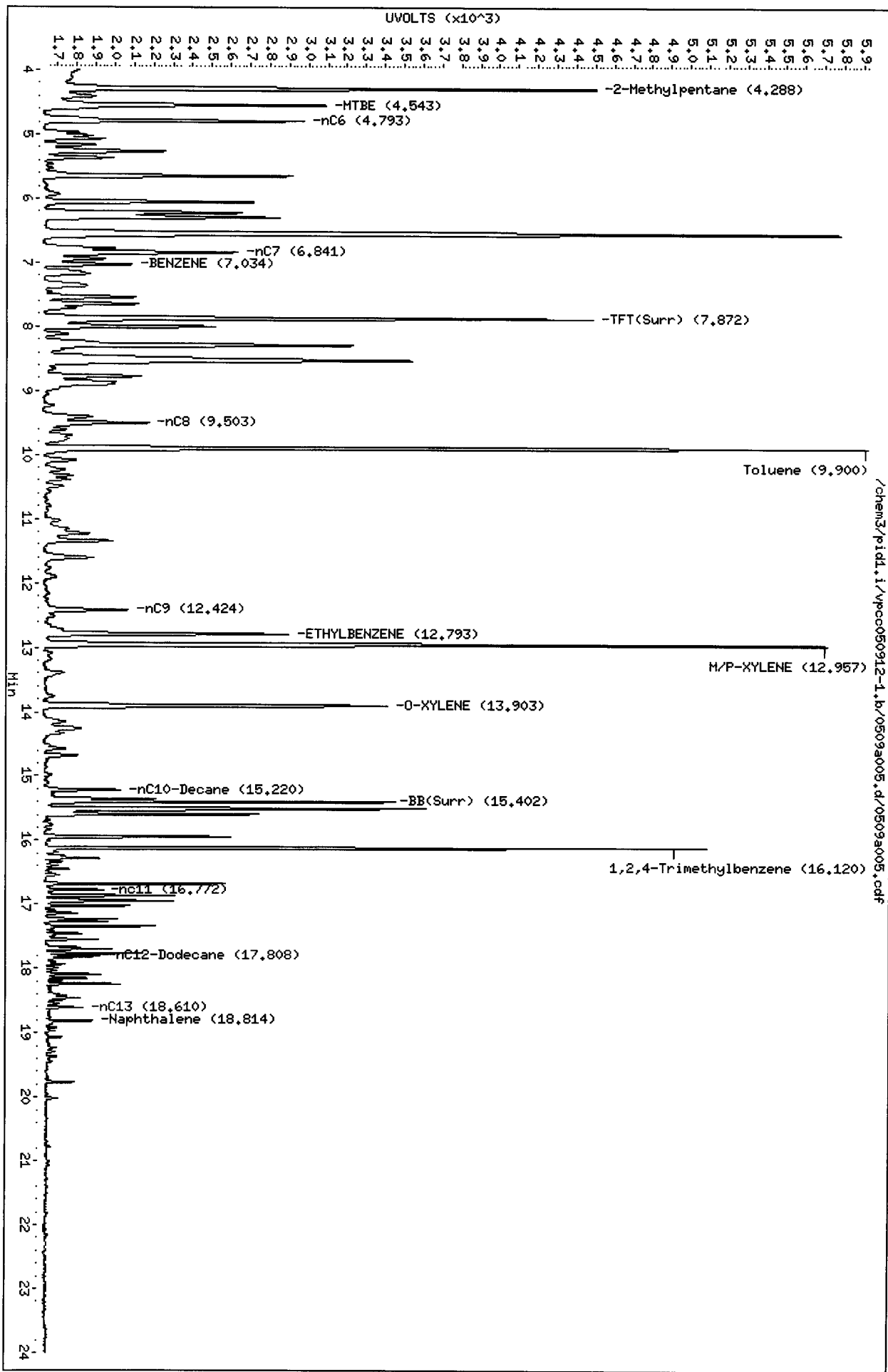
Sample Info: LCSD0509

Instrument: pid1.i

Column phase: RTX 502-2 FID

Operator: JM

Column diameter: 0.18



Data File: /chem3/pid1.i/vpc050912-2.b/05092005.d
Date : 09-MAY-2012 11:23

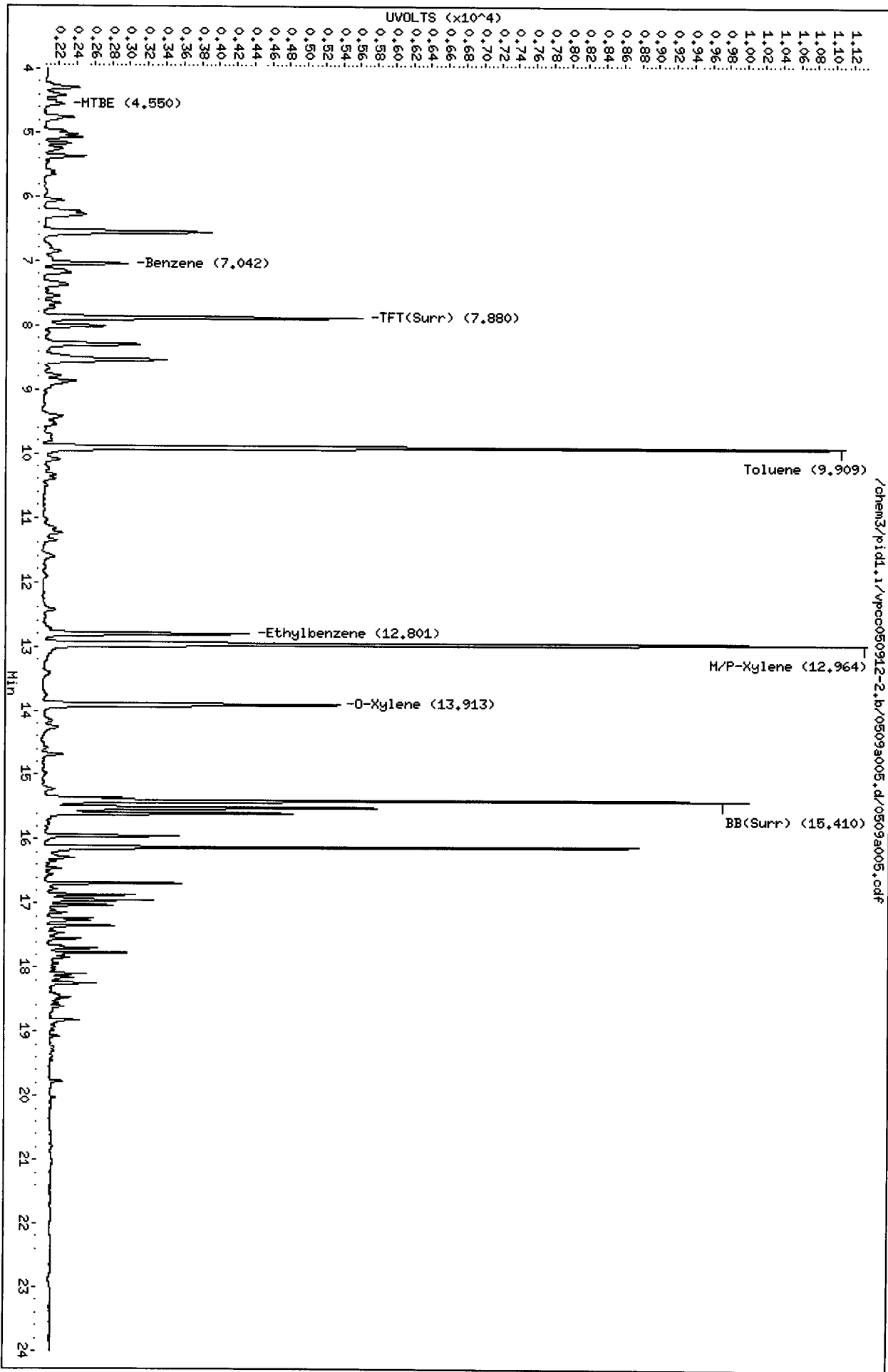
Client ID:

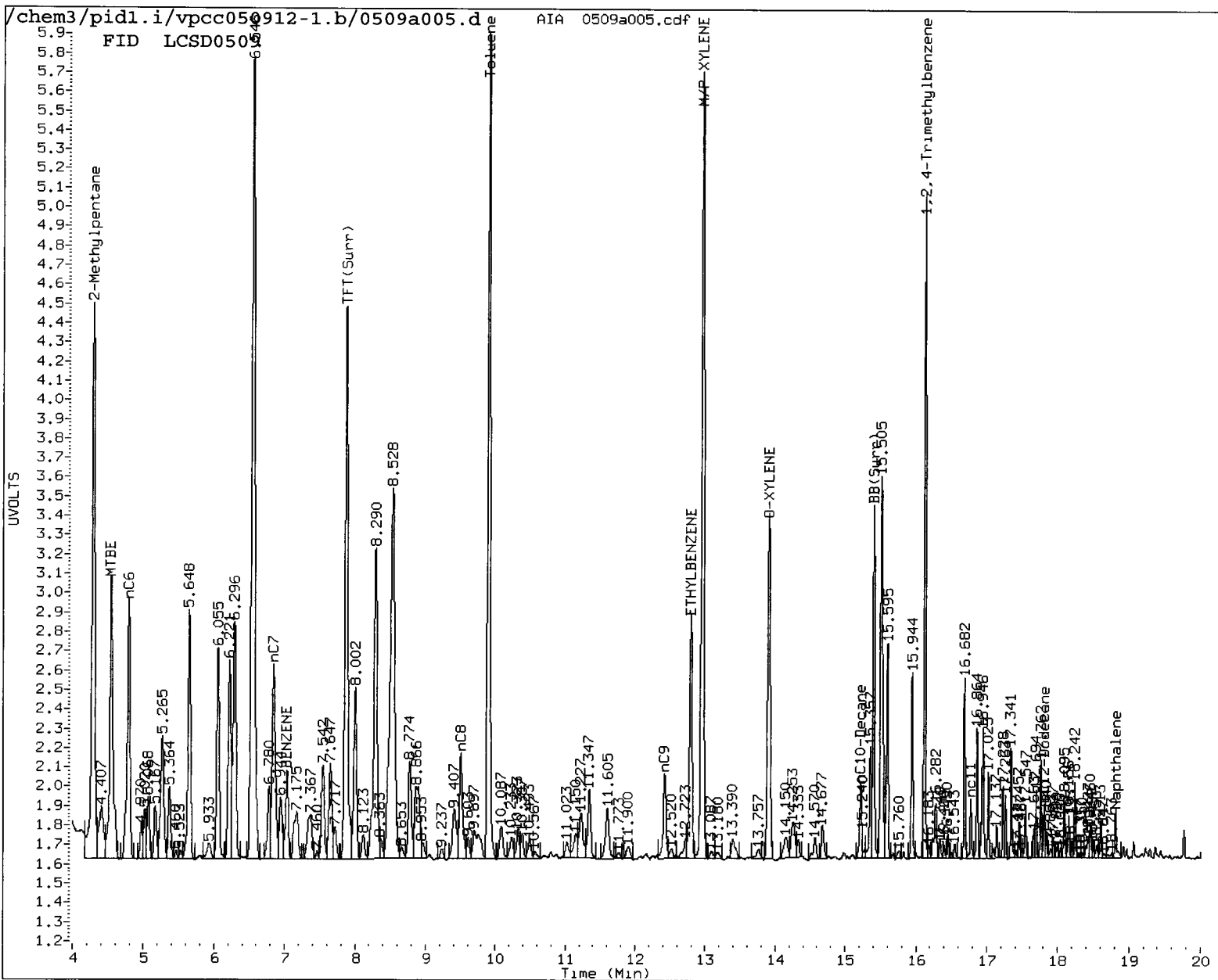
Sample Info: LCSD0509

Instrument: pid1.i

Column phase: RTX 502-2 PID

Operator: JM
Column diameter: 0.18





MANUAL INTEGRATION

- ☒ Baseline correction
- ☐ 2. Poor chromatography
- ☐ 3. Peak not found
- ☐ 4. Totals calculation

5. Other _____

Analyst: MT Date: 5/10/12

ORGANICS ANALYSIS DATA SHEET

BETX by Method SW8021BMod

Page 1 of 1

Sample ID: MW-12D

MATRIX SPIKE

Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *mmw*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Analyzed MS: 05/09/12 14:33

MSD: 05/09/12 15:02

Instrument/Analyst MS: PID1/MH

MSD: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor MS: 1.0

MSD: 1.0

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzene	< 1.00 U	3.76	3.70	102%	3.69	3.70	99.7%	1.9%
Toluene	< 1.00 U	41.4	39.6	105%	40.3	39.6	102%	2.7%
Ethylbenzene	< 1.00 U	11.6	11.6	100%	11.3	11.6	97.4%	2.6%
m,p-Xylene	< 1.00 U	42.8	42.5	101%	41.5	42.5	97.6%	3.1%
o-Xylene	< 1.00 U	19.6	19.2	102%	19.1	19.2	99.5%	2.6%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

BETX Surrogate Recovery

	MS	MSD
Trifluorotoluene	98.0%	99.8%
Bromobenzene	96.5%	96.9%

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: MW-12D

MATRIX SPIKE

Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *mm*

Reported: 05/10/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Analyzed MS: 05/09/12 14:33

MSD: 05/09/12 15:02

Instrument/Analyst MS: PID1/MH

MSD: PID1/MH

Purge Volume: 5.0 mL

Dilution Factor MS: 1.0

MSD: 1.0

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Gasoline Range Hydrocarbons < 0.25 U		0.97	1.00	97.0%	0.96	1.00	96.0%	1.0%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	MS	MSD
Trifluorotoluene	97.8%	98.2%
Bromobenzene	93.9%	94.7%

m4
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a011.d ARI ID: UT66CMS
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a011.d Client ID: MW-12D MS
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 14:33
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.873	0.001	2904	41203	97.8	TFT(Surr)
15.403	0.001	1828	15901	93.9	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	327574	0.976 M
8015C 2MP-TMB (4.19 to 16.22)	689188	712136	1.033 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	576437	1.045 M
NWTPHG Tol-Nap (9.80 to 18.91)	354347	343810	0.970 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.882	0.002	3645	98.0	TFT(Surr)
15.411	0.001	8011	96.5	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.043	0.001	961	3.76	Benzene
9.910	0.002	9344	41.44	Toluene
12.802	0.001	2334	11.63	Ethylbenzene
12.965	0.003	9421	42.80	M/P-Xylene
13.914	0.002	3338	19.55	O-Xylene
4.551	-0.008	202	2.03	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

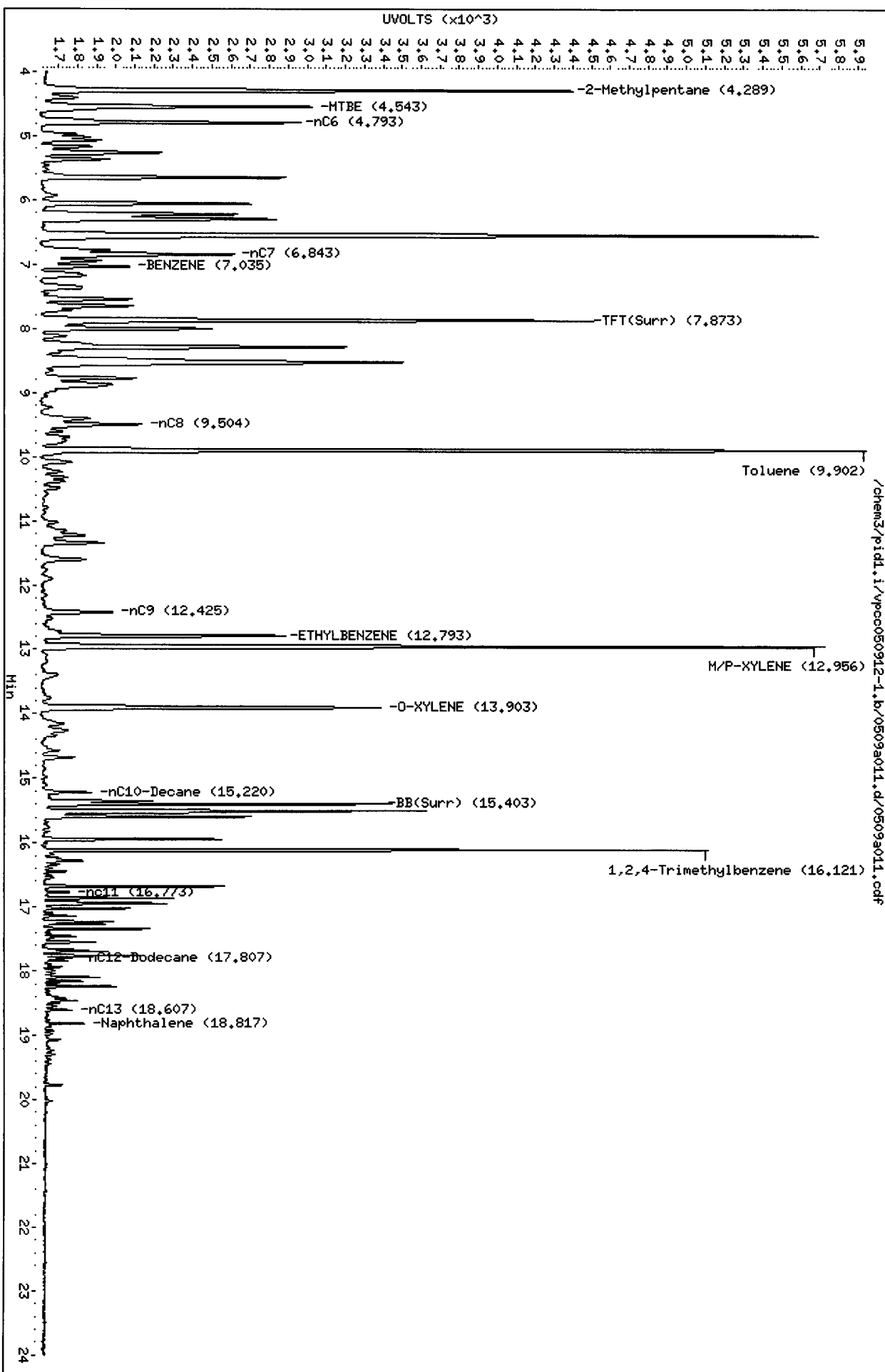
Data File: /chem3/pid1.i/vpcc050912-1.b/0509a011.d
Date : 09-MAY-2012 14:33
Client ID: MW-12D HS
Sample Info: UT6CHS

