

**Chevron Environmental
Management Company**

**Annual 2014 Groundwater
Monitoring Report**

Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International
Airport
Fairbanks, Alaska
ADEC File # 100.26.040

December 8, 2014

Hridaya Bastola

Hridaya Bastola
Environmental Scientist I

Greg Montgomery

Greg Montgomery
Senior Project Manager

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Prepared for:
Chevron Environmental Management
Company

Prepared by:
ARCADIS
1100 Olive Way
Suite 800
Seattle
Washington 98101
Tel 206.325.5254
Fax 206.325.8218

Our Ref.:
B0045507

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1. Introduction

On behalf of Chevron Environmental Management Company (Chevron), ARCADIS US, Inc. (ARCADIS), has prepared this report to document the annual 2014 groundwater sampling event for former Chevron facility 306443 (the site) located at Gate 28, West Ramp at Fairbanks International Airport in Fairbanks, Alaska.

The site location and surrounding area are shown on **Figure 1**. The site features are shown on **Figure 2**. This report summarizes the groundwater sampling events conducted by ARCADIS on July 9 and 10, 2014. Work was conducted under the direction of a “qualified person” as defined in 18 Alaska Administrative Code (AAC) 75.990 (100), and 18 AAC 78.995 (118).

2. Groundwater Monitoring Methods

2.1. Groundwater Gauging Methods

On July 9, 2014, 23 site monitoring wells, GEI-1 through GEI-9, MW-1 through MW-13, and recovery well RW-1, were gauged with an oil/water interface probe to determine depth-to-water, and to ascertain if light non-aqueous phase liquid (LNAPL) was present. Measurable LNAPL was detected in monitoring wells GEI-5 and GEI-6 during the gauging event. Thicknesses in these wells ranged from 0.19 feet (GEI-5) to 0.01 (GEI-6) feet. Groundwater gauging data are presented in **Table 1**.

In order to prevent the possibility of cross-contamination, wells were gauged in the order of lowest to highest historical petroleum hydrocarbon concentrations in groundwater. Non-disposable groundwater monitoring equipment was decontaminated prior to and after each use, with a detergent solution and rinsed in potable water. Field data sheets are included in **Appendix A**.

2.2. Groundwater Elevation and Flow Direction

Depth-to-groundwater during the August 2014 event ranged from 5.92 feet below top of casing (btoc) in monitoring well MW-2 to 7.72 feet btoc in monitoring well MW-13. Groundwater elevations ranged from 425.58 feet above mean sea level (msl) in monitoring well MW-7 to 426.14 feet msl in monitoring well MW-13. Due to the presence of LNAPL, groundwater elevations recorded in monitoring wells GEI-5 and GEI-6 were corrected using the following formula:

Corrected Groundwater Elevation =

((Top of Casing – Depth-to-Water) + (LNAPL Thickness x Specific Gravity of LNAPL (0.82))

Based on the water levels measured during the July 2014 sampling event, the groundwater elevation gradient is relatively flat, therefore contours were not included. The general flow at the site is to the west, which is consistent to previous events (summarized in **Table 1** and shown on **Figure 3**).

3. Groundwater Monitoring Results**3.1. Groundwater Sampling Methods**

Groundwater samples were collected using no purge sampling procedures in accordance with the Alaska Department of Conservation (ADEC) field sampling procedures (ADEC 2010). Non-purge sampling procedures were conducted in accordance with ADEC Draft Field Sampling Guidance (ADEC, 2010), ARCADIS Bailer-Grab Groundwater Sampling (ARCADIS, 2009a), and ARCADIS *Groundwater sampling with HydraSleeves – Standard Operating Procedure* (ARCADIS 2011). Disposable Teflon[®] bailers and HydraSleeves[™] were used to collect the samples. HydraSleeves[™] were lowered into the water column and were allowed to sit in the monitoring wells for at least two hours prior to sampling. After the necessary sample bottles were filled using the HydraSleeves[™] for analysis of gasoline range organics (GRO) and benzene toluene, ethylbenzene, and total xylenes (BTEX), Teflon[®] disposable bailers (bailers) were used to fill the remaining sample bottles for analysis of diesel range organics (DRO) and residual range organics (RRO). Bailers were lowered slowly into the water column to mitigate potential volatilization.

Groundwater samples were labeled, stored in a cooler packed with ice and submitted to Pace Laboratories (Pace) in Minneapolis, Minnesota, under proper chain-of-custody procedures. Groundwater samples from monitoring wells GEI-7, GEI-8, MW-2 through MW-13 were submitted to the analytical laboratory for the following analyses:

- GRO by Alaska method AK101
- DRO by Alaska method AK102
- DRO with Silica gel cleanup (SGC) by Alaska method AK 102
- RRO by Alaska method AK103
- BTEX by Environmental Protection Agency (EPA) method 8260B

Concentrations of DRO include not only dissolved petroleum hydrocarbons, but also polar non-hydrocarbon compounds. Polar compounds can result from 1) biodegradation of original petroleum hydrocarbons, 2) sampling or lab artifacts, 3) other chemicals (e.g. chlorinated compounds), or 4) naturally occurring organics. In some cases, polar compounds are a very large portion of the organics being measured as DRO. Groundwater samples from the August 2014 event were analyzed for both DRO and DRO using SGC protocols for comparison. The DRO and DRO with SGC data are presented in **Table 2**.

Duplicate groundwater samples BD-1 (MW-3) and BD-2 (MW-5) were collected and submitted blind to the laboratory for GRO, DRO, and BTEX analysis. Matrix spike (MS) and matrix spike duplicate (MSD) samples were collected from monitoring well MW-12 and submitted to the laboratory for GRO, DRO and BTEX analysis. Groundwater samples were not collected from monitoring wells GEI-1 through GEI-6, GEI-9, and RW-1 due to the presence of LNAPL.

3.2. Groundwater Analytical Results

Concentrations of DRO greater than the ADEC groundwater cleanup level (GCL) (1,500 µg/L) was detected in monitoring wells GEI-7, MW-3 and MW-5 at concentrations ranging from 1,800 µg/L (MW-5) to 102,000 µg/L (GEI-7).

Concentrations of DRO with SGC greater than or equal to the ADEC GCL (1,500 µg/L) was detected in monitoring wells GEI-7, MW-3, MW-5, and MW-8 at concentrations ranging from 1,500 µg/L (MW-5) to 78,900 µg/L (GEI-7).

Analytical results for DRO with SGC were consistently lower than those without. The remaining analyses were not detected above their respective ADEC GCLs. Analytical results obtained from the annual 2014 groundwater monitoring event are summarized in **Table 2** and are shown on **Figure 4**. Historical geochemical parameters are summarized in **Table 3**.

4. Laboratory Data Quality Assurance Summary

As required by ADEC (Technical Memorandum 06-002, dated March 2009b), ARCADIS completed a laboratory data review checklist for the Pace report during the annual 2014 reporting period. The laboratory report is included as **Appendix B** and the data review checklist is included as **Appendix C**. The following quality assurance (QA)

summary describes six parameters, related to the quality and usability of the data presented in this report.

4.1. Precision

The data met precision objectives for laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) relative percent differences (RPDs).

4.2. Accuracy

The data met accuracy objectives as indicated by the laboratory quality control samples, which were within method/laboratory limits.

4.3. Representativeness

The data appear to be representative of site conditions and are generally consistent with historical groundwater monitoring results and expected impacts to groundwater.

4.4. Comparability

The laboratory results are presented in the same units as previous reports to allow comparison.

4.5. Completeness

The results appear to be valid and usable, and thus, the laboratory results have 100% completeness.

4.6. Sensitivity

The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCLs for compounds analyzed.

5. Conclusions

The groundwater elevation data collected during the July 2014 indicate groundwater flow direction and gradient are generally consistent with historical data, the site is relatively flat, but general groundwater flow is to the south. Groundwater samples

were collected from 14 monitoring wells GEI-7, GEI-8, and MW-2 through MW-13. GEI-1 through GEI-6, GEI-9, MW-1 and RW-1 were gauged, but not sampled due to presence of LNAPL.

The analytical results of the July 2014 groundwater sampling event showed concentrations of DRO in monitoring wells GEI-7, MW-3 (parent and duplicate), MW-5 (parent), and MW-8 greater than or equal to the ADEC GCL. The analytical results from the remaining monitoring wells did not contain concentrations greater than their respective ADEC GCLs.

Analytical results since initial sampling events, which started between 2004 and 2010, show a general decreasing trend, with the exception of GEI-3, GEI-4, and GEI-7, where concentrations tend to fluctuate. GRO and benzene concentrations have decreased and are currently not present in any monitoring wells greater than the ADEC GCL. In addition, the three downgradient monitoring wells (MW-11, MW-12, and MW-13) concentrations are below the laboratory reporting limits. The remaining analytical results were generally consistent with previous monitoring events.

Based on the DRO plume stability and discussions with ADEC during the project review meeting on August 28, 2012, ARCADIS has decreased sampling the site to an annual basis. The annual 2014 groundwater sampling event will be conducted in the third quarter of 2015. If you have any questions or would like to discuss this further, please contact Greg Montgomery at 206.726.4742.

6. References

ADEC, May, 2010. *Draft Field Sampling Guidance*. Division of Spill Prevention and Response Contaminated Sites Program.

ARCADIS. *Bailer-Grab Groundwater Sampling*. March 10. 2009a.

ADEC Technical Memorandum, March, 2009b. *Environmental Laboratory Data and Quality Assurance Requirements*. ADEC, Division of Spill Prevention and Response Contaminated Sites Program.

ADEC. *Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells*. February 2, 2011.



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Former Chevron Facility
306443

ARCADIS. *Groundwater sampling with HydraSleeves – Standard Operating Procedure*. February, 2011.

ARCADIS

Tables

Table 1
Groundwater Elevation Data
Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)
GEI-1	99.87	09/04/03	6.32	--	--	93.55	--
		04/24/04			Well buried under snow/ice		--
		09/16/04	8.56	--	--	91.31	--
		04/21/05			Well buried under snow/ice		--
		09/30/05	8.17	--	--	91.70	--
		04/19/06			Well buried under snow/ice		--
		09/21/06	9.04	--	--	90.83	--
		04/03/07	11.35	11.08	0.27	88.74	--
		09/29/07	8.60	8.54	0.06	91.32	--
		10/15/07	10.35	9.94	0.41	89.86	--
		11/19/07	10.91	10.78	0.13	89.07	--
		03/29/08			Well buried under snow/ice		--
		06/25/08	9.35	--	Trace	90.52	--
		07/14/08	8.22	--	Trace	91.65	--
		08/06/08	5.83	--	Trace	94.04	--
		09/10/08	8.22	8.20	0.02	91.67	--
		11/24/08	9.88	--	Trace	89.99	--
		12/18/08	10.06	--	Trace	89.81	--
		01/27/09	10.73	10.70	0.03	89.16	--
		02/20/09	11.18	10.98	0.20	88.85	--
		04/21/09			Well buried under snow/ice		--
		10/06/09	10.35	10.33	0.02	89.54	--
		03/18/10	11.96	11.22	0.74	88.52	--
		04/20/10			Unable to remove sock- frozen		--
		05/26/10	11.71	11	0.71	88.74	--
		06/18/10	9.42	9.41	0.01	90.46	--
		07/23/10	7.20	--	Trace	92.67	--
		08/16/10	7.21	--	Trace	92.66	--
		09/23/10	8.29	8.25	0.04	423.91	--
		10/25/10	10.67	--	Trace	421.50	--
		11/16/10	11.46	--	Trace	420.71	--
		12/14/10			Well not measured		--
		01/05/11			Well not measured		--
		02/08/11	10.71	--	Trace	421.46	--
		03/23/11	11.39	--	Trace	420.78	--
		04/13/11	11.27	10.84	0.43	421.25	--
		06/09/11	9.40	--	Trace	422.77	--
		08/23/11	7.28	--	Trace	424.89	--
		06/12/12	9.21	--	Trace	422.96	--
		08/06/13	7.25	--	--	424.92	--
07/09/14		6.27	--	--	425.90	--	

Table 1
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Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)
GEI-2	99.79	09/04/03	6.19	--	--	93.60	--
		04/24/04			Well buried under snow/ice		--
		09/16/04	8.47	--	--	91.32	--
		04/21/05			Well buried under snow/ice		--
		09/30/05	7.76	--	--	92.03	--
		04/19/06			Well buried under snow/ice		--
		09/21/06	9.01	--	--	90.78	--
		04/03/07			Well Dry		--
		09/29/07	8.57	--	--	91.22	--
		03/29/08	10.22	--	--	89.57	--
		09/10/08	8.18	--	--	91.61	--
		04/21/09			Well under water		--
		10/06/09			Well Dry		--
		06/18/10	9.43	9.42	0.01	90.37	--
	07/23/10	7.29	--	--	92.50	--	
	08/16/10	7.21	--	--	92.58	--	
	09/23/10	8.25	--	--	423.90	--	
	10/25/10			Well not measured		--	
	11/16/10			Well not measured		--	
	12/14/10			Well not measured		--	
	01/05/11			Well not measured		--	
	02/08/11			Well not measured		--	
	03/23/11			Well not measured		--	
	04/13/11			Well not measured		--	
	06/09/11	9.39	--	--	422.76	--	
	08/23/11	7.25	--	--	424.90	--	
	06/12/12	9.21	--	--	422.94	--	
	08/06/13	7.32	--	--	424.83	--	
07/09/14	6.29	--	--	425.86	--		
GEI-3	99.73	09/04/03	6.14	--	--	93.59	--
		04/24/04	9.49	--	--	90.24	--
		09/16/04	8.38	--	--	91.35	--
		04/21/05	9.84	--	--	89.89	--
		09/30/05	7.67	--	--	92.06	--
		04/19/06	11.28	10.75	0.53	88.88	--
		09/21/06	8.91	--	--	90.82	--
		04/03/07	10.80	10.78	0.02	88.95	--
		09/29/07	8.47	--	--	91.26	--
		03/29/08	10.15	--	--	89.58	--
		09/10/08	8.08	--	--	91.65	--
		04/21/09	11.11	10.89	0.22	88.80	--
		10/06/09	10.22	10.20	0.02	89.53	--
		03/18/10	11.41	10.90	0.51	88.74	--
	04/20/10	10.96	10.90	0.06	88.82	--	
	05/26/10	11.42	10.90	0.52	88.74	--	
	06/18/10	9.37	9.36	0.01	90.37	--	
	07/23/10	7.11	--	--	92.62	--	
	08/16/10	7.10	--	--	92.63	--	
	09/23/10	8.16	--	--	423.91	--	
	10/25/10	10.55	10.51	0.04	421.55	--	
	11/16/10	11.41	11.18	0.23	420.85	--	
	12/14/10			Well not measured		--	
	01/05/11	10.32	--	--	421.75	--	
	02/08/11	10.67	--	--	421.40	--	
	03/23/11	11.39	--	--	420.68	--	
	04/13/11	10.90	10.87	0.03	421.19	--	
	06/09/11	9.35	--	Trace	422.72	--	
08/23/11	7.25	--	Trace	424.82	--		
06/12/12	9.22	--	Trace	422.85	--		
08/06/13	7.29	--	--	424.78	--		
07/09/14	6.33	--	--	425.74	--		
	¹ 432.15						
	¹ 432.07						

Table 1
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Former Chevron Facility 306443
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Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)	
GEI-4	99.66	09/04/03	6.12	--	--	93.54	--	
		04/24/04	9.52	--	--	90.14	--	
		09/16/04	8.41	--	--	91.25	--	
		04/21/05	9.83	--	--	89.83	--	
		09/30/05	7.69	--	--	91.97	--	
		04/19/06	10.90	--	--	88.76	--	
		09/21/06	8.91	--	--	90.75	--	
		04/03/07	10.98	--	--	88.68	--	
		09/29/07	8.44	--	--	91.22	--	
		03/29/08	10.08	--	--	89.58	--	
		09/10/08	8.03	--	--	91.63	--	
		04/21/09	10.65	--	--	89.01	--	
		10/06/09	10.14	--	--	89.52	--	
	06/18/10	9.24	--	--	90.42	--		
	07/23/10	6.95	--	--	92.71	--		
	08/16/10	7.00	6.97	0.03	92.68	--		
	09/23/10	8.10	8.05	0.05	423.91	--		
	10/25/10		Well not measured			--		
	11/16/10		Well not measured			--		
	12/14/10		Well not measured			--		
	01/05/11		Well not measured			--		
	02/08/11		Well not measured			--		
	03/23/11		Well not measured			--		
	04/13/11		Well not measured			--		
	06/09/11		9.19	--	--	422.78	--	
	08/23/11		7.09	--	Trace	424.88	--	
06/12/12		9.00	--	Trace	422.97	--		
08/06/13		7.08	--	--	424.89	--		
		07/09/14	6.03	--	--	425.94	--	
GEI-5	99.88	09/04/03	8.28	5.97	2.31	93.49	--	
		04/24/04	10.11	9.71	0.40	90.10	--	
		09/16/04	10.40	8.21	2.19	91.28	--	
		04/21/05	10.49	10.06	0.43	89.74	--	
		09/30/05	7.95	--	--	91.93	--	
		04/19/06	11.75	11.01	0.74	88.74	--	
		09/21/06	10.09	9.01	1.08	90.68	--	
		04/03/07	11.70	11.23	0.47	88.57	--	
		09/29/07	9.22	8.72	0.50	91.07	--	
		03/29/08	10.67	10.45	0.22	89.39	--	
		09/10/08	8.71	8.37	0.34	91.45	--	
		11/24/08	10.08	--	--	89.80	--	
		12/18/08	10.29	--	--	89.59	--	
		01/27/09	11.26	10.94	0.32	88.88	--	
		02/20/09	11.65	11.21	0.44	88.59	--	
		04/21/09	11.44	11.02	0.42	88.78	--	
		10/06/09	10.65	10.53	0.12	89.33	--	
		03/18/10	11.61	11.6	0.01	88.28	--	
		04/20/10	12.45	11.5	0.95	88.21	--	
		05/26/10	11.69	11.31	0.38	88.50	--	
		06/18/10	9.73	9.72	0.01	90.16	--	
		07/23/10	7.76	--	--	92.12	--	
		08/16/10	7.98	7.34	0.64	92.42	--	
		09/23/10	9.51	8.45	1.06	423.79	--	
		10/25/10	10.88	--	--	421.55	--	
		11/16/10	11.71	11.68	0.03	420.74	--	
		12/14/10		Well not measured			--	
		01/05/11		10.86	--	--	421.57	--
		02/08/11		10.99	--	--	421.44	--
		03/23/11		11.24	11.23	0.01	421.20	--
		04/13/11		11.51	11.18	0.33	421.19	--
06/09/11		9.69	--	Trace	422.74	--		
08/23/11		7.84	7.56	0.28	424.82	0.2		
06/12/12		9.55	--	Trace	422.88	--		
08/06/13		8.52	7.43	1.09	424.80	--		
		07/09/14	6.80	6.61	0.19	425.79	--	

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Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)	
GEI-6	99.95	09/04/03	6.47	--	--	93.48	--	
		04/24/04	9.95	--	--	90.00	--	
		09/16/04	8.83	--	--	91.12	--	
		04/21/05	10.28	--	--	89.67	--	
		09/30/05	8.24	--	--	91.71	--	
		04/19/06	Well buried under snow/ice					--
		09/21/06	9.30	9.30	<0.1	90.65	--	
		04/03/07	Well Dry					--
		09/29/07	9.10	8.81	0.29	91.09	--	
		10/15/07	10.70	10.26	0.44	89.61	--	
		11/19/07	11.04	10.71	0.33	89.18	--	
		03/29/08	10.61	10.60	0.01	89.35	--	
		06/25/08	9.58	--	--	90.37	--	
		07/14/08	8.51	--	--	91.44	--	
		08/06/08	6.44	6.08	0.36	93.81	--	
		09/10/08	9.25	8.41	0.84	91.39	--	
		11/24/08	10.30	10.22	0.08	89.72	--	
		12/18/08	10.52	10.38	0.14	89.54	--	
		01/27/09	11.10	10.96	0.14	88.96	--	
		02/20/09	11.10	--	--	88.85	--	
	04/21/09	Well blocked at 11.5' below TOC					--	
	10/06/09	10.85	10.68	0.17	89.24	--		
	03/18/10	Unable to locate					--	
	04/20/10	Well Dry					--	
	05/26/10	Well blocked at 11.05' below TOC					--	
	06/18/10	9.80	--	Trace	90.15	--		
	07/23/10	7.70	7.61	0.09	92.32	--		
	08/16/10	8.20	7.41	0.79	92.40	--		
	09/23/10	9.31	8.52	0.79	423.83	--		
	10/25/10	Well blocked at 11.1' below TOC					--	
	11/16/10	Well blocked at 11.06' below TOC					--	
	12/14/10	Well not measured					--	
	01/05/11	Well blocked at 11.12' below TOC					--	
	02/08/11	Well blocked at 11.10' below TOC					--	
	03/23/11	Well blocked at 11.06' below TOC					--	
	04/13/11	Well blocked at 11.10' below TOC					--	
06/09/11	9.80	--	--	422.69	--			
08/23/11	8.59	7.50	1.09	424.79	1.2			
06/12/12	9.75	--	Trace	422.74	--			
08/06/13	8.47	7.55	0.92	424.77	--			
07/09/14		6.73	6.72	0.01	425.77	--		
	¹ 432.49							

Table 1
Groundwater Elevation Data
Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)	
GEI-7	99.44	09/04/03	5.92	--	--	93.52	--	
		04/24/04	9.49	--	--	89.95	--	
		09/16/04	8.36	--	--	91.08	--	
		04/21/05	9.95	--	--	89.49	--	
		09/30/05	7.74	--	--	91.70	--	
		04/19/06	11.04	--	--	88.40	--	
		09/21/06	9.06	--	--	90.38	--	
		04/03/07	11.21	--	--	88.23	--	
		09/29/07	8.59	--	--	90.85	--	
		03/29/08	10.28	10.26	0.02	89.18	--	
		09/10/08	8.21	--	--	91.23	--	
		04/21/09	10.90	10.86	0.04	88.57	--	
		10/06/09	10.36	10.34	0.02	89.10	--	
		03/18/10		Unable to locate				--
		04/20/10		12.31	11.22	1.09	88.02	--
	05/26/10		11.41	11.08	0.33	88.30	--	
	06/18/10		9.48	9.47	0.01	89.97	--	
	07/23/10		7.25	--	--	92.19	--	
	08/16/10		7.21	--	--	92.23	--	
	09/23/10	¹ 432.14	09/23/10	8.30	--	--	423.84	--
	10/25/10		10.76	--	--	421.38	--	
	11/16/10		11.26	--	--	420.88	--	
	12/14/10		10.38	--	--	421.76	--	
	01/05/11		10.36	--	--	421.78	--	
	02/08/11		11.23	10.69	0.54	421.35	--	
	03/23/11		11.45	10.97	0.48	421.08	--	
	04/13/11		11.43	10.95	0.48	421.10	--	
	06/09/11		9.71	9.42	0.29	422.67	0.2	
	08/23/11		7.33	--	--	424.81	--	
	06/12/12		9.42	9.27	0.15	422.84	0.15	
08/06/13	7.21		--	--	424.93	--		
07/09/14	6.25		--	--	425.89	--		
GEI-8	100.01		09/04/03	6.48	--	--	93.53	--
			04/24/04	9.94	--	--	90.07	--
		09/16/04	8.84	--	--	91.17	--	
		04/21/05	10.31	--	--	89.70	--	
		09/30/05	8.18	--	--	91.83	--	
		04/19/06	11.47	--	--	88.54	--	
		09/21/06	9.48	--	--	90.53	--	
		04/03/07	11.63	--	--	88.38	--	
		09/29/07	9.08	--	--	90.93	--	
		03/29/08	10.77	--	--	89.24	--	
		09/10/08	8.72	8.70	0.02	91.31	--	
		11/24/08	10.36	--	--	89.65	--	
		12/18/08	10.55	--	--	89.46	--	
		01/27/09	11.24	--	--	88.77	--	
		02/20/09	11.55	--	--	88.46	--	
	04/21/09	11.50	--	--	88.51	--		
	10/06/09	10.82	--	--	89.19	--		
	03/18/10	11.79	--	--	88.22	--		
	04/20/10	11.87	--	--	88.14	--		
	05/26/10	11.63	--	--	88.38	--		
	06/18/10	9.96	--	--	90.05	--		
	07/23/10	6.79	--	--	93.22	--		
	08/16/10	7.71	--	--	92.30	--		
	09/23/10	8.80	--	--	423.88	--		
	10/25/10				Well not measured	--		
	11/16/10				Well not measured	--		
	12/14/10				Well not measured	--		
	01/05/11				Well not measured	--		
	02/08/11				Well not measured	--		
	03/23/11				Well not measured	--		
04/13/11				Well not measured	--			
06/09/11		9.97	--	--	422.71	--		
08/23/11		7.86	--	--	424.82	--		
06/12/12				Well not measured-obstructed by ice	--			
08/06/13		7.60	--	--	425.08	--		
07/09/14		6.67	--	--	426.01	--		
	¹ 432.68							

Table 1
Groundwater Elevation Data
Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)	
GEI-9	100.02	09/04/03	6.42	--	--	93.60	--	
		04/24/04	9.82	--	--	90.20	--	
		09/16/04	8.21	--	--	91.81	--	
		04/21/05			Well buried under snow/ice		--	--
		09/30/05	8.14	--	--	91.88	--	
		04/19/06			Well buried under snow/ice		--	--
		09/21/06	9.31	--	--	90.71	--	
		04/03/07	11.39	--	--	88.63	--	
		09/29/07	8.91	--	--	91.11	--	
		03/29/08	10.73	10.65	0.08	89.36	--	
		09/10/08	8.63	--	--	91.39	--	
		04/21/09			Well buried under snow/ice		--	--
		10/06/09	10.90	10.87	0.03	89.14	--	
		03/18/10			Well obstructed by snow/ice		--	--
		04/20/10	12.11	11.9	0.21	88.08	--	
		05/26/10	11.81	11.71	0.1	88.29	--	
		07/23/10	7.82	--	--	92.20	--	
		08/16/10	7.84	7.81	0.03	92.20	--	
		09/23/10	9.00	8.87	0.13	423.92	--	
	10/25/10			Well not measured		--	--	
	11/16/10			Well not measured		--	--	
	12/14/10			Well not measured		--	--	
	01/05/11			Well not measured		--	--	
	02/08/11			Well not measured		--	--	
	03/23/11			Well not measured		--	--	
	04/13/11			Well not measured		--	--	
	06/09/11		10.27	10.08	0.19	422.70	--	
	08/23/11		7.99	--	Trace	424.82	--	
	06/12/12		10.07	10.01	0.06	422.79	--	
08/06/13		7.82	--	--	424.99	--		
07/09/14		6.97	--	--	425.84	--		
MW-1	¹ 432.51	09/10/08	8.65	--	--	423.86	--	
		04/21/09	11.26	--	--	421.25	--	
		10/06/09	10.75	--	--	421.76	--	
		06/18/10	9.85	9.79	0.06	422.71	--	
		07/23/10	7.54	--	--	424.97	--	
		08/16/10	7.56	--	--	424.95	--	
		09/23/10	8.68	--	--	423.82	--	
		10/25/10	11.05	--	--	421.45	--	
		11/16/10	11.82	--	--	420.68	--	
		12/14/10	10.83	--	--	421.67	--	
		01/05/11	10.82	--	--	421.68	--	
		02/08/11	11.15	--	--	421.35	--	
		03/23/11	11.40	10.92	0.48	421.49	--	
		04/13/11	11.37	11.36	0.01	421.14	--	
		06/09/11	9.84	--	--	422.66	--	
		08/23/11	7.69	--	--	424.81	--	
		06/12/12	9.68	9.59	0.09	422.89	0.01	
		08/06/13	7.68	--	--	424.82	--	
		07/09/14		6.65	--	--	425.85	--

Table 1
Groundwater Elevation Data
Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)
MW-8	433.11	09/20/10	8.30	--	--	424.81	--
		09/23/10	9.32	--	--	423.79	--
		10/25/10	11.80	--	--	421.31	--
		11/16/10	12.32	--	--	420.79	--
		12/14/10	11.36	--	--	421.75	--
		01/05/11	11.39	--	--	421.72	--
		02/08/11	11.70	--	--	421.41	--
		03/23/11	12.63	11.95	0.68	420.48	--
		04/13/11	12.59	11.94	0.65	420.52	--
		06/09/11	10.45	--	--	422.66	--
		08/23/11	8.35	--	--	424.76	--
		06/12/12	10.29	--	--	422.82	--
		08/06/13	8.38	--	--	424.73	--
		07/09/14	7.42	--	--	425.69	--
MW-9	432.39	09/20/10	8.30	--	--	424.09	--
		09/23/10	8.60	--	--	423.79	--
		10/25/10	10.95	--	--	421.44	--
		11/16/10	11.74	--	--	420.65	--
		12/14/10		Well not measured- unable to locate			--
		01/05/11		Well blocked at 0.8' below grade surface			--
		02/08/11		Well blocked at 0.8' below grade surface			--
		03/23/11		Well blocked at 0.8' below grade surface			--
		04/13/11		Well blocked at 0.8' below grade surface			--
		06/09/11		Obstructed @ 4.45'			--
		08/23/11	7.61	--	--	424.78	--
		06/12/12	9.66	--	--	422.73	--
		08/06/13	7.70	--	--	424.69	--
		07/09/14	6.78	--	--	425.61	--
MW-10	432.75	09/20/10	8.58	--	--	424.17	--
		09/23/10	8.92	--	--	423.83	--
		10/25/10	10.20	--	--	422.55	--
		11/16/10	11.99	--	--	420.76	--
		12/14/10		Well not measured			--
		01/05/11	11.00	--	--	421.75	--
		02/08/11	11.37	--	--	421.38	--
		03/23/11	11.62	--	--	421.13	--
		04/13/11	11.90	--	--	420.85	--
		06/09/11	10.06	--	--	422.69	--
		08/23/11	7.91	--	--	424.84	--
		06/12/12	10.91	--	--	421.84	--
		08/06/13	8.02	--	--	424.73	--
		07/09/14	7.02	--	--	425.84	--
MW-11	NE	10/11/13	10.61	--	--	NE	--
		07/09/14	6.69	--	--	NE	--
MW-12	433.00	10/11/13	11.10	--	--	421.90	--
		07/09/14	7.49	--	--	425.51	--
MW-13	433.86	10/11/13	11.59	--	--	422.27	--
		07/09/14	7.72	--	--	426.14	--

Table 1
Groundwater Elevation Data
Former Chevron Facility 306443
Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Monitoring Well	Top of Casing Elevation (feet)	Date	Depth-to-Water (top of casing) (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Groundwater Elevation (feet)	LNAPL Removed (Gallons)
RW-1	432.30	09/10/08	8.30	--	--	424.00	--
		04/21/09		Well obstructed by snow/ice			--
		10/06/09	10.45	--	--	421.85	--
		06/18/10	9.54	--	--	423.21	--
		08/16/10	7.31	--	--	424.99	--
		09/23/10	8.39	--	--	423.91	--
		10/25/10		Well not measured			--
		11/16/10		Well not measured			--
		12/14/10		Well not measured			--
		1/5/11		Well not measured			--
		2/8/11		Well not measured			--
		3/23/11		Well not measured			--
		4/13/11		Well not measured			--
		06/09/11	9.54	--	--	422.76	--
		08/23/11	7.45	--	Trace	424.85	--
		06/12/12	9.37	--	Trace	422.93	--
		08/06/13	7.42	--	--	424.88	--
		07/09/14	6.48	--	--	425.82	--

Notes:

LNAPL = Light non-aqueous phase liquid

Groundwater elevations were corrected due to the presence of LNAPL in well. Specific gravity of 0.82 was used for the LNAPL (Jet-A Fuel).