Instrument: pid1.i

Page 1

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18



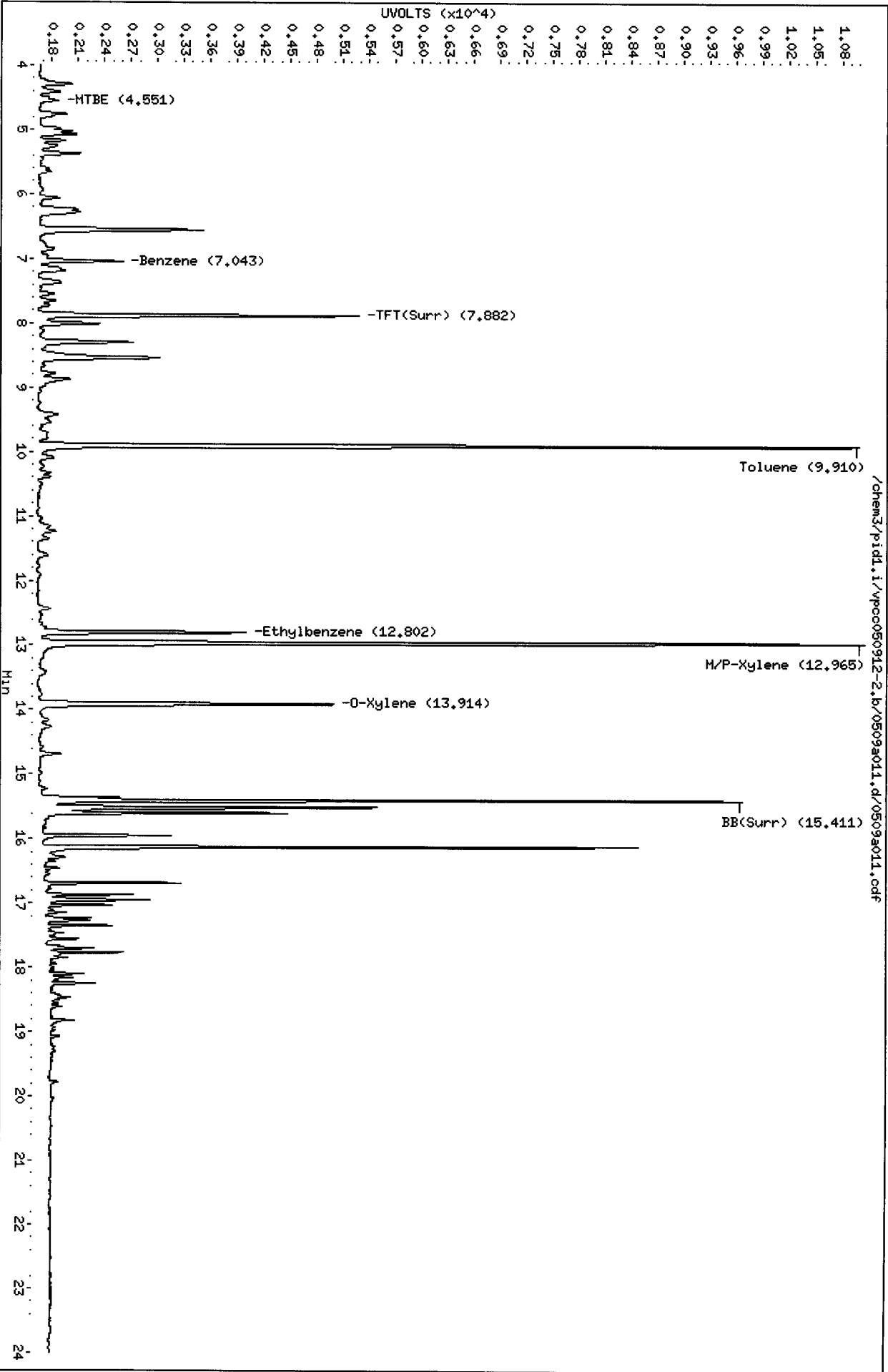
Data File: /chem3/pid1.i/vpcc050912-2.b/0509a011.d
Date : 09-MAY-2012 14:33
Client ID: MM-12D HS
Sample Info: UT6CCHS

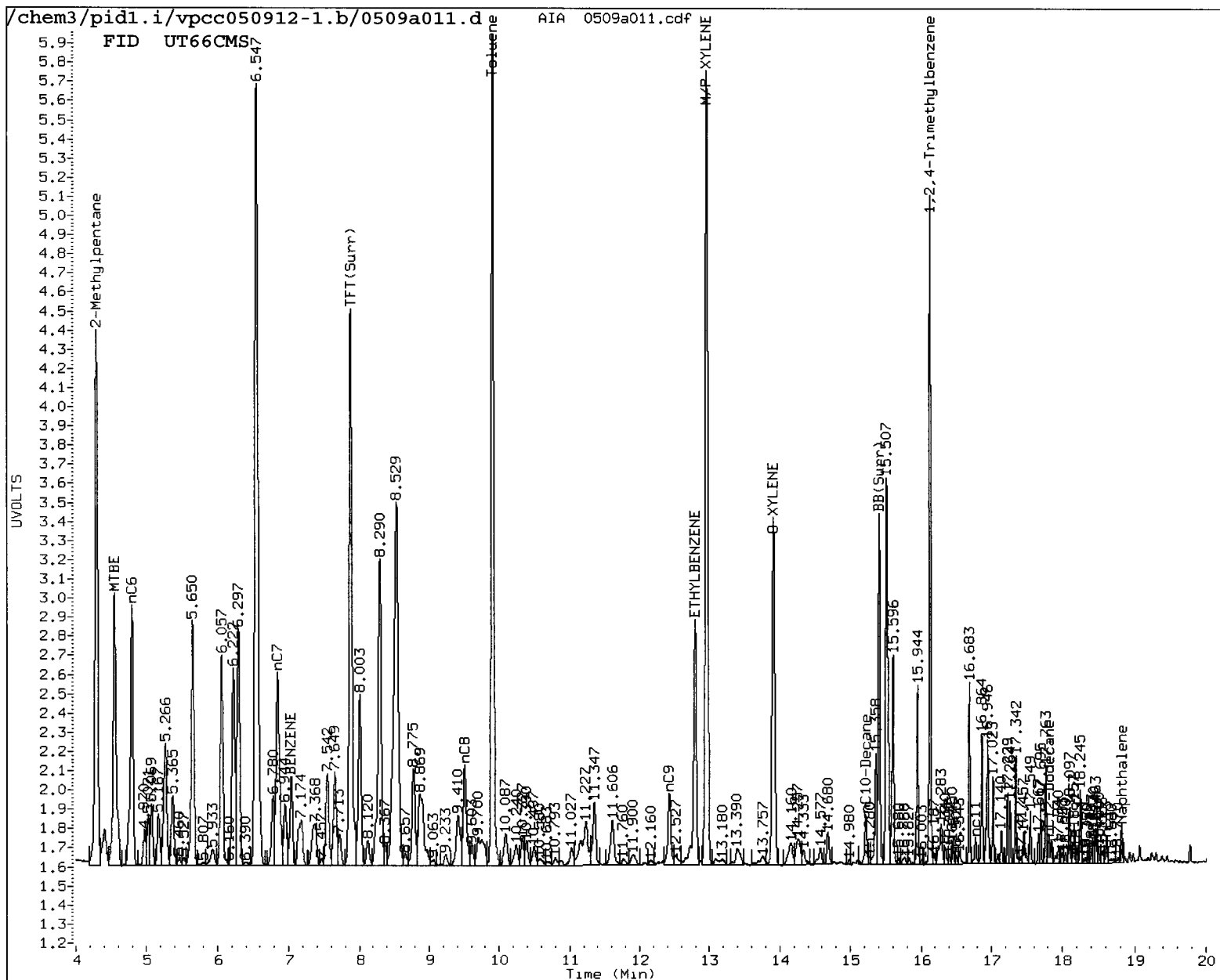
Instrument: pid1.i

Page 1

Column phase: RTX 502-2 PID

Operator: JM
Column diameter: 0.18





MANUAL INTEGRATION

- ☒ 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MH

Date: 5/10/12

74
5/10/12

Analytical Resources Inc.
BETX/Gas Quantitation Report

Data file 1: /chem3/pid1.i/vpcc050912-1.b/0509a012.d ARI ID: UT66CMSD
Data file 2: /chem3/pid1.i/vpcc050912-2.b/0509a012.d Client ID: MW-12D MSD
Method: /chem3/pid1.i/vpcc050912-2.b/PIDB.m Injection Date: 09-MAY-2012 15:02
Instrument: pid1.i Matrix: WATER
Gas Ical Date: 17-APR-2012 Dilution Factor: 1.000
BETX Ical Date: 16-APR-2012

FID Surrogates

RT	Shift	Height	Area	%Rec	Compound
--	----	-----	----	----	-----
7.872	0.000	2918	41306	98.2	TFT(Surr)
15.402	0.000	1842	15869	94.7	BB(Surr)

PETROLEUM HYDROCARBONS (FID)

Range	RF	Total Area*	Amount
-----	----	-----	-----
WAGas Tol-C12 (9.80 to 17.91)	335652	322624	0.961 M
8015C 2MP-TMB (4.19 to 16.22)	689188	702190	1.019 M
AK101 nC6-nC10 (4.69 to 15.12)	551766	565575	1.025 M
NWTPHG Tol-Nap (9.80 to 18.91)	354347	340070	0.960 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area
Range marker RT's are set by daily RT standard

PID Surrogates

RT	Shift	Response	%Rec	Compound
--	----	-----	----	-----
7.881	0.001	3713	99.8	TFT(Surr)
15.410	0.000	8045	96.9	BB(Surr)

SW8021 (PID)

RT	Shift	Response	Amount	Compound
--	----	-----	-----	-----
7.042	0.000	942	3.69	Benzene
9.909	0.001	9090	40.31	Toluene
12.802	0.001	2267	11.29	Ethylbenzene
12.965	0.002	9142	41.53	M/P-Xylene
13.913	0.000	3267	19.13	O-Xylene
4.551	-0.008	197	1.98	MTBE

A Indicates Peak Area was used for quantitation instead of Height
N Indicates peak was manually integrated

Data File: /chem3/pid1.i/vpoc050912-1.b/0509a012.d

Date : 09-MAY-2012 15:02

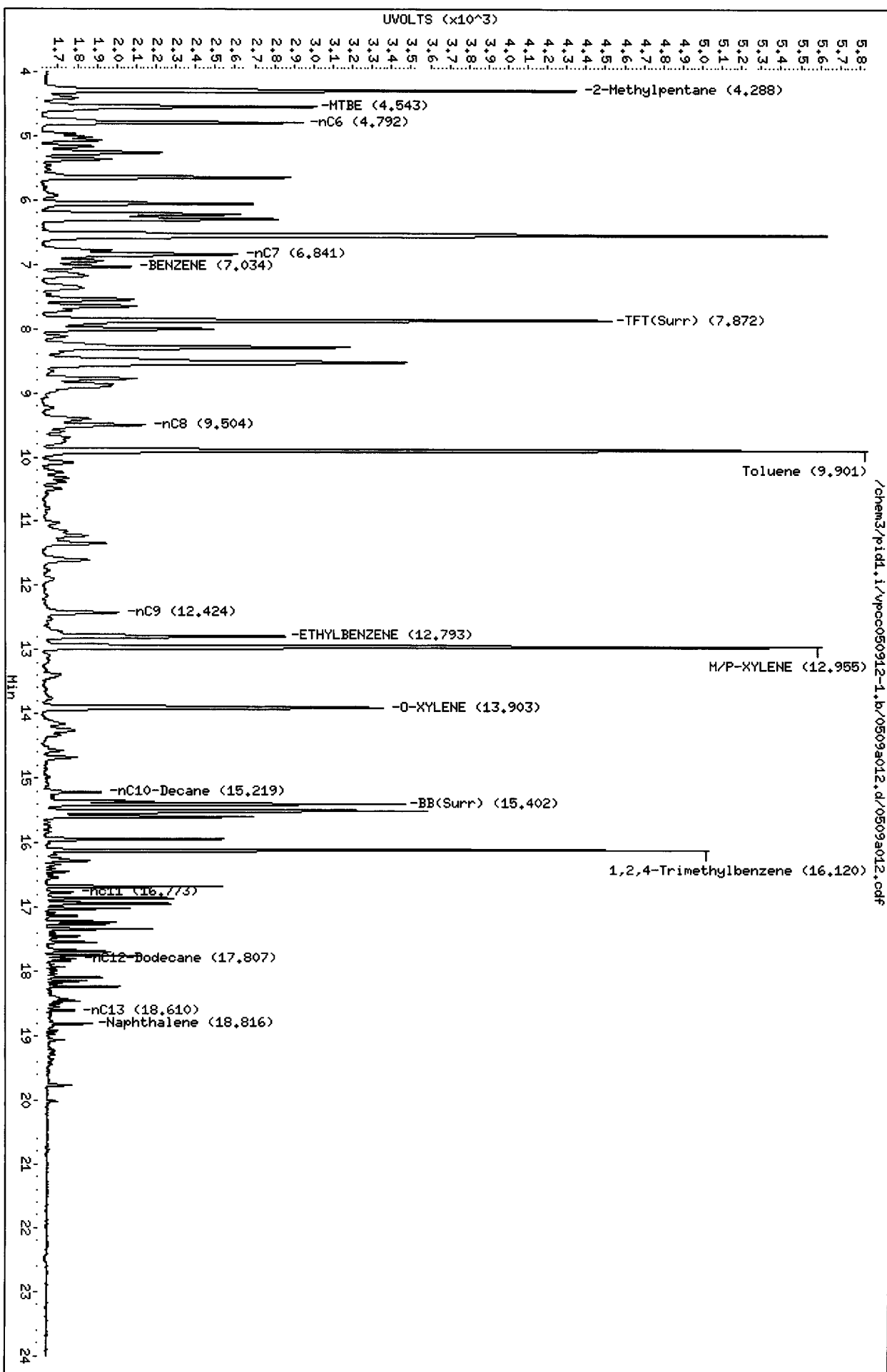
Client ID: MW-12D MSD

Sample Info: UT6CHMSD

Page 1

Column phase: RTX 502-2 FID

Operator: JM
Column diameter: 0.18



Data File: /chem3/pid1.i/vpcc050912-2.b/0509a012.d

Date : 09-MAY-2012 15:02

Client ID: MW-12D MSD

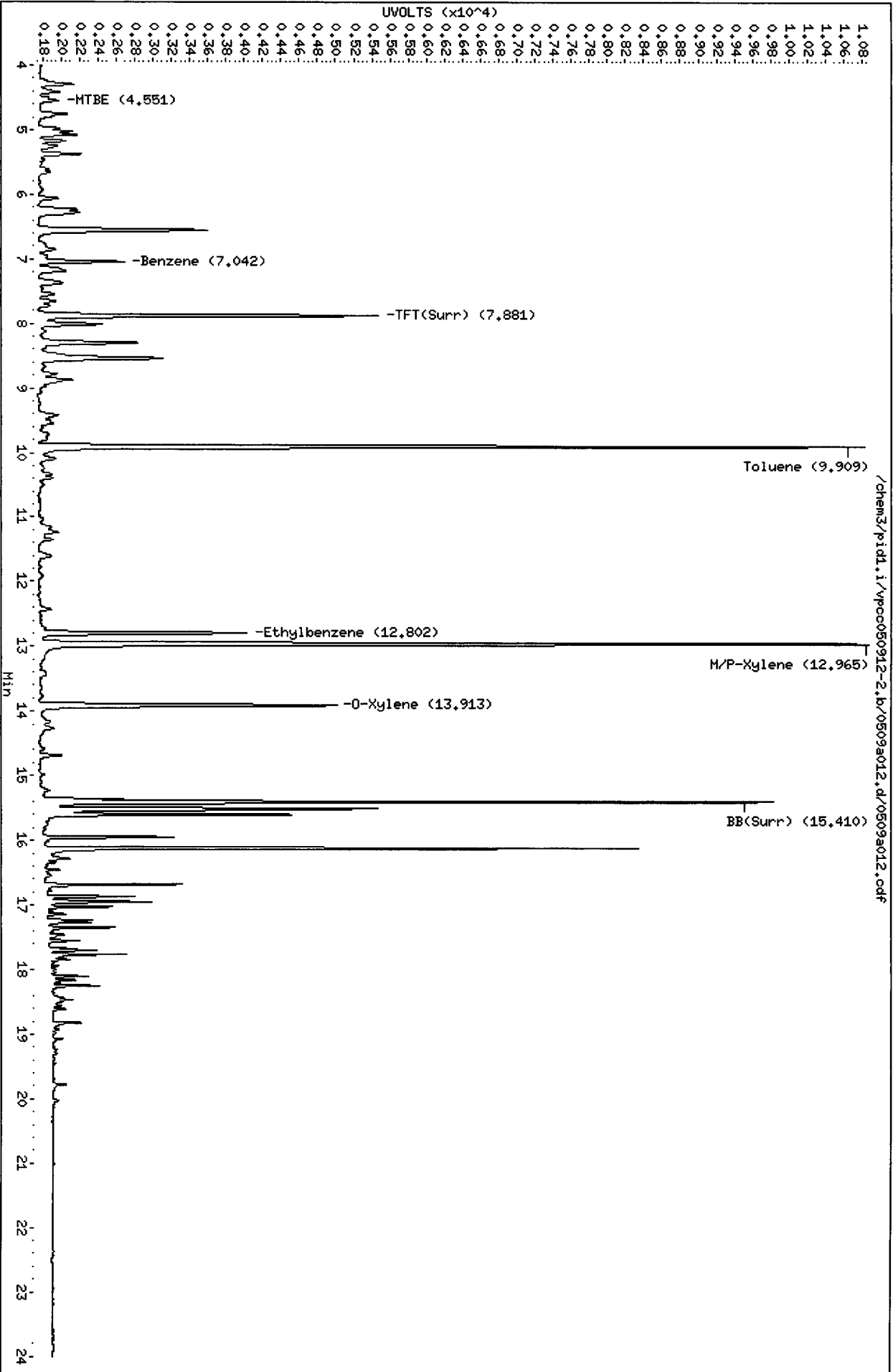
Sample Info: UT66CHSD

Instrument: pid1.i

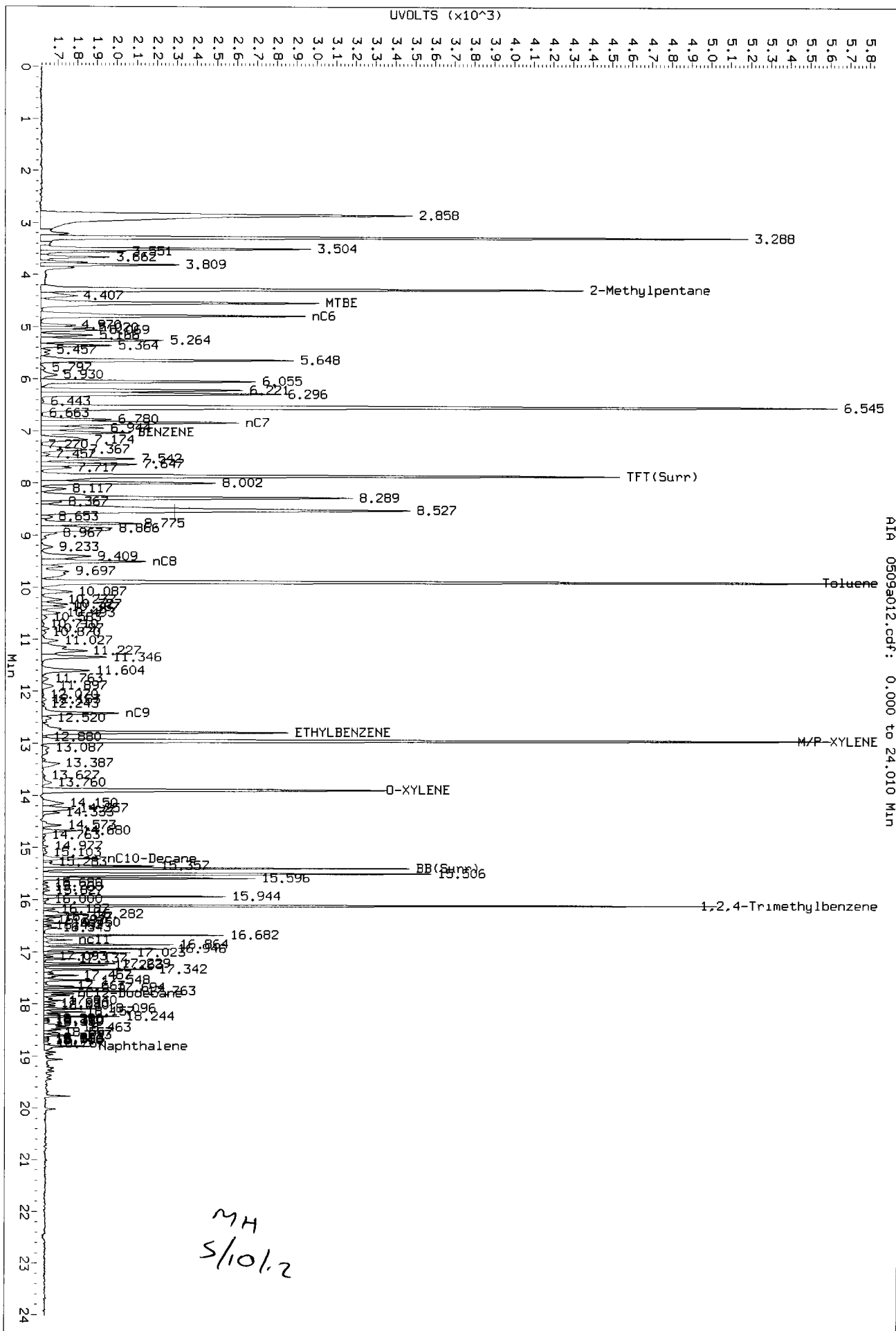
Operator: JM

Column diameter: 0.18

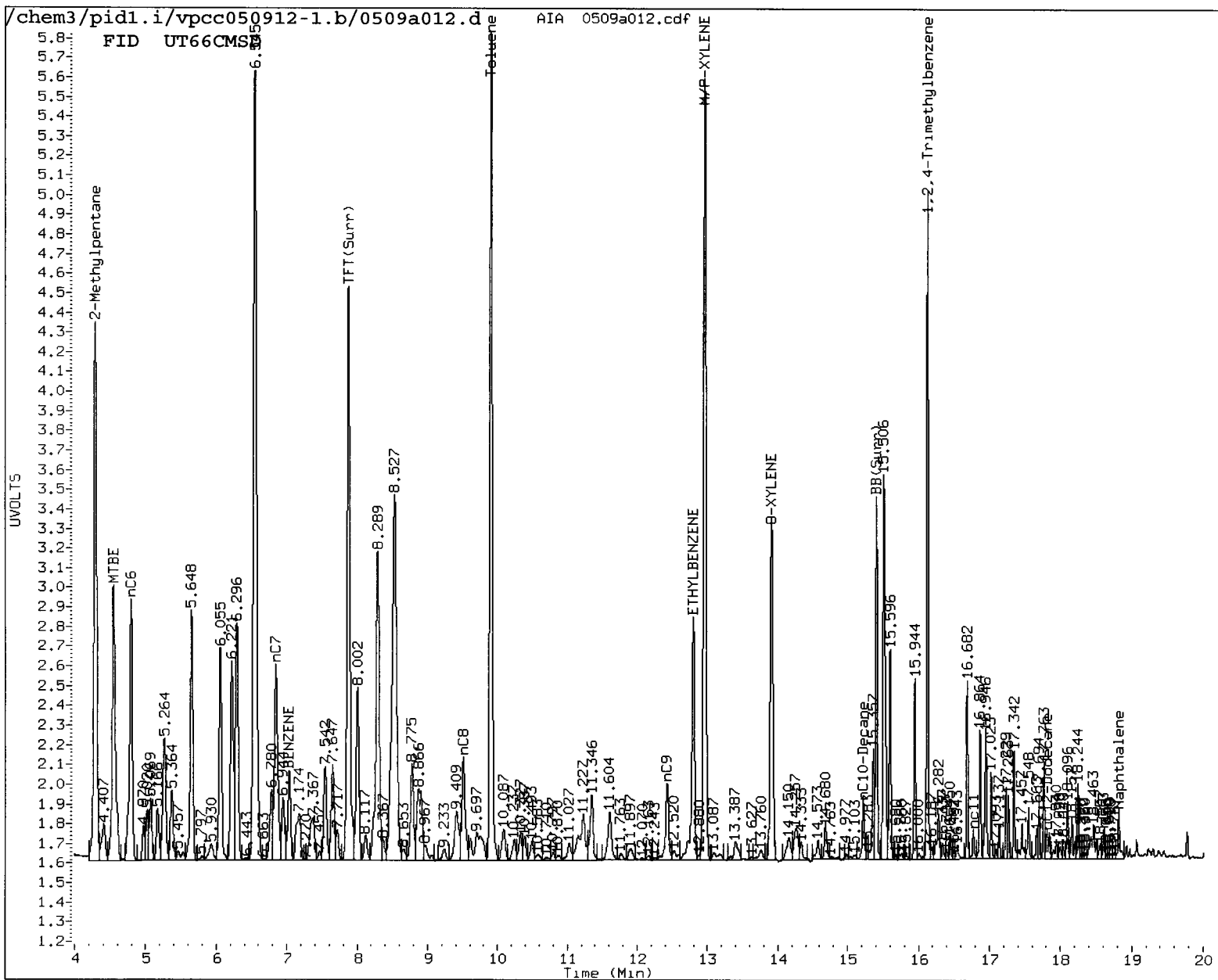
Column phase: RTX 502-2 PID



Data File: /chem3/pid1.1/vpcc050912-1.b/0509a012.d/0509a012.cdf
Injection Date: 09-May-2012 15:02
Instrument: pid1.1
Client Sample ID: MW-120 MSD



MH
5/10/12



MANUAL INTEGRATION

- ☒ 1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MTT

Date: 5/10/12

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 1
Matrix: Water

QC Report No: UT66-Pacific Groundwater Group
Project: Birds Eye I
JI1001.04

Data Release Authorized: *FWW*
Reported: 05/14/12

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	RL	Result
UT66A 12-8385	MW-9S HC ID: ---	05/10/12	05/11/12. FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 68.7%
UT66B 12-8386	MW-9D HC ID: ---	05/10/12	05/11/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 70.4%
MB-051012 12-8387	Method Blank HC ID: ---	05/10/12	05/11/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 70.7%
UT66C 12-8387	MW-12D HC ID: ---	05/10/12	05/11/12 FID4A	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 64.3%

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.

CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: UT66-Pacific Groundwater Group
Project: Birds Eye I
JI1001.04

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MW-9S	68.7%	0
MW-9D	70.4%	0
MB-051012	70.7%	0
LCS-051012	69.0%	0
LCSD-051012	75.6%	0
MW-12D	64.3%	0
MW-12D MS	66.5%	0
MW-12D MSD	63.1%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3510C
Log Number Range: 12-8385 to 12-8387

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Sample ID: MW-12D

Page 1 of 1

MS/MSD

Lab Sample ID: UT66C

QC Report No: UT66-Pacific Groundwater Group

LIMS ID: 12-8387

Project: Birds Eye I

Matrix: Water

JII1001.04

Data Release Authorized: *[Signature]*

Date Sampled: 05/08/12

Reported: 05/14/12

Date Received: 05/08/12

Date Extracted MS/MSD: 05/10/12

Sample Amount MS: 500 mL

MSD: 500 mL

Date Analyzed MS: 05/11/12 16:54

Final Extract Volume MS: 1.0 mL

MSD: 05/11/12 17:18

MSD: 1.0 mL

Instrument/Analyst MS: FID/MH

Dilution Factor MS: 1.00

MSD: FID/MH

MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	< 0.10	1.70	3.00	56.7%	1.66	3.00	55.3%	2.4%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	66.5%	63.1%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID-Silica and Acid Cleaned

Sample ID: LCS-051012

Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-051012

QC Report No: UT66-Pacific Groundwater Group

LIMS ID: 12-8387

Project: Birds Eye I

Matrix: Water

JI1001.04

Data Release Authorized: 

Date Sampled: 05/08/12

Reported: 05/14/12

Date Received: 05/08/12

Date Extracted LCS/LCSD: 05/10/12

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 05/11/12 14:29

Final Extract Volume LCS: 1.0 mL

LCSD: 05/11/12 14:53

LCSD: 1.0 mL

Instrument/Analyst LCS: FID/MH

Dilution Factor LCS: 1.00

LCSD: FID/MH

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	1.83	3.00	61.0%	1.88	3.00	62.7%	2.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	69.0%	75.6%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
 Date Received: 05/08/12

ARI Job: UT66
 Project: Birds Eye I
 JI1001.04

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
12-8385-UT66A	MW-9S	500 mL	1.00 mL	05/10/12
12-8386-UT66B	MW-9D	500 mL	1.00 mL	05/10/12
12-8387-051012MB1	Method Blank	500 mL	1.00 mL	05/10/12
12-8387-051012LCS1	Lab Control	500 mL	1.00 mL	05/10/12
12-8387-051012LCSD1	Lab Control Dup	500 mL	1.00 mL	05/10/12
12-8387-UT66C	MW-12D	500 mL	1.00 mL	05/10/12
12-8387-UT66CMS	MW-12D	500 mL	1.00 mL	05/10/12
12-8387-UT66CMSD	MW-12D	500 mL	1.00 mL	05/10/12

MH
5/14/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120511.b/0511a020.d ARI ID: UT55MBW1
Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m Client ID:
Instrument: fid4a.i Injection: 11-MAY-2012 14:05
Operator: MH
Report Date: 05/14/2012 Dilution Factor: 1
Macro: 10-MAY-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.296	0.011	3431	2757	GAS (Tol-C12)	53700	3.57
C8	1.481	-0.016	504	1117	DIESEL (C12-C24)	98981	6.56
C10	3.120	-0.002	348	597	M.OIL (C24-C38)	124393	10.73
C12	4.156	0.005	535	890	AK-102 (C10-C25)	129010	7.22
C14	4.914	0.007	428	434	AK-103 (C25-C36)	96692	12.46
C16	5.552	0.001	522	378			
C18	6.129	-0.008	681	1281			
C20	6.717	0.001	685	804	MIN.OIL (C24-C38)	124393	9.25
C22	7.268	0.007	541	1560			
C24	7.763	-0.012	357	715			
C25	8.026	0.004	532	833			
C26	8.280	0.020	371	636			
C28	8.717	0.004	1102	1483			
C32	9.651	-0.001	575	301			
C34	10.126	-0.007	400	419	CREOSOT (C12-C22)	86747	23.61
Filter Peak	10.518	0.006	393	199			
C36	10.617	0.005	5346	5419			
C38	11.048	-0.029	2153	4514			
C40	11.530	-0.002	468	211			
o-terph	6.309	-0.002	535369	627599	JET-A (C10-C18)	82751	5.58
Triacon Surr	9.183	-0.005	559286	683553			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	627599	31.8	70.7
Triacontane	683553	46.6	103.6

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.1/20120511.b/0511a020.d

Date : 11-MAY-2012 14:05

Client ID:

Sample Info: UTSGHBM1

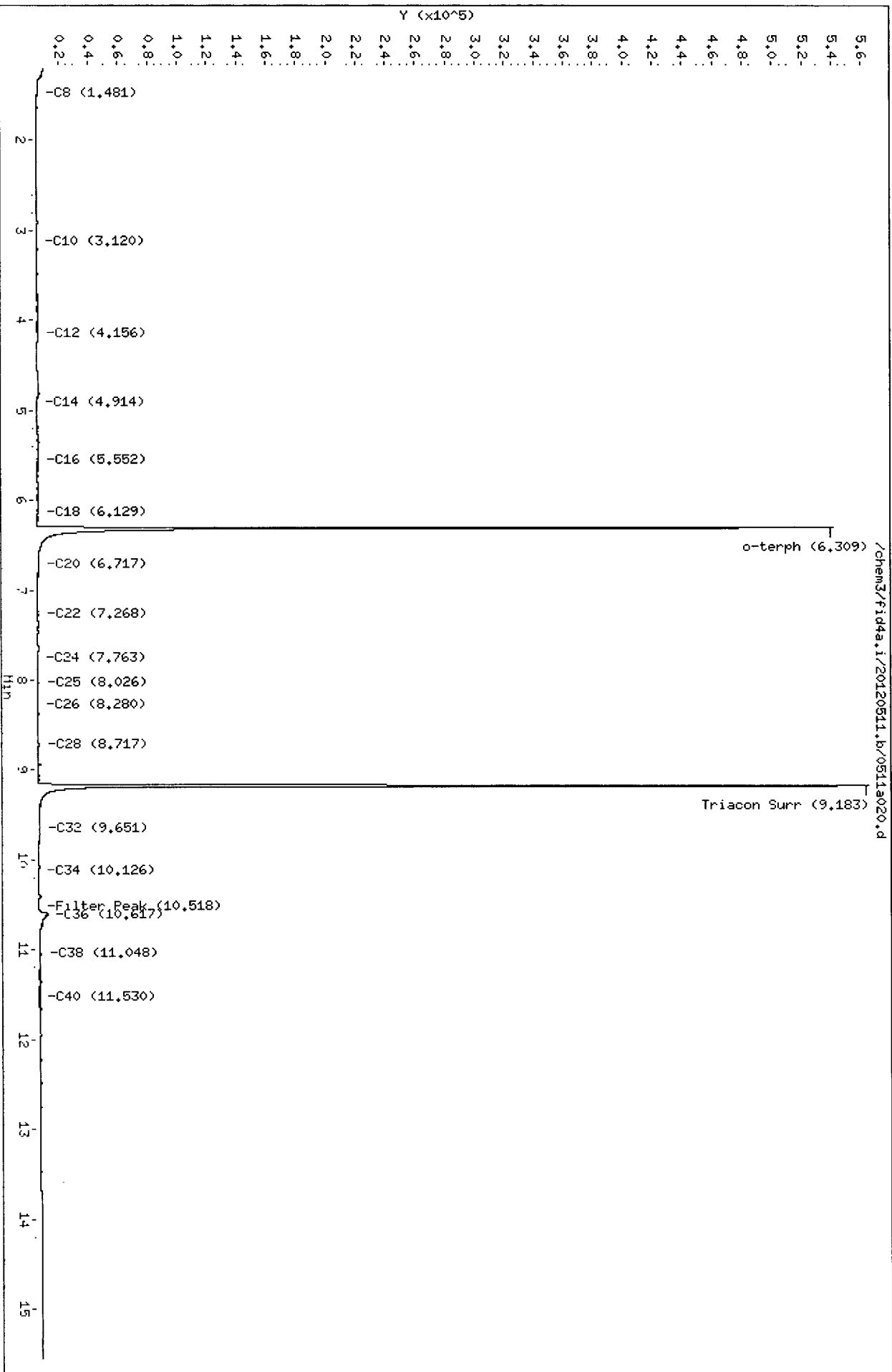
Column phase: RTX-1

Instrument: fid4a.1

Operator: NH

Column diameter: 0.25

Page 1



MH
5/14/12

Analytical Resources Inc.
407S TPH Quantitation Report

Data file: /chem3/fid4a.i/20120511.b/0511a021.d

ARI ID: UT55LCSW1

Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m

Client ID:

Instrument: fid4a.i

Injection: 11-MAY-2012 14:29

Operator: MH

Report Date: 05/14/2012

Dilution Factor: 1

Macro: 10-MAY-2012

Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.292	0.008	8238	7471	GAS (Tol-C12)	2879692	191.42
C8	1.505	0.008	4937	6252	DIESEL (C12-C24)	13822700	916.69
C10	3.124	0.002	60423	50638	M.OIL (C24-C38)	319050	27.51
C12	4.160	0.009	28681	22171	AK-102 (C10-C25)	15953327	892.59 M
C14	4.906	-0.002	80150	62879	AK-103 (C25-C36)	236880	30.53
C16	5.542	-0.009	444714	371639			
C18	6.139	0.002	348198	373722			
C20	6.713	-0.002	243927	335479	MIN.OIL (C24-C38)	319050	23.74
C22	7.259	-0.002	113618	156169			
C24	7.779	0.005	23445	55588			
C25	8.029	0.008	10658	26030			
C26	8.266	0.006	5304	10543			
C28	8.716	0.003	1819	2342			
C32	9.655	0.003	890	1508			
C34	10.126	-0.007	87	75	CREOSOT (C12-C22)	13317938	3624.76 M
Filter Peak	10.512	0.000	57	12			
C36	10.563	-0.048	43349	117724			
C38	11.079	0.003	280	475			
C40	11.520	-0.012	97	124			
o-terph	6.312	0.001	745808	612188	JET-A (C10-C18)	11735550	790.70
Triacon Surr	9.183	-0.005	588861	676497			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	612188	31.0	69.0
Triacontane	676497	46.1	102.5

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.1/20120511.b/0511a021.d

Date: 11-May-2012 14:29

Client ID:

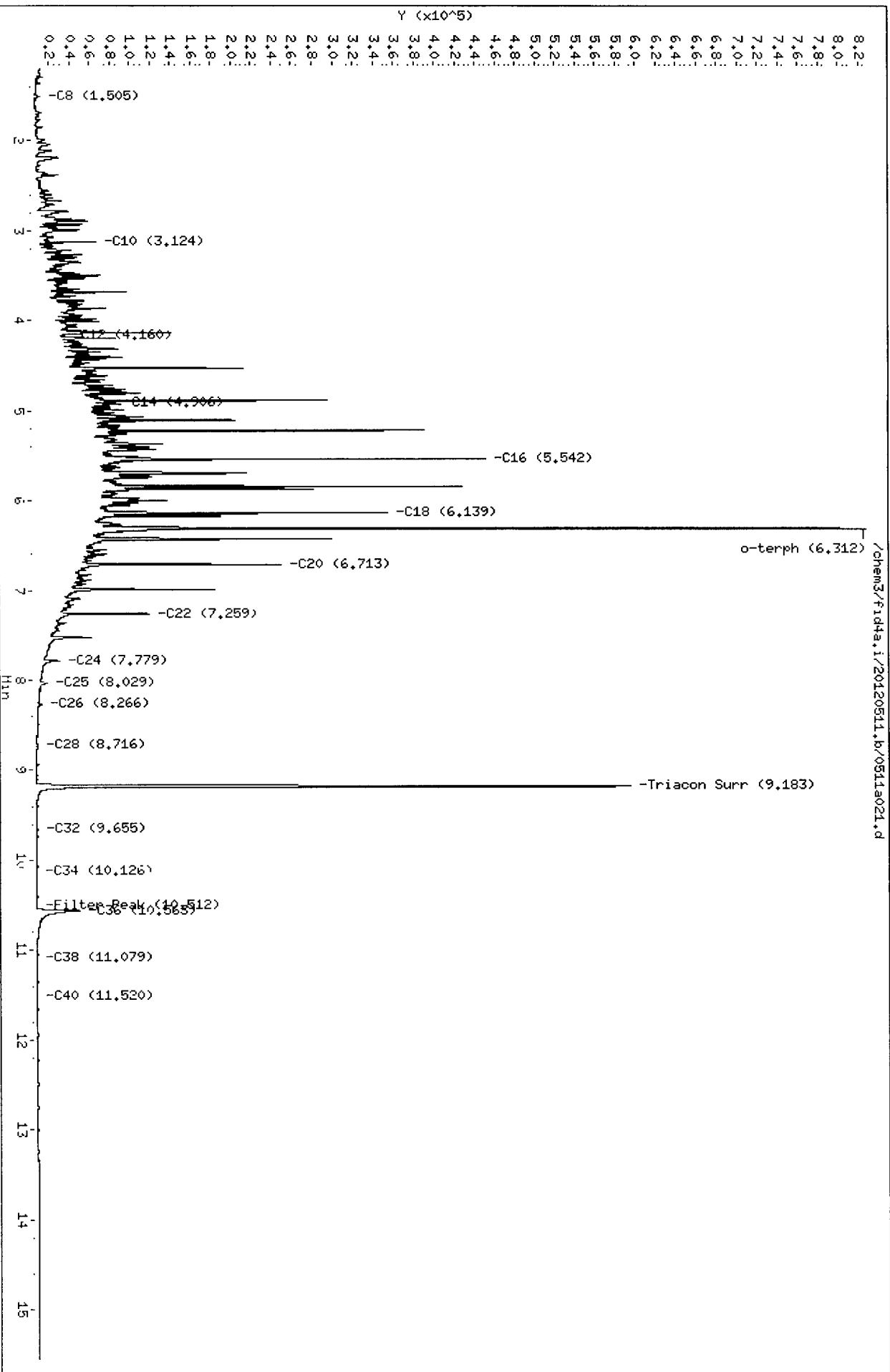
Sample Info: UT56LCSM1

Column phase: RTX-1

Instrument: fid4a.1

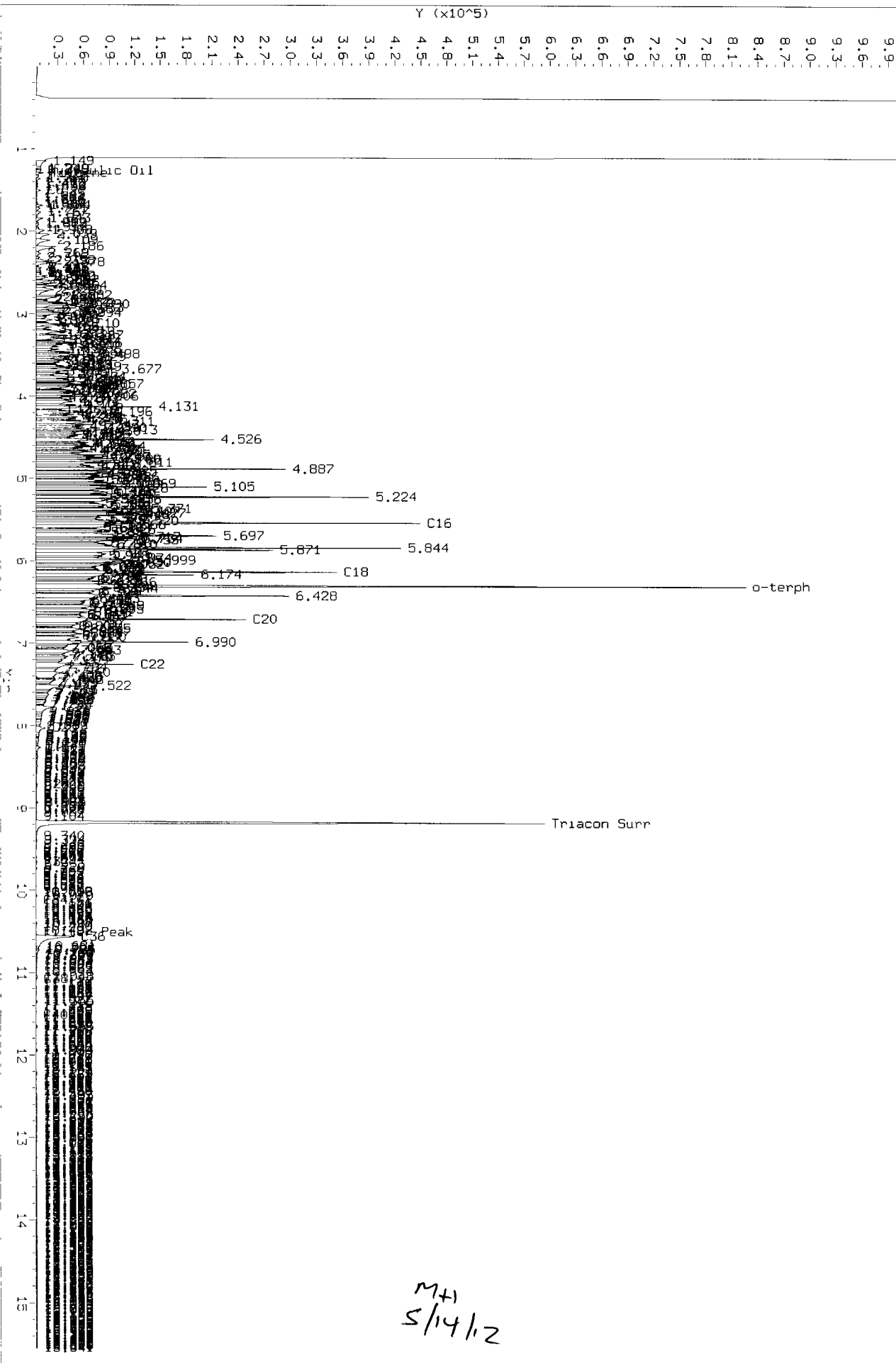
Operator: MH

Column diameter: 0.25



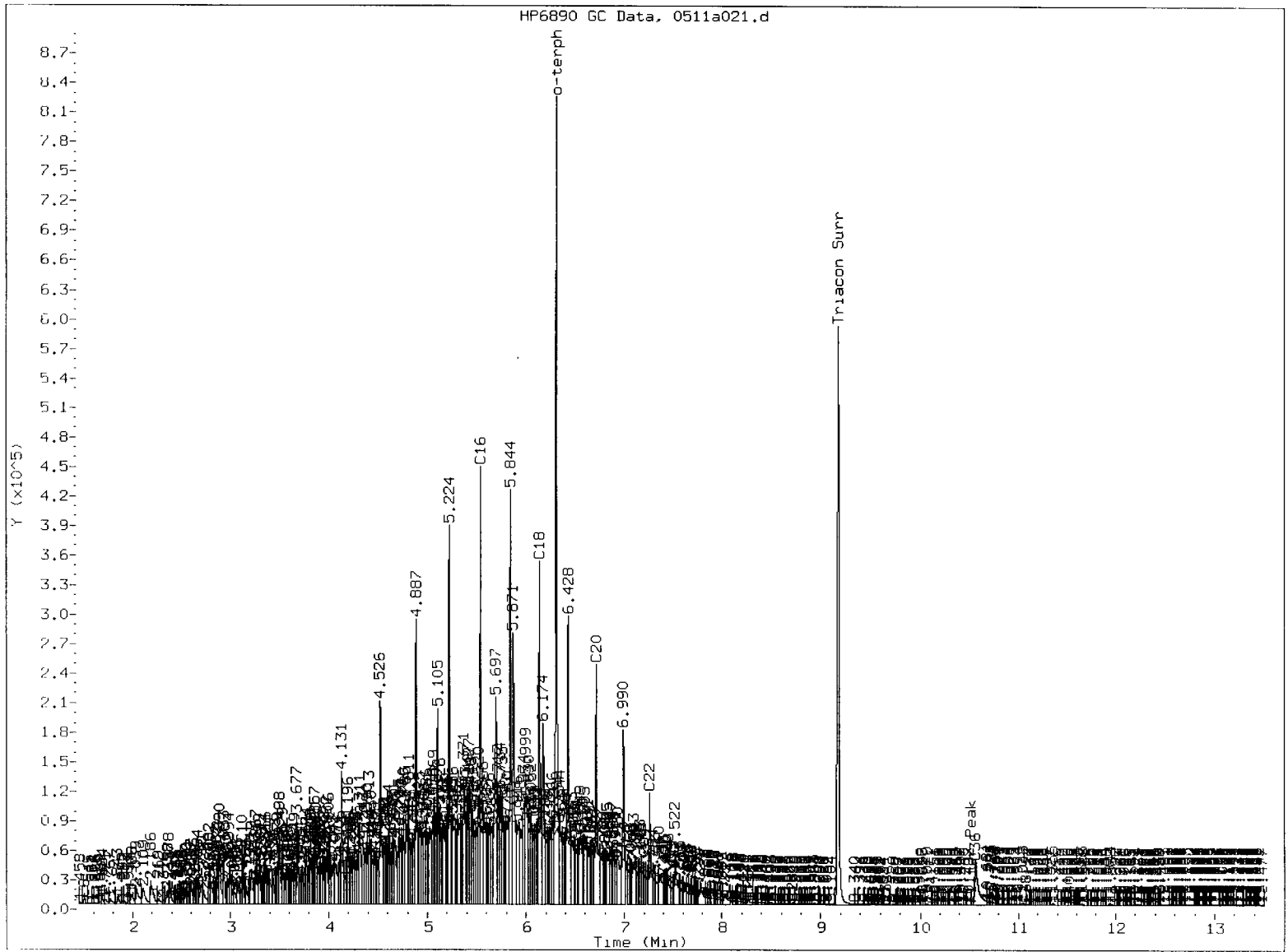
Data File: /chem3/fid4a.1/20120511.b/0511a021.d
Injection Date: 11-May-2012 14:29
Instrument: fid4a.1
Client Sample ID:

HP6890 GC Data, 0511a021.d: 0.000 to 15.548 Min



FID:4A-2C/RTX-1 UT55LCSW1

FID:4A SIGNAL



MANUAL INTEGRATION

- ☒ Baseline correction
- ☐ 2. Poor chromatography
- ☐ 3. Peak not found
- ☐ 4. Totals calculation
- ☐ 5. Other _____

Analyst: MH

Date: 5/14/12

Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/14/12

Data file: /chem3/fid4a.i/20120511.b/0511a022.d

ARI ID: UT55LCSDW1

Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m

Client ID:

Instrument: fid4a.i

Injection: 11-MAY-2012 14:53

Operator: MH

Report Date: 05/14/2012

Dilution Factor: 1

Macro: 10-MAY-2012

Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.293	0.009	7294	8235	GAS (Tol-C12)	2928012	194.63
C8	1.505	0.008	4850	6998	DIESEL (C12-C24)	14194314	941.33
C10	3.124	0.002	63701	52017	M.OIL (C24-C38)	293759	25.33
C12	4.162	0.011	30241	19488	AK-102 (C10-C25)	16349636	914.77 M
C14	4.904	-0.003	80824	62587	AK-103 (C25-C36)	227428	29.31
C16	5.543	-0.008	463272	397658			
C18	6.139	0.002	354711	390824			
C20	6.714	-0.002	248176	345868	MIN.OIL (C24-C38)	293759	21.86
C22	7.259	-0.002	120243	153189			
C24	7.780	0.006	24309	69832			
C25	8.030	0.008	11423	30138			
C26	8.267	0.007	5660	9863			
C28	8.715	0.002	1862	2480			
C32	9.659	0.006	911	1687			
C34	10.136	0.003	91	50	CREOSOT (C12-C22)	13687053	3725.23 M
Filter Peak	10.501	-0.011	106	82			
C36	10.628	0.016	7441	9494			
C38	11.052	-0.025	1342	2565			
C40	11.536	0.003	94	119			
o-terph	6.313	0.002	810409	671511	JET-A (C10-C18)	12022376	810.02
Triacon Surr	9.185	-0.003	619863	719830			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	671511	34.0	75.6
Triacontane	719830	49.1	109.1

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120511.b/0511a022.d

Date: 11-MAY-2012 14:53

Client ID:

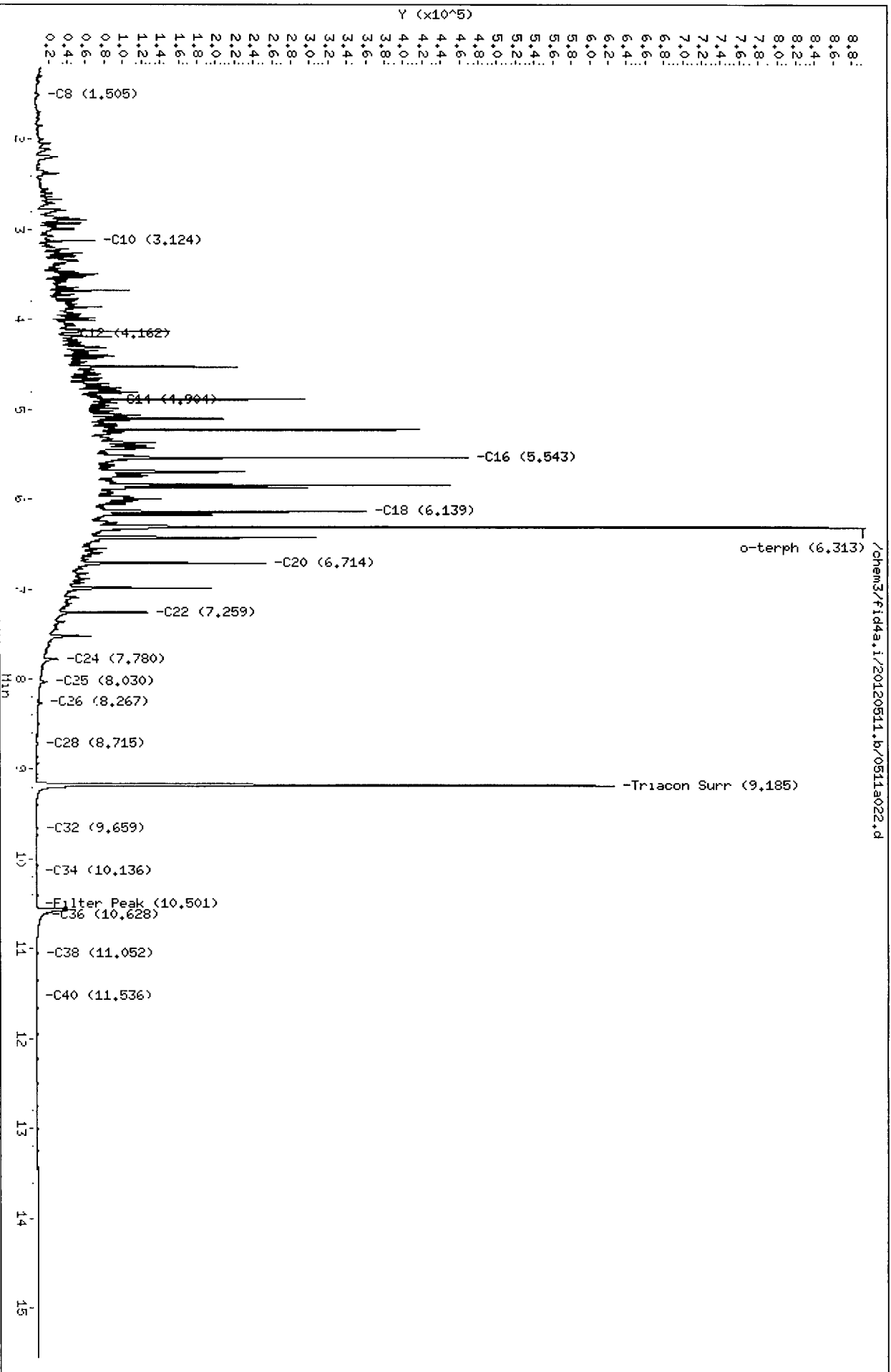
Sample Info: UT55LCSDM1

Instrument: fid4a.1

Operator: MH

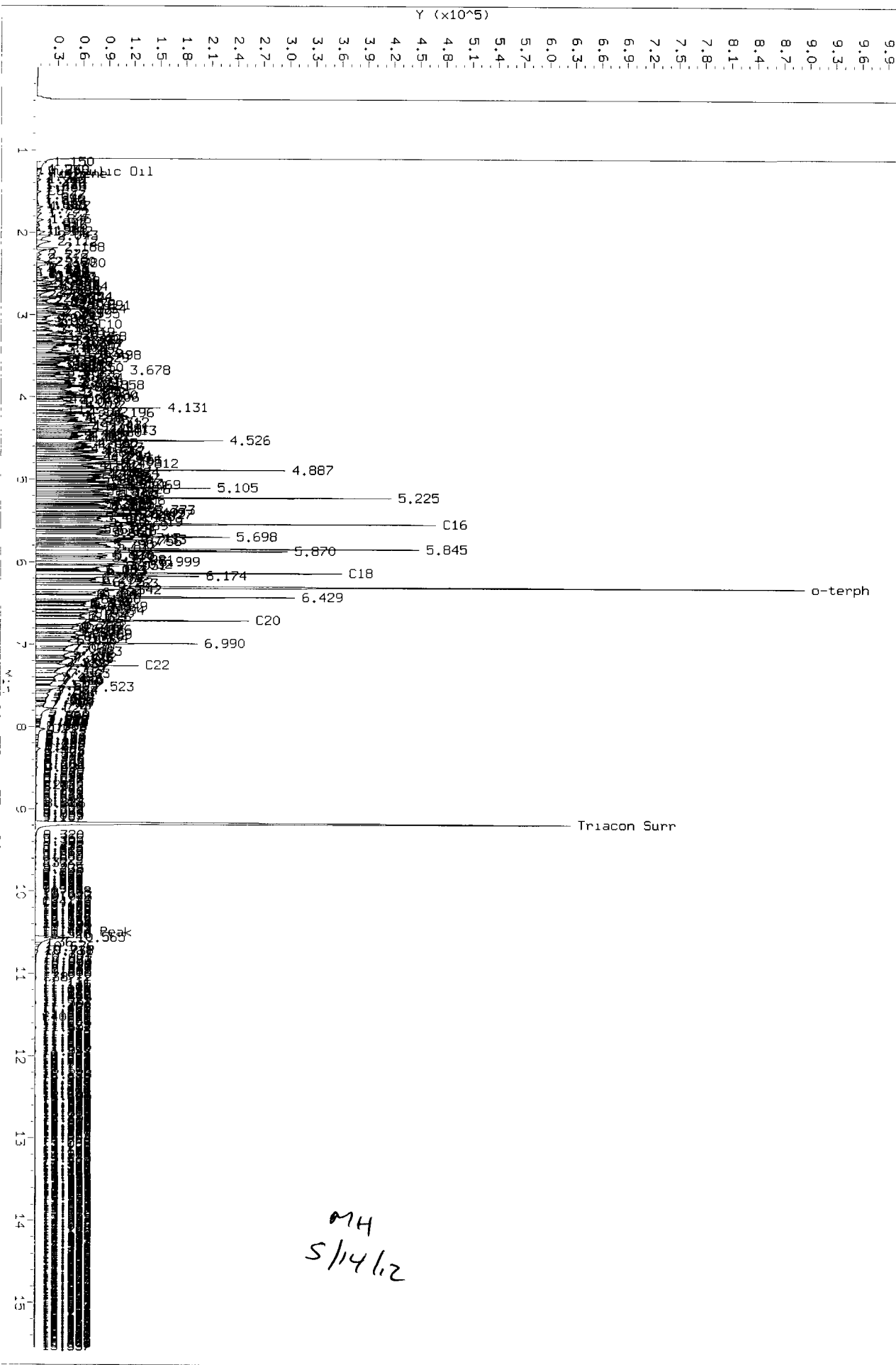
Column diameter: 0.25

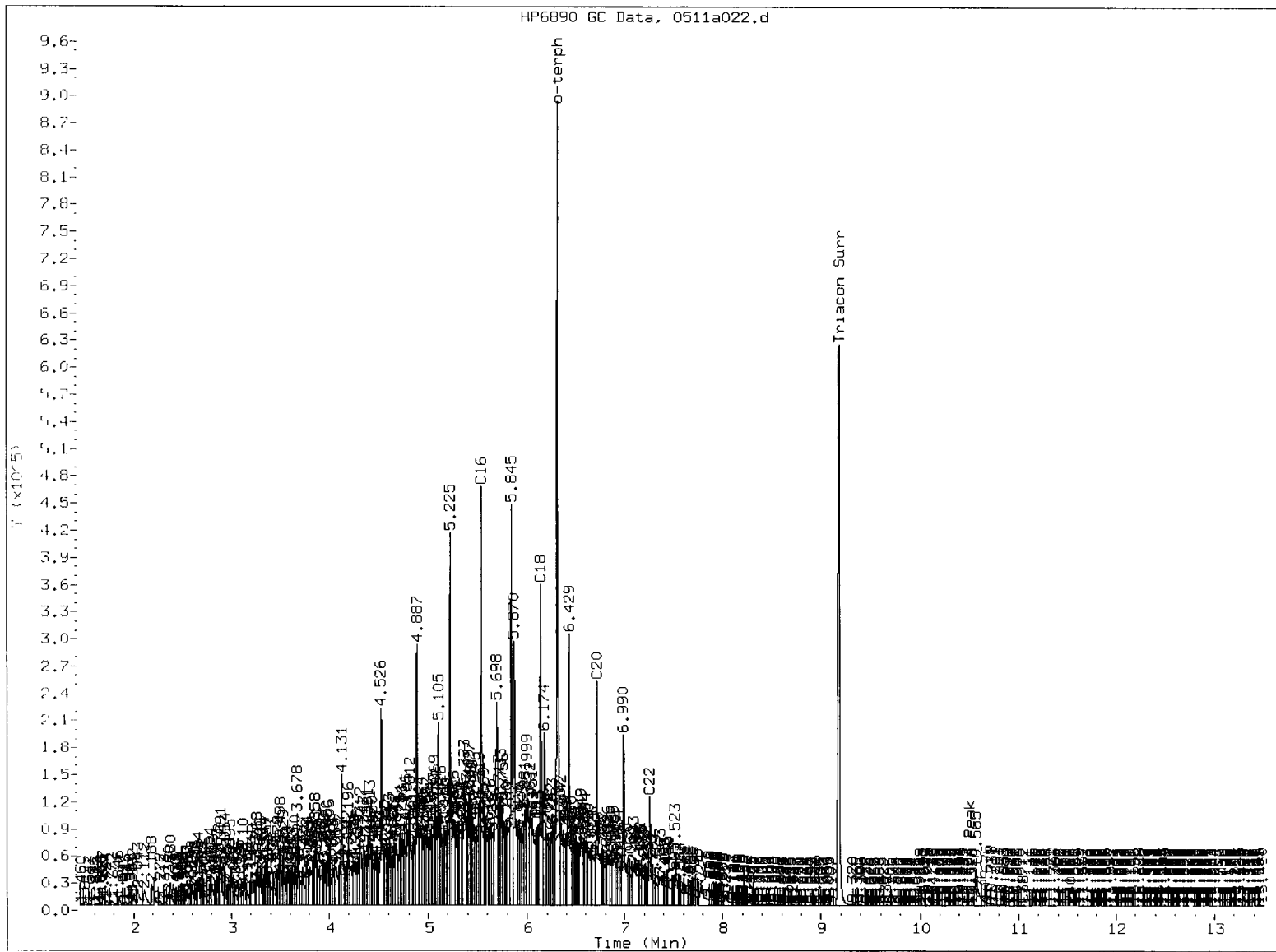
Column phase: RTX-1



Data File: /chem3/fid4a.1/20120511.b/0511a022.d
Injection Date: 11-May-2012 14:53
Instrument: fid4a.1
Client Sample ID:

HP6890 GC Data, 0511a022.d: 0.000 to 15.548 Min





MANUAL INTEGRATION

- ☒ Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Other _____

Analyst: MHDate: 5/14/12

Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/14/12

Data file: /chem3/fid4a.i/20120511.b/0511a024.d

ARI ID: UT66A

Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m

Client ID: MW-9S

Instrument: fid4a.i

Injection: 11-MAY-2012 15:41

Operator: MH

Report Date: 05/14/2012

Dilution Factor: 1

Macro: 10-MAY-2012

Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.297	0.013	4005	9064	GAS (Tol-C12)	66899	4.45
C8	1.514	0.018	514	1555	DIESEL (C12-C24)	98932	6.56
C10	3.115	-0.007	353	360	M.OIL (C24-C38)	187512	16.17
C12	4.152	0.002	592	509	AK-102 (C10-C25)	133535	7.47
C14	4.914	0.006	393	639	AK-103 (C25-C36)	158887	20.48
C16	5.537	-0.014	562	924			
C18	6.124	-0.013	567	1088			
C20	6.737	0.021	647	408	MIN.OIL (C24-C38)	187512	13.95
C22	7.268	0.007	504	1433			
C24	7.764	-0.010	297	656			
C25	8.027	0.005	410	500			
C26	8.256	-0.004	269	168			
C28	8.717	0.004	882	1048			
C32	9.658	0.006	996	2813			
C34	10.133	0.000	292	293	CREOSOT (C12-C22)	91394	24.87
Filter Peak	10.520	0.008	276	220			
C36	10.564	-0.047	39185	102502			
C38	11.094	0.018	520	1025			
C40	11.530	-0.002	364	406			
o-terph	6.309	-0.002	493142	609841	JET-A (C10-C18)	87379	5.89
Triacon Surr	9.183	-0.005	589553	680683			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	609841	30.9	68.7
Triacontane	680683	46.4	103.1