Bold text indicates most recent sampling event.

"--" = Not applicable.

NE = not established

¹ = Updated survey data

Table 2
Groundwater Analytical Data
 Former Chevron Facility 306443
 Gate 28, West Ramp, Fairbanks International Airport
 Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	DRO with SGC	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead	1,2 Dibrom-ethane	
ADEC Groundwater Cleanup Levels ¹		2,200	1,500	1,500	1,100	5	1,000	700	10,000	470	15	0.05	
GEI-1	04/24/04	Well buried by snow/ice											
	09/16/04	1,760	151,000	--	--	7.05	1.83	47.9	251	--	--	--	
	09/16/04 ^P	--	--	--	--	5.40	2.02	42.2	233	--	--	--	
	04/21/05	Well buried by snow/ice											
	09/30/05	2,270	327,000	--	--	<3,970	5.52	0.945	36.6	208	--	--	
	04/19/06	Well buried by snow/ice											
	09/21/06	1,300	690,000	--	--	<9,800	10.0	0.8	22	140	--	--	
	04/03/07	LNAPL Present - Well not sampled											
	09/29/07	LNAPL Present - Well not sampled											
	03/29/08	Well buried by snow/ice											
	09/10/08	LNAPL Present - Well not sampled											
	04/22/09	Well buried under snow/ice											
	10/06/09	LNAPL Present - Well not sampled											
	06/18/10	LNAPL Present - Well not sampled											
	09/23/10	LNAPL Present - Well not sampled											
	06/10/11	LNAPL Globules Present - Well not sampled											
	08/25/11	LNAPL Globules Present - Well not sampled											
06/13/12	LNAPL Globules Present - Well not sampled												
Duplicate	08/07/13	970	49,800	43,600	<1,100	6.6	<1.0	16.9	125	<1.0	--	--	
	08/07/13	1,280	90,700	--	<1,000	6.7	<1.0	17.5	130	<1.0	--	--	
07/10/14		LNAPL Globules Present - Well not sampled											
GEI-2	04/24/04	Well buried by snow/ice											
	09/16/04	76.6	1,430	--	--	2.53	0.547	<0.500	1.81	--	--	--	
	04/21/05	Well buried by snow/ice											
	09/30/05	65.6	885	--	<391	<0.500	<0.500	<0.500	<1.50	--	--	--	
	04/19/06	Well buried by snow/ice											
	09/21/06	56.0	1,500	--	430	<0.5	<0.500	<0.500	<1.50	--	--	--	
	04/03/07	Well dry - Not sampled											
	09/29/07	30	--	--	--	<1.00	<1.00	<1.00	<2.00	--	--	--	
	03/29/08	<50.0	-- ³	--	-- ³	<0.500	<0.500	<0.500	<1.00	--	--	--	
	09/10/08	52 ⁴	5,300 ⁵	--	<743	0.225	<0.500	1.16	<1.00	--	<1.00	--	
	04/22/09	Well under water											
	10/06/09	Well dry - Not sampled											
	06/18/10	LNAPL Present - Well not sampled											
	09/23/10	<10	2,500	--	210	<0.5	<0.5	<0.5	<1.5	--	<0.052	--	
	06/10/11	13	6,100	--	930	<0.5	<0.5	<0.5	<1.00	--	--	--	
	08/25/11	<10	1,100	--	840	<0.5	<0.5	<0.5	<1.50	--	--	--	
	Duplicate	08/25/11	<10	--	--	--	<0.5	<0.5	<0.5	<1.50	--	--	--
06/13/12		<10	320	79	980	<0.5	<0.5	<0.5	<1.5	--	--	--	
Duplicate	06/13/12	<10	190	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	
	08/07/13	<100	960	<420	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	
07/10/14		LNAPL Globules Present - Well not sampled											
GEI-3	04/24/04	1,330	21,000	--	--	<5.00	<5.00	13.9	59.8	--	--	--	
	09/16/04	310	18,300	--	--	1.26	<0.500	8.27	14.9	--	--	--	
	04/21/05	464	22,900	--	--	<0.500	<0.500	6.24	14.6	--	--	--	
	09/30/05	450	33,300	--	625	<0.500	<0.500	3.45	10.6	--	--	--	
	04/19/06	LNAPL Present - Well not sampled											
	09/21/06	500	29,000	--	<480	<0.600	<0.500	7.7	25.0	--	--	--	
	04/03/07	LNAPL Present - Well not sampled											
	09/29/07	700	65,000	--	<2,100	<5.00	<5.00	<5.00	<20	--	--	--	
	03/29/08	492	47,100 ²	--	863	<0.500	<0.500	5.01	16.0	--	--	--	
	09/10/08	374 ⁴	22,400 ⁵	--	<3,750	<1.00	<2.50	7.06	13.7	--	<1.00	--	
	04/22/09	LNAPL Present - Well not sampled											
	10/06/09	LNAPL Present - Well not sampled											
	06/18/10	LNAPL Present - Well not sampled											
	09/23/10	450	2,400	--	<140	<0.5	<0.5	2.2	8.6	--	<0.052	--	
	06/10/11	LNAPL Globules Present - Well not sampled											
	08/25/11	LNAPL Globules Present - Well not sampled											
	06/13/12	LNAPL Globules Present - Well not sampled											
Duplicate	08/07/13	529	25,800	23000	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	
	07/10/14	LNAPL Globules Present - Well not sampled											
GEI-4	04/24/04	1,270	43,600	--	--	<5.00	<5.00	14.6	57.2	--	--	--	
	09/16/04	638	36,200	--	--	15.0	0.675	21.8	35.7	--	--	--	
	04/21/05	570	37,500	--	--	35.4	1.27	17.7	40.1	--	--	--	
	09/30/05	1,030	122,000	--	--	<4,100	7.47	4.88	25.1	58.7	--	--	
	04/19/06	879	17,800	--	<391	7.58	<0.500	21.8	27.9	--	<1.00	--	
	09/21/06	630	12,000	--	<480	24.0	0.5	25	43	--	--	--	
	04/03/07	300	2,000	--	<40	5.0	<1.00	9	8.0	--	--	--	
	09/29/07	1,400	43,000	--	<2,000	20	1.00	20	40	--	--	--	
	03/29/08	255 ¹	11,300 ²	--	<735	2.17	<0.500	4.16	9.20	--	--	--	
	09/10/08	689 ⁴	32,300 ⁵	--	<3,750	53.2	2.42	37.9	71.0	--	<1.00	--	
	04/22/09	229 ¹	2,840 ⁵	--	<721	2.90	<0.500	4.50	7.64	--	<1.00 ⁷	<0.01	
	10/06/09	305	5,820	--	787	15.7	<1.00	17.3	33.77	--	<1.00	<0.0100	
	06/18/10	Well Not Sampled											
	09/23/10	LNAPL Present - Well not sampled											
	06/10/11	3,900	270,000	--	<14,000	<2.5	<1.0	<2.5	8.2	--	--	--	
	08/25/11	LNAPL Globules Present - Well not sampled											
	06/13/12	LNAPL Globules Present - Well not sampled											
	Duplicate	08/08/13	473	344,000	323,000	6300	4.3	<1.0	1.2	4.4	<1.0	--	--
		07/10/14	LNAPL Globules Present - Well not sampled										

Table 2
Groundwater Analytical Data
 Former Chevron Facility 306443
 Gate 28, West Ramp, Fairbanks International Airport
 Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	DRO with SGC	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead	1,2 Dibrom-ethane	
ADEC Groundwater Cleanup Levels ¹		2,200	1,500	1,500	1,100	5	1,000	700	10,000	470	15	0.05	
GEI-5	04/24/04												
	09/16/04												
	04/21/05												
	09/30/05	2,530	671,000	--	--	<8,700	12.4	<0.500	107	326	--	--	
	04/19/06												
	09/21/06												
	04/03/07												
	09/29/07												
	03/29/08	68.1	1,860 ²	--	--	<708	<0.500	<0.500	<0.500	1.78			--
	09/10/08												
	04/22/09												
	10/06/09												
	06/18/10												
	09/23/10												
06/10/11													
08/25/11													
06/13/12													
08/07/13													
07/10/14													
GEI-6	04/24/04	2,930	168,000	--	--	8.17	<5.00	59.6	145				
	09/16/04	1,890	39,600	--	--	7.80	1.57	23.8	75.0				
	04/21/05	1,290	25,300	--	--	15.7	<0.500	57.1	134				
	09/30/05	2,220	120,000	--	--	<4,770	14.8	<0.500	20.8	107			
	04/19/06												
	09/21/06												
	04/03/07												
	09/29/07												
	03/29/08	1,170 ¹	334,000 ²	--	--	904	8.41	<2.50	33.8	128	58.8	--	
	09/10/08												
	04/22/09												
	10/06/09												
	06/18/10												
	09/23/10												
06/10/11	1,300	170,000	--	--	<8,400	2.9	<0.5	19	61				
08/25/11													
06/13/12													
08/07/13													
07/10/14													
GEI-7	04/24/04	2,440	43,200	--	--	6.97	<5.00	7.58	20.0				
	09/16/04	363	5,660	--	--	<0.500	1.34	8.89	14.2				
	04/21/05	1,080	13,600	--	--	32.6	2.52	64.6	92.0				
	09/30/05	226	6,700	--	--	<397	<0.500	3.68	4.72				
	04/19/06	934	25,200	--	--	<856	37.9	4.11	77.8	103	<1.00		
	09/21/06	470	4,100	--	--	<98	1.2	<0.5	14	15			
	04/03/07	2,200	12,000	--	--	<980	50	4	90	200			
	04/03/07 ^D	2,200	12,000	--	--	<980	40	4	90	200			
	09/29/07	1,500	130,000	--	--	<2,000	<5	<5	<10	<20	27.9		
	09/29/07 ^D	900	92,000	--	--	<2,000	<5	<5	<10	<20			
	03/29/08	1,630 ¹	44,200	--	--	1,320	31.1	<5.00	90.5	147			
	03/29/08 ^D	1,630	51,400	--	--	1,470	26.8	<5.00	85.2	131			
	09/10/08	352 ⁴	15,200 ⁵	--	--	<833	<1.00	<2.50	10.7	8.02	<1.00		
	04/22/09												
10/06/09													
06/18/10													
09/24/10	570	1,900	--	--	200	<2.0	<2.0	9.7	11	<0.052			
06/10/11													
08/25/11													
06/13/12													
08/08/13	561	37,200	34000	<1,200	<1.0	<1.0	12.2	14.7	<1.0	--	--		
08/08/13	203	102,000	78,900	630	<1.0	<1.0	1.2	<3.0	--	--	--		
GEI-8	04/24/04	<500	7,390	--	--	<5.00	<5.00	11.7	30.4				
	09/16/04	82	8,690	--	--	<0.500	<0.500	0.520	1.12				
	04/21/05	54.3	1,460	--	--	<0.500	<0.500	<0.500	<1.50				
	04/21/05 ^D	<50	--	--	--	<0.500	<0.500	<0.500	<1.50				
	09/30/05	<50	4,970	--	--	<397	<0.500	<0.500	<0.500	<1.50			
	04/19/06	<50	1,480	--	--	<400	<0.500	<0.500	<0.500	<1.50			
	04/19/06 ^D	78.0	--	--	--	<500	<0.500	<0.500	<1.50		<1.00		
	09/21/06	40.0	1,800	--	--	<160	<0.5	<0.5	<0.5	<1.5			
	04/03/07	60	910	--	--	360	<1.0	<1.0	<1.0	<2.0			
	09/29/07	80	4,400	--	--	<200	<1.0	<1.0	<1.0	<2.0			
	03/29/08	62.0 ¹	2,830 ²	--	--	<759	<0.500	<0.500	<0.500	1.94			
	09/10/08												
	04/22/09	66.6 ¹	1,810 ²	--	--	819 ³	<0.200	<0.500	<0.500	<1.00	<1.00 ⁷	<0.0100	
	10/06/09	50.9	942	--	--	<391	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100	
10/06/09	50.9	942	--	--	<391	<0.200	<1.00	<1.00	<3.00	<1.00	<0.0100		
06/18/10													
09/23/10	11	530	--	--	220	<0.5	<0.5	<0.5	<1.5		<0.052		
06/10/11	1,300	26,000	--	--	<3,400	<2.5	<2.5	<2.5	<7.5				
08/25/11	20	99,000	--	--	<3,500	<0.5	<0.5	<0.5	<1.5				
08/25/11	32	--	--	--	--	<0.5	<0.5	<0.5	<1.5				
06/13/12													
08/08/13	<100	4,200	3,500	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0				
08/08/13	<100	3,000	--	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0				
07/10/14	<100	1,200	910	<400	<1.0	<1.0	<1.0	<3.0	<1.0				
GEI-9	04/24/04	8,370	33,700	--	--	9.53	<5.00	113	321				
	09/16/04	1,350	77,400	--	--	17.3	<0.500	58.3	57.5				
	04/21/05												
	09/30/05	838	50,900	--	--	<443	16.2	<0.500	55.4	82.3			
	04/19/06												
	09/21/06	1,200	95,000	--	--	<1,900	23.0	<0.5	52	80		36.5	
	09/21/06 ^D	1,300	43,000	--	--	<980	22.0	<0.5	50	75			
	04/03/07	1,600	9,700	--	--	<400	6.0	<1.0	40	80		0.62	
	09/29/07	1,800	680,000	--	--	<20,000	10.0	<5.00	40	70		29.8	
	03/29/08	1,690 ¹	111,000 ²	--	--	839	7.23	<5.00	25.1	85.5		89.4	
	09/10/08	1,510 ⁴	118,000 ⁵	--	--	<8,330	9.04	<5.00	29.3	63.1		<1.00	
	9/10/08 ^D	1,150 ⁶	191,000 ⁵	--	--	<7,500	9.18	<5.00	25.0	56.1		<1.00	
	04/22/09												
	10/06/09												
06/18/10													
09/23/10													
06/10/11													
08/25/11													
06/13/12													
08/07/13	512	29,800	25,200	<1,000	8.20	<1.0	12.8	39	<1.0				
07/10/14													

Table 2
Groundwater Analytical Data
 Former Chevron Facility 306443
 Gate 28, West Ramp, Fairbanks International Airport
 Fairbanks, Alaska

Monitoring Well	Date Sampled	GRO	DRO	DRO with SGC	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead	1,2 Dibromethane
ADEC Groundwater Cleanup Levels ¹												
		2,200	1,500	1,500	1,100	5	1,000	700	10,000	470	15	0.05
MW-1	09/10/08	2,000 ⁴	10,900 ²	--	<743	27.4	<0.500	99.8	163	--	<1.00	--
	04/22/09	2,260 ¹	20,700 ²	--	1,190 ³	42.2	0.566	84.3	236	--	<1.00 ⁷	<0.01
	10/07/09	1,040	8,070	--	642	25.4	<10.0	81.8	171.9	--	<1.00	<0.0100
	06/18/10						LNAPL Present - Well not sampled					
	09/24/10	1,800	12,000	--	<1,500	21	<0.5	55	130	--	--	--
	09/24/10	1,800	--	--	--	22	<0.5	56	130	--	--	--
	06/10/11	1,200	210,000	--	<8,500	29	<2.5	56	160	--	--	--
	06/10/11	1,200	--	--	--	25	<0.5	54	160	--	--	--
	08/25/11	2,600	82,000	--	<3,400	32.0	9.1	45	130	--	--	--
	06/13/12							LNAPL Present - Well not sampled				
08/08/13	678	8,300	5,000	<1,000	13.7	<1.0	51.7	97.2	<1.0	--	--	
07/10/14							Well not sampled					
MW-2	09/10/08	<50.0	208 ⁶	--	<743	<0.20	<0.500	<0.50	<1.00	--	<1.00	--
	04/22/09						Well buried under snow/ice					
	10/06/09	<50.0	<410	--	<410	<0.200	<1.00	<1.00	<3.00	--	<1.00	<0.0100
	06/18/10	11	530	--	290	<0.5	<0.5	<0.5	<1.5	--	<0.05	--
	09/23/10	<10	100	--	150	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/10/11	<10	85	--	200	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/25/11	<10	1,000	--	790	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/13/12	<10	170	<50	170	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/07/13	<100	<420	<420	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0	--	--
	07/10/14	<100	510	<400	<400	<1.0	<1.0	<1.0	<3.0	--	--	--
MW-3	09/10/08	144 ⁴	2,800 ¹	--	<743	0.263	<0.500	0.687	1.56	--	<1.00	--
	04/22/09	96.4 ¹	1,600 ²	--	<728	0.210	<0.500	1.09	1.81	--	<1.00 ⁷	<0.01
	10/07/09	205	1,350	--	<391	<0.400	<2.00	10.5	10.02	--	<1.00	<0.0100
	06/18/10	220	17,000	--	<3.4	<0.5	<2	<0.5	<5	--	<0.05	--
	06/18/10	64	17,000	--	<3.5	<0.5	<0.5	<0.5	<1.5	--	--	--
	09/24/10	27	510	--	91	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/10/11	<50	21,000	--	<1,700	<2.5	<2.5	<2.5	<7.5	--	--	--
	06/10/11	460	--	--	--	<0.5	<0.5	0.6	3.3	--	--	--
	08/25/11	71	10,000	--	<690	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/13/12							LNAPL Globules Present - Well not sampled				
08/08/13	<100	15,100	14,200	<1,100	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	
07/10/14	121	11,000	9,900	<400	<1.0	<1.0	<1.0	<3.0	--	--	--	
Duplicate	07/10/14	<100	17,300	14,500	<400	<1.0	<1.0	<1.0	<3.0	--	--	--
MW-4	09/10/08	<50.0	150 ⁶	--	<743	<0.20	<0.500	<0.50	<1.00	--	<1.00	--
	04/22/09						Well buried under snow/ice					
	10/06/09	<50.0	<391	--	<391	<0.200	<1.00	<1.00	<3.00	--	<1.00	<0.0100
	10/06/09 ^D	<50.0	<403	--	<403	<0.200	<1.00	<1.00	<3.00	--	<1.00	<0.0100
	06/18/10						Well not sampled					
	09/24/10	<10	56	--	75	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/10/11	<10	<50	--	<71	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/25/11	20	62	--	77	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/13/12	<10	120	<50	<71	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/07/13	<100	<450	<450	<1,100	<1.0	<1.0	<1.0	<3.0	<1.0	--	--
07/10/14	<100	<400	--	<400	<1.0	<1.0	<1.0	<3.0	--	--	--	
MW-5	09/10/08	89.1 ⁴	2,240 ¹	--	<743	0.378	<0.500	2.42	3.28	--	<1.00	--
	04/22/09	254 ¹	4,230 ²	--	<728	0.590	<0.500	6.95	5.14	--	<1.00 ⁷	<0.01
	04/22/09 ^D	248 ¹	4,150 ²	--	<721	0.593	<0.500	6.82	4.90	--	<1.00 ⁷	<0.01
	10/07/09	<50.0	1,040	--	<391	<0.200	<1.00	1.35	<3.00	--	<1.00	<0.0100
	06/18/10	540	1,500	--	<1.7	<0.5	<5	2	<5	--	--	--
	09/24/10	230	6,500	--	<690	<0.5	<0.5	4.3	7.8	--	--	--
	09/24/10	240	--	--	--	<0.5	<0.5	4.6	8.0	--	--	--
	06/10/11	3,800	63,000	--	<6,900	<0.5	<0.5	5.2	23	--	--	--
	08/25/11	210	2,700	--	<140	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/13/12	130	7,000	10,000	<720	<0.5	<0.5	0.6	2.8	--	--	--
08/08/13	<100	3,600	2,900	<1,100	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	
07/10/14	<100	1,800	1,500	<400	<1.0	<1.0	<1.0	<3.0	--	--	--	
07/10/14	<100	1,300	--	<430	<1.0	<1.0	<1.0	<3.0	--	--	--	
MW-6	09/24/10	81	560	--	86	<0.5	<0.5	2.3	3.9	--	--	--
	06/10/11	86	730	--	1,600	<0.5	<0.5	0.6	<5	--	--	--
	08/25/11	58	770	--	430	<0.5	<0.5	1.1	2	--	--	--
	06/13/12	41	460	160	150	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/07/13	<100	450	<420	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0	--	--
	07/10/14	<100	<420	--	<420	<1.0	<1.0	<1.0	<3.0	--	--	--
MW-7	09/24/10	<10	200	--	92	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/10/11	<10	650	--	2,000	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/25/11	<10	150	--	190	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/13/12	<10	360	<52	770	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/08/13	<100	<420	<420	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0	--	--
	07/10/14	<100	<400	--	<400	<1.0	<1.0	<1.0	<3.0	--	--	--
MW-8	09/24/10	1,000	4,500	--	<360	1.3	<0.5	38	69	--	--	--
	06/10/11						LNAPL Globules Present - Well not sampled					
	08/25/11						LNAPL Globules Present - Well not sampled					
	06/13/12						LNAPL Globules Present - Well not sampled					
08/08/13	313	7,800	4,500	<1,100	<1.0	<1.0	<1.0	3.4	<1.0	--	--	
07/10/14	100	7,800	7,400	<400	<1.0	<1.0	<1.0	<3.0	--	--	--	
MW-9	09/24/10	890	6,000	--	<730	7.3	<0.5	50	55	--	--	--
	06/10/11						Obstruction - Well not sampled					
	08/25/11	460	260	--	350	5.9	<2.5	35		--	--	--
	06/13/12						Obstruction - Well not sampled					
	08/08/13	304	3,200	1,500	<1,000	2.9	<1.0	32.2	23.5	<1.0	--	--
	07/10/14	<100	<420	--	<420	<1.0	<1.0	<1.0	<3.0	--	--	--

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Monitoring Well	Date Sampled	GRO	DRO	DRO with SGC	RRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead	1,2-Dibromethane
ADEC Groundwater Cleanup Levels ¹		2,200	1,500	1,500	1,100	5	1,000	700	10,000	470	15	0.05
MW-10	09/24/10	<10	850	--	520	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/10/11	<10	700	--	480	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/25/11	<10	960	--	530	<0.5	<0.5	<0.5	<1.5	--	--	--
	06/13/12	<10	630	<50	240	<0.5	<0.5	<0.5	<1.5	--	--	--
	08/08/13	<100	900	<420	<1,000	<1.0	<1.0	<1.0	<3.0	<1.0	--	--
07/10/14	<100	<420	--	<420	<1.0	<1.0	<1.0	<3.0	--	--	--	
MW-11	10/11/13	<100	<420	--	<420	<1.0	<1.0	<1.0	<3.0	--	--	--
	07/10/14	<100	<400	--	<400	<1.0	<1.0	<1.0	<3.0	--	--	--
MW-12	10/11/13	<100	<420	--	<420	<1.0	<1.0	<1.0	<3.0	--	--	--
	07/10/14	<100	<430	--	<430	<1.0	<1.0	<1.0	<3.0	--	--	--
MW-13 Duplicate	10/11/13	<100	<390	--	<390	<1.0	<1.0	<1.0	<3.0	--	--	--
	10/11/13	<100	<430	--	<430	<1.0	<1.0	<1.0	<3.0	--	--	--
	07/10/14	<100	<400	--	<400	<1.0	<1.0	<1.0	<3.0	--	--	--
RW-1	10/06/09	172	4,260	--	512	<0.200	<1.00	1.04	2.25	--	<1.00	<0.0100
	06/18/10	260	1,500	--	80	<0.5	<2.00	0.7	8.6	--	--	--
	09/24/10	330	4,100	--	<350	<0.5	<2.0	1.3	8.6	--	--	--
	06/10/11	3,500	140,000	--	<6,800	<2.5	<10	4	39	--	--	--
	08/25/11											
	06/13/12											
	08/07/13	317	3,900	2,600	<1,100	<1.0	<1.0	1.5	8.1	<1.0	--	--
	07/10/14											

Notes:
 GRO = Gasoline range organics by Alaska method 101
 DRO = Diesel range organics by Alaska method 102
 SGC = Silica gel cleanup
 RRO = Residual range organics by Alaska method 103
 BTEX and 1,2-Dibromethane by EPA method 8021B
 EPA = Environmental Protection Agency
 MTBE = Methyl-tert-butyl ether by EPA method 8260B
 Lead by EPA method 6020
 ADEC = Alaska Department of Environmental Conservation
 GCL = groundwater cleanup level
 All results are reported in micrograms per liter (µg/l).
 -- = sample was not analyzed for this compound.
 < = result did not exceed indicated method reporting limit; an elevated reporting limit indicates sample was diluted.
 Highlighted cell = exceeds GCL.
 LNAPL = light non-aqueous phase liquid
 □ - duplicate of preceding sample.
 Bold Type indicates most recent sampling event.
¹ ADEC Groundwater Cleanup Levels (GCL) per 18 AAC 75.345, Table C, Register 188, October 9, 2008.
² Detected hydrocarbons in the gasoline range appear to be due to overlap of diesel range hydrocarbons.
³ Hydrocarbon pattern most closely resembles kerosene.
⁴ Insufficient water to collect sample.
⁵ Does not match typical pattern.
⁶ Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel.
⁷ The chromatographic pattern is not consistent with diesel fuel.
⁸ Sample filtered in lab.
⁹ The heavy oil range organics present are due to hydrocarbons eluting primarily in the diesel range.
¹⁰ Hydrocarbon pattern most closely resembles a blend of Weathered Diesel and Transformer Oil.

Table 3
Geochemical Parameter Monitoring Data
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Gate 28, West Ramp, Fairbanks International Airport
Fairbanks, Alaska

Relative Location	Monitoring Well ID	Date Sampled	DO (mg/L) ¹	ORP (mV) ¹	Total Alkalinity (mg/L as CaCO ₃) ²	Sulfate (mg/L) ³	Nitrate as Nitrogen (mg/L) ³	Methane (mg/L) ⁴	Ferrous Iron (mg/L) ⁵	Nitrate by Field Measurement (mg/L) ⁵
Cross gradient	GEI-4	04/22/09	0.56	-80.61	349	6.22	<0.20	1.95 ⁶	4.0	0.0
Within Plume Close to Source	GEI-8	04/22/09	0.60	-93.16	588	7.40	<0.20	0.468	6.2	0.0
Cross gradient	MW-1	04/22/09	0.32	-108.16	540	<0.40	<0.20	16.5 ⁶	5.6	0.0
Cross gradient	MW-2	06/13/12	--	--	412	31	1.2	0.014	--	--
Down gradient	MW-3	04/22/09	1.07	-108.06	338	8.24	<0.20 ⁷	1.05 ⁶	3.0	0.0
Down gradient	MW-4	06/13/12	--	--	268	22.0	<0.25	0.011	--	--
Down gradient	MW-5	04/22/09	0.31	-84.71	438	6.88	<0.20 ⁷	1.2 ⁶	5.0	0.0
Down gradient	MW-5 ^D	04/22/09	--	--	429	6.84	<0.20 ⁷	0.832	--	--
Down gradient	MW-7	06/13/12	--	--	305	19.2	<0.25	0.110	--	--
Up gradient	MW-10	06/13/12	--	--	440	28.4	<0.25	0.069	--	--

Notes:

- ¹: DO and ORP measured using an In-Situ® 9500 and flow through cell instrument.
- ²: Total alkalinity analyzed using EPA method 310.1.
- ³: Sulfate and nitrate as nitrogen analyzed by EPA method 300.0.
- ⁴: Methane analyzed using GC/FID, with exception of 6/13/12 analyzed by RSKSOP-175 modified.
- ⁵: Ferrous iron and nitrate field measurement analyzed using a Hach field kit.
- ⁶: Sample required dilution due to high concentrations of target analyte.
- ⁷: The holding time was not met.

DO = Dissolved oxygen

ORP = Oxidation-reduction potential

"<" = Indicates analyte not detected above MRL

"--" = Indicates analyte was not sampled or analyzed for

^D Duplicate

mV = millivolts

Bold Type indicates most recent sampling event, which was in 2012.