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.1/20120511.b/0511a024.d

Date : 11-MAY-2012 15:41

Client ID: MH-9S

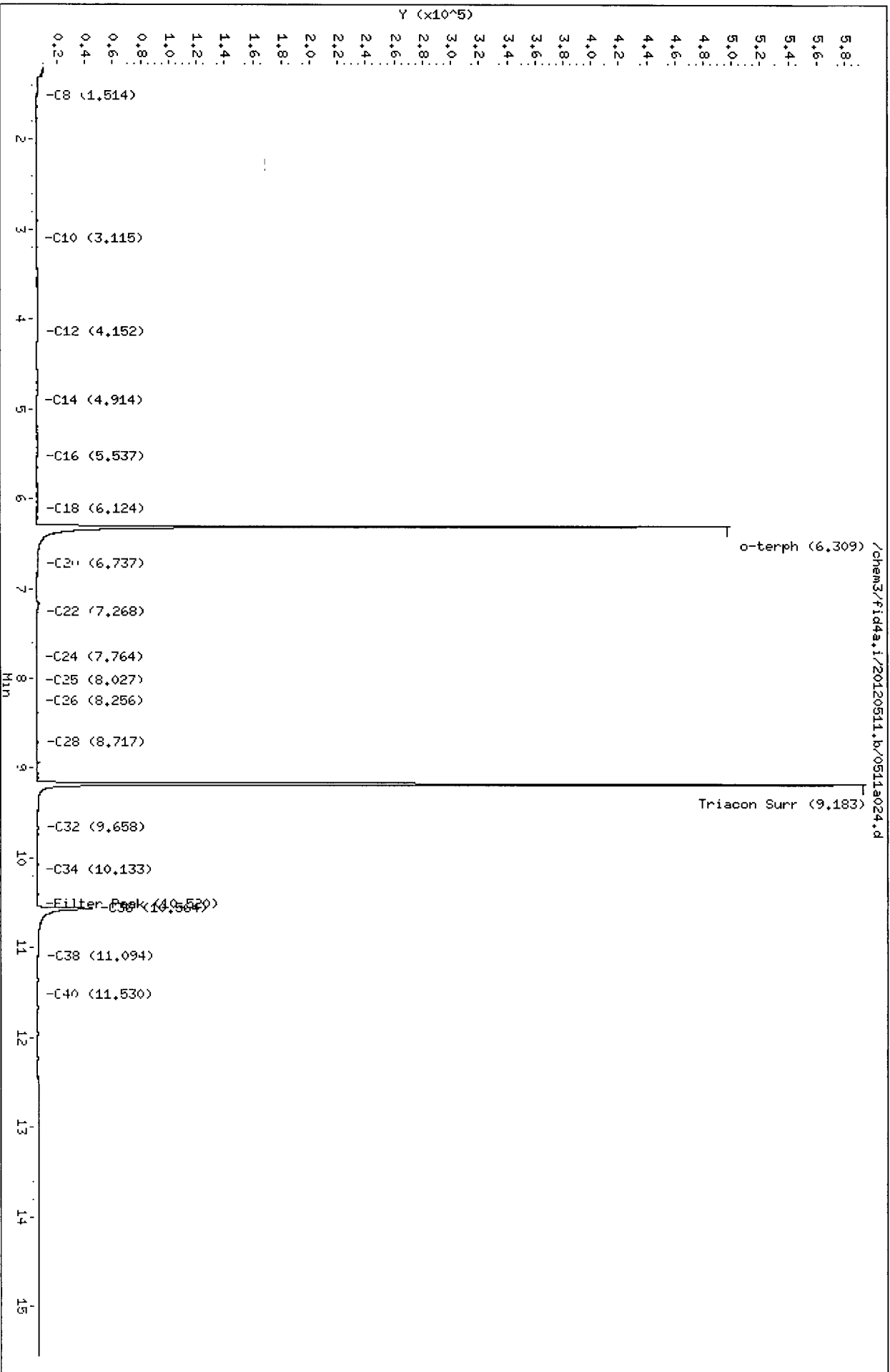
Sample Info: UT66A

Column phase: RTX-1

Instrument: fid4a.1

Operator: MH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/14/12

Data file: /chem3/fid4a.i/20120511.b/0511a025.d ARI ID: UT66B
Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m Client ID: MW-9D
Instrument: fid4a.i Injection: 11-MAY-2012 16:06
Operator: MH
Report Date: 05/14/2012 Dilution Factor: 1
Macro: 10-MAY-2012
Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS							
Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.272	-0.012	4925	6041	GAS (Tol-C12)	74886	4.98
C8	1.489	-0.008	628	842	DIESEL (C12-C24)	100313	6.65
C10	3.130	0.008	343	389	M.OIL (C24-C38)	128864	11.11
C12	4.155	0.004	616	832	AK-102 (C10-C25)	137431	7.69
C14	4.887	-0.020	439	373	AK-103 (C25-C36)	94959	12.24
C16	5.552	0.001	432	697			
C18	6.143	0.006	446	711			
C20	6.732	0.016	601	1039	MIN.OIL (C24-C38)	128864	9.59
C22	7.270	0.009	593	1577			
C24	7.779	0.005	303	290			
C25	8.028	0.006	519	686			
C26	8.258	-0.002	265	265			
C28	8.717	0.004	1278	1628			
C32	9.641	-0.011	487	554			
C34	10.146	0.013	317	299	CREOSOT (C12-C22)	90660	24.67
Filter Peak	10.512	0.000	298	377			
C36	10.599	-0.013	8931	25752			
C38	11.050	-0.026	1999	4051			
C40	11.535	0.003	346	339			
o-terph	6.309	-0.002	497685	625159	JET-A (C10-C18)	83365	5.62
Triacon Surr	9.185	-0.003	594113	697294			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	625159	31.7	70.4
Triacotane	697294	47.5	105.7

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.1/20120511.b/0511a025.d

Date: 11-MAY-2012 16:06

Client ID: MH-9D

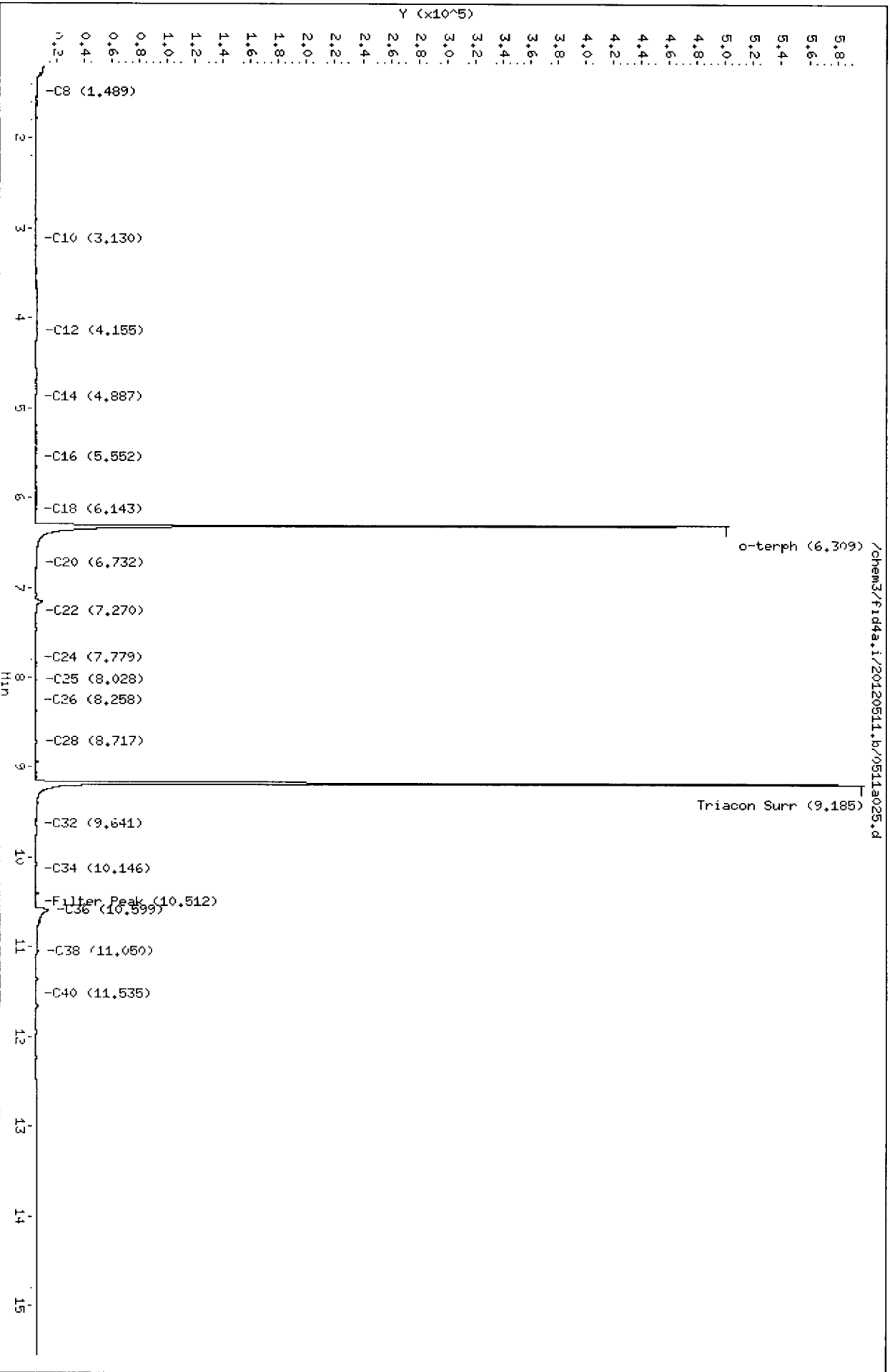
Sample Info: UT66B

Column phase: RTX-1

Instrument: fid4a.1

Operator: HH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

MH
5/14/12

Data file: /chem3/fid4a.i/20120511.b/0511a026.d

ARI ID: UT66C

Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m

Client ID: MW-12D

Instrument: fid4a.i

Injection: 11-MAY-2012 16:30

Operator: MH

Report Date: 05/14/2012

Dilution Factor: 1

Macro: 10-MAY-2012

Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.274	-0.011	4966	5904	GAS (Tol-C12)	64124	4.26
C8	1.502	0.005	853	3332	DIESEL (C12-C24)	94066	6.24
C10	3.115	-0.007	247	432	M.OIL (C24-C38)	206286	17.79
C12	4.139	-0.012	373	310	AK-102 (C10-C25)	117536	6.58
C14	4.898	-0.009	318	636	AK-103 (C25-C36)	171622	22.12
C16	5.551	0.000	547	305			
C18	6.125	-0.012	809	1285			
C20	6.697	-0.019	746	941	MIN.OIL (C24-C38)	206286	15.35
C22	7.268	0.007	464	1185			
C24	7.753	-0.021	371	874			
C25	8.005	-0.017	304	368			
C26	8.271	0.011	1886	2731			
C28	8.715	0.001	3523	3749			
C32	9.658	0.006	1232	3256			
C34	10.134	0.001	319	511	CREOSOT (C12-C22)	84984	23.13
Filter Peak	10.525	0.013	188	37			
C36	10.566	-0.046	40883	101489			
C38	11.098	0.022	341	389			
C40	11.527	-0.005	173	246			
o-terph	6.308	-0.003	470249	570426	JET-A (C10-C18)	75274	5.07
Triacon Surr	9.182	-0.006	541959	624013			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	570426	28.9	64.3
Triacontane	624013	42.6	94.6

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.1/20120511.b/0511a026.d

Date : 11-MAY-2012 16:30

Client ID: HM-12D

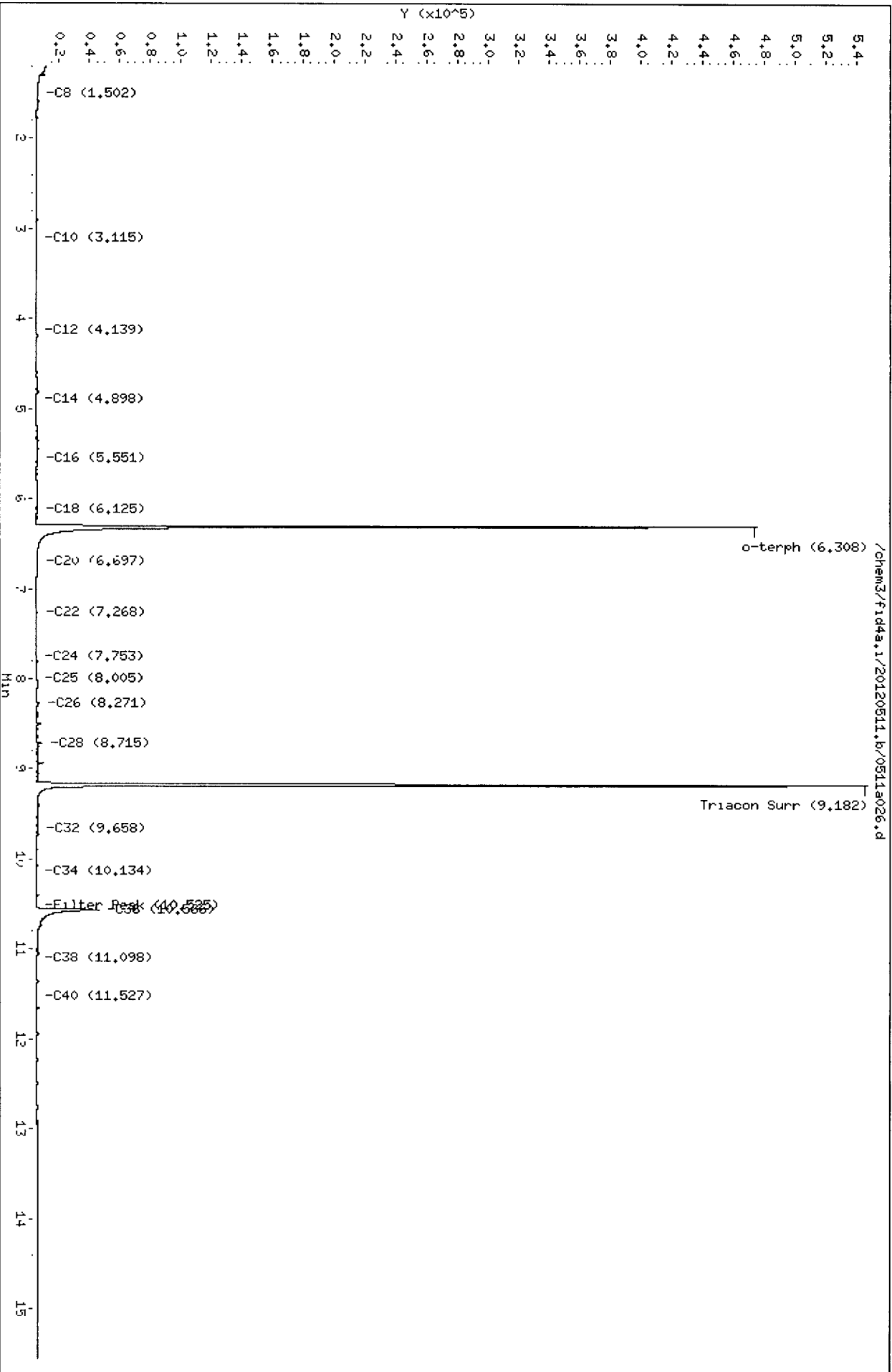
Sample Info: UT66C

Column phase: RTX-1

Instrument: fid4a.i

Operator: HH

Column diameter: 0.25



Analytical Resources Inc.
407S TPH Quantitation Report

M4
5/14/12

Data file: /chem3/fid4a.i/20120511.b/0511a027.d

ARI ID: UT66CMS

Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m

Client ID: MW-12D MS

Instrument: fid4a.i

Injection: 11-MAY-2012 16:54

Operator: MH

Report Date: 05/14/2012

Dilution Factor: 1

Macro: 10-MAY-2012

Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.303	0.019	13131	19455	GAS (Tol-C12)	3229096	214.65
C8	1.515	0.018	8570	17315	DIESEL (C12-C24)	12835768	851.23
C10	3.127	0.004	63084	55457	M.OIL (C24-C38)	328104	28.29
C12	4.162	0.011	30912	22807	AK-102 (C10-C25)	15031412	841.01 M
C14	4.905	-0.002	73265	53138	AK-103 (C25-C36)	272002	35.05
C16	5.544	-0.007	419126	349691			
C18	6.140	0.003	323842	358820			
C20	6.715	-0.001	212477	252378	MIN.OIL (C24-C38)	328104	24.41
C22	7.260	-0.001	104537	171564			
C24	7.783	0.009	21918	56057			
C25	8.030	0.008	10855	24275			
C26	8.268	0.008	6317	11670			
C28	8.714	0.001	3537	4067			
C32	9.656	0.004	1250	3003			
C34	10.136	0.003	262	138	CREOSOT (C12-C22)	12356785	3363.16 M
Filter Peak	10.496	-0.016	202	325			
C36	10.648	0.036	5991	11653			
C38	11.058	-0.018	839	1636			
C40	11.534	0.001	29	22			
o-terph	6.312	0.001	714129	590106	JET-A (C10-C18)	11274328	759.62
Triacon Surr	9.183	-0.005	578640	663022			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	590106	29.9	66.5
Triacontane	663022	45.2	100.5

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120511.b/0511a027.d

Date: 11-MAY-2012 16:54

Client ID: MW-12D HS

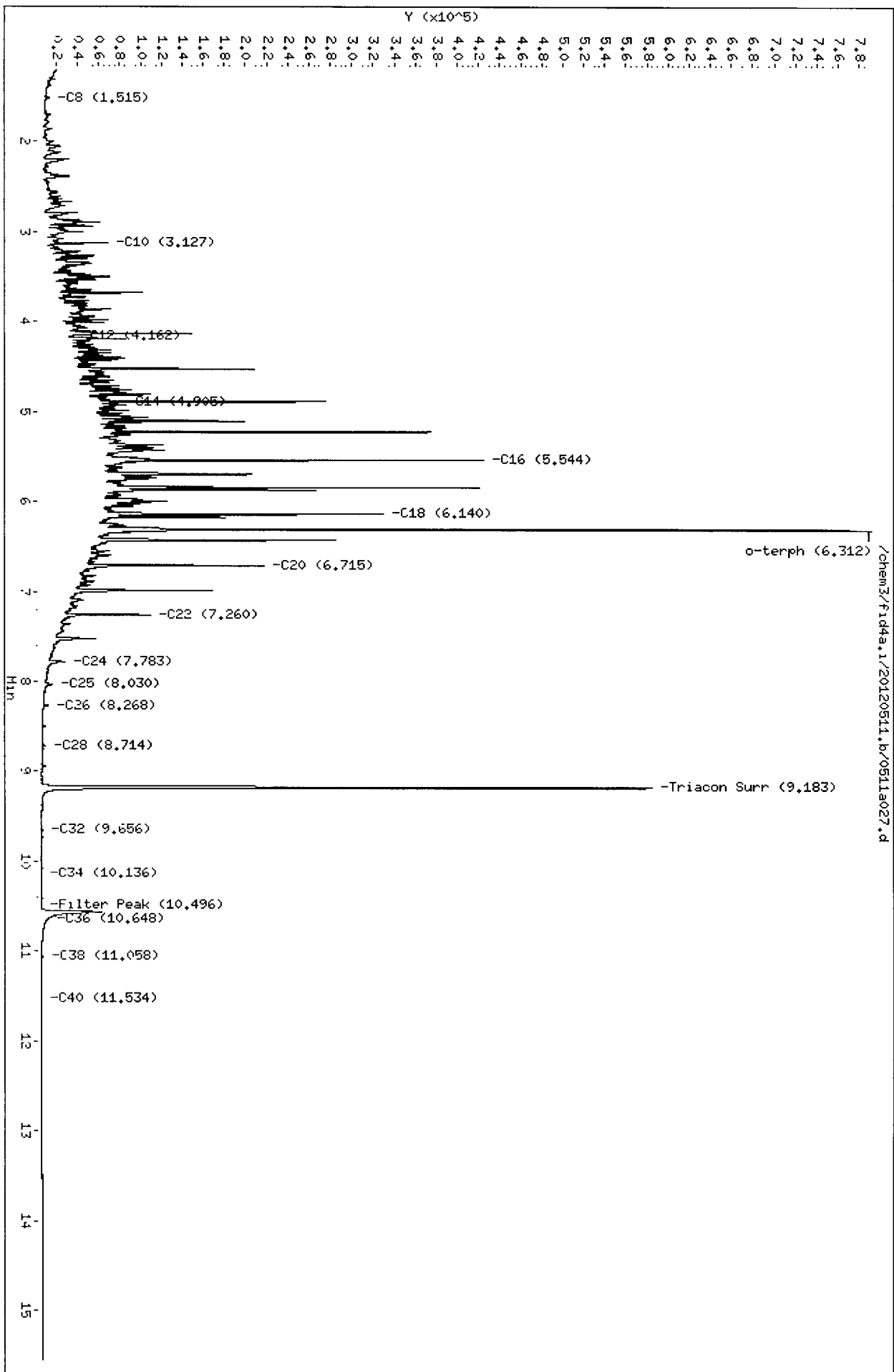
Sample Info: UT66CHS

Column phase: RTX-1

Instrument: fid4a.i

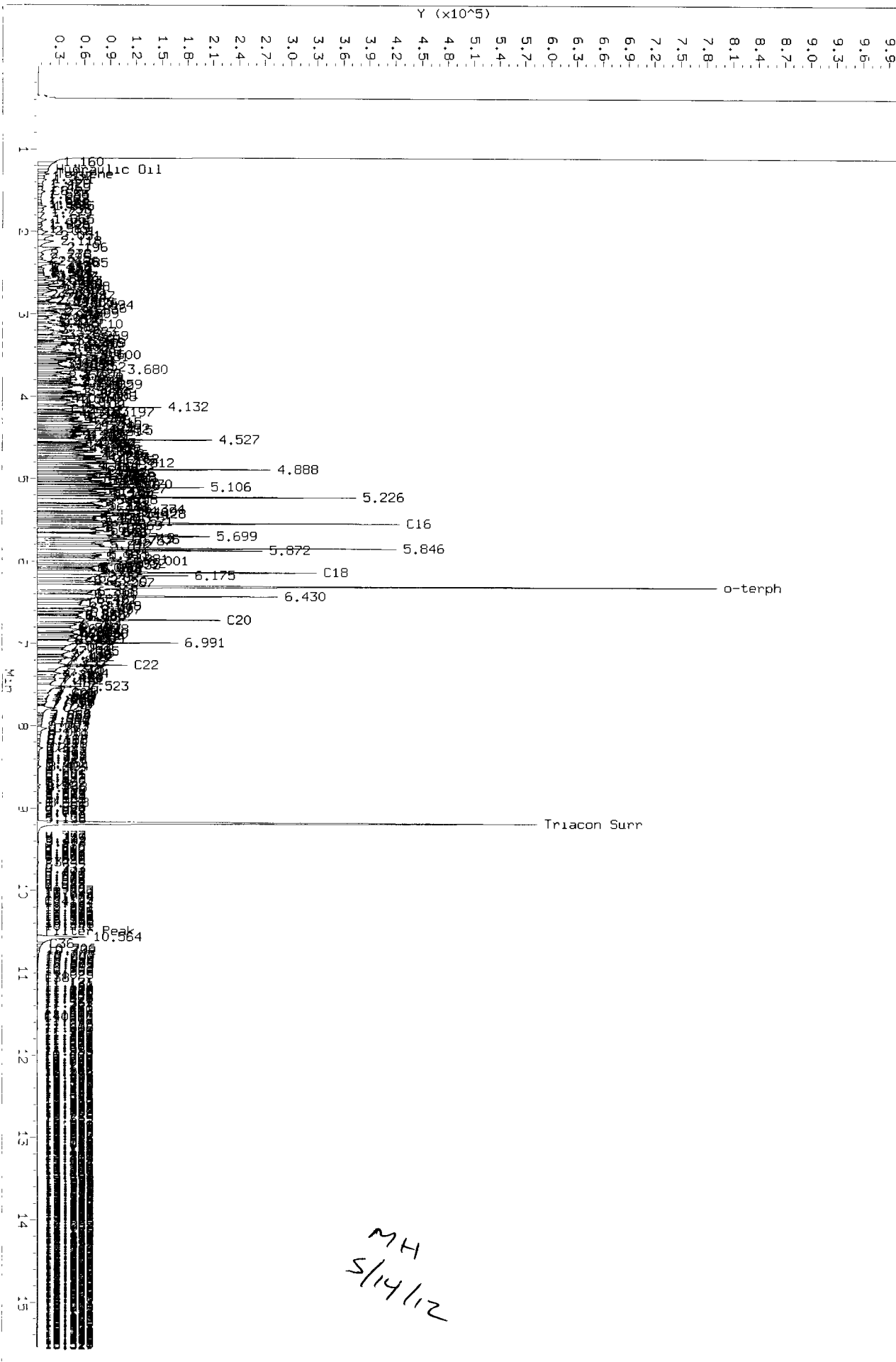
Operator: HH

Column diameter: 0.25



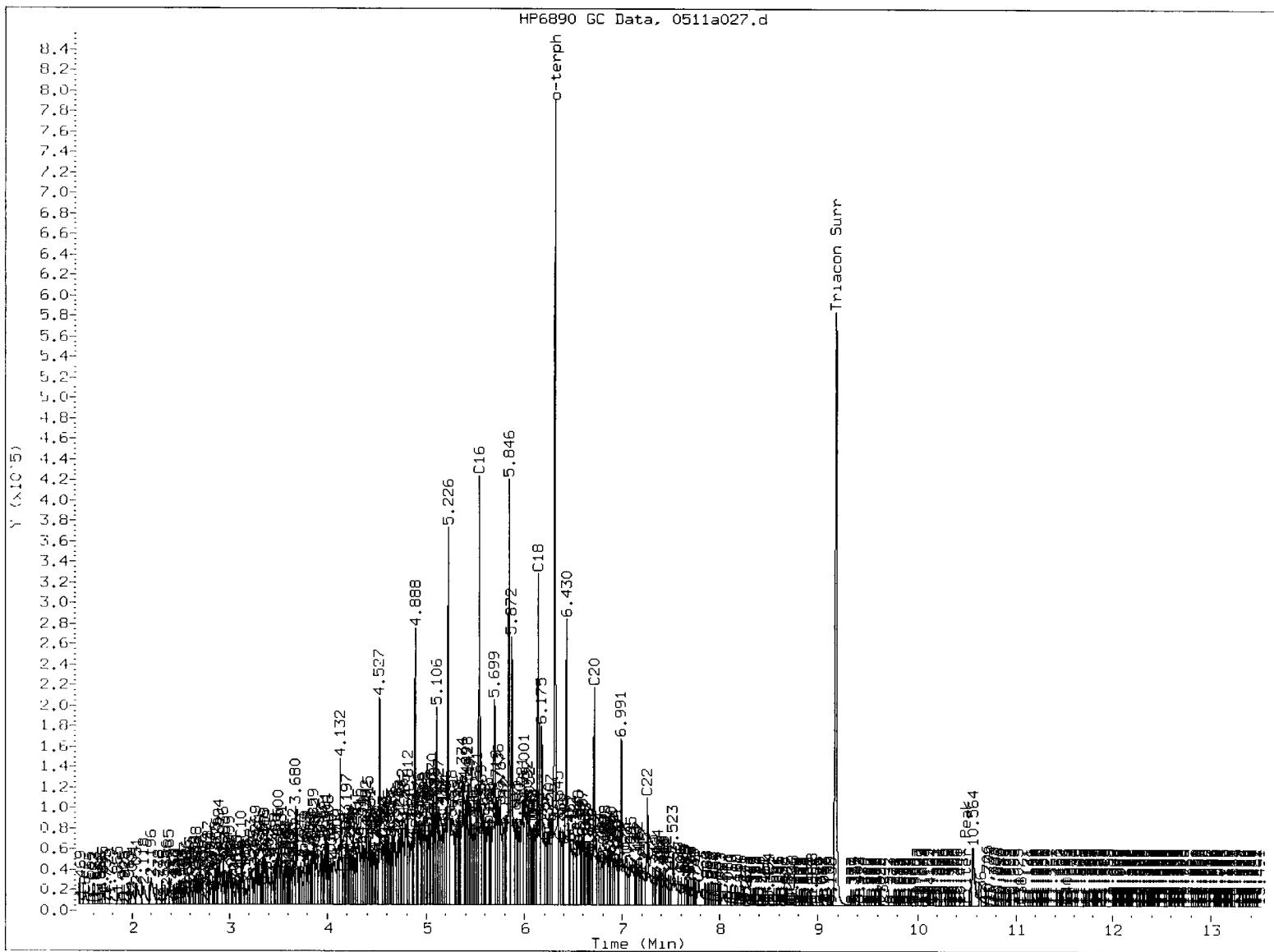
Data File: /chem3/fid4a.1/20120511.b/0511a027.d
Injection Date: 11-May-2012 16:34
Instrument: fid4a.1
Client Sample ID: MW-12D MS

HP6890 GC Data, 0511a027.d: 0.000 to 15.548 Min



FID:4A-2C/RTX-1 UT66CMS

FID:4A SIGNAL



MANUAL INTEGRATION

- ☒ Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: MH

Date: 5/14/12

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407S TPH Quantitation Report

MH
5/14/12

Data file: /chem3/fid4a.i/20120511.b/0511a028.d

ARI ID: UT66CMSD

Method: /chem3/fid4a.i/20120511.b/ftphfid4a.m

Client ID: MW-12D MSD

Instrument: fid4a.i

Injection: 11-MAY-2012 17:18

Operator: MH

Report Date: 05/14/2012

Dilution Factor: 1

Macro: 10-MAY-2012

Calibration Dates: Gas:10-MAY-2012 Diesel:08-FEB-2012 M.Oil:19-APR-2012

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.293	0.009	8158	6837	GAS (Tol-C12)	2809728	186.77
C8	1.506	0.009	5178	6447	DIESEL (C12-C24)	12552694	832.46
C10	3.124	0.002	58104	51113	M.OIL (C24-C38)	415315	35.81
C12	4.132	-0.019	128463	129912	AK-102 (C10-C25)	14598193	816.77 M
C14	4.905	-0.003	71223	49389	AK-103 (C25-C36)	352396	45.42
C16	5.542	-0.009	398381	336850			
C18	6.138	0.002	311264	358190			
C20	6.714	-0.002	212866	307836	MIN.OIL (C24-C38)	415315	30.90
C22	7.261	-0.001	98805	181857			
C24	7.780	0.006	19871	61877			
C25	8.032	0.010	10485	29125			
C26	8.270	0.010	6108	11991			
C28	8.717	0.004	3714	4568			
C32	9.659	0.007	1266	2518			
C34	10.133	0.000	208	434	CREOSOT (C12-C22)	12090005	3290.55 M
Filter Peak	10.523	0.012	67	37			
C36	----						
C38	11.051	-0.025	1677	3023			
C40	11.539	0.007	42	18			
o-terph	6.311	0.000	693923	559738	JET-A (C10-C18)	10810558	728.38
Triacon Surr	9.183	-0.005	524032	620981			

M Indicates manual integration within range.

Range Times: NW Diesel(4.151 - 7.775) AK102(3.12 - 8.02) Jet A(3.12 - 6.14)
NW M.Oil(7.77 - 11.08) AK103(8.02 - 10.61) OR Diesel(3.12 - 8.71)

Surrogate	Area	Amount	%Rec
o-Terphenyl	559738	28.4	63.1
Triacontane	620981	42.3	94.1

Analyte	RF	Curve Date
o-Terph Surr	19726.1	08-FEB-2012
Triacon Surr	14664.8	19-APR-2012
Gas	15043.9	10-MAY-2012
Diesel	15079.0	08-FEB-2012
Motor Oil	11597.0	19-APR-2012
AK102	17873.0	08-FEB-2012
AK103	7759.3	29-DEC-2011
JetA	14842.0	13-APR-2011
Min Oil	13440.7	09-MAY-2012
Bunker C	7100.0	16-DEC-2011
Creosote	3674.2	15-AUG-2011