MRL = Method reporting limit

CaCO₃ = Calcium carbonate

EPA = Environmental Protection Agency

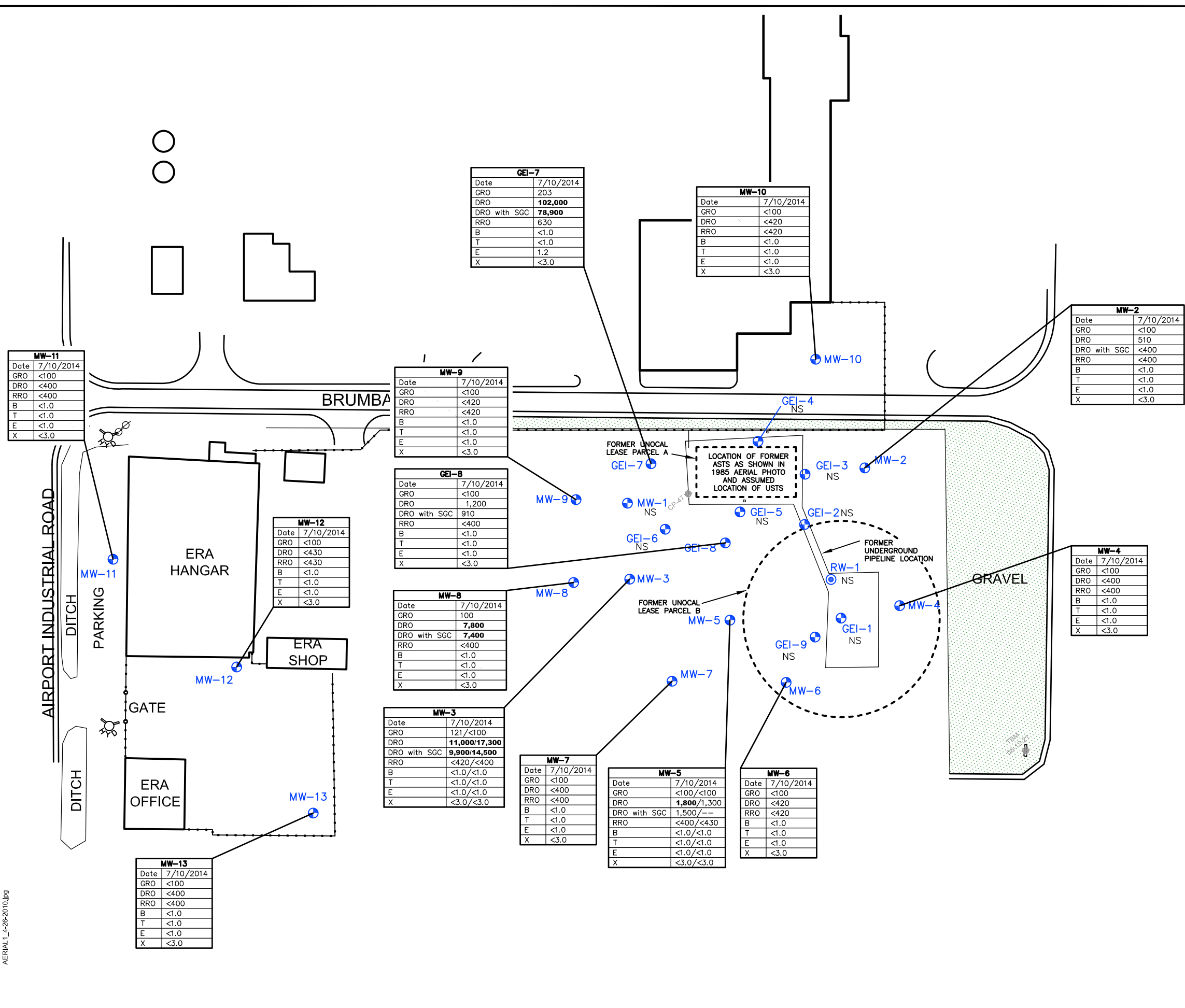
mg/L = milligrams per liter

µg/L = micrograms per liter

ADEC = Alaska Department of Environmental Conservation

ARCADIS

Figures

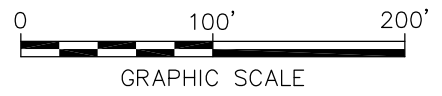


LEGEND

- FIRE HYDRANT
- POWER POLE
- CHAINLINK FENCE
- MONITORING WELL
- RECOVERY WELL

DATE	SAMPLE DATE
GRO	Gasoline Range Organics
DRO	Diesel Range Organics
DRO with SGC	Diesel Range Organics with Silica gel cleanup
RRO	Residual Range Organics
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total Xylenes
MTBE	Methyl-tert-butyl ether

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)
BOLD = EXCEEDS GROUNDWATER CLEANUP LEVEL (GCL)
 20/32 = DUPLICATE SAMPLE COLLECTED
 <0.5 = RESULT IS BELOW LABORATORY DETECTION LIMIT
 NS = NOT SAMPLED
 --- = NOT ANALYZED

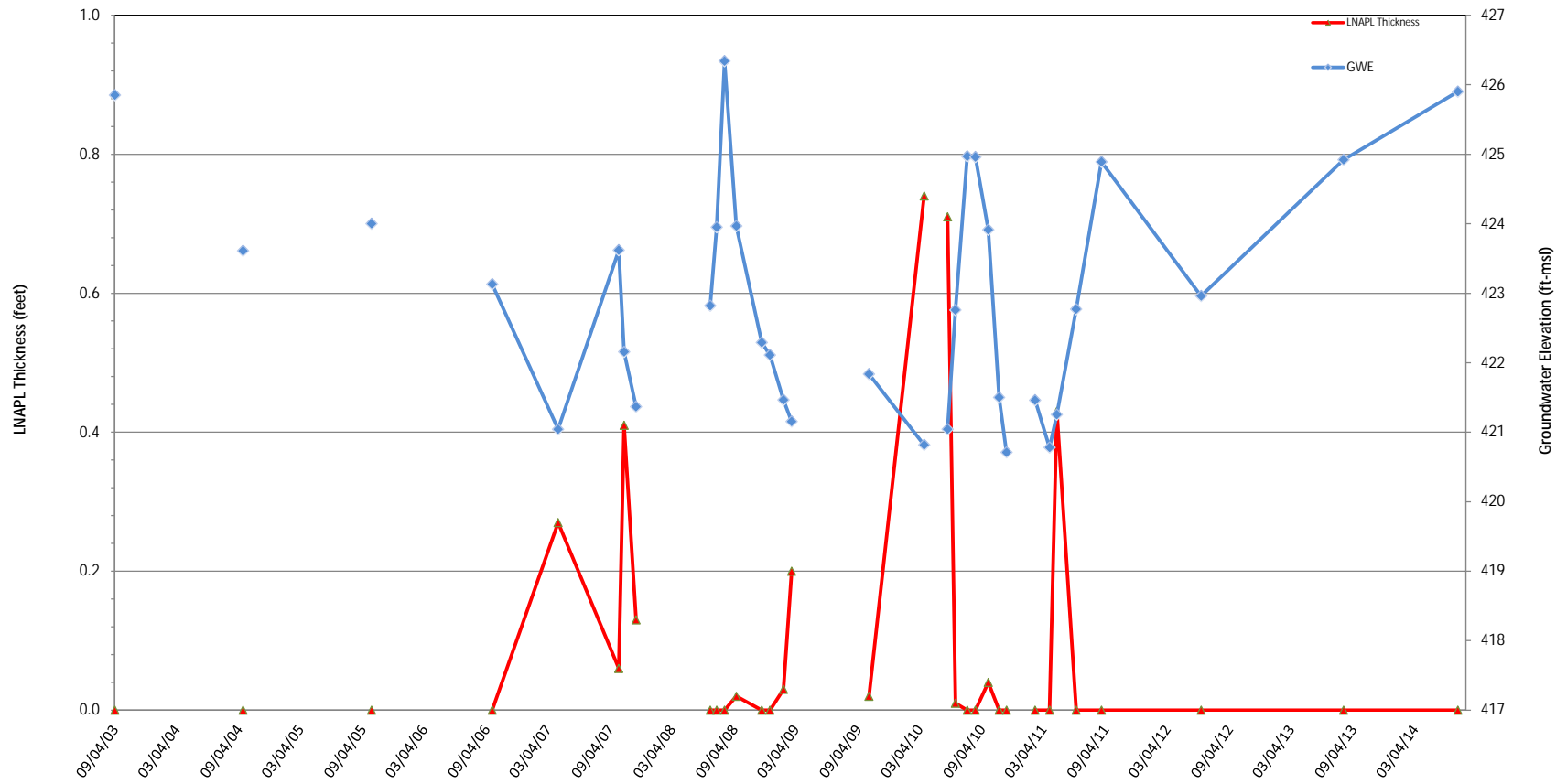


SOURCE: Base map provided by GEOENGINEERS. Map date 5/15/05, full scale. Base map updated with survey information by "McLane Consulting, Inc.", Date 8/31/08 and 10/28/10.

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
 GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK.
ANNUAL 2014 GROUNDWATER MONITORING REPORT

**GROUNDWATER ANALYTICAL SUMMARY
 MAP - JULY 10, 2014**



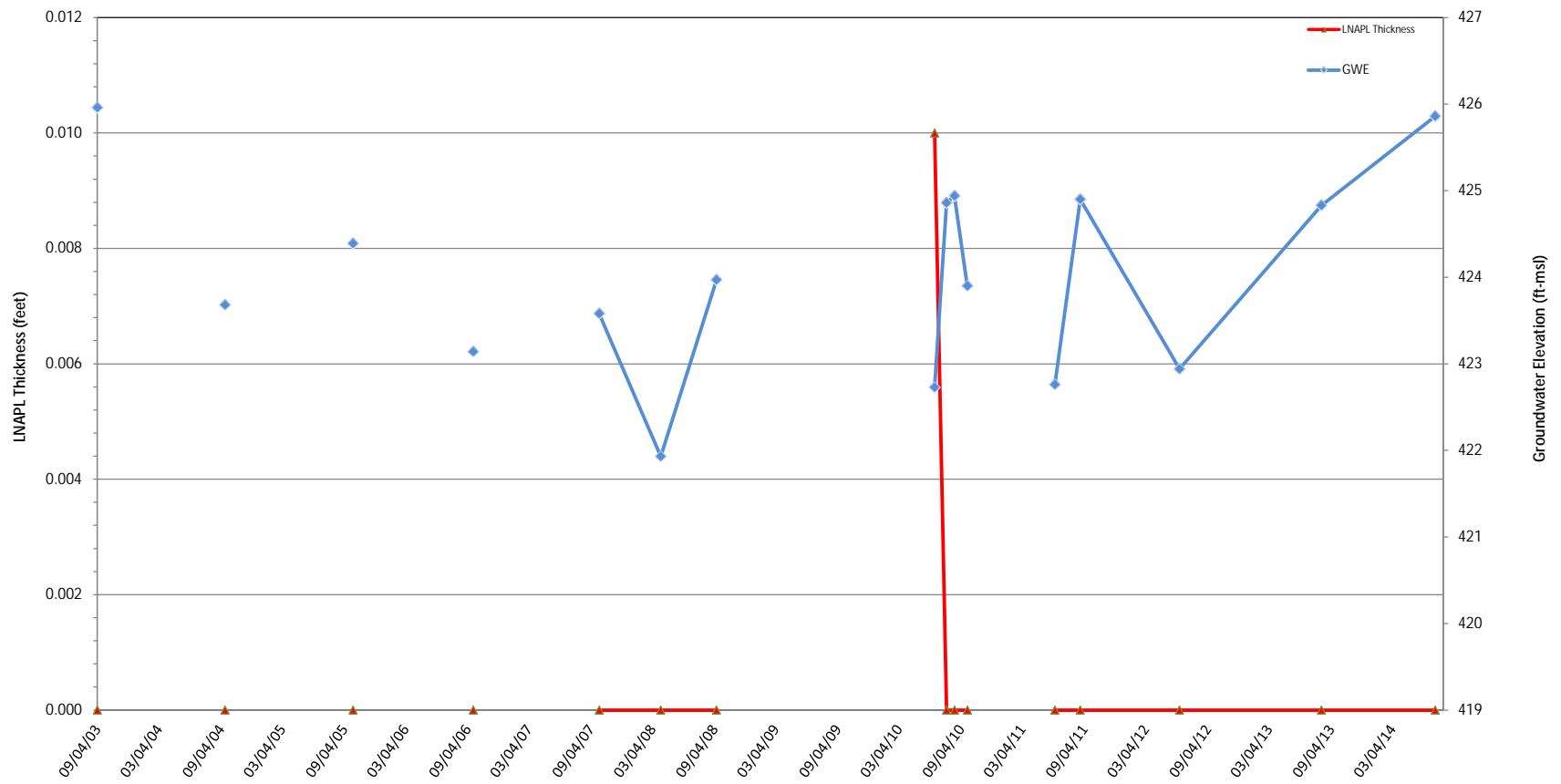


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
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Monitoring Well GEI-1 Historical Groundwater Elevation and LNAPL Thickness

FIGURE 5



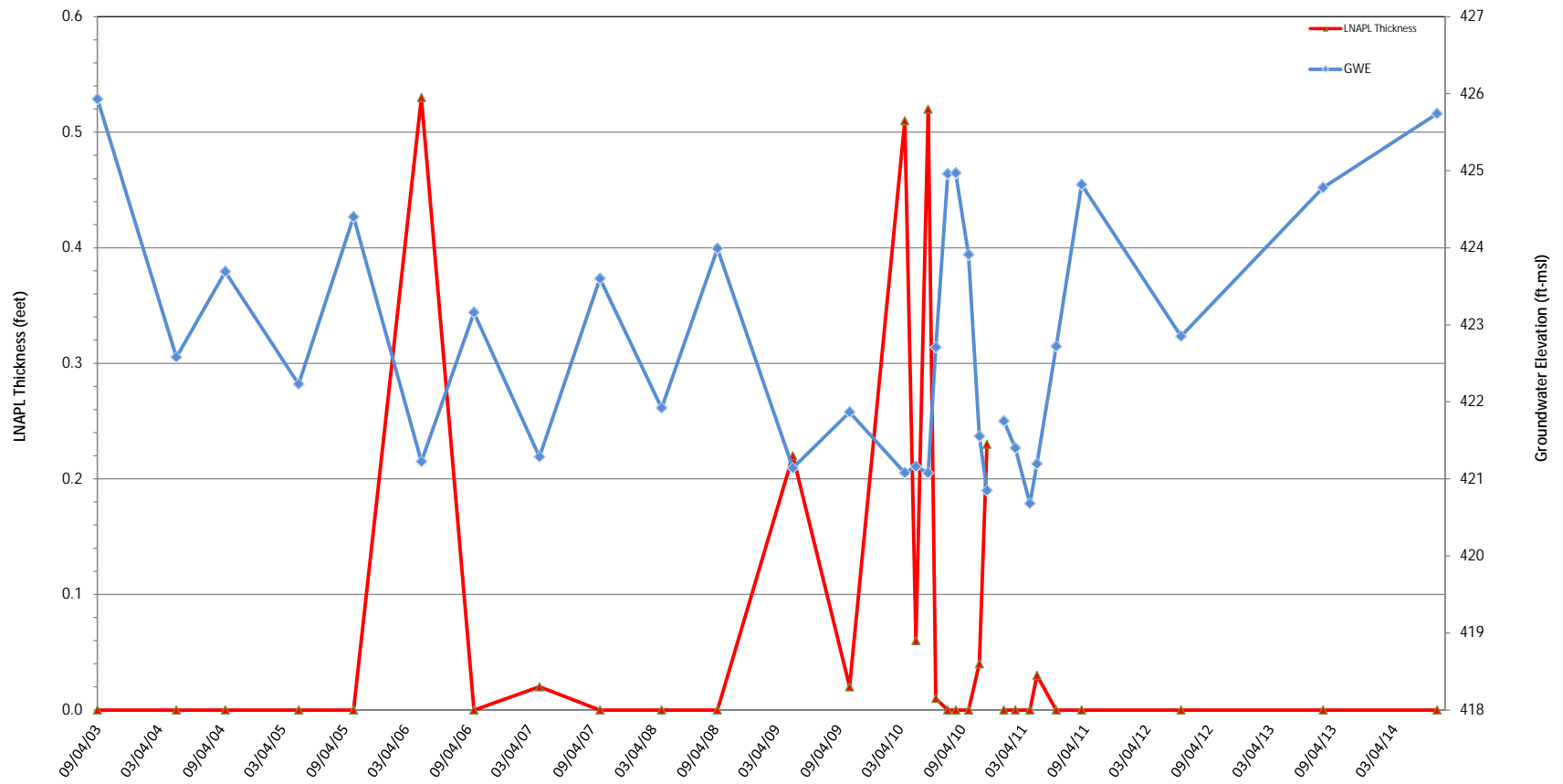
LEGEND:
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**Monitoring Well GEI-2 Historical Groundwater
 Elevation and LNAPL Thickness**



FIGURE
 6

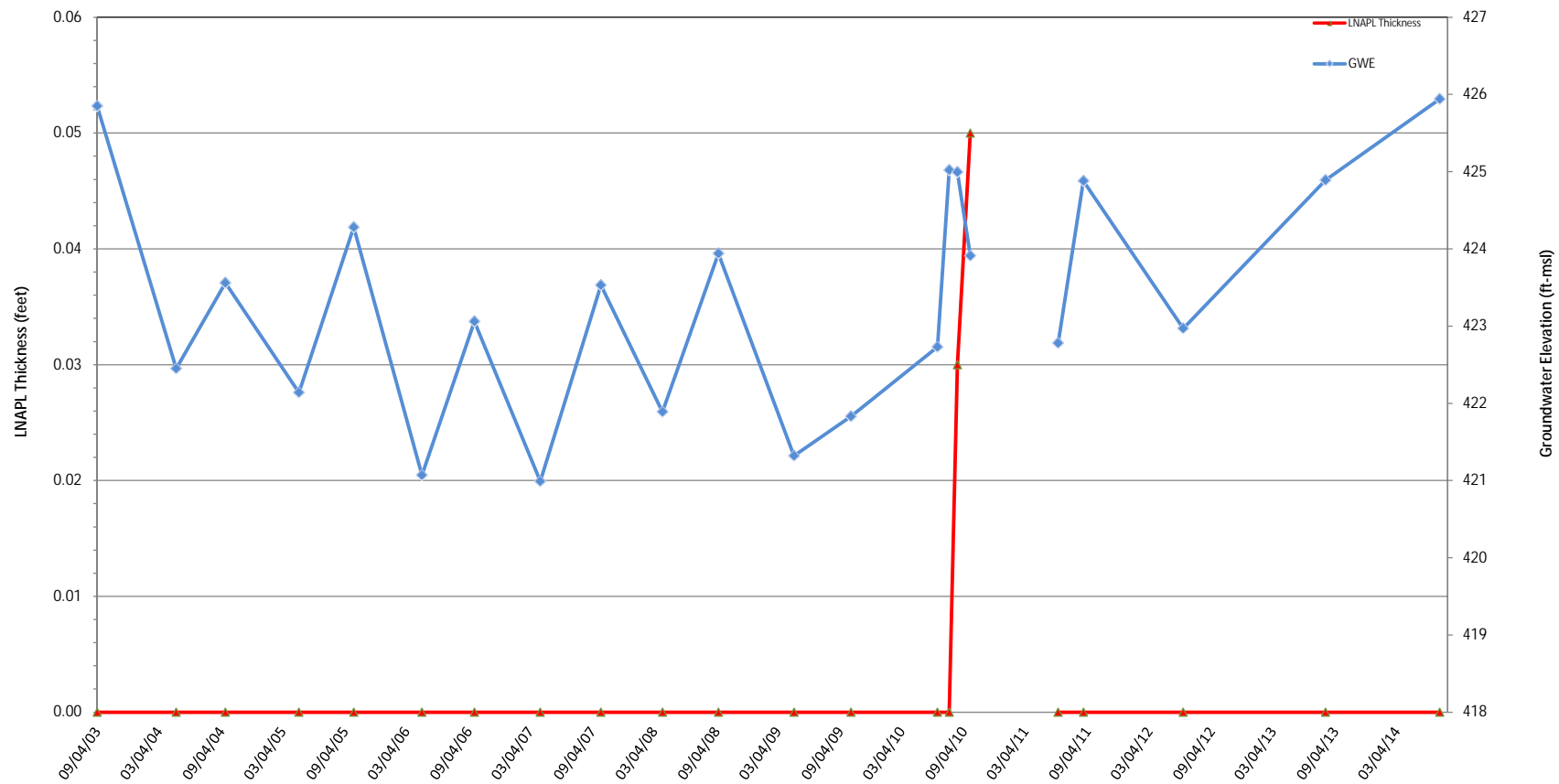


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

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**Monitoring Well GEI-3 Historical Groundwater
 Elevation and LNAPL Thickness**





LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

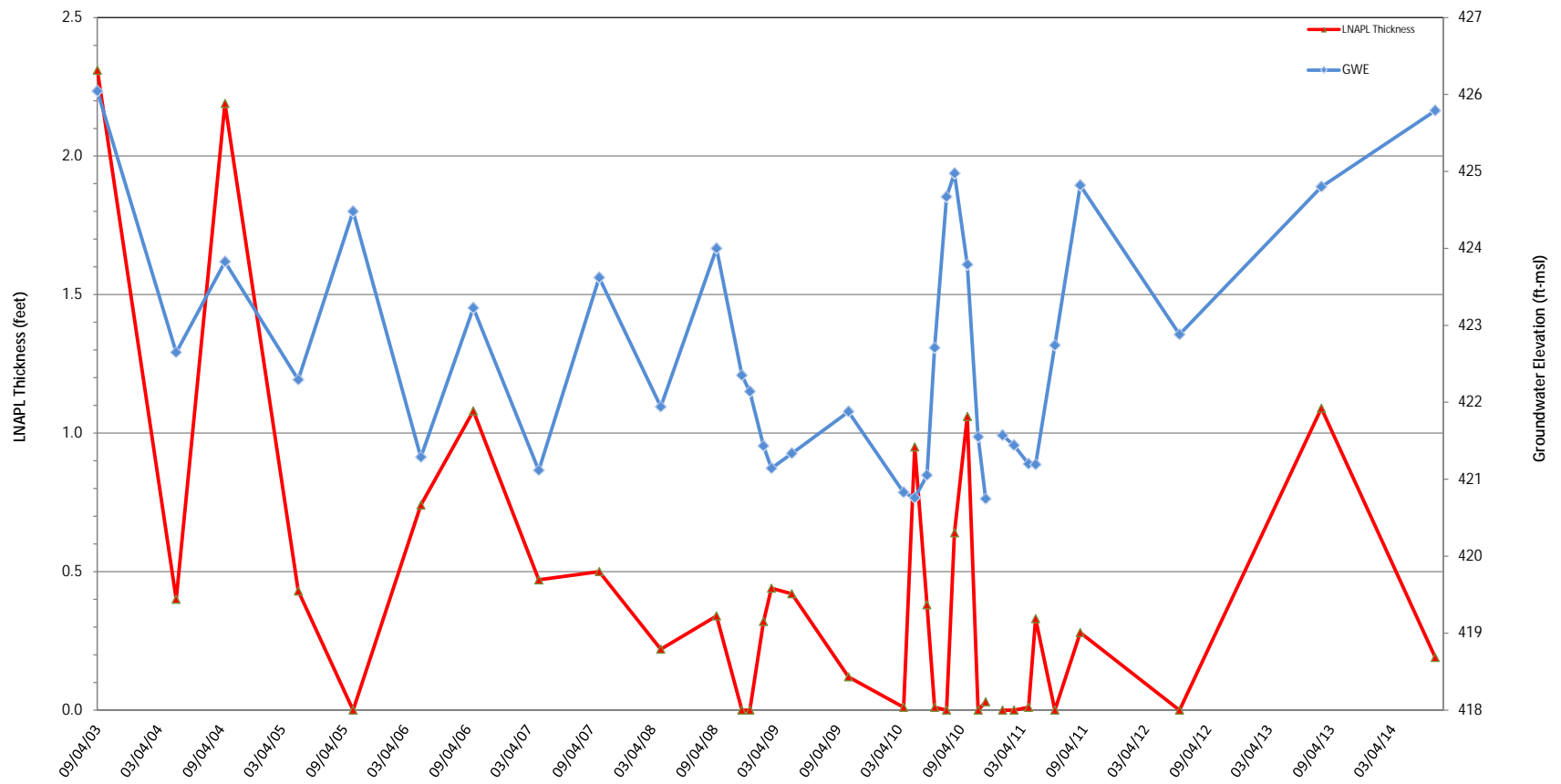
CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
 GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK
 ANNUAL 2014 GROUNDWATER MONITORING REPORT

**Monitoring Well GEI-4 Historical Groundwater
 Elevation and LNAPL Thickness**



FIGURE

8



LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

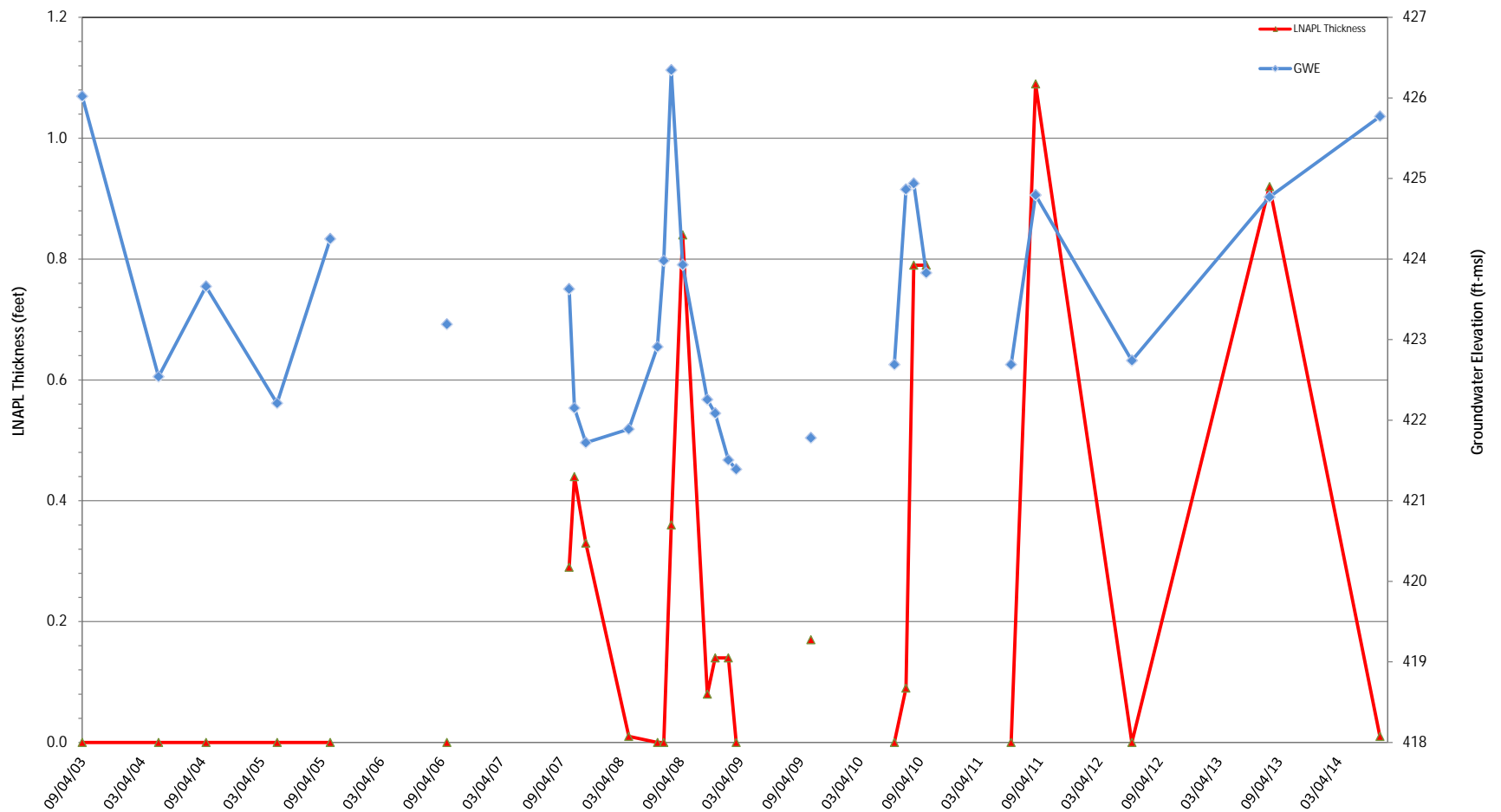
CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
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Monitoring Well GEI-5 Historical Groundwater Elevation and LNAPL Thickness




FIGURE

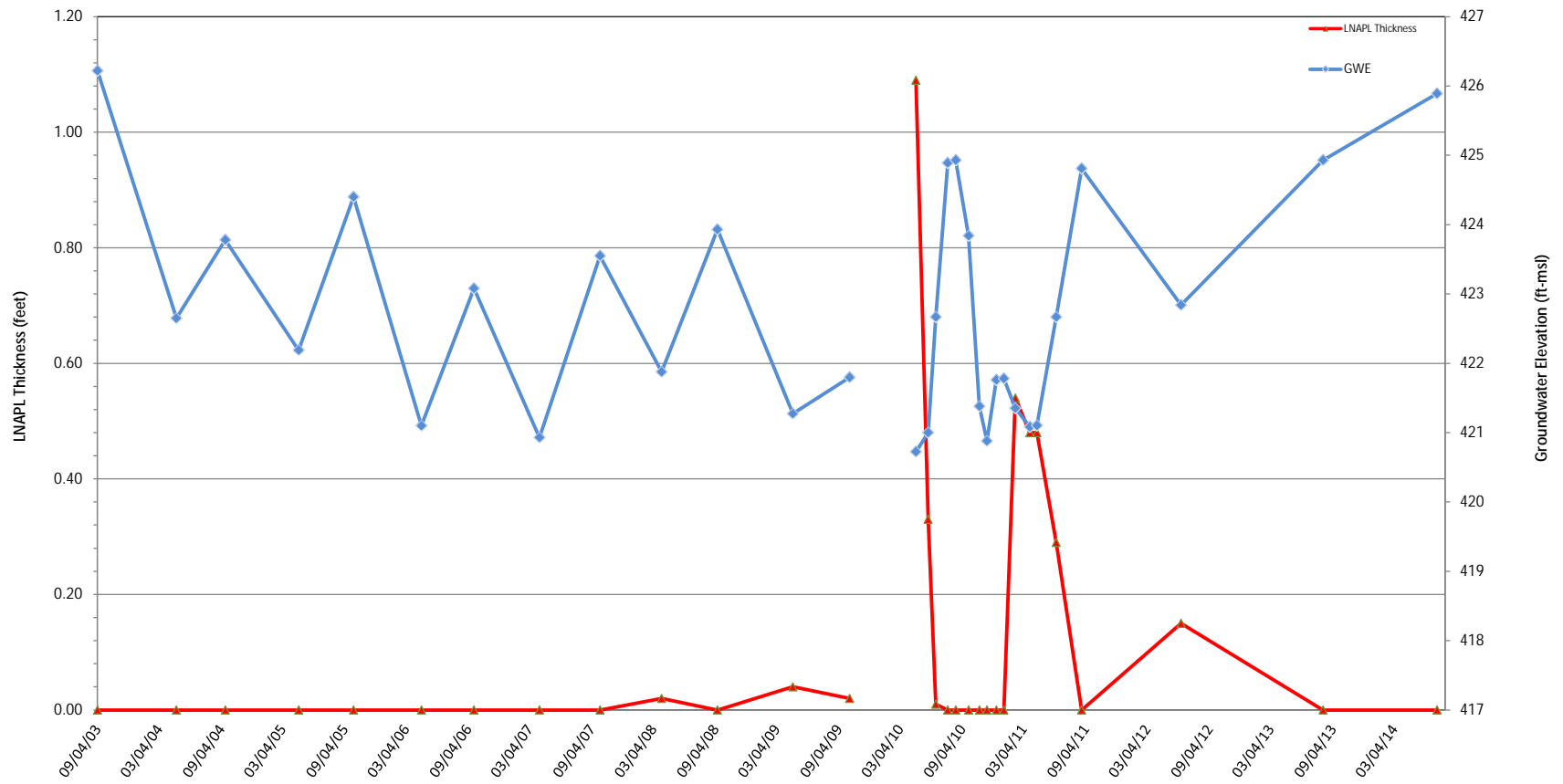
9



LEGEND:

GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

CHEVRON #306443 (FORMER UNOCAL BULK PLANT) GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK ANNUAL 2014 GROUNDWATER MONITORING REPORT	
Monitoring Well GEI-6 Historical Groundwater Elevation and LNAPL Thickness	
	FIGURE 10

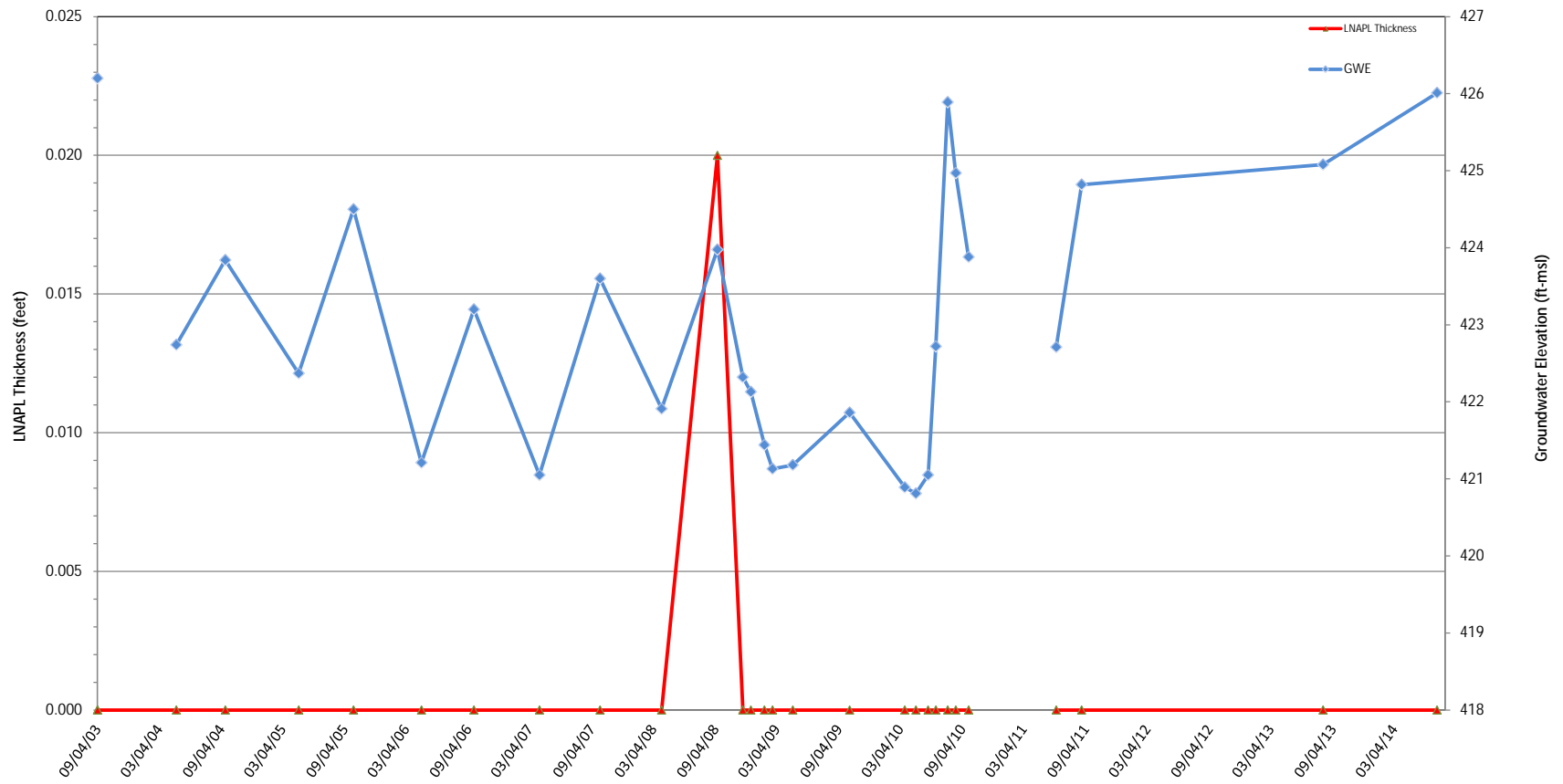


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

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Monitoring Well GEI-7 Historical Groundwater Elevation and LNAPL Thickness

FIGURE 11

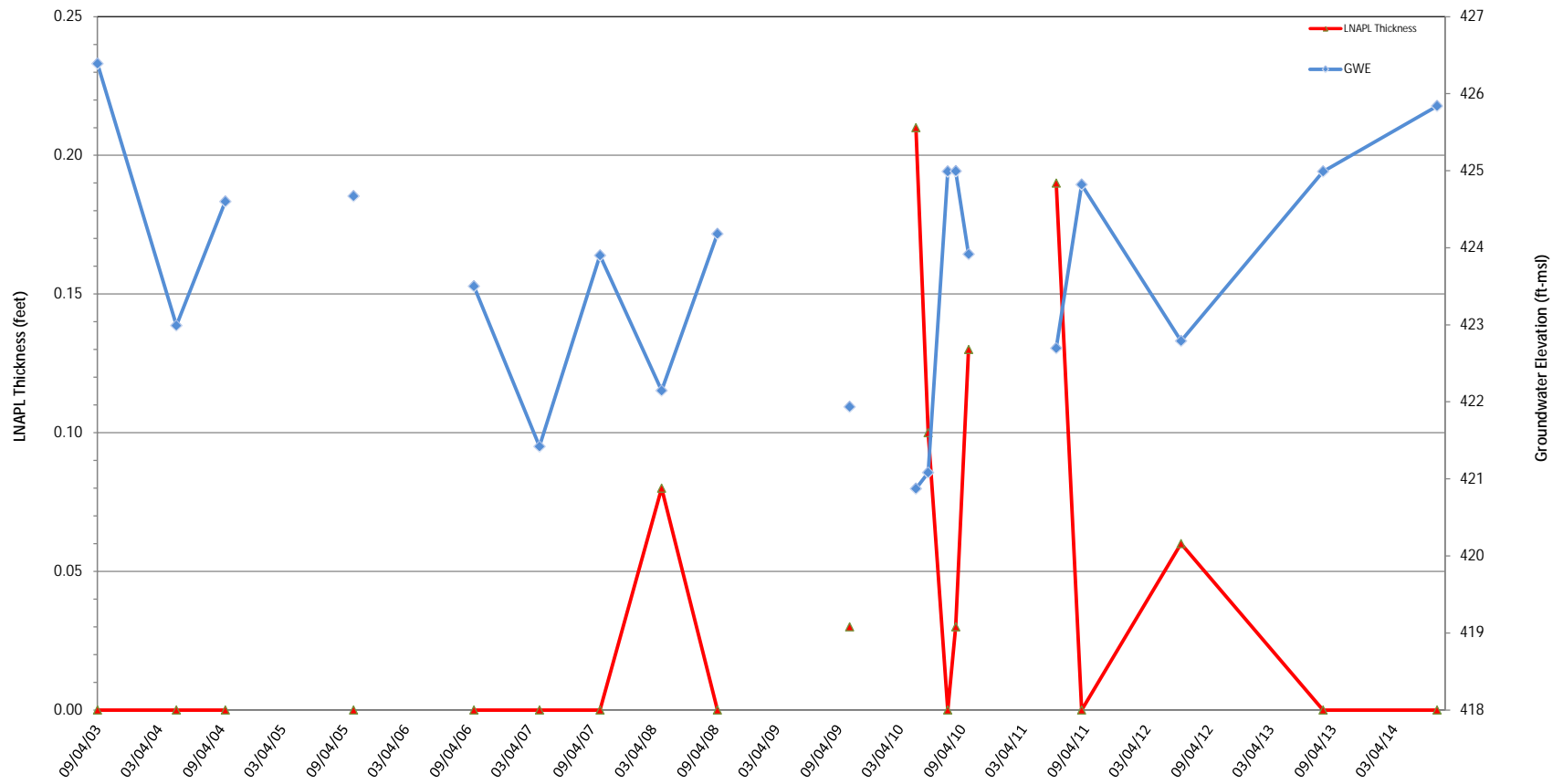


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged, including First Semi-Annual 2012

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**Monitoring Well GEI-8 Historical Groundwater
 Elevation and LNAPL Thickness**



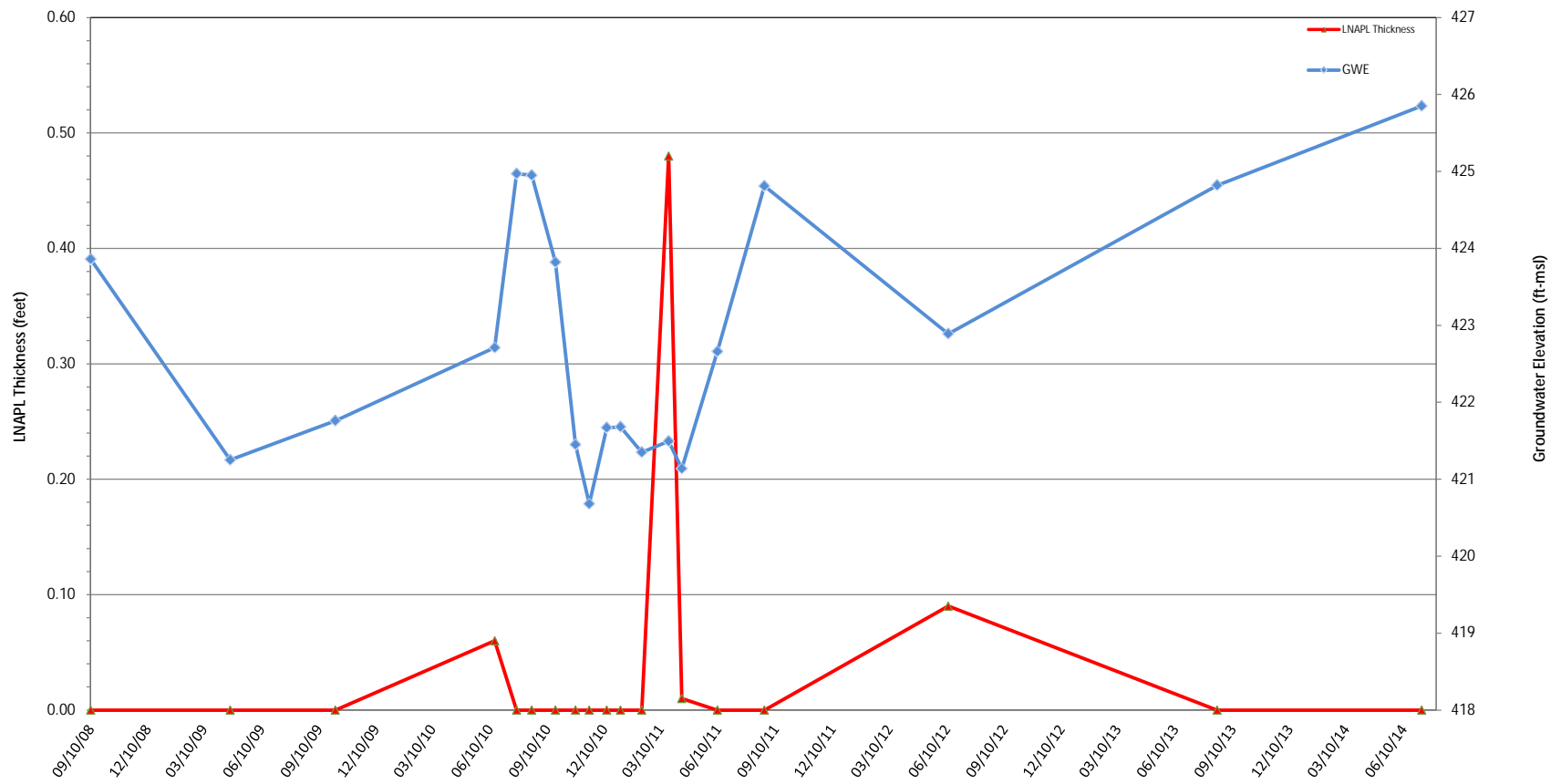


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

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 ANNUAL 2014 GROUNDWATER MONITORING
 REPORT

**Monitoring Well GEI-9 Historical Groundwater
 Elevation and LNAPL Thickness**



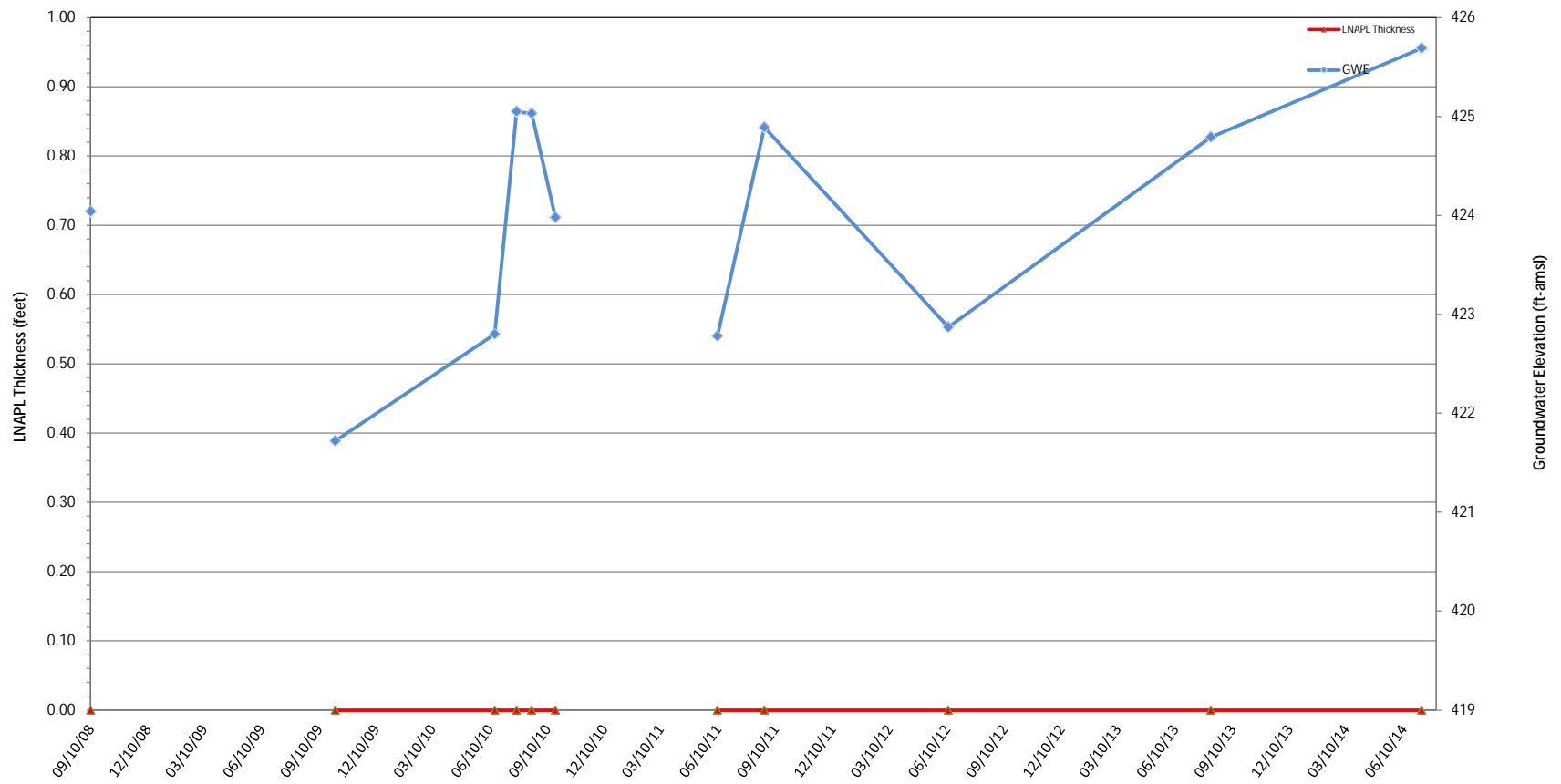


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

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 REPORT

**Monitoring Well MW-1 Historical Groundwater
 Elevation and LNAPL Thickness**



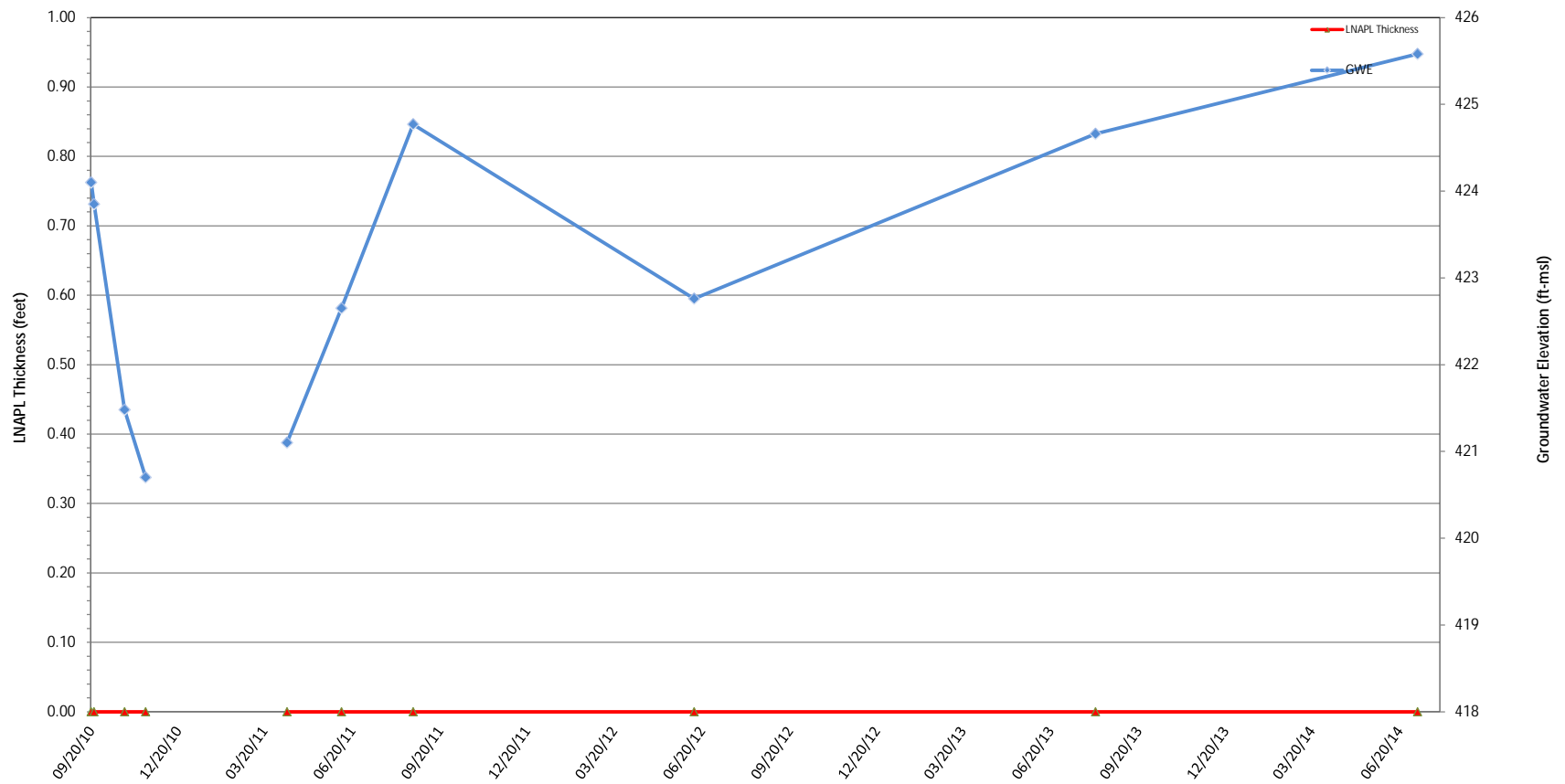


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet mean sea level
 Data gaps = wells were inaccessible and not gauged

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 REPORT

**Monitoring Well MW-4 Historical Groundwater
 Elevation and LNAPL Thickness**

**FIGURE
 15**

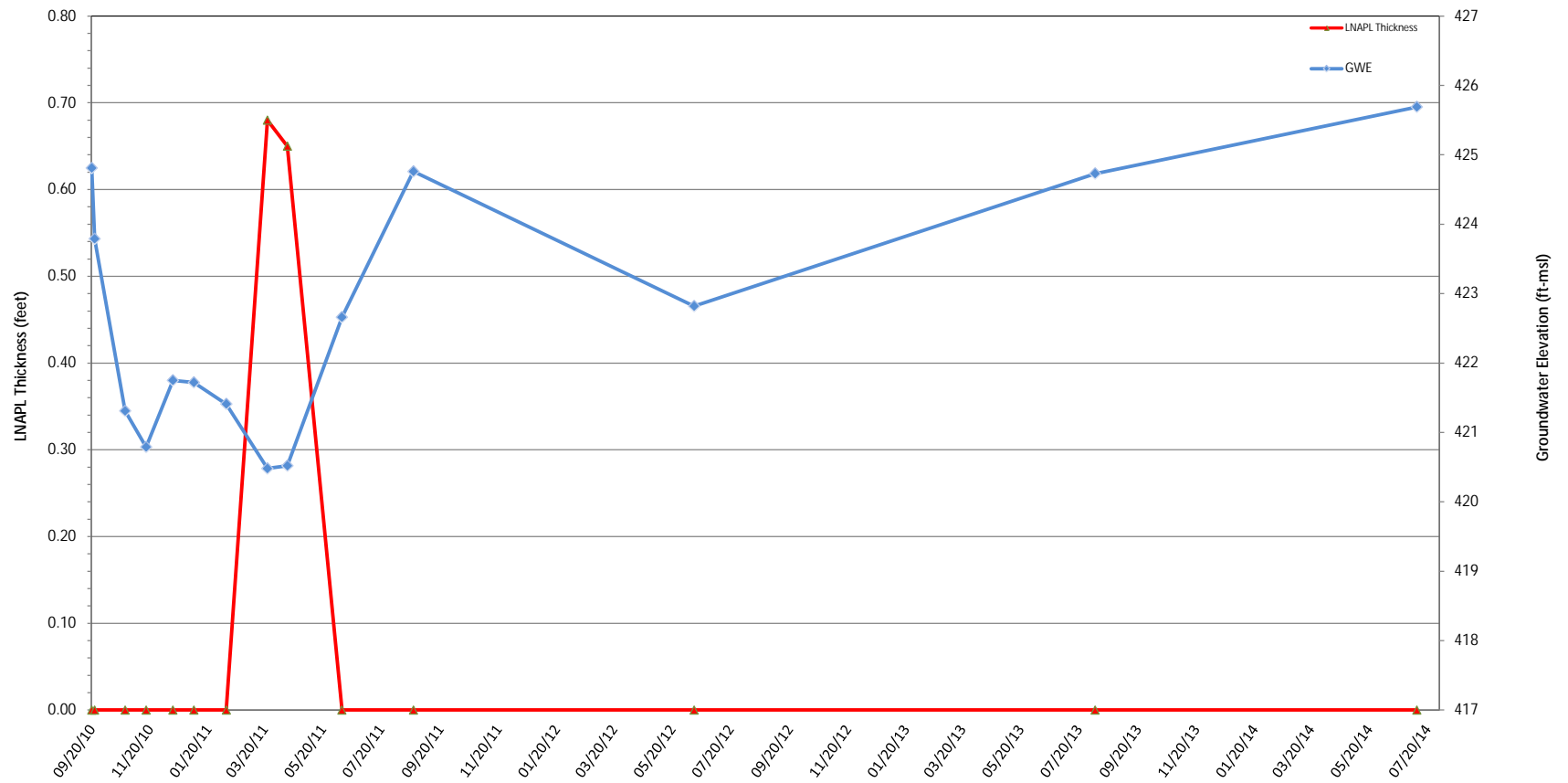


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

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 REPORT

**Monitoring Well MW-7 Historical Groundwater
 Elevation and LNAPL Thickness**



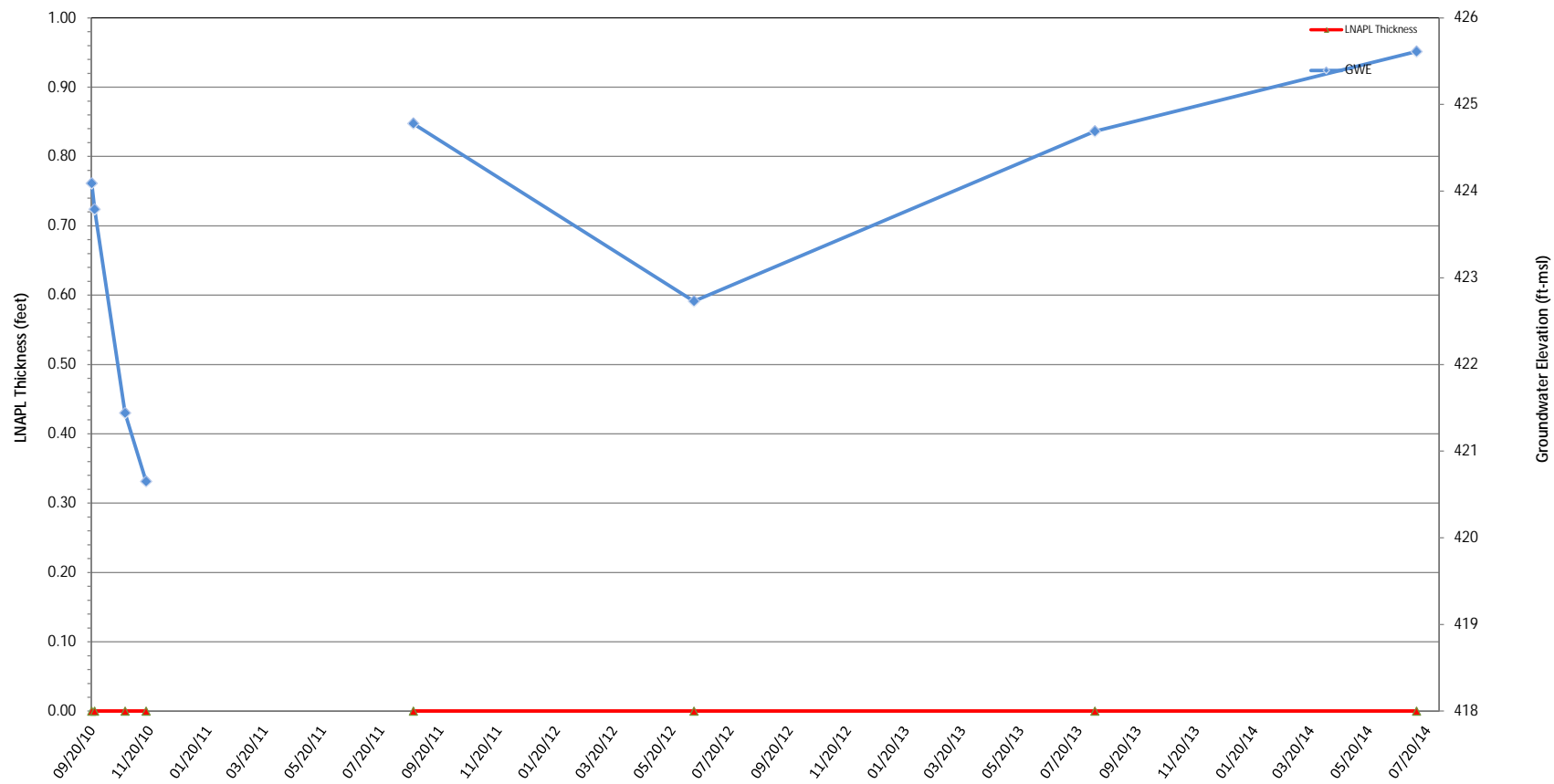


LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
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**Monitoring Well MW-8 Historical Groundwater
 Elevation and LNAPL Thickness**