Data File: /chem3/fid4a.i/20120511.b/v511a028.d

Date: 11-MAY-2012 17:18

Client ID: MW-12D HSD

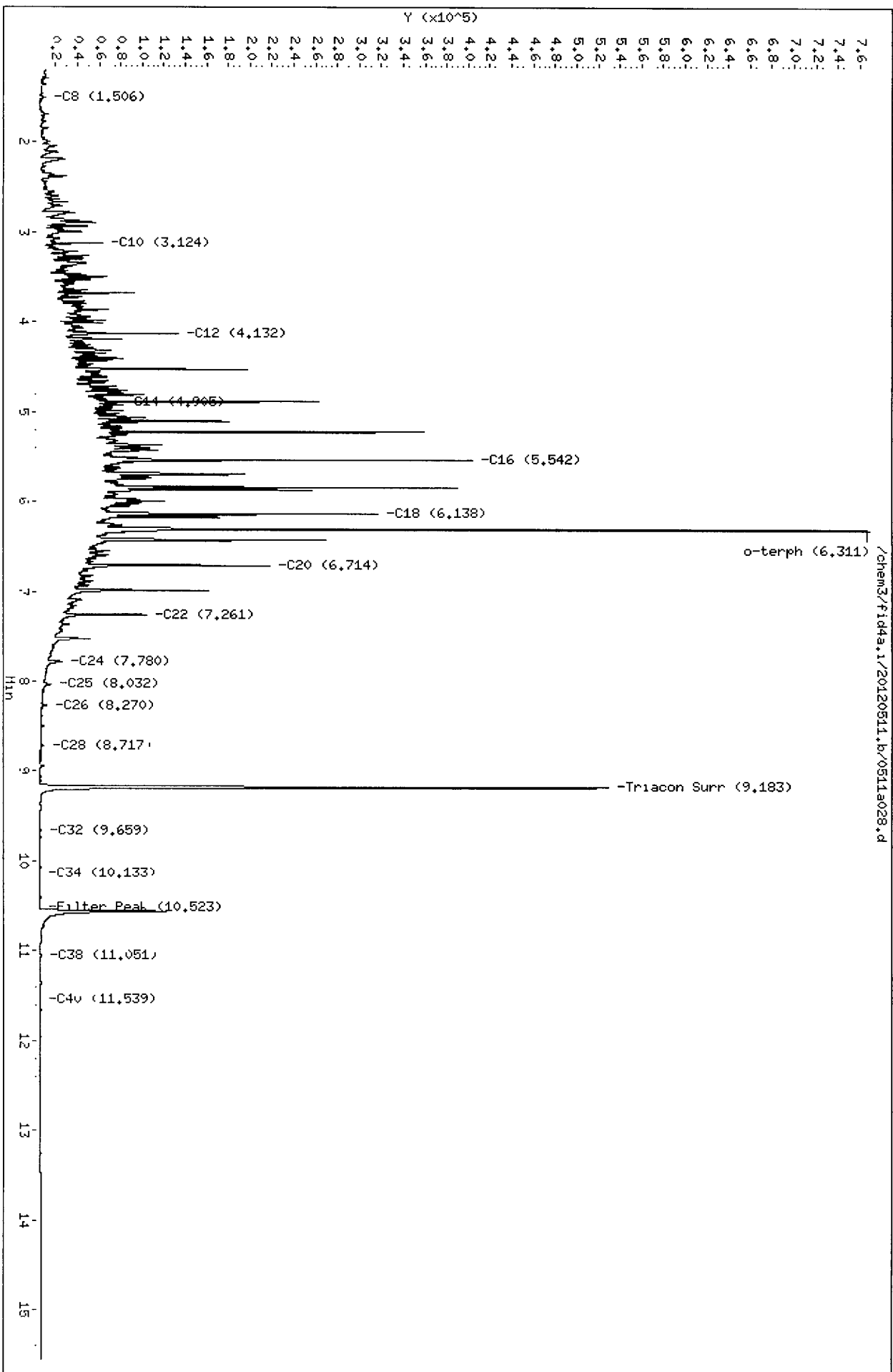
Sample Info: UT66CHSD

Column phase: RTX-1

Instrument: fid4a.1

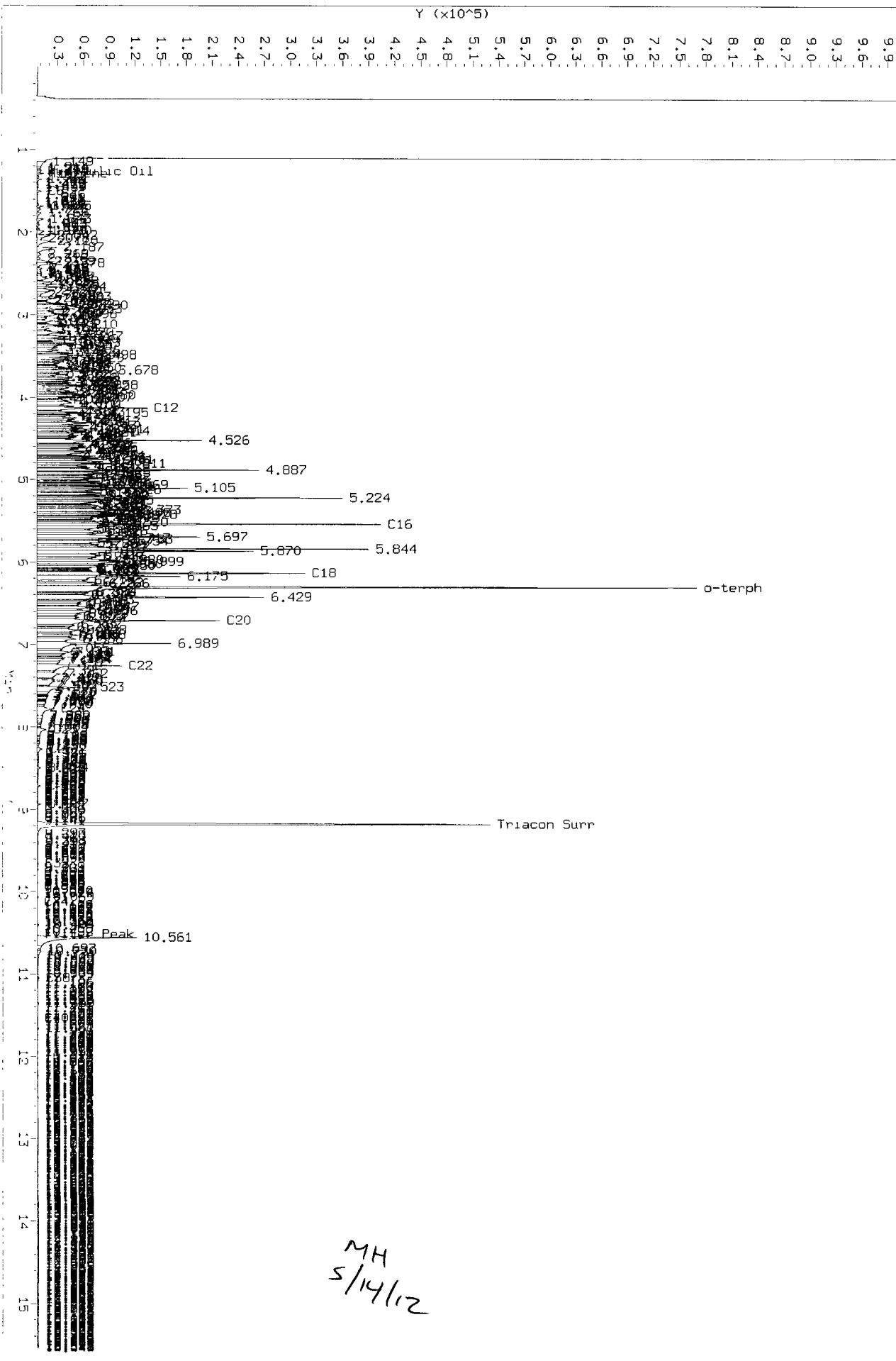
Operator: HH

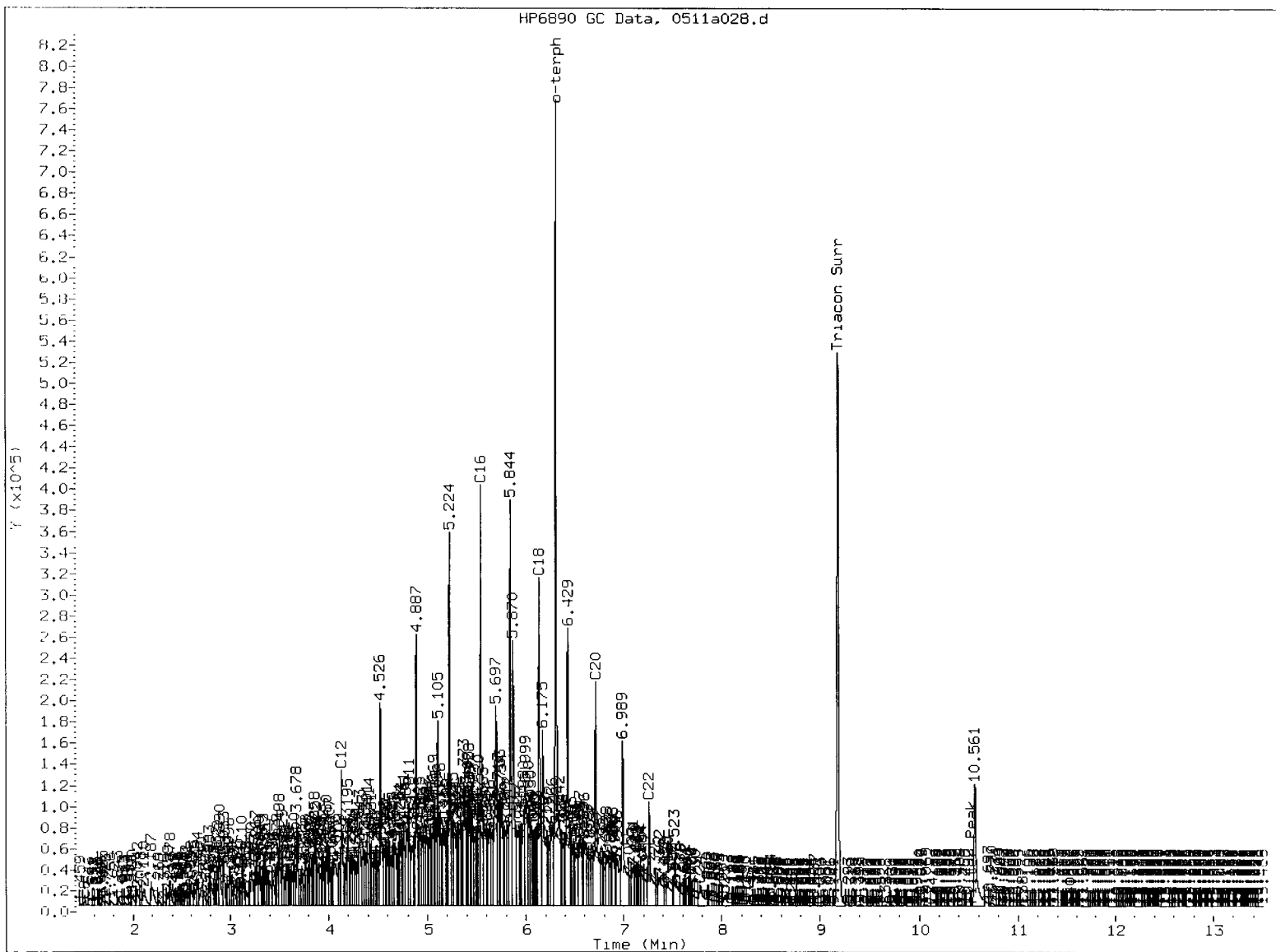
Column diameter: 0.25



Data File: /chem3/fid4a.1/20120511.b/0511a028.d
Injection Date: 11-MAY-2012 17:18
Instrument: fid4a.1
Client Sample ID: MW-12D MSD

HP6890 GC Data, 0511a028.d: 0.000 to 15.548 Min





MANUAL INTEGRATION

- ☒ Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation

5. Other _____

Analyst: MH

Date: 5/4/12

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-9S

SAMPLE

Lab Sample ID: UT66A

LIMS ID: 12-8385

Matrix: Water

Data Release Authorized: *MW*

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Extracted: 05/10/12

Date Analyzed: 05/11/12 15:21

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 62.3%

d14-Dibenzo(a,h)anthracene 52.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MW-9D

SAMPLE

Lab Sample ID: UT66B

LIMS ID: 12-8386

Matrix: Water

Data Release Authorized: 

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Extracted: 05/10/12

Date Analyzed: 05/11/12 15:50

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 64.3%

d14-Dibenzo(a,h)anthracene 47.0%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-12D

SAMPLE

Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: 

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Extracted: 05/10/12

Date Analyzed: 05/11/12 16:19

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	62.7%
d14-Dibenzo(a,h)anthracene	63.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1



Sample ID: MW-12D

MATRIX SPIKE

Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *hw*

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Extracted: 05/10/12

Date Analyzed: 05/11/12 16:49

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	---
208-96-8	Acenaphthylene	0.10	---
83-32-9	Acenaphthene	0.10	---
86-73-7	Fluorene	0.10	---
85-01-8	Phenanthrene	0.10	---
120-12-7	Anthracene	0.10	---
206-44-0	Fluoranthene	0.10	---
129-00-0	Pyrene	0.10	---
56-55-3	Benzo(a)anthracene	0.10	---
218-01-9	Chrysene	0.10	---
50-32-8	Benzo(a)pyrene	0.10	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	---
53-70-3	Dibenz(a,h)anthracene	0.10	---
191-24-2	Benzo(g,h,i)perylene	0.10	---
TOTBFA	Total Benzofluoranthenes	0.20	---

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 70.3%
d14-Dibenzo(a,h)anthracene 74.0%

ORGANICS ANALYSIS DATA SHEET**PNAs by SW8270D-SIM GC/MS**

Page 1 of 1

**Sample ID: MW-12D****MATRIX SPIKE DUPLICATE**

Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *WW*

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Extracted: 05/10/12

Date Analyzed: 05/11/12 17:18

Instrument/Analyst: NT4/JZ

Sample Amount: 500 mL

Final Extract Volume: 0.5 mL

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	---
208-96-8	Acenaphthylene	0.10	---
83-32-9	Acenaphthene	0.10	---
86-73-7	Fluorene	0.10	---
85-01-8	Phenanthrene	0.10	---
120-12-7	Anthracene	0.10	---
206-44-0	Fluoranthene	0.10	---
129-00-0	Pyrene	0.10	---
56-55-3	Benzo(a)anthracene	0.10	---
218-01-9	Chrysene	0.10	---
50-32-8	Benzo(a)pyrene	0.10	---
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	---
53-70-3	Dibenz(a,h)anthracene	0.10	---
191-24-2	Benzo(g,h,i)perylene	0.10	---
TOTBFA	Total Benzofluoranthenes	0.20	---

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	66.0%
d14-Dibenzo(a,h)anthracene	65.7%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

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Sample ID: MB-051012

METHOD BLANK

Lab Sample ID: MB-051012

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *MW*

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Extracted: 05/10/12

Sample Amount: 500 mL

Date Analyzed: 05/11/12 14:22

Final Extract Volume: 0.5 mL

Instrument/Analyst: NT4/JZ

Dilution Factor: 1.00

CAS Number	Analyte	RL	Result
91-20-3	Naphthalene	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.10	< 0.10 U
83-32-9	Acenaphthene	0.10	< 0.10 U
86-73-7	Fluorene	0.10	< 0.10 U
85-01-8	Phenanthrene	0.10	< 0.10 U
120-12-7	Anthracene	0.10	< 0.10 U
206-44-0	Fluoranthene	0.10	< 0.10 U
129-00-0	Pyrene	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.10	< 0.10 U
218-01-9	Chrysene	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.20	< 0.20 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene 48.7%
d14-Dibenzo(a,h)anthracene 52.3%

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: UT66-Pacific Groundwater Group
Project: Birds Eye I
JI1001.04

<u>Client ID</u>	<u>MNP</u>	<u>DBA</u>	<u>TOT OUT</u>
MW-9S	62.3%	52.7%	0
MW-9D	64.3%	47.0%	0
MB-051012	48.7%	52.3%	0
LCS-051012	55.7%	56.3%	0
MW-12D	62.7%	63.7%	0
MW-12D MS	70.3%	74.0%	0
MW-12D MSD	66.0%	65.7%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(MNP) = d10-2-Methylnaphthalene	(40-110)	(33-107)
(DBA) = d14-Dibenzo(a,h)anthracene	(33-140)	(10-142)

Prep Method: SW3520C
Log Number Range: 12-8385 to 12-8387

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1



Sample ID: LCS-051012

LAB CONTROL SAMPLE

Lab Sample ID: LCS-051012

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 05/10/12

Date Analyzed LCS: 05/11/12 14:51

Instrument/Analyst LCS: NT4/JZ

Sample Amount LCS: 500 mL

Final Extract Volume LCS: 0.50 mL

Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Naphthalene	1.42	3.00	47.3%
Acenaphthylene	1.40	3.00	46.7%
Acenaphthene	1.56	3.00	52.0%
Fluorene	1.68	3.00	56.0%
Phenanthrene	1.99	3.00	66.3%
Anthracene	1.71	3.00	57.0%
Fluoranthene	2.05	3.00	68.3%
Pyrene	2.04	3.00	68.0%
Benzo(a)anthracene	1.77	3.00	59.0%
Chrysene	2.15	3.00	71.7%
Benzo(a)pyrene	1.54	3.00	51.3%
Indeno(1,2,3-cd)pyrene	1.81	3.00	60.3%
Dibenz(a,h)anthracene	1.45 Q	3.00	48.3%
Benzo(g,h,i)perylene	1.84	3.00	61.3%
Total Benzofluoranthenes	5.12	6.00	85.3%

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-2-Methylnaphthalene	55.7%
d14-Dibenzo(a,h)anthracene	56.3%

ORGANICS ANALYSIS DATA SHEET

PNAs by SW8270D-SIM GC/MS

Page 1 of 1

Sample ID: MW-12D

MATRIX SPIKE

Lab Sample ID: UT66C

LIMS ID: 12-8387

Matrix: Water

Data Release Authorized: 

Reported: 05/14/12

QC Report No: UT66-Pacific Groundwater Group

Project: Birds Eye I

Event: JI1001.04

Date Sampled: 05/08/12

Date Received: 05/08/12

Date Extracted MS/MSD: 05/10/12

Sample Amount MS: 500 mL

MSD: 500 mL

Date Analyzed MS: 05/11/12 16:49

Final Extract Volume MS: 0.50 mL

MSD: 05/11/12 17:18

MSD: 0.50 mL

Instrument/Analyst MS: NT4/JZ

Dilution Factor MS: 1.00

MSD: NT4/JZ

MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	< 0.10 U	1.79	3.00	59.7%	1.77	3.00	59.0%	1.1%
Acenaphthylene	< 0.10 U	1.89	3.00	63.0%	1.78	3.00	59.3%	6.0%
Acenaphthene	< 0.10 U	1.93	3.00	64.3%	1.89	3.00	63.0%	2.1%
Fluorene	< 0.10 U	2.12	3.00	70.7%	2.11	3.00	70.3%	0.5%
Phenanthrene	< 0.10 U	2.23	3.00	74.3%	2.35	3.00	78.3%	5.2%
Anthracene	< 0.10 U	2.12	3.00	70.7%	2.08	3.00	69.3%	1.9%
Fluoranthene	< 0.10 U	2.24	3.00	74.7%	2.41	3.00	80.3%	7.3%
Pyrene	< 0.10 U	2.27	3.00	75.7%	2.34	3.00	78.0%	3.0%
Benzo(a)anthracene	< 0.10 U	2.09	3.00	69.7%	2.05	3.00	68.3%	1.9%
Chrysene	< 0.10 U	2.26	3.00	75.3%	2.25	3.00	75.0%	0.4%
Benzo(a)pyrene	< 0.10 U	1.78	3.00	59.3%	1.81	3.00	60.3%	1.7%
Indeno(1,2,3-cd)pyrene	< 0.10 U	1.68	3.00	56.0%	1.53	3.00	51.0%	9.3%
Dibenz(a,h)anthracene	< 0.10 U	1.67 Q	3.00	55.7%	1.54 Q	3.00	51.3%	8.1%
Benzo(g,h,i)perylene	< 0.10 U	1.69	3.00	56.3%	1.58	3.00	52.7%	6.7%
Total Benzofluoranthenes	< 0.20 U	4.54	6.00	75.7%	4.57	6.00	76.2%	0.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

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