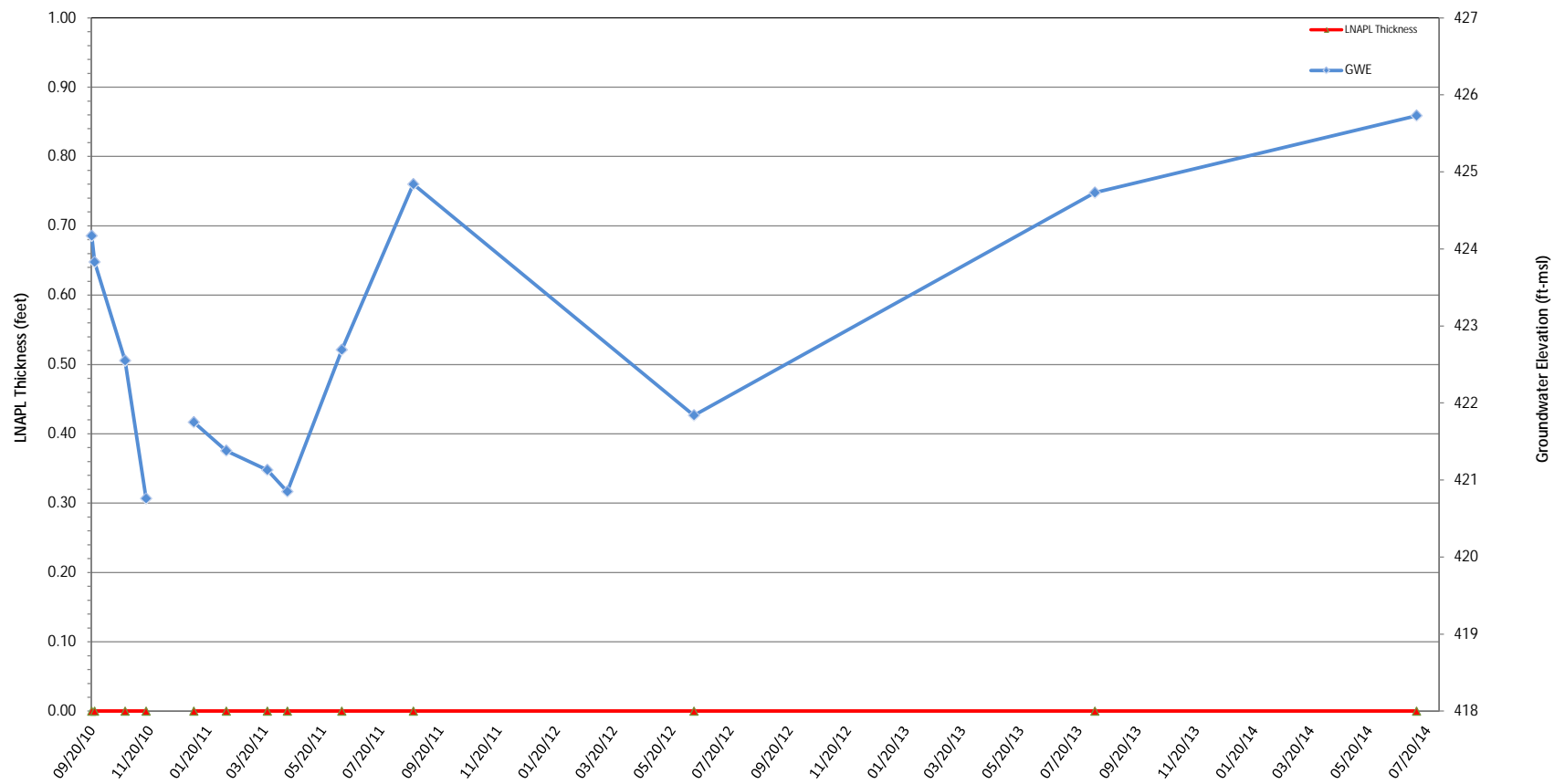


LEGEND:
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 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
 GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK
 ANNUAL 2014 GROUNDWATER MONITORING
 REPORT

**Monitoring Well MW-9 Historical Groundwater
 Elevation and LNAPL Thickness**





LEGEND:
 GWE = Groundwater elevation
 LNAPL = Light non-aqueous phase liquid
 ft-msl = Feet above mean sea level
 Data gaps = wells were inaccessible and not gauged

CHEVRON #306443 (FORMER UNOCAL BULK PLANT)
 GATE 28, WEST RAMP, FAIRBANKS AIRPORT, FAIRBANKS, AK
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 REPORT

**Monitoring Well MW-10 Historical Groundwater
 Elevation and LNAPL Thickness**

**FIGURE
 19**

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Appendix A

Field Data Sheets

7/9/14 FIA Unocal 306443 / Gate 28, West Ramp
 2014 Annual GWM Event

Personnel: M. MacDaniel & P. DeCarvalho

Weather: 70F, Sunny

11:30 Arrive on site, Conduct H+S
 Tailgate meeting, review HASP, review hazards, complete ATW, calibrate PID.

11:50 Begin prepping equipment for ganging.

12:20 Begin Ganging. Data is summarized in the following table:

Well ID	DTW	PID	DTP	Comments
Gei-1	6.27	228	-	
Gei-2	6.29	2.5	-	
Gei-3	6.33	54.4	-	
Gei-4	6.03	225	-	
Gei-5	6.80	117	6.61	
Gei-6	6.73	212	6.72	
Gei-7	6.25	10.4	-	
Gei-8	6.67	15.6	-	
Gei-9	6.97	167	-	
MW-1	6.65	2.5	-	
MW-2	5.92	8.7	-	
MW-3	7.09	115	-	
MW-4	6.62	37.8	-	Lib Broken
MW-5	7.12	0.6	-	

7/9/14 FIA Unocal 306443 / Gate 28, West Ramp
 2014 Annual GWM Event

Personnel: M. MacDaniel & P. DeCarvalho

Weather: 70F, Sunny

Continued...

Well ID	DTW	PID	DTP	Comments
MW-6	6.87	228.5	-	
MW-7	7.20	5.7	-	Heard Casing
MW-8	7.42 6.69	7.0	-	
MW-9	6.78	0.1	-	Heard Casing
MW-10	7.02	15.9	-	Heard Casing
MW-11	6.69	0.0	-	New
MW-12	7.49	1.7	-	New
MW-13	7.72	2.3	-	New
RW-1	6.48	331	-	

1700 Completed ganging. Mobilized off site to hotel.

7/10/14 FIA Unocal 306443/Gate 28
 2014 Annual OWM West Ramp

Personnel: M. MacDaniel & P. DeCarvalho

Weather: 70F, Sunny

9:00 Arrive on site, contact H+S
 tailgate, review SOW, review
 HASP, review hazards, Complete
 PTW.

9:20 Begin setting up sampling equipment
 and sampling via hydrasteeves
 at MW-4. Sampling data is summarized
 in the following table:

Well ID	Sample Time	Comments
Gei-1	NS	Not sampled - LNAPL Globules
Gei-2	NS	LNAPL Globules present
Gei-3	NS	" " "
Gei-4	NS	" " "
Gei-5	NS	Measurable LNAPL
Gei-6	NS	" "
Gei-7	12:30	Lost new hydrasteeve down well → had to retrieve.
Gei-8	12:00	
Gei-9	NS	LNAPL Globules present
Gei-10		

7/10/14 306443 FIA Unocal
 2014 Annual OWM

Continued...

Well ID	Sample Time	Comments
MW-1	NS	
MW-2	11:00	
MW-3	13:30	BD-1 Collected
MW-4	9:30	
MW-5	14:20	BD-2 Collected
MW-6	11:30	
MW-7	14:50	
MW-8	13:50	
MW-9	13:20	
MW-10	17:30	
MW-11	16:50	
MW-12	16:10	MS/MSD Collected
MW-13	15:50	
Rev-1	NS	LNAPL Globules present
1500	Mob off site to purchase hook for hydrasteeve retrieval in Gei-7.	
1540	Return to site and continue sampling	
1745	Complete Sampling, pack equipment. Mob to hotel to unload Samples	



ARCADIS

Appendix B

Laboratory Analytical Reports

July 25, 2014

Gregory Montgomery
Arcadis US, Inc.
1100 Olive Way
Suite 800
Seattle, WA 98101

RE: Project: Chevron#306443 BATE28,WRAMP FI
Pace Project No.: 10273877

Dear Gregory Montgomery:

Enclosed are the analytical results for sample(s) received by the laboratory on July 14, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Julie Thieschafer for
Jennifer Gross
jennifer.gross@pacelabs.com
Project Manager

Enclosures

cc: David Beaudoin, Arcadis US, Inc.
Michael MacDaniel, Arcadis US, Inc.
Tammy Parise, Arcadis US, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alabama Certification #40770

Alabama Certification #40770

Alaska Certification #: UST-078

Alaska Certification #MN00064

Arizona Certification #: AZ-0014

Arkansas Certification #: 88-0680

California Certification #: 01155CA

Colorado Certification #Pace

Connecticut Certification #: PH-0256

EPA Region 8 Certification #: 8TMS-L

Florida/NELAP Certification #: E87605

Guam Certification #: Pace

Georgia Certification #: 959

Idaho Certification #: MN00064

Hawaii Certification #MN00064

Illinois Certification #: 200011

Indiana Certification#C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky Dept of Envi. Protection - DW #90062

Kentucky Dept of Envi. Protection - WW #:90062

Louisiana DEQ Certification #: 3086

Louisiana DHH #: LA140001

Maine Certification #: 2013011

Maryland Certification #: 322

Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace

Montana Certification #: MT0092

Nebraska Certification #: Pace

New Jersey Certification #: MN-002

New Jersey Certification #: MN-002

New York Certification #: 11647

North Carolina Certification #: 530

North Carolina State Public Health #: 27700

North Dakota Certification #: R-036

Ohio EPA #: 4150

Ohio VAP Certification #: CL101

Oklahoma Certification #: 9507

Oregon Certification #: MN200001

Oregon Certification #: MN300001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification

Saipan (CNMI) #:MP0003

South Carolina #:74003001

Texas Certification #: T104704192

Tennessee Certification #: 02818

Utah Certification #: MN000642013-4

Virginia DGS Certification #: 251

Virginia/VELAP Certification #: Pace

Washington Certification #: C486

Wisconsin Certification #: 999407970

West Virginia Certification #: 382

West Virginia TO-15 Approval

West Virginia DHHR #:9952C

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10273877001	MW-3-W-071014	Water	07/10/14 13:30	07/14/14 09:22
10273877002	MW-4-W-071014	Water	07/10/14 09:30	07/14/14 09:22
10273877003	MW-5-W-071014	Water	07/10/14 14:20	07/14/14 09:22
10273877004	MW-6-W-071014	Water	07/10/14 11:30	07/14/14 09:22
10273877005	MW-7-W-071014	Water	07/10/14 14:50	07/14/14 09:22
10273877006	MW-8-W-071014	Water	07/10/14 13:50	07/14/14 09:22
10273877007	GEI-7-W-071014	Water	07/10/14 12:30	07/14/14 09:22
10273877008	GEI-8-W-071014	Water	07/10/14 12:00	07/14/14 09:22
10273877009	MW-9-W-071014	Water	07/10/14 13:20	07/14/14 09:22
10273877010	MW-10-W-071014	Water	07/10/14 17:30	07/14/14 09:22
10273877011	MW-11-W-071014	Water	07/10/14 16:50	07/14/14 09:22
10273877012	MW-2-W-071014	Water	07/10/14 11:00	07/14/14 09:22
10273877013	MW-12-W-071014	Water	07/10/14 16:10	07/14/14 09:22
10273877014	MW-13-W-071014	Water	07/10/14 15:50	07/14/14 09:22
10273877015	BD-1-W-071014	Water	07/10/14 00:00	07/14/14 09:22
10273877016	BD-2-W-071014	Water	07/10/14 00:00	07/14/14 09:22
10273877017	Trip Blank-071014	Water	07/10/14 00:00	07/14/14 09:22

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Chevron#306443 BATE28,WRAMP FI
Pace Project No.: 10273877

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10273877001	MW-3-W-071014	Alaska 102/103	JRH, MT	5	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877002	MW-4-W-071014	Alaska 102/103	JRH	4	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877003	MW-5-W-071014	Alaska 102/103	JRH, MT	5	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877004	MW-6-W-071014	Alaska 102/103	JRH	4	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877005	MW-7-W-071014	Alaska 102/103	JRH	4	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877006	MW-8-W-071014	Alaska 102/103	JRH, MT	5	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877007	GEI-7-W-071014	Alaska 102/103	JRH, MT	7	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877008	GEI-8-W-071014	Alaska 102/103	JRH, MT	5	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877009	MW-9-W-071014	Alaska 102/103	JRH	4	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877010	MW-10-W-071014	Alaska 102/103	JRH, MT	5	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877011	MW-11-W-071014	Alaska 102/103	JRH	4	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877012	MW-2-W-071014	Alaska 102/103	JRH, MT	5	PASI-M
		Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
10273877013	MW-12-W-071014	Alaska 102/103	JRH	4	PASI-M

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10273877014	MW-13-W-071014	Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
		Alaska 102/103	JRH	4	PASI-M
10273877015	BD-1-W-071014	Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
		Alaska 102/103	JRH, MT	7	PASI-M
10273877016	BD-2-W-071014	Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
		Alaska 102/103	JRH	4	PASI-M
10273877017	Trip Blank-071014	Alaska 101	LLC	2	PASI-M
		EPA 8260	AJC	7	PASI-M
		Alaska 101	LLC	2	PASI-M

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 102/103

Description: DRO and RRO by AK102/103

Client: Arcadis_Chevron

Date: July 25, 2014

General Information:

16 samples were analyzed for Alaska 102/103. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/25742

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- GEI-7-W-071014 (Lab ID: 10273877007)
 - n-Triacontane (S) SG
 - o-Terphenyl (S) SG

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: OEXT/25693

N2: The lab does not hold TNI accreditation for this parameter.

- BD-1-W-071014 (Lab ID: 10273877015)
 - DRO by AK 102
 - Residual Range Organics AK103
- BLANK (Lab ID: 1733732)
 - DRO by AK 102
 - Residual Range Organics AK103

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 102/103

Description: DRO and RRO by AK102/103

Client: Arcadis_Chevron

Date: July 25, 2014

Analyte Comments:

QC Batch: OEXT/25693

N2: The lab does not hold TNI accreditation for this parameter.

- GEI-7-W-071014 (Lab ID: 10273877007)
 - DRO by AK 102
 - Residual Range Organics AK103
- GEI-8-W-071014 (Lab ID: 10273877008)
 - DRO by AK 102
 - Residual Range Organics AK103
- LCS (Lab ID: 1733733)
 - DRO by AK 102
 - Residual Range Organics AK103
- MS (Lab ID: 1733734)
 - DRO by AK 102
 - Residual Range Organics AK103
- MSD (Lab ID: 1733735)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-10-W-071014 (Lab ID: 10273877010)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-11-W-071014 (Lab ID: 10273877011)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-13-W-071014 (Lab ID: 10273877014)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-2-W-071014 (Lab ID: 10273877012)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-3-W-071014 (Lab ID: 10273877001)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-4-W-071014 (Lab ID: 10273877002)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-5-W-071014 (Lab ID: 10273877003)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-6-W-071014 (Lab ID: 10273877004)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-7-W-071014 (Lab ID: 10273877005)
 - DRO by AK 102
 - Residual Range Organics AK103

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 102/103

Description: DRO and RRO by AK102/103

Client: Arcadis_Chevron

Date: July 25, 2014

Analyte Comments:

QC Batch: OEXT/25693

N2: The lab does not hold TNI accreditation for this parameter.

- MW-8-W-071014 (Lab ID: 10273877006)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-9-W-071014 (Lab ID: 10273877009)
 - DRO by AK 102
 - Residual Range Organics AK103

QC Batch: OEXT/25717

N2: The lab does not hold TNI accreditation for this parameter.

- BD-2-W-071014 (Lab ID: 10273877016)
 - DRO by AK 102
 - Residual Range Organics AK103
- BLANK (Lab ID: 1735260)
 - DRO by AK 102
 - Residual Range Organics AK103
- LCS (Lab ID: 1735261)
 - DRO by AK 102
 - Residual Range Organics AK103
- MS (Lab ID: 1735262)
 - DRO by AK 102
 - Residual Range Organics AK103
- MS (Lab ID: 1735264)
 - DRO by AK 102
 - Residual Range Organics AK103
- MSD (Lab ID: 1735263)
 - DRO by AK 102
 - Residual Range Organics AK103
- MSD (Lab ID: 1735265)
 - DRO by AK 102
 - Residual Range Organics AK103
- MW-12-W-071014 (Lab ID: 10273877013)
 - DRO by AK 102
 - Residual Range Organics AK103

QC Batch: OEXT/25742

N2: The lab does not hold TNI accreditation for this parameter.

- BD-1-W-071014 (Lab ID: 10273877015)
 - DRO by AK 102 Silica Gel Clean
- BLANK (Lab ID: 1738208)
 - DRO by AK 102 Silica Gel Clean
- GEI-7-W-071014 (Lab ID: 10273877007)
 - DRO by AK 102 Silica Gel Clean

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 102/103

Description: DRO and RRO by AK102/103

Client: Arcadis_Chevron

Date: July 25, 2014

Analyte Comments:

QC Batch: OEXT/25742

N2: The lab does not hold TNI accreditation for this parameter.

- GEI-8-W-071014 (Lab ID: 10273877008)
 - DRO by AK 102 Silica Gel Clean
- LCS (Lab ID: 1738209)
 - DRO by AK 102 Silica Gel Clean
- MW-10-W-071014 (Lab ID: 10273877010)
 - DRO by AK 102 Silica Gel Clean
- MW-2-W-071014 (Lab ID: 10273877012)
 - DRO by AK 102 Silica Gel Clean
- MW-3-W-071014 (Lab ID: 10273877001)
 - DRO by AK 102 Silica Gel Clean
- MW-5-W-071014 (Lab ID: 10273877003)
 - DRO by AK 102 Silica Gel Clean
- MW-8-W-071014 (Lab ID: 10273877006)
 - DRO by AK 102 Silica Gel Clean

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 101

Description: AK101 GCV

Client: Arcadis_Chevron

Date: July 25, 2014

General Information:

17 samples were analyzed for Alaska 101. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: GCV/12300

N2: The lab does not hold TNI accreditation for this parameter.

- BD-2-W-071014 (Lab ID: 10273877016)
 - AK101 Gasoline Range Organics
- BLANK (Lab ID: 1732864)
 - AK101 Gasoline Range Organics
- DUP (Lab ID: 1733634)
 - AK101 Gasoline Range Organics
- GEI-8-W-071014 (Lab ID: 10273877008)
 - AK101 Gasoline Range Organics

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 101

Description: AK101 GCV

Client: Arcadis_Chevron

Date: July 25, 2014

Analyte Comments:

QC Batch: GCV/12300

N2: The lab does not hold TNI accreditation for this parameter.

- LCS (Lab ID: 1732865)
 - AK101 Gasoline Range Organics
- LCSD (Lab ID: 1732866)
 - AK101 Gasoline Range Organics
- MS (Lab ID: 1732867)
 - AK101 Gasoline Range Organics
- MSD (Lab ID: 1732868)
 - AK101 Gasoline Range Organics
- MW-10-W-071014 (Lab ID: 10273877010)
 - AK101 Gasoline Range Organics
- MW-11-W-071014 (Lab ID: 10273877011)
 - AK101 Gasoline Range Organics
- MW-12-W-071014 (Lab ID: 10273877013)
 - AK101 Gasoline Range Organics
- MW-13-W-071014 (Lab ID: 10273877014)
 - AK101 Gasoline Range Organics
- MW-2-W-071014 (Lab ID: 10273877012)
 - AK101 Gasoline Range Organics
- MW-4-W-071014 (Lab ID: 10273877002)
 - AK101 Gasoline Range Organics
- MW-5-W-071014 (Lab ID: 10273877003)
 - AK101 Gasoline Range Organics
- MW-6-W-071014 (Lab ID: 10273877004)
 - AK101 Gasoline Range Organics
- MW-7-W-071014 (Lab ID: 10273877005)
 - AK101 Gasoline Range Organics
- MW-8-W-071014 (Lab ID: 10273877006)
 - AK101 Gasoline Range Organics
- MW-9-W-071014 (Lab ID: 10273877009)
 - AK101 Gasoline Range Organics
- Trip Blank-071014 (Lab ID: 10273877017)
 - AK101 Gasoline Range Organics

QC Batch: GCV/12311

N2: The lab does not hold TNI accreditation for this parameter.

- BD-1-W-071014 (Lab ID: 10273877015)
 - AK101 Gasoline Range Organics
- BLANK (Lab ID: 1734585)
 - AK101 Gasoline Range Organics
- DUP (Lab ID: 1736026)
 - AK101 Gasoline Range Organics
- GEI-7-W-071014 (Lab ID: 10273877007)
 - AK101 Gasoline Range Organics

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: Alaska 101

Description: AK101 GCV

Client: Arcadis_Chevron

Date: July 25, 2014

Analyte Comments:

QC Batch: GCV/12311

N2: The lab does not hold TNI accreditation for this parameter.

- LCS (Lab ID: 1734586)
 - AK101 Gasoline Range Organics
- LCSD (Lab ID: 1734587)
 - AK101 Gasoline Range Organics
- MS (Lab ID: 1736025)
 - AK101 Gasoline Range Organics
- MW-3-W-071014 (Lab ID: 10273877001)
 - AK101 Gasoline Range Organics

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PROJECT NARRATIVE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Method: EPA 8260

Description: 8260 MSV UST

Client: Arcadis_Chevron

Date: July 25, 2014

General Information:

17 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/27785

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10274267001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 1735837)
- Ethylbenzene

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-3-W-071014		Lab ID: 10273877001	Collected: 07/10/14 13:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	11.0 mg/L		0.42	1	07/16/14 12:30	07/19/14 16:06		N2
DRO by AK 102 Silica Gel Clean	9.9 mg/L		0.42	1	07/16/14 12:30	07/21/14 19:19		N2
Residual Range Organics AK103	ND mg/L		0.42	1	07/16/14 12:30	07/19/14 16:06		N2
Surrogates								
o-Terphenyl (S) SG	86 %.		50-150	1	07/16/14 12:30	07/21/14 19:19	84-15-1	
n-Triacontane (S) SG	84 %.		50-150	1	07/16/14 12:30	07/21/14 19:19		
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	121 ug/L		100	1		07/17/14 15:37		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	97 %.		60-120	1		07/17/14 15:37	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 05:51	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 05:51	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 05:51	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 05:51	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100 %.		75-125	1		07/16/14 05:51	17060-07-0	
Toluene-d8 (S)	101 %.		75-125	1		07/16/14 05:51	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/16/14 05:51	460-00-4	

Sample: MW-4-W-071014		Lab ID: 10273877002	Collected: 07/10/14 09:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 16:27		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 16:27		N2
Surrogates								
o-Terphenyl (S)	84 %.		50-150	1	07/16/14 12:30	07/19/14 16:27	84-15-1	
n-Triacontane (S)	88 %.		50-150	1	07/16/14 12:30	07/19/14 16:27	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 15:50		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	99 %.		60-120	1		07/15/14 15:50	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 06:05	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 06:05	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 06:05	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 06:05	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101 %.		75-125	1		07/16/14 06:05	17060-07-0	
Toluene-d8 (S)	100 %.		75-125	1		07/16/14 06:05	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-4-W-071014		Lab ID: 10273877002	Collected: 07/10/14 09:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST		Analytical Method: EPA 8260						
Surrogates								
4-Bromofluorobenzene (S)	100 %.		75-125	1		07/16/14 06:05	460-00-4	

Sample: MW-5-W-071014		Lab ID: 10273877003	Collected: 07/10/14 14:20	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	1.8 mg/L		0.40	1	07/16/14 12:30	07/19/14 16:49		N2
DRO by AK 102 Silica Gel Clean	1.5 mg/L		0.40	1	07/16/14 12:30	07/21/14 19:41		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 16:49		N2
Surrogates								
o-Terphenyl (S) SG	79 %.		50-150	1	07/16/14 12:30	07/21/14 19:41	84-15-1	
n-Triacontane (S) SG	76 %.		50-150	1	07/16/14 12:30	07/21/14 19:41		
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 16:10		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	97 %.		60-120	1		07/15/14 16:10	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 06:20	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 06:20	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 06:20	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 06:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103 %.		75-125	1		07/16/14 06:20	17060-07-0	
Toluene-d8 (S)	99 %.		75-125	1		07/16/14 06:20	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/16/14 06:20	460-00-4	

Sample: MW-6-W-071014		Lab ID: 10273877004	Collected: 07/10/14 11:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.42	1	07/16/14 12:30	07/19/14 17:11		N2
Residual Range Organics AK103	ND mg/L		0.42	1	07/16/14 12:30	07/19/14 17:11		N2
Surrogates								
o-Terphenyl (S)	93 %.		50-150	1	07/16/14 12:30	07/19/14 17:11	84-15-1	
n-Triacontane (S)	94 %.		50-150	1	07/16/14 12:30	07/19/14 17:11	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 16:30		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	98 %.		60-120	1		07/15/14 16:30	98-08-8	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-6-W-071014		Lab ID: 10273877004	Collected: 07/10/14 11:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 06:34	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 06:34	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 06:34	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 06:34	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104 %.		75-125	1		07/16/14 06:34	17060-07-0	
Toluene-d8 (S)	101 %.		75-125	1		07/16/14 06:34	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/16/14 06:34	460-00-4	

Sample: MW-7-W-071014		Lab ID: 10273877005	Collected: 07/10/14 14:50	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 13:12		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 13:12		N2
Surrogates								
o-Terphenyl (S)	62 %.		50-150	1	07/16/14 12:30	07/19/14 13:12	84-15-1	
n-Triacontane (S)	62 %.		50-150	1	07/16/14 12:30	07/19/14 13:12	638-68-6	

AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 19:11		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	100 %.		60-120	1		07/15/14 19:11	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 06:49	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 06:49	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 06:49	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 06:49	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103 %.		75-125	1		07/16/14 06:49	17060-07-0	
Toluene-d8 (S)	103 %.		75-125	1		07/16/14 06:49	2037-26-5	
4-Bromofluorobenzene (S)	102 %.		75-125	1		07/16/14 06:49	460-00-4	

Sample: MW-8-W-071014		Lab ID: 10273877006	Collected: 07/10/14 13:50	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	7.8 mg/L		0.40	1	07/16/14 12:30	07/19/14 17:32		N2
DRO by AK 102 Silica Gel Clean	7.4 mg/L		0.40	1	07/16/14 12:30	07/21/14 20:02		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 17:32		N2
Surrogates								
o-Terphenyl (S) SG	90 %.		50-150	1	07/16/14 12:30	07/21/14 20:02	84-15-1	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-8-W-071014		Lab ID: 10273877006	Collected: 07/10/14 13:50	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
Surrogates								
n-Triacontane (S) SG	86 %.		50-150	1	07/16/14 12:30	07/21/14 20:02		
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	100 ug/L		100	1		07/15/14 19:31		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	98 %.		60-120	1		07/15/14 19:31	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 07:03	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 07:03	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 07:03	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 07:03	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104 %.		75-125	1		07/16/14 07:03	17060-07-0	
Toluene-d8 (S)	100 %.		75-125	1		07/16/14 07:03	2037-26-5	
4-Bromofluorobenzene (S)	103 %.		75-125	1		07/16/14 07:03	460-00-4	

Sample: GEI-7-W-071014		Lab ID: 10273877007	Collected: 07/10/14 12:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	102 mg/L		8.0	20	07/16/14 12:30	07/20/14 13:32		N2
DRO by AK 102 Silica Gel Clean	78.9 mg/L		8.0	20	07/16/14 12:30	07/21/14 18:14		N2
Residual Range Organics AK103	0.63 mg/L		0.40	1	07/16/14 12:30	07/19/14 17:54		N2
Surrogates								
o-Terphenyl (S)	96 %.		50-150	1	07/16/14 12:30	07/19/14 17:54	84-15-1	
o-Terphenyl (S) SG	0 %.		50-150	20	07/16/14 12:30	07/21/14 18:14	84-15-1	S4
n-Triacontane (S)	91 %.		50-150	1	07/16/14 12:30	07/19/14 17:54	638-68-6	
n-Triacontane (S) SG	0 %.		50-150	20	07/16/14 12:30	07/21/14 18:14		S4
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	203 ug/L		100	1		07/17/14 16:37		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	95 %.		60-120	1		07/17/14 16:37	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 07:18	71-43-2	
Ethylbenzene	1.2 ug/L		1.0	1		07/16/14 07:18	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 07:18	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 07:18	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99 %.		75-125	1		07/16/14 07:18	17060-07-0	
Toluene-d8 (S)	97 %.		75-125	1		07/16/14 07:18	2037-26-5	
4-Bromofluorobenzene (S)	102 %.		75-125	1		07/16/14 07:18	460-00-4	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: GEI-8-W-071014		Lab ID: 10273877008	Collected: 07/10/14 12:00	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	1.2 mg/L		0.40	1	07/16/14 12:30	07/19/14 18:16		N2
DRO by AK 102 Silica Gel Clean	0.91 mg/L		0.40	1	07/16/14 12:30	07/21/14 18:35		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 18:16		N2
Surrogates								
o-Terphenyl (S) SG	82 %.		50-150	1	07/16/14 12:30	07/21/14 18:35	84-15-1	
n-Triacontane (S) SG	72 %.		50-150	1	07/16/14 12:30	07/21/14 18:35		
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 19:51		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	95 %.		60-120	1		07/15/14 19:51	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 07:32	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 07:32	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 07:32	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 07:32	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100 %.		75-125	1		07/16/14 07:32	17060-07-0	
Toluene-d8 (S)	100 %.		75-125	1		07/16/14 07:32	2037-26-5	
4-Bromofluorobenzene (S)	100 %.		75-125	1		07/16/14 07:32	460-00-4	

Sample: MW-9-W-071014		Lab ID: 10273877009	Collected: 07/10/14 13:20	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.42	1	07/16/14 12:30	07/19/14 18:37		N2
Residual Range Organics AK103	ND mg/L		0.42	1	07/16/14 12:30	07/19/14 18:37		N2
Surrogates								
o-Terphenyl (S)	87 %.		50-150	1	07/16/14 12:30	07/19/14 18:37	84-15-1	
n-Triacontane (S)	88 %.		50-150	1	07/16/14 12:30	07/19/14 18:37	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 20:11		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	94 %.		60-120	1		07/15/14 20:11	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 07:47	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 07:47	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 07:47	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 07:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102 %.		75-125	1		07/16/14 07:47	17060-07-0	
Toluene-d8 (S)	99 %.		75-125	1		07/16/14 07:47	2037-26-5	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-9-W-071014		Lab ID: 10273877009	Collected: 07/10/14 13:20	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST		Analytical Method: EPA 8260						
Surrogates								
4-Bromofluorobenzene (S)	101 %.		75-125	1		07/16/14 07:47	460-00-4	

Sample: MW-10-W-071014		Lab ID: 10273877010	Collected: 07/10/14 17:30	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	0.71 mg/L		0.42	1	07/16/14 12:30	07/19/14 18:59		N2
DRO by AK 102 Silica Gel Clean	ND mg/L		0.42	1	07/16/14 12:30	07/21/14 20:24		N2
Residual Range Organics AK103	0.42 mg/L		0.42	1	07/16/14 12:30	07/19/14 18:59		N2
Surrogates								
o-Terphenyl (S) SG	71 %.		50-150	1	07/16/14 12:30	07/21/14 20:24	84-15-1	
n-Triacontane (S) SG	70 %.		50-150	1	07/16/14 12:30	07/21/14 20:24		

AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 20:31		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	99 %.		60-120	1		07/15/14 20:31	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 08:01	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 08:01	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 08:01	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 08:01	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101 %.		75-125	1		07/16/14 08:01	17060-07-0	
Toluene-d8 (S)	101 %.		75-125	1		07/16/14 08:01	2037-26-5	
4-Bromofluorobenzene (S)	103 %.		75-125	1		07/16/14 08:01	460-00-4	

Sample: MW-11-W-071014		Lab ID: 10273877011	Collected: 07/10/14 16:50	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 19:21		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 19:21		N2
Surrogates								
o-Terphenyl (S)	89 %.		50-150	1	07/16/14 12:30	07/19/14 19:21	84-15-1	
n-Triacontane (S)	88 %.		50-150	1	07/16/14 12:30	07/19/14 19:21	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 20:51		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	96 %.		60-120	1		07/15/14 20:51	98-08-8	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-11-W-071014		Lab ID: 10273877011	Collected: 07/10/14 16:50	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/16/14 08:16	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/16/14 08:16	100-41-4	
Toluene	ND ug/L		1.0	1		07/16/14 08:16	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/16/14 08:16	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102 %.		75-125	1		07/16/14 08:16	17060-07-0	
Toluene-d8 (S)	100 %.		75-125	1		07/16/14 08:16	2037-26-5	
4-Bromofluorobenzene (S)	102 %.		75-125	1		07/16/14 08:16	460-00-4	

Sample: MW-2-W-071014		Lab ID: 10273877012	Collected: 07/10/14 11:00	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	0.51 mg/L		0.40	1	07/16/14 12:30	07/19/14 19:42		N2
DRO by AK 102 Silica Gel Clean	ND mg/L		0.40	1	07/16/14 12:30	07/21/14 20:46		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 19:42		N2
Surrogates								
o-Terphenyl (S) SG	80 %.		50-150	1	07/16/14 12:30	07/21/14 20:46	84-15-1	
n-Triacontane (S) SG	79 %.		50-150	1	07/16/14 12:30	07/21/14 20:46		

AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 21:11		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	98 %.		60-120	1		07/15/14 21:11	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/18/14 21:57	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/18/14 21:57	100-41-4	
Toluene	ND ug/L		1.0	1		07/18/14 21:57	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/18/14 21:57	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102 %.		75-125	1		07/18/14 21:57	17060-07-0	
Toluene-d8 (S)	99 %.		75-125	1		07/18/14 21:57	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/18/14 21:57	460-00-4	

Sample: MW-12-W-071014		Lab ID: 10273877013	Collected: 07/10/14 16:10	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.43	1	07/17/14 16:57	07/20/14 18:32		N2
Residual Range Organics AK103	ND mg/L		0.43	1	07/17/14 16:57	07/20/14 18:32		N2
Surrogates								
o-Terphenyl (S)	76 %.		50-150	1	07/17/14 16:57	07/20/14 18:32	84-15-1	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: MW-12-W-071014		Lab ID: 10273877013	Collected: 07/10/14 16:10	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
Surrogates								
n-Triacontane (S)	77 %.		50-150	1	07/17/14 16:57	07/20/14 18:32	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 17:30		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	98 %.		50-150	1		07/15/14 17:30	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/18/14 21:41	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/18/14 21:41	100-41-4	
Toluene	ND ug/L		1.0	1		07/18/14 21:41	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/18/14 21:41	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101 %.		75-125	1		07/18/14 21:41	17060-07-0	
Toluene-d8 (S)	97 %.		75-125	1		07/18/14 21:41	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/18/14 21:41	460-00-4	

Sample: MW-13-W-071014		Lab ID: 10273877014	Collected: 07/10/14 15:50	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 20:04		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 20:04		N2
Surrogates								
o-Terphenyl (S)	72 %.		50-150	1	07/16/14 12:30	07/19/14 20:04	84-15-1	
n-Triacontane (S)	73 %.		50-150	1	07/16/14 12:30	07/19/14 20:04	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 21:31		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	99 %.		60-120	1		07/15/14 21:31	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/18/14 22:14	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/18/14 22:14	100-41-4	
Toluene	ND ug/L		1.0	1		07/18/14 22:14	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/18/14 22:14	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103 %.		75-125	1		07/18/14 22:14	17060-07-0	
Toluene-d8 (S)	96 %.		75-125	1		07/18/14 22:14	2037-26-5	
4-Bromofluorobenzene (S)	104 %.		75-125	1		07/18/14 22:14	460-00-4	

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: BD-1-W-071014		Lab ID: 10273877015	Collected: 07/10/14 00:00	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	17.3 mg/L		0.80	2	07/16/14 12:30	07/20/14 13:10		N2
DRO by AK 102 Silica Gel Clean	14.5 mg/L		0.80	2	07/16/14 12:30	07/21/14 17:52		N2
Residual Range Organics AK103	ND mg/L		0.40	1	07/16/14 12:30	07/19/14 20:26		N2
Surrogates								
o-Terphenyl (S)	93 %.		50-150	1	07/16/14 12:30	07/19/14 20:26	84-15-1	
o-Terphenyl (S) SG	79 %.		50-150	2	07/16/14 12:30	07/21/14 17:52	84-15-1	
n-Triacontane (S)	89 %.		50-150	1	07/16/14 12:30	07/19/14 20:26	638-68-6	
n-Triacontane (S) SG	76 %.		50-150	2	07/16/14 12:30	07/21/14 17:52		
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/17/14 15:57		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	97 %.		60-120	1		07/17/14 15:57	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/18/14 22:30	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/18/14 22:30	100-41-4	
Toluene	ND ug/L		1.0	1		07/18/14 22:30	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/18/14 22:30	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	97 %.		75-125	1		07/18/14 22:30	17060-07-0	
Toluene-d8 (S)	99 %.		75-125	1		07/18/14 22:30	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/18/14 22:30	460-00-4	

Sample: BD-2-W-071014		Lab ID: 10273877016	Collected: 07/10/14 00:00	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
DRO and RRO by AK102/103		Analytical Method: Alaska 102/103 Preparation Method: EPA 3510						
DRO by AK 102	1.3 mg/L		0.43	1	07/17/14 16:57	07/20/14 19:37		N2
Residual Range Organics AK103	ND mg/L		0.43	1	07/17/14 16:57	07/20/14 19:37		N2
Surrogates								
o-Terphenyl (S)	86 %.		50-150	1	07/17/14 16:57	07/20/14 19:37	84-15-1	
n-Triacontane (S)	88 %.		50-150	1	07/17/14 16:57	07/20/14 19:37	638-68-6	
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 16:50		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	96 %.		60-120	1		07/15/14 16:50	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/18/14 22:46	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/18/14 22:46	100-41-4	
Toluene	ND ug/L		1.0	1		07/18/14 22:46	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/18/14 22:46	1330-20-7	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Sample: BD-2-W-071014		Lab ID: 10273877016	Collected: 07/10/14 00:00	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST		Analytical Method: EPA 8260						
Surrogates								
1,2-Dichloroethane-d4 (S)	98 %.		75-125	1		07/18/14 22:46	17060-07-0	
Toluene-d8 (S)	100 %.		75-125	1		07/18/14 22:46	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/18/14 22:46	460-00-4	

Sample: Trip Blank-071014		Lab ID: 10273877017	Collected: 07/10/14 00:00	Received: 07/14/14 09:22	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
AK101 GCV		Analytical Method: Alaska 101						
AK101 Gasoline Range Organics	ND ug/L		100	1		07/15/14 15:30		N2
Surrogates								
a,a,a-Trifluorotoluene (S)	98 %.		60-120	1		07/15/14 15:30	98-08-8	
8260 MSV UST		Analytical Method: EPA 8260						
Benzene	ND ug/L		1.0	1		07/18/14 18:41	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/18/14 18:41	100-41-4	
Toluene	ND ug/L		1.0	1		07/18/14 18:41	108-88-3	
Xylene (Total)	ND ug/L		3.0	1		07/18/14 18:41	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104 %.		75-125	1		07/18/14 18:41	17060-07-0	
Toluene-d8 (S)	97 %.		75-125	1		07/18/14 18:41	2037-26-5	
4-Bromofluorobenzene (S)	105 %.		75-125	1		07/18/14 18:41	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

QC Batch: GCV/12300 Analysis Method: Alaska 101
 QC Batch Method: Alaska 101 Analysis Description: AK101W GCV Water
 Associated Lab Samples: 10273877002, 10273877003, 10273877004, 10273877005, 10273877006, 10273877008, 10273877009, 10273877010, 10273877011, 10273877012, 10273877013, 10273877014, 10273877016, 10273877017

METHOD BLANK: 1732864 Matrix: Water
 Associated Lab Samples: 10273877002, 10273877003, 10273877004, 10273877005, 10273877006, 10273877008, 10273877009, 10273877010, 10273877011, 10273877012, 10273877013, 10273877014, 10273877016, 10273877017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
AK101 Gasoline Range Organics	ug/L	ND	100	07/15/14 15:10	N2
a,a,a-Trifluorotoluene (S)	%.	97	60-120	07/15/14 15:10	

LABORATORY CONTROL SAMPLE & LCSD: 1732865 1732866

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
AK101 Gasoline Range Organics	ug/L	1000	990	905	99	91	60-120	9	20	N2
a,a,a-Trifluorotoluene (S)	%.				104	105	60-120			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1732867 1732868

Parameter	Units	10273877013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
AK101 Gasoline Range Organics	ug/L	ND	1000	1000	1210	1150	121	115	70-130	4	30	N2
a,a,a-Trifluorotoluene (S)	%.						109	110	60-120			

SAMPLE DUPLICATE: 1733634

Parameter	Units	10273877016 Result	Dup Result	RPD	Max RPD	Qualifiers
AK101 Gasoline Range Organics	ug/L	ND	77.1J		30	N2
a,a,a-Trifluorotoluene (S)	%.	96	96	1		

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QUALITY CONTROL DATA

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

QC Batch: GCV/12311 Analysis Method: Alaska 101
 QC Batch Method: Alaska 101 Analysis Description: AK101W GCV Water
 Associated Lab Samples: 10273877001, 10273877007, 10273877015

METHOD BLANK: 1734585 Matrix: Water

Associated Lab Samples: 10273877001, 10273877007, 10273877015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
AK101 Gasoline Range Organics	ug/L	ND	100	07/17/14 15:17	N2
a,a,a-Trifluorotoluene (S)	%.	98	60-120	07/17/14 15:17	

LABORATORY CONTROL SAMPLE & LCSD: 1734586

1734587

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
AK101 Gasoline Range Organics	ug/L	1000	979	950	98	95	60-120	3	20	N2
a,a,a-Trifluorotoluene (S)	%.				103	100	60-120			

MATRIX SPIKE SAMPLE: 1736025

Parameter	Units	10273877007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
AK101 Gasoline Range Organics	ug/L	203	1000	1290	108	70-130	N2
a,a,a-Trifluorotoluene (S)	%.				104	60-120	

SAMPLE DUPLICATE: 1736026

Parameter	Units	10273877015 Result	Dup Result	RPD	Max RPD	Qualifiers
AK101 Gasoline Range Organics	ug/L	ND	112		30	N2
a,a,a-Trifluorotoluene (S)	%.	97	95	3		

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QUALITY CONTROL DATA

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

QC Batch: MSV/27785 Analysis Method: EPA 8260
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
 Associated Lab Samples: 10273877001, 10273877002, 10273877003, 10273877004, 10273877005, 10273877006, 10273877007, 10273877008, 10273877009, 10273877010, 10273877011

METHOD BLANK: 1733170 Matrix: Water
 Associated Lab Samples: 10273877001, 10273877002, 10273877003, 10273877004, 10273877005, 10273877006, 10273877007, 10273877008, 10273877009, 10273877010, 10273877011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/16/14 04:09	
Ethylbenzene	ug/L	ND	1.0	07/16/14 04:09	
Toluene	ug/L	ND	1.0	07/16/14 04:09	
Xylene (Total)	ug/L	ND	3.0	07/16/14 04:09	
1,2-Dichloroethane-d4 (S)	%	102	75-125	07/16/14 04:09	
4-Bromofluorobenzene (S)	%	100	75-125	07/16/14 04:09	
Toluene-d8 (S)	%	100	75-125	07/16/14 04:09	

LABORATORY CONTROL SAMPLE: 1733171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	18.6	93	75-125	
Ethylbenzene	ug/L	20	18.7	93	75-125	
Toluene	ug/L	20	18.3	91	75-125	
Xylene (Total)	ug/L	60	57.5	96	75-125	
1,2-Dichloroethane-d4 (S)	%			99	75-125	
4-Bromofluorobenzene (S)	%			99	75-125	
Toluene-d8 (S)	%			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1735836 1735837

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Benzene	ug/L	206	100	100	296	287	89	80	75-129	3	30
Ethylbenzene	ug/L	620	100	100	701	676	81	56	75-128	4	30 M1
Toluene	ug/L	20.2	100	100	116	112	96	91	75-129	4	30
Xylene (Total)	ug/L	302	300	300	624	591	107	96	75-129	5	30
1,2-Dichloroethane-d4 (S)	%						103	102	75-125		
4-Bromofluorobenzene (S)	%						99	99	75-125		
Toluene-d8 (S)	%						99	98	75-125		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Chevron#306443 BATE28,WRAMP FI
Pace Project No.: 10273877

QC Batch: MSV/27839 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 10273877012, 10273877013, 10273877014, 10273877015, 10273877016, 10273877017

METHOD BLANK: 1736218 Matrix: Water
Associated Lab Samples: 10273877012, 10273877013, 10273877014, 10273877015, 10273877016, 10273877017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	07/18/14 18:25	
Ethylbenzene	ug/L	ND	1.0	07/18/14 18:25	
Toluene	ug/L	ND	1.0	07/18/14 18:25	
Xylene (Total)	ug/L	ND	3.0	07/18/14 18:25	
1,2-Dichloroethane-d4 (S)	%	102	75-125	07/18/14 18:25	
4-Bromofluorobenzene (S)	%	104	75-125	07/18/14 18:25	
Toluene-d8 (S)	%	97	75-125	07/18/14 18:25	

LABORATORY CONTROL SAMPLE: 1736219

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.7	89	75-125	
Ethylbenzene	ug/L	20	17.8	89	75-125	
Toluene	ug/L	20	17.8	89	75-125	
Xylene (Total)	ug/L	60	51.2	85	75-125	
1,2-Dichloroethane-d4 (S)	%			101	75-125	
4-Bromofluorobenzene (S)	%			101	75-125	
Toluene-d8 (S)	%			103	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1738174 1738175

Parameter	Units	10273877013		1738174		1738175		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result							
Benzene	ug/L	ND	20	20	17.3	18.3	86	92	75-129	6	30			
Ethylbenzene	ug/L	ND	20	20	16.2	15.5	81	77	75-128	5	30			
Toluene	ug/L	ND	20	20	16.9	17.1	85	86	75-129	1	30			
Xylene (Total)	ug/L	ND	60	60	48.4	45.4	81	76	75-129	6	30			
1,2-Dichloroethane-d4 (S)	%						100	99	75-125					
4-Bromofluorobenzene (S)	%						103	104	75-125					
Toluene-d8 (S)	%						103	103	75-125					

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

QC Batch:	OEXT/25693	Analysis Method:	Alaska 102/103
QC Batch Method:	EPA 3510	Analysis Description:	AK1023 GCS
Associated Lab Samples:	10273877001, 10273877002, 10273877003, 10273877004, 10273877005, 10273877006, 10273877007, 10273877008, 10273877009, 10273877010, 10273877011, 10273877012, 10273877014, 10273877015		

METHOD BLANK: 1733732 Matrix: Water
Associated Lab Samples: 10273877001, 10273877002, 10273877003, 10273877004, 10273877005, 10273877006, 10273877007, 10273877008, 10273877009, 10273877010, 10273877011, 10273877012, 10273877014, 10273877015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
DRO by AK 102	mg/L	ND	0.40	07/19/14 12:07	N2
Residual Range Organics AK103	mg/L	ND	0.40	07/19/14 12:07	N2
n-Triacontane (S)	%	75	60-120	07/19/14 12:07	
o-Terphenyl (S)	%	83	60-120	07/19/14 12:07	

LABORATORY CONTROL SAMPLE: 1733733

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
DRO by AK 102	mg/L	2	1.7	84	75-125	N2
Residual Range Organics AK103	mg/L	2	1.9	94	60-120	N2
n-Triacontane (S)	%			90	60-120	
o-Terphenyl (S)	%			93	60-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1733734 1733735

Parameter	Units	10273534005		1733734		1733735		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
DRO by AK 102	mg/L	ND	2.1	2.2	1.6	1.6	79	75	50-150	1	20	N2	
Residual Range Organics AK103	mg/L	ND	2.1	2.2	1.7	1.8	84	84	50-150	4	20	N2	
n-Triacontane (S)	%						84	81	60-120				
o-Terphenyl (S)	%						87	84	60-120				

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QUALITY CONTROL DATA

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

QC Batch: OEXT/25717 Analysis Method: Alaska 102/103
QC Batch Method: EPA 3510 Analysis Description: AK1023 GCS
Associated Lab Samples: 10273877013, 10273877016

METHOD BLANK: 1735260 Matrix: Water

Associated Lab Samples: 10273877013, 10273877016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
DRO by AK 102	mg/L	ND	0.40	07/20/14 16:23	N2
Residual Range Organics AK103	mg/L	ND	0.40	07/20/14 16:23	N2
n-Triacontane (S)	%.	82	60-120	07/20/14 16:23	
o-Terphenyl (S)	%.	86	60-120	07/20/14 16:23	

LABORATORY CONTROL SAMPLE: 1735261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
DRO by AK 102	mg/L	2	1.5	77	75-125	N2
Residual Range Organics AK103	mg/L	2	1.7	85	60-120	N2
n-Triacontane (S)	%.			80	60-120	
o-Terphenyl (S)	%.			85	60-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1735262 1735263

Parameter	Units	10273877013 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max			
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result				MSD Result	RPD	RPD	Qual
DRO by AK 102	mg/L	ND	2.1	2.1	2.1	1.6	1.7	75	77	50-150	3	20	N2
Residual Range Organics AK103	mg/L	ND	2.1	2.1	2.1	1.9	2.0	80	86	50-150	7	20	N2
n-Triacontane (S)	%.							75	77	60-120			
o-Terphenyl (S)	%.							76	78	60-120			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1735264 1735265

Parameter	Units	10274233006 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max			
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result				MSD Result	RPD	RPD	Qual
DRO by AK 102	mg/L	ND	2	2.1	2.1	1.5	1.8	69	82	50-150	17	20	N2
Residual Range Organics AK103	mg/L	ND	2	2.1	2.1	1.7	2.0	74	89	50-150	18	20	N2
n-Triacontane (S)	%.							73	83	60-120			
o-Terphenyl (S)	%.							72	83	60-120			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

WORKORDER QUALIFIERS

WO: 10273877

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold TNI accreditation for this parameter.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

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METHOD CROSS REFERENCE TABLE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Parameter	Matrix	Analytical Method	Preparation Method
8260 MSV UST	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Chevron#306443 BATE28,WRAMP FI
Pace Project No.: 10273877

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10273877001	MW-3-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877001	MW-3-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877002	MW-4-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877003	MW-5-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877003	MW-5-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877004	MW-6-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877005	MW-7-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877006	MW-8-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877006	MW-8-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877007	GEI-7-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877007	GEI-7-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877008	GEI-8-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877008	GEI-8-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877009	MW-9-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877010	MW-10-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877010	MW-10-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877011	MW-11-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877012	MW-2-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877012	MW-2-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877013	MW-12-W-071014	EPA 3510	OEXT/25717	Alaska 102/103	GCSV/13619
10273877014	MW-13-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877015	BD-1-W-071014	EPA 3510	OEXT/25693	Alaska 102/103	GCSV/13618
10273877015	BD-1-W-071014	EPA 3510	OEXT/25742	Alaska 102/103	GCSV/13627
10273877016	BD-2-W-071014	EPA 3510	OEXT/25717	Alaska 102/103	GCSV/13619
10273877001	MW-3-W-071014	Alaska 101	GCV/12311		
10273877002	MW-4-W-071014	Alaska 101	GCV/12300		
10273877003	MW-5-W-071014	Alaska 101	GCV/12300		
10273877004	MW-6-W-071014	Alaska 101	GCV/12300		
10273877005	MW-7-W-071014	Alaska 101	GCV/12300		
10273877006	MW-8-W-071014	Alaska 101	GCV/12300		
10273877007	GEI-7-W-071014	Alaska 101	GCV/12311		
10273877008	GEI-8-W-071014	Alaska 101	GCV/12300		
10273877009	MW-9-W-071014	Alaska 101	GCV/12300		
10273877010	MW-10-W-071014	Alaska 101	GCV/12300		
10273877011	MW-11-W-071014	Alaska 101	GCV/12300		
10273877012	MW-2-W-071014	Alaska 101	GCV/12300		
10273877013	MW-12-W-071014	Alaska 101	GCV/12300		
10273877014	MW-13-W-071014	Alaska 101	GCV/12300		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Chevron#306443 BATE28,WRAMP FI

Pace Project No.: 10273877

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10273877015	BD-1-W-071014	Alaska 101	GCV/12311		
10273877016	BD-2-W-071014	Alaska 101	GCV/12300		
10273877017	Trip Blank-071014	Alaska 101	GCV/12300		
10273877001	MW-3-W-071014	EPA 8260	MSV/27785		
10273877002	MW-4-W-071014	EPA 8260	MSV/27785		
10273877003	MW-5-W-071014	EPA 8260	MSV/27785		
10273877004	MW-6-W-071014	EPA 8260	MSV/27785		
10273877005	MW-7-W-071014	EPA 8260	MSV/27785		
10273877006	MW-8-W-071014	EPA 8260	MSV/27785		
10273877007	GEI-7-W-071014	EPA 8260	MSV/27785		
10273877008	GEI-8-W-071014	EPA 8260	MSV/27785		
10273877009	MW-9-W-071014	EPA 8260	MSV/27785		
10273877010	MW-10-W-071014	EPA 8260	MSV/27785		
10273877011	MW-11-W-071014	EPA 8260	MSV/27785		
10273877012	MW-2-W-071014	EPA 8260	MSV/27839		
10273877013	MW-12-W-071014	EPA 8260	MSV/27839		
10273877014	MW-13-W-071014	EPA 8260	MSV/27839		
10273877015	BD-1-W-071014	EPA 8260	MSV/27839		
10273877016	BD-2-W-071014	EPA 8260	MSV/27839		
10273877017	Trip Blank-071014	EPA 8260	MSV/27839		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt Client Name: **Arcaadis U.S., Inc** Project #: **WO#: 10273877**

Courier: Fed Ex UPS USPS Client
 Commercial Pace SpeedDee Other:

Tracking Number: **8059 4079 3270; 7900 1239 0485**



Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No

Packing Material: Bubble Wrap Bubble Bags None Other: Temp Blank? Yes No

Thermom. Used: 888A9130516413 888A912167504 888A9132521491 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temp Read (°C): **80; 4.5** Cooler Temp Corrected (°C): **80; 4.5** Biological Tissue Frozen? Yes No N/A

Temp should be above freezing to 6°C Correction Factor: **0.0** Date and Initials of Person Examining Contents: **RT 7-14-14**

			Comments:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	5.
Short Hold Time Analysis (<72 hr)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/>	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/>	11.
Sample Labels Match COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/>	12. <i>to sets of extn samples (see exceptions form), as 7/14/14</i>
-Includes Date/Time/ID/Analysis Matrix: NT			
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/>	13. <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/>	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/>	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/>	14.
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	15.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	
Pace Trip Blank Lot # (if purchased): 061014-01			

CLIENT NOTIFICATION/RESOLUTION Field Data Required? Yes No

Person Contacted: **Tammy, Michael, Gregory David** Date/Time: **7/14/14 13:08**

Comments/Resolution: **Per Tammy, 7/16/14 13:36, proceed w/ analysis. as 7/16/14**

Project Manager Review: **Jenny Gross** Date: **7/14/14**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name:
SCUR Exceptions Form

Document Revised: 16Apr2012
Page 1 of 1

Document No.:
F-MN-L-220-Rev.00

Issuing Authority:
Pace Minnesota Quality Office

Workorder #: 10273877

Issue	Sample ID	Container Type/#
Cooler out of Temp	MW-3-071014	AG3H; V69H
	MW-4-071014	AG3H; V69H
	MW-5-071014	AG3H;
	MW-6-071014	AG3H
	MW-7-071014	AG3H; V69H
	MW-8-071014	AG3H
	MW-9-071014	AG3H
	MW-10-071014	AG3H; V69H
	MW-12-071014	AG3H
	MW-13-071014	V69H
	BD-2-W-071014	V69H
	TB-061014-01	V69H
	Extra Samples not on COC	MS-1-W-071014
MSD-1-W-071014		AG3H; V69H
MW-12-071014		AG3H; V69H
MW-13-071014		AG3H; V69H
BD-1-W-071014		AG3H; V69H
BD-2-W-071014		AG3H; V69H
JP 7.14.14		

Data File: \\192.168.10.12\chem\10msv5.i\071514c.b\07151486.D

Report Date: 07/16/2014

Sample ID: 10273877001

Client ID:

Instrument: 10msv5.i

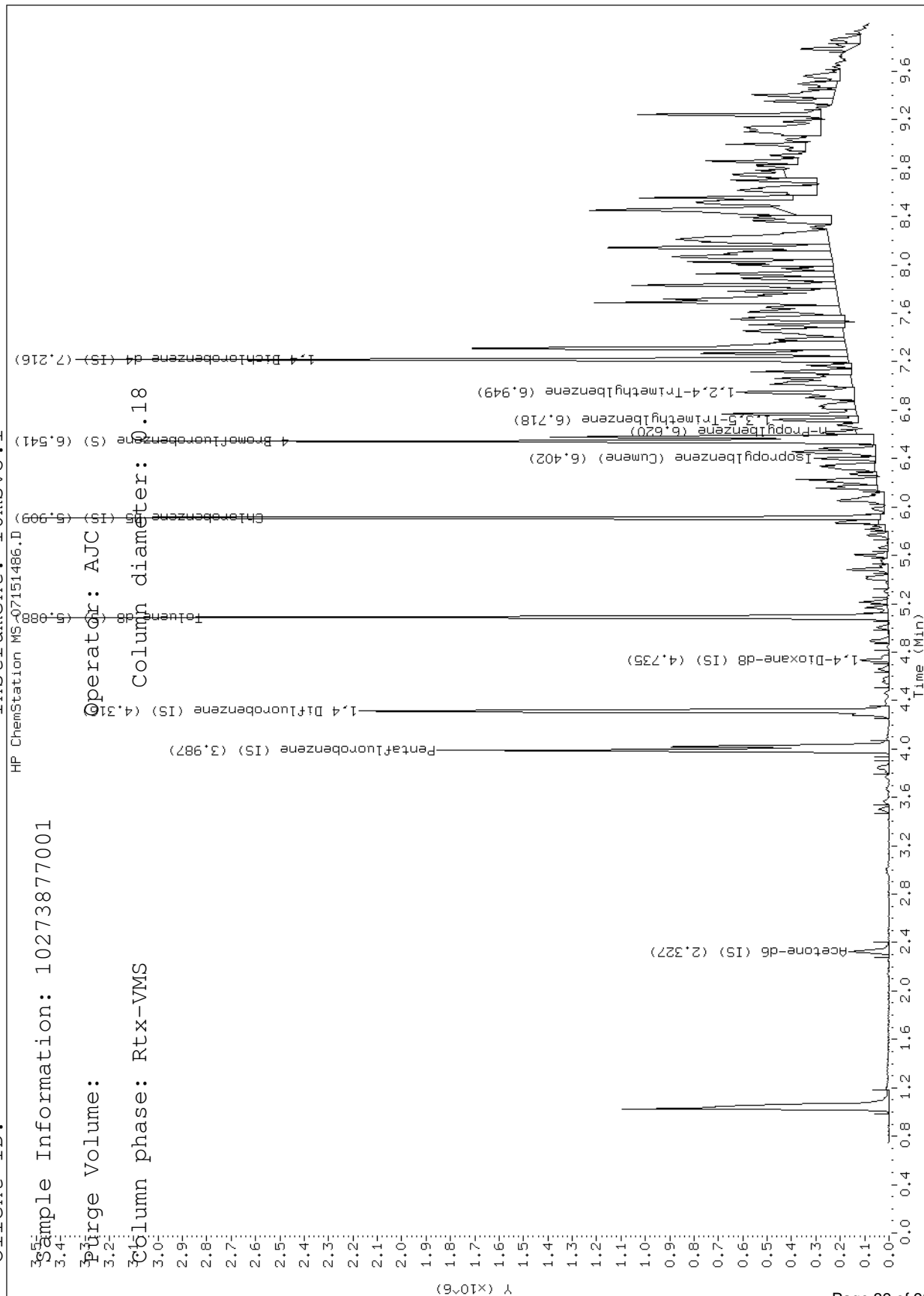
Sample Information: 10273877001

Purge Volume:

Column phase: Rtx-VMS

Operator: AJC

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10msv5.i\071514c.b\07151487.D

Report Date: 07/16/2014

Sample ID: 10273877002

Client ID:

Instrument: 10msv5.i

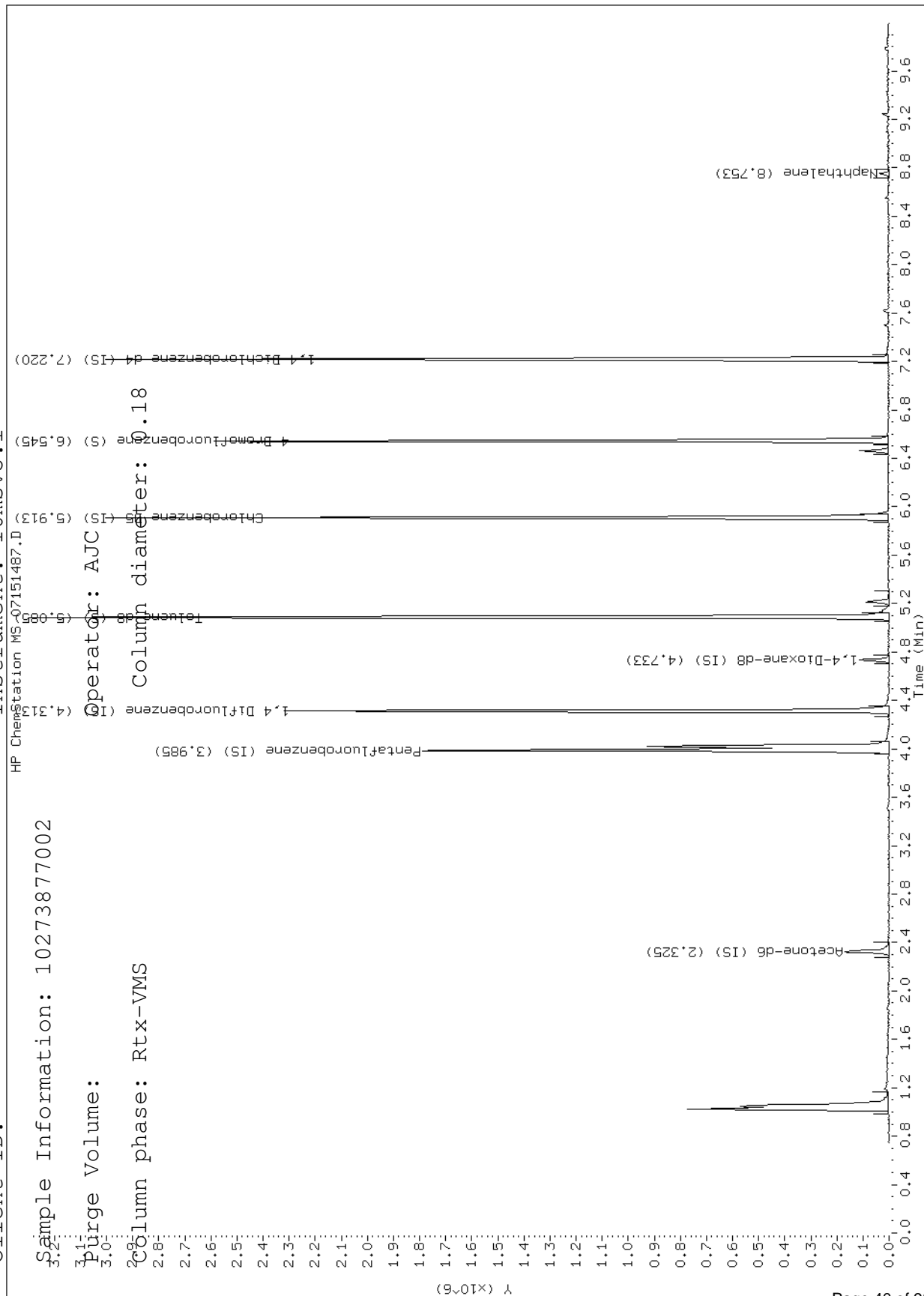
Sample Information: 10273877002

Purge Volume:

Column phase: Rtx-VMS

Operator: AJC

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10msv5.i\071514c.b\07151488.D

Report Date: 07/16/2014

Sample ID: 10273877003

Client ID:

Instrument: 10msv5.i

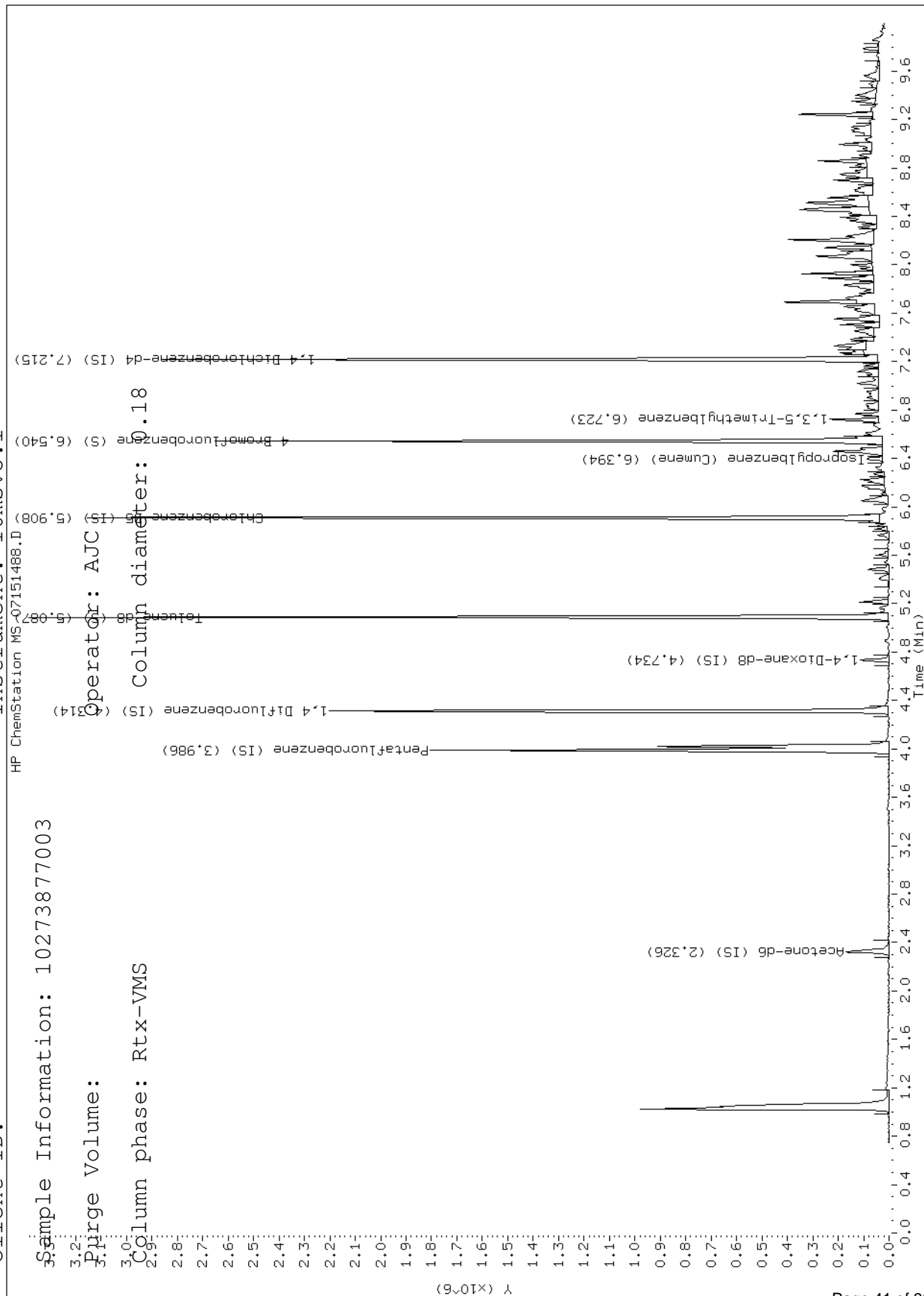
Sample Information: 10273877003

Purge Volume:

Column phase: Rtx-VMS

Operator: AJC

Column diameter: 0.18



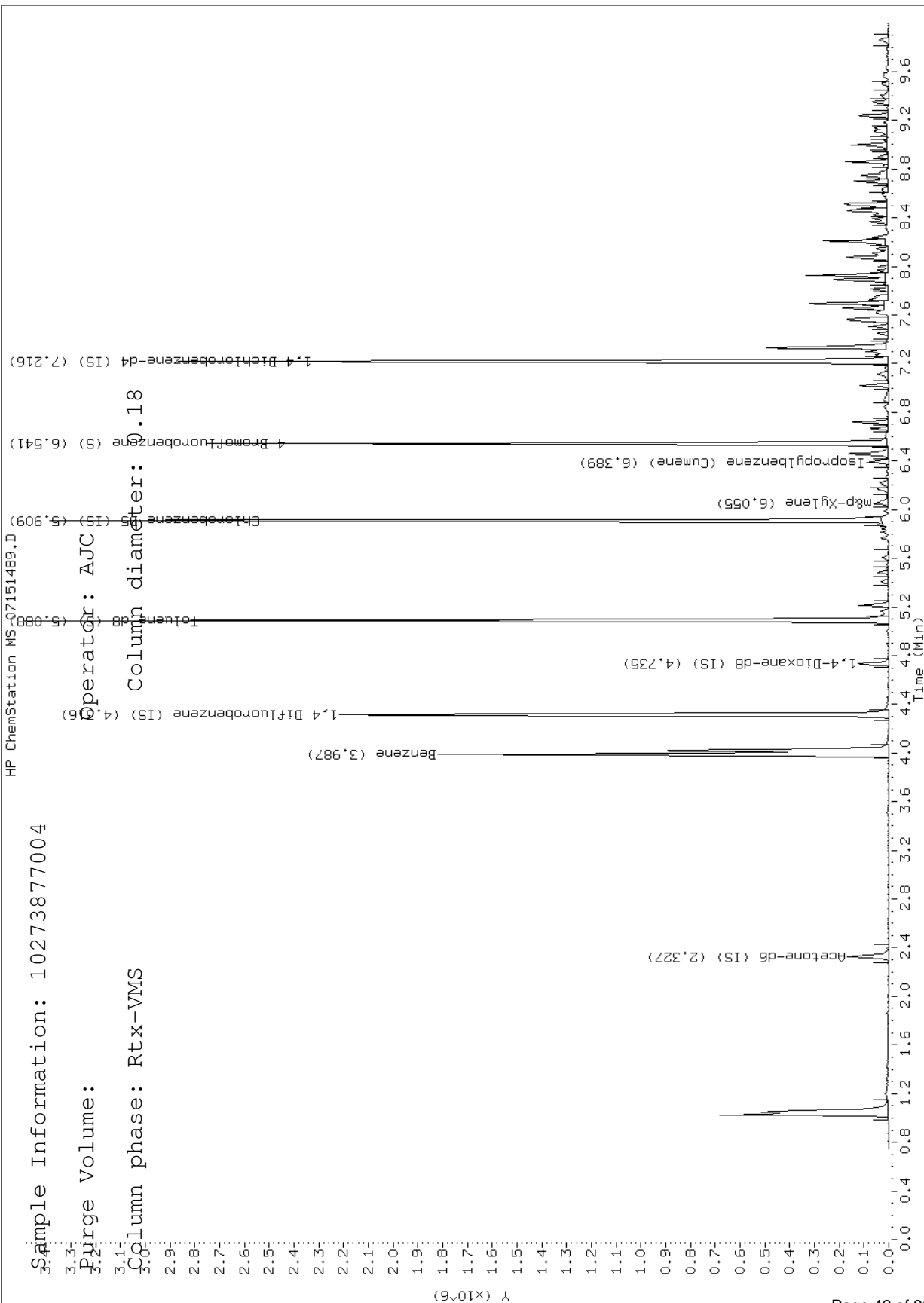
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Report Date: 07/16/2014

Sample ID: 10273877004

Client ID:

Instrument: 10msv5.i



Sample Information: 10273877004

Purge Volume:

Column phase: Rtx-VMS

Data File: \\192.168.10.12\chem\10msv5.i\071514c.b\07151490.D

Report Date: 07/16/2014

Sample ID: 10273877005

Client ID:

Instrument: 10msv5.i

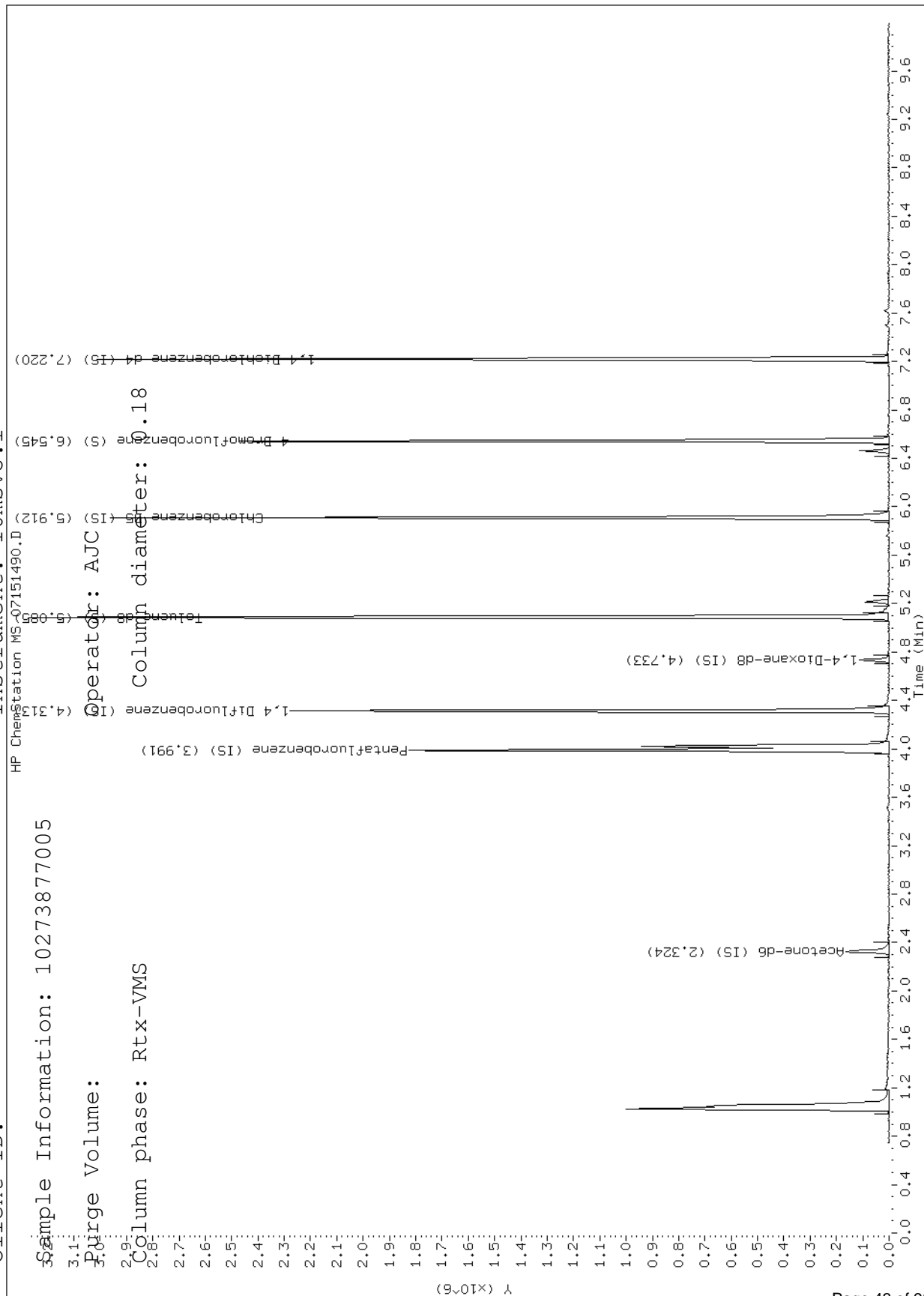
Sample Information: 10273877005

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



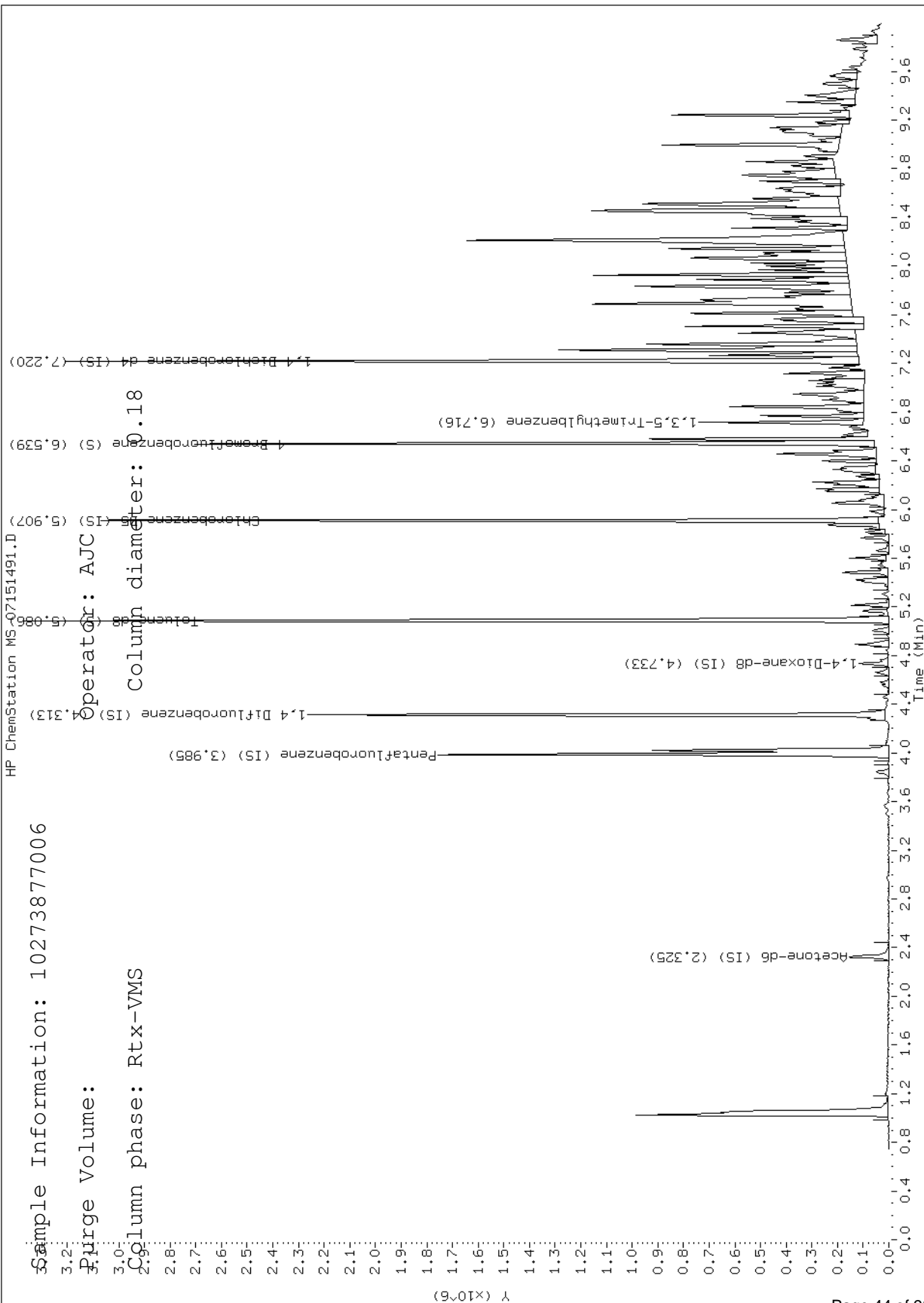
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Report Date: 07/16/2014

Sample ID: 10273877006

Client ID:

Instrument: 10msv5.i



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Report Date: 07/16/2014

Sample ID: 10273877007

Client ID:

Instrument: 10msv5.i

HP ChemStation MS 07151492.D

Sample Information: 10273877007

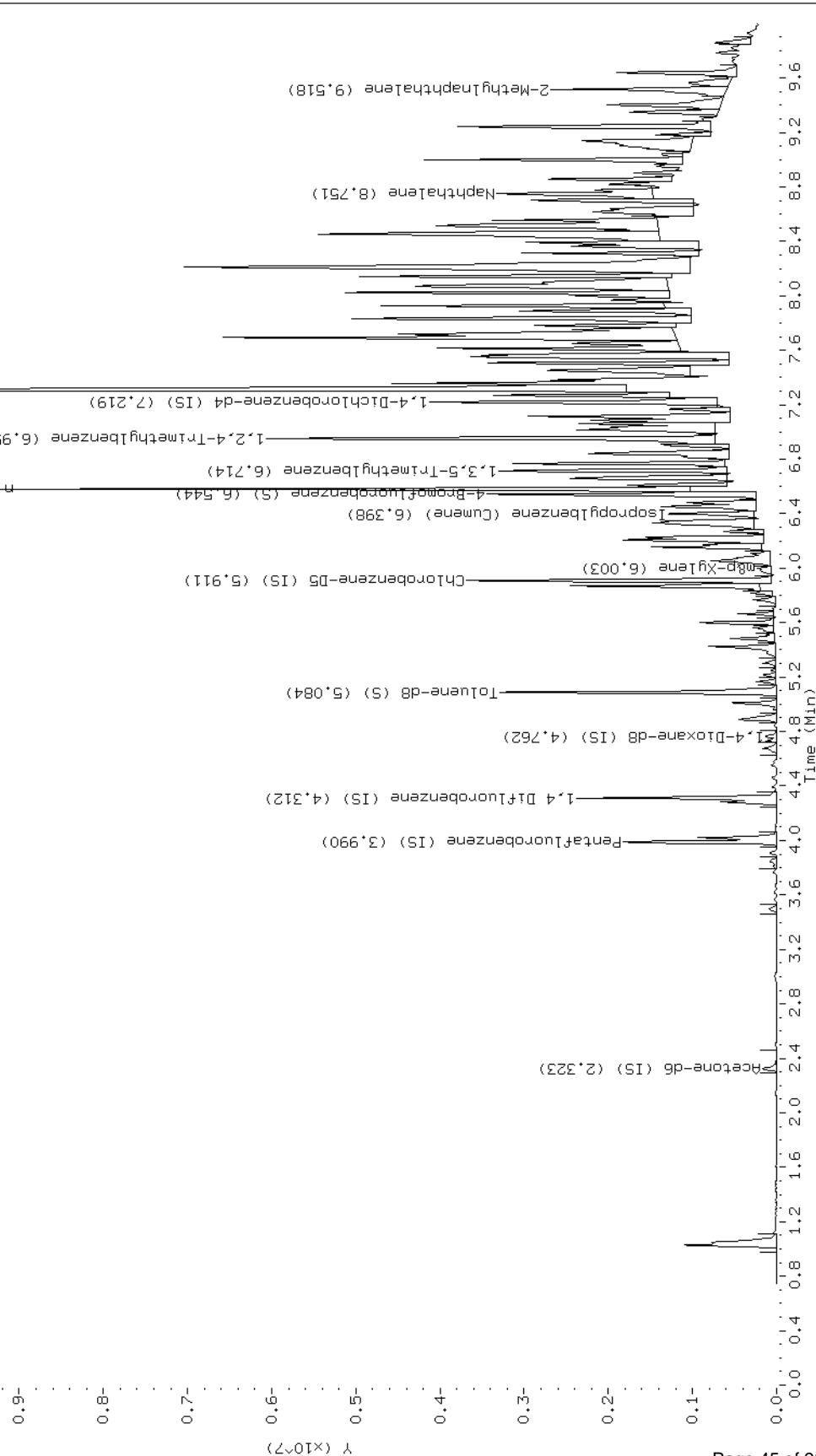
1.1-

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



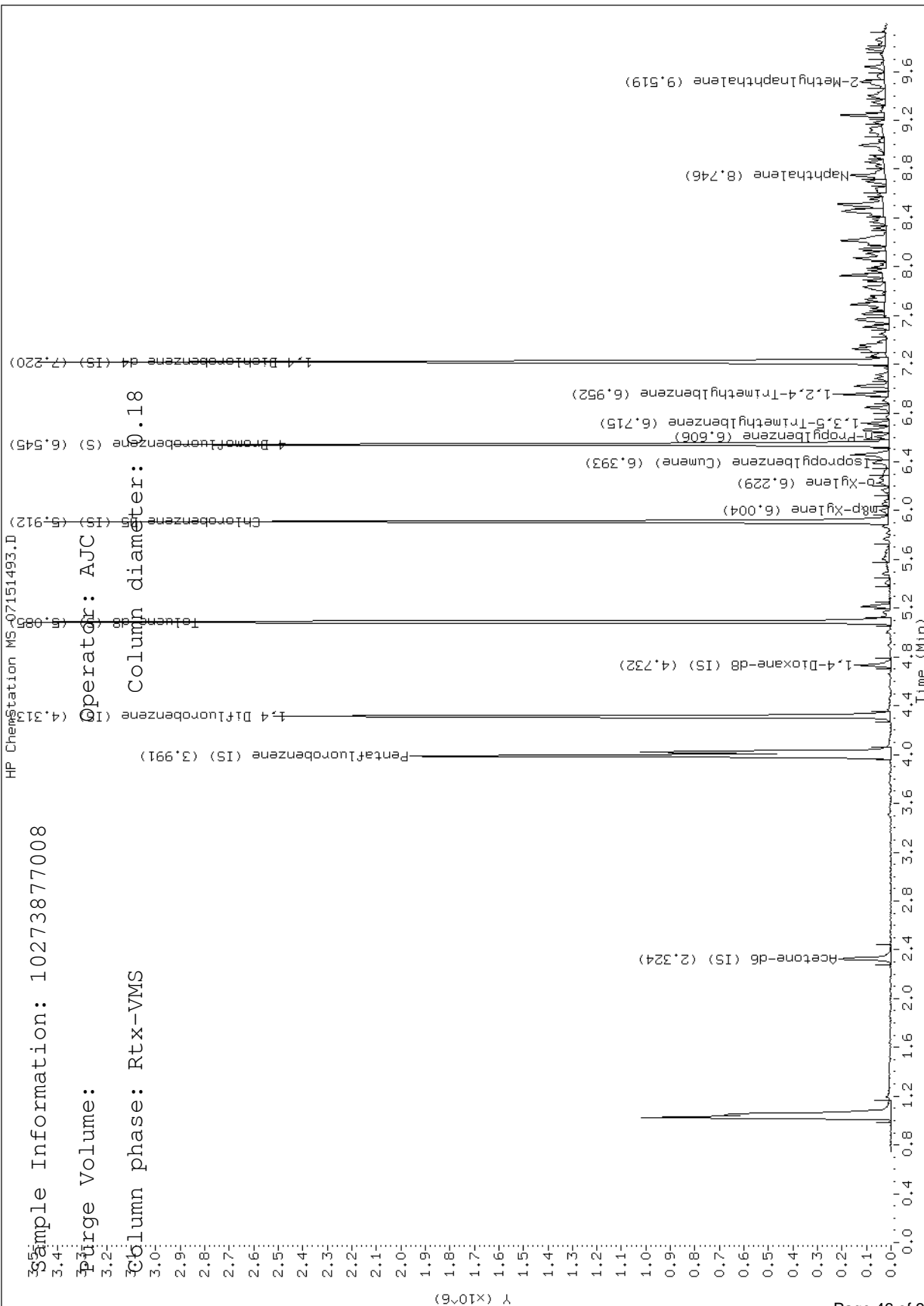
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Report Date: 07/16/2014

Sample ID: 10273877008

Client ID:

Instrument: 10msv5.i



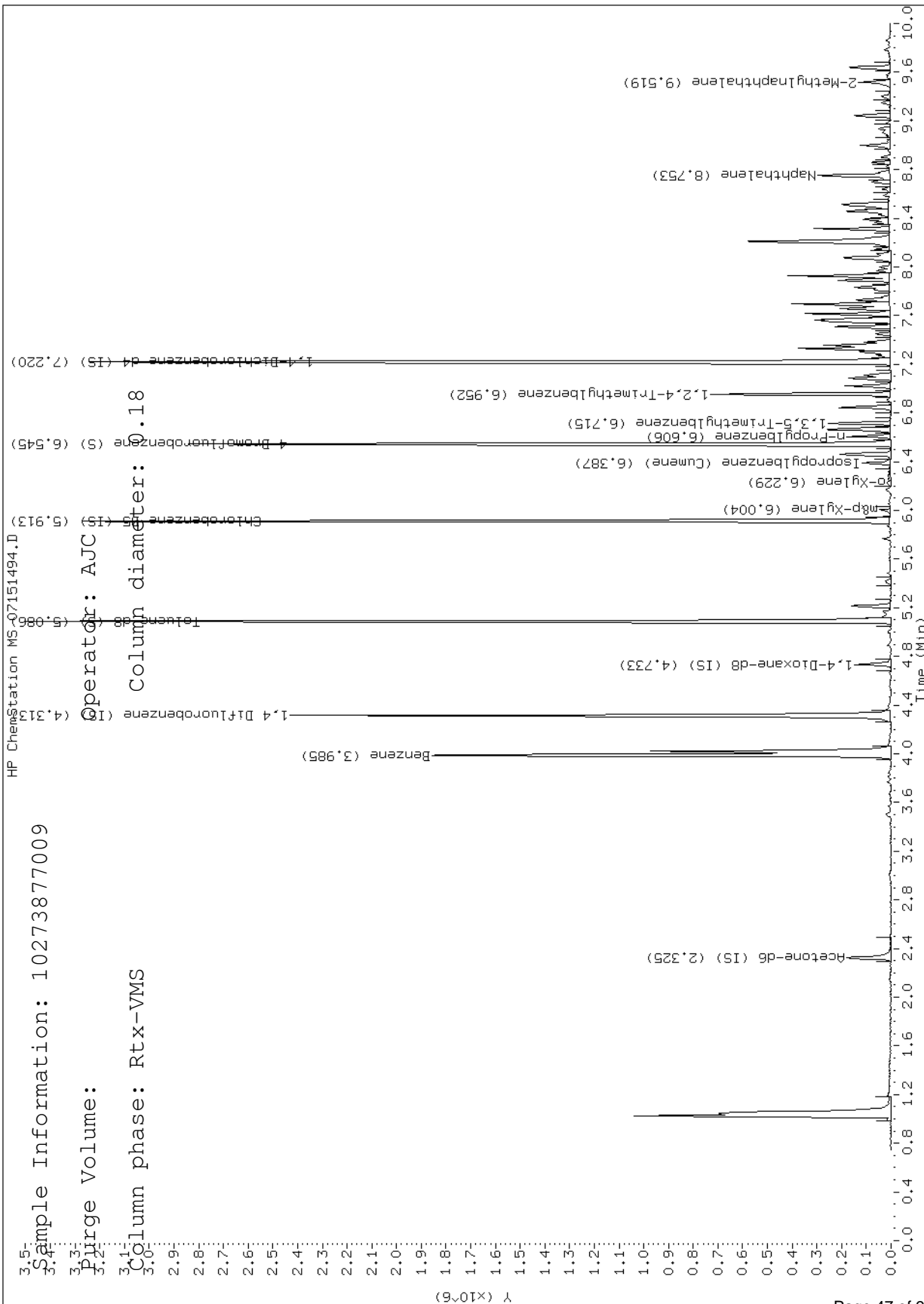
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Report Date: 07/16/2014

Sample ID: 10273877009

Client ID:

Instrument: 10msv5.i



Data File: \\192.168.10.12\chem\10msv5.i\071514c.b\07151495.D

Report Date: 07/16/2014

Sample ID: 10273877010

Client ID:

Instrument: 10msv5.i

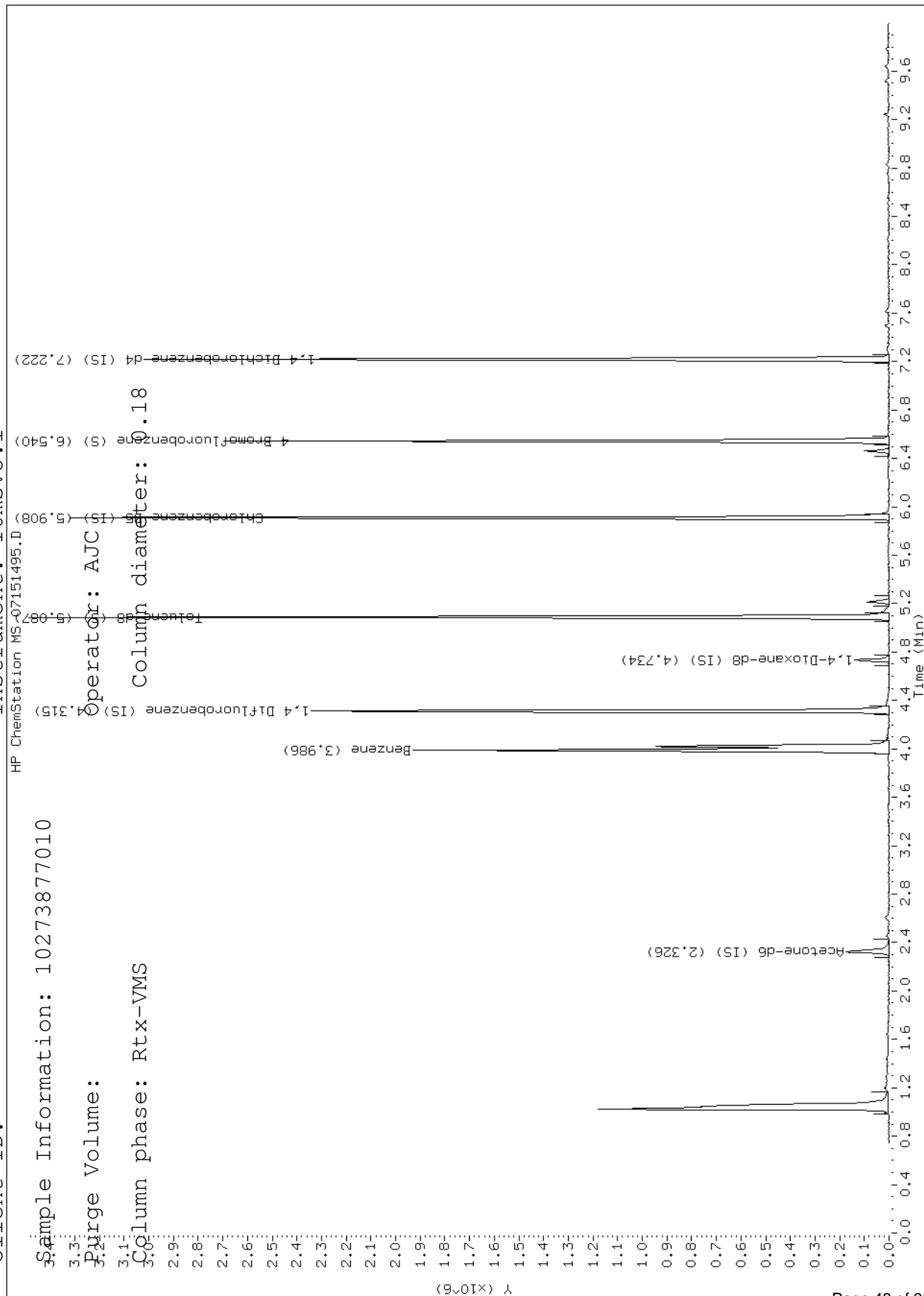
Sample Information: 10273877010

Purge Volume:

Column phase: Rtx-VMS

Operator: AJC

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10msv5.i\071514c.b\07151496.D

Report Date: 07/16/2014

Sample ID: 10273877011

Client ID:

Instrument: 10msv5.i

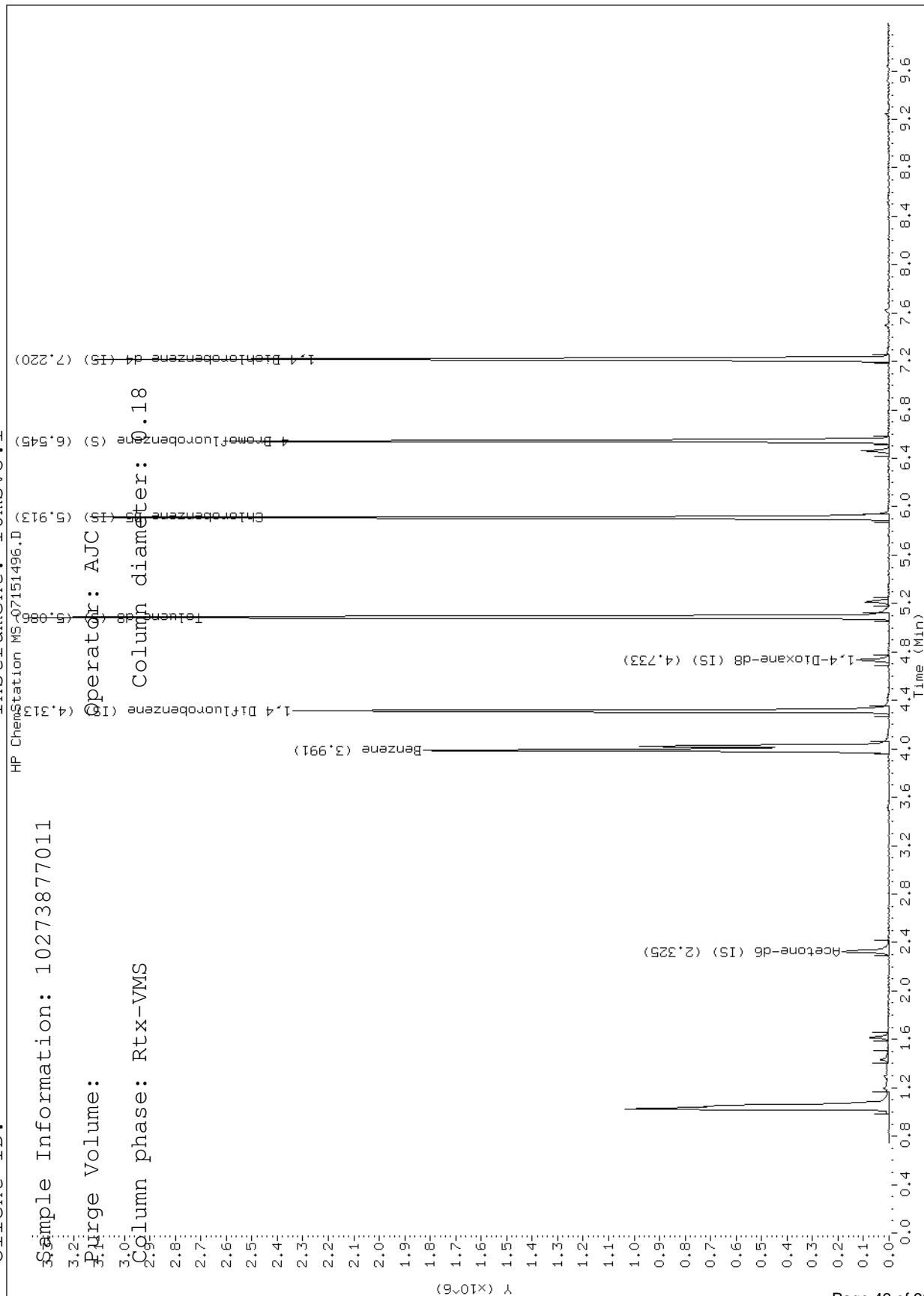
Sample Information: 10273877011

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



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Report Date: 07/21/2014

Sample ID: 10273877012

Client ID:

Instrument: 10msv1.i

HP ChemStation MS 07181451.D

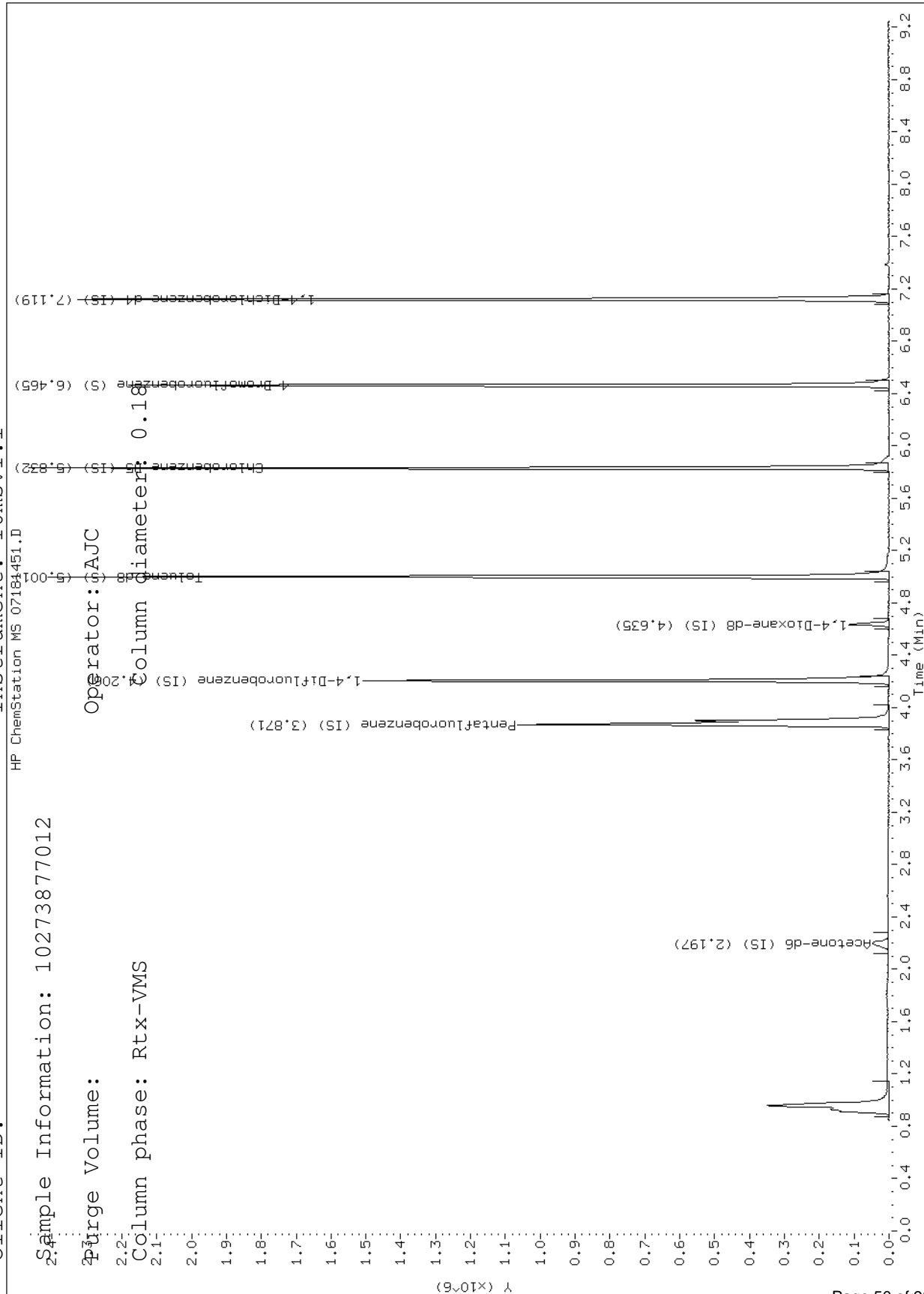
Sample Information: 10273877012

Purge Volume:

Operator: SAJC

Column phase: Rtx-VMS

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10msv1.i\071814b.b\07181450.D

Report Date: 07/21/2014

Sample ID: 10273877013

Client ID:

Instrument: 10msv1.i

HP ChemStation MS 07181450.D

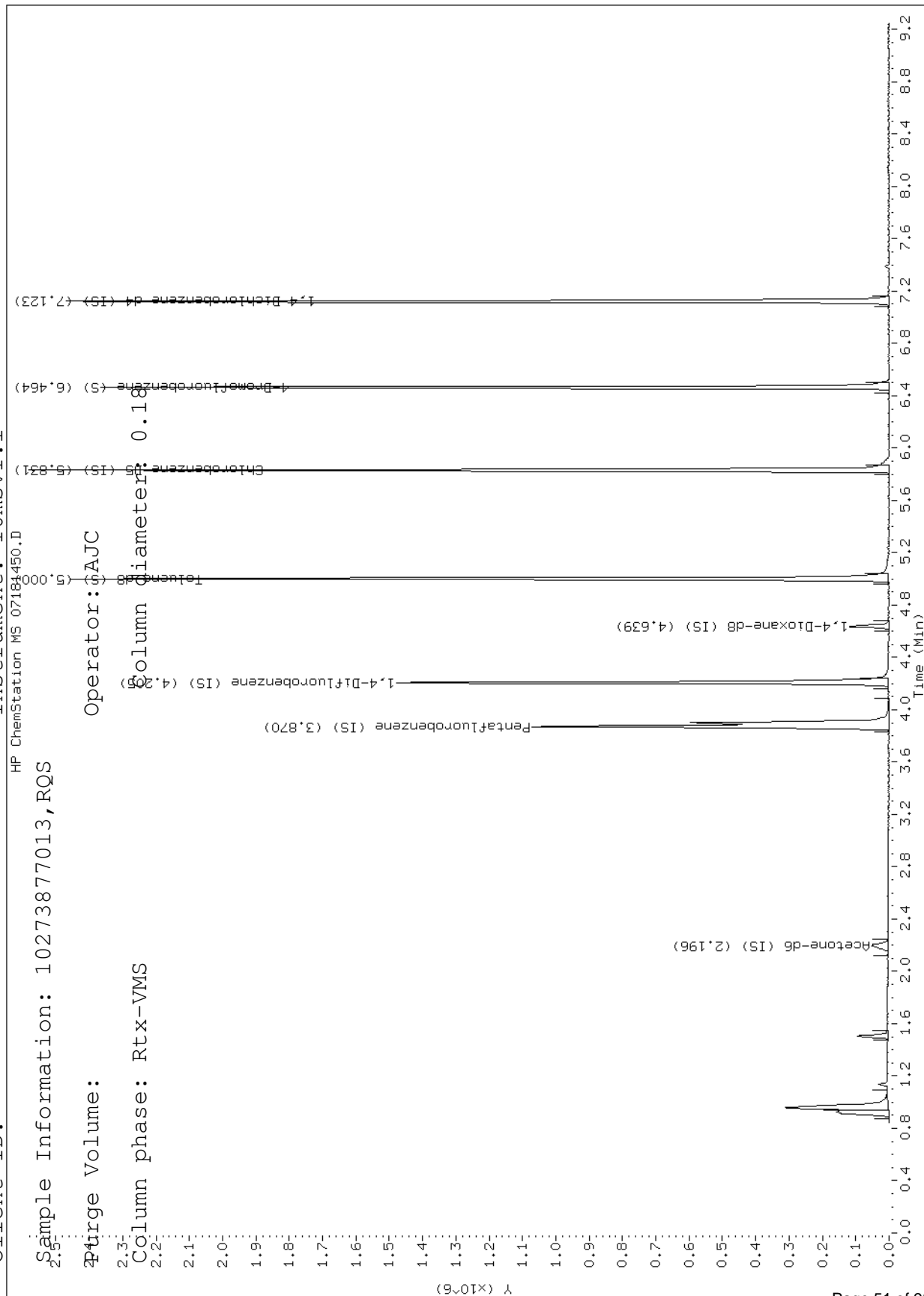
Sample Information: 10273877013, RQS

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



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Report Date: 07/21/2014

Sample ID: 10273877014

Client ID:

Instrument: 10msv1.i

HP ChemStation MS 07181452.D

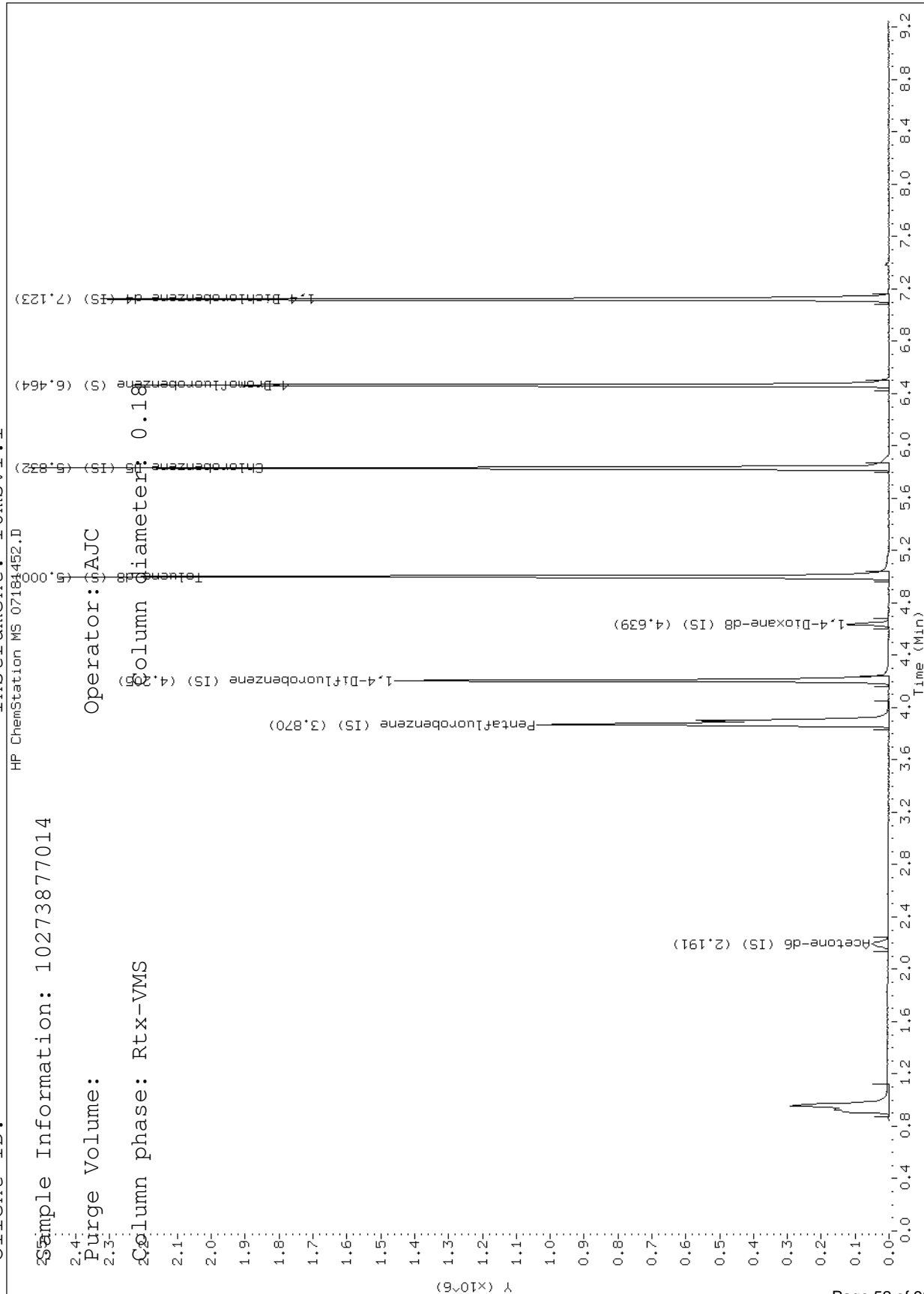
Sample Information: 10273877014

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10msv1.i\071814b.b\07181453.D

Report Date: 07/21/2014

Sample ID: 10273877015

Client ID:

Instrument: 10msv1.i

HP ChemStation MS 07181453.D

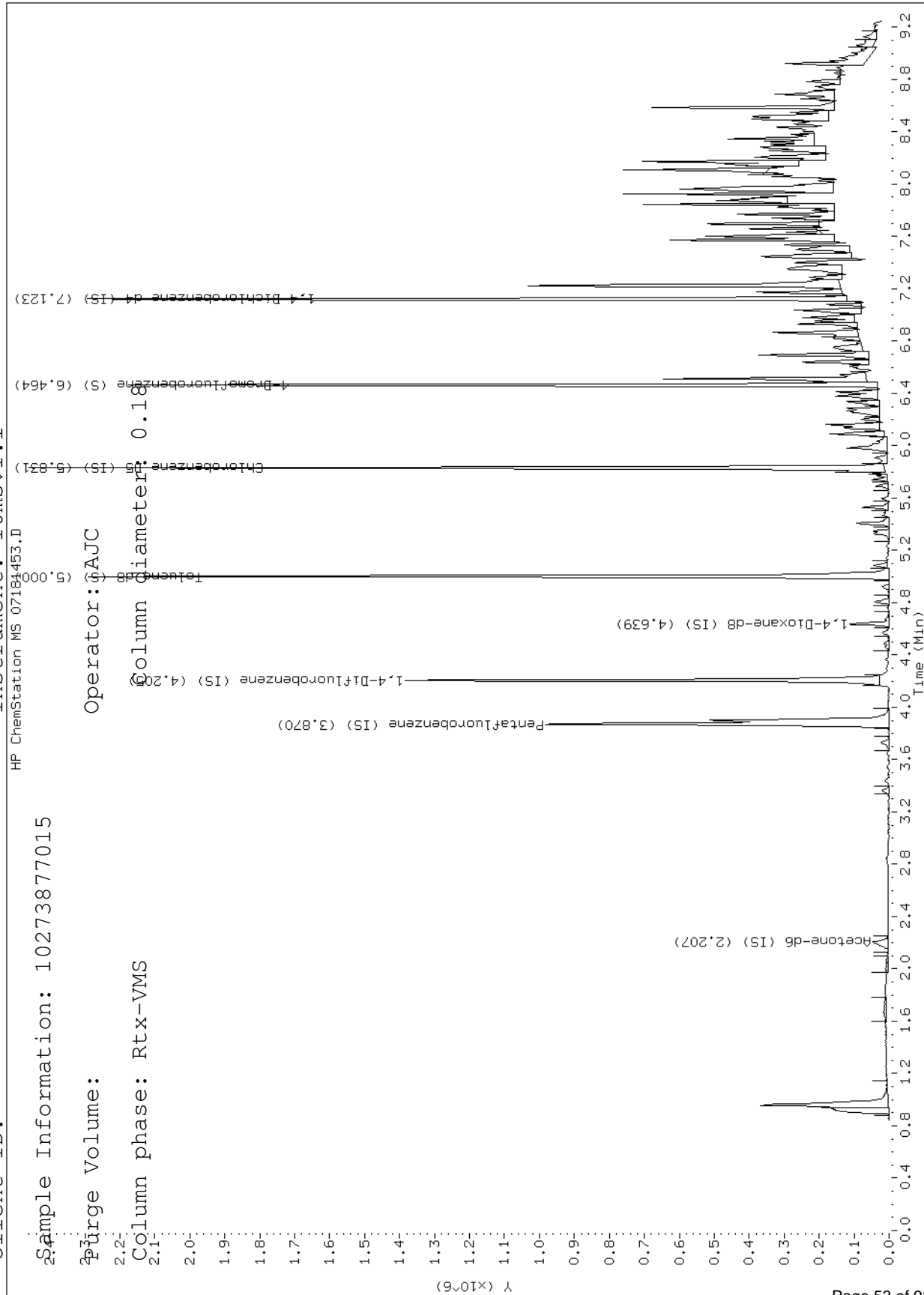
Sample Information: 10273877015

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



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Report Date: 07/21/2014

Sample ID: 10273877016

Client ID:

Instrument: 10msv1.i

HP ChemStation MS 07181454.D

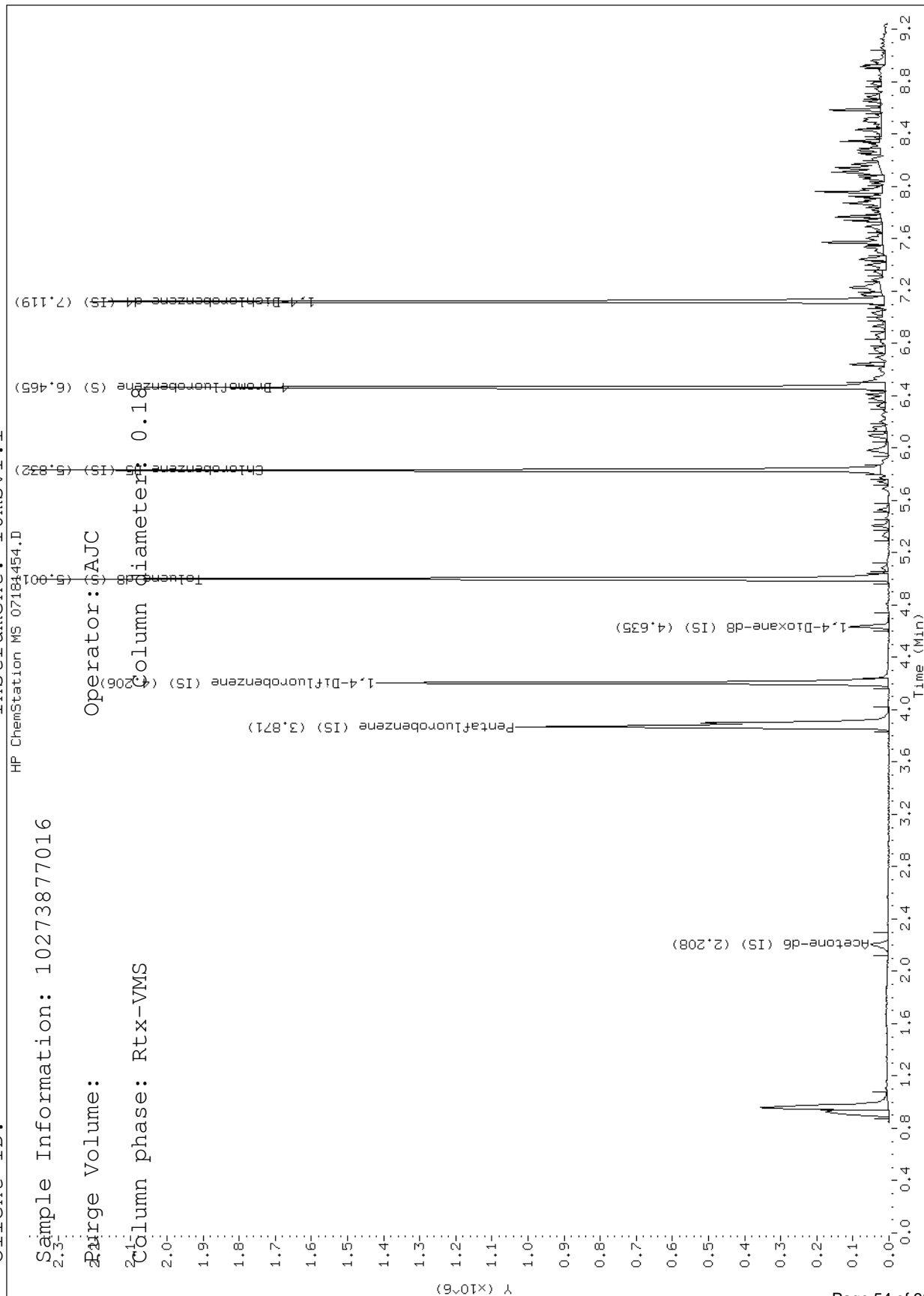
Sample Information: 10273877016

Purge Volume:

Operator: SAJC

Column phase: Rtx-VMS

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10msv1.i\071814b.b\07181439.D

Report Date: 07/21/2014

Sample ID: 10273877017

Client ID:

Instrument: 10msv1.i

HP ChemStation MS 07181439.D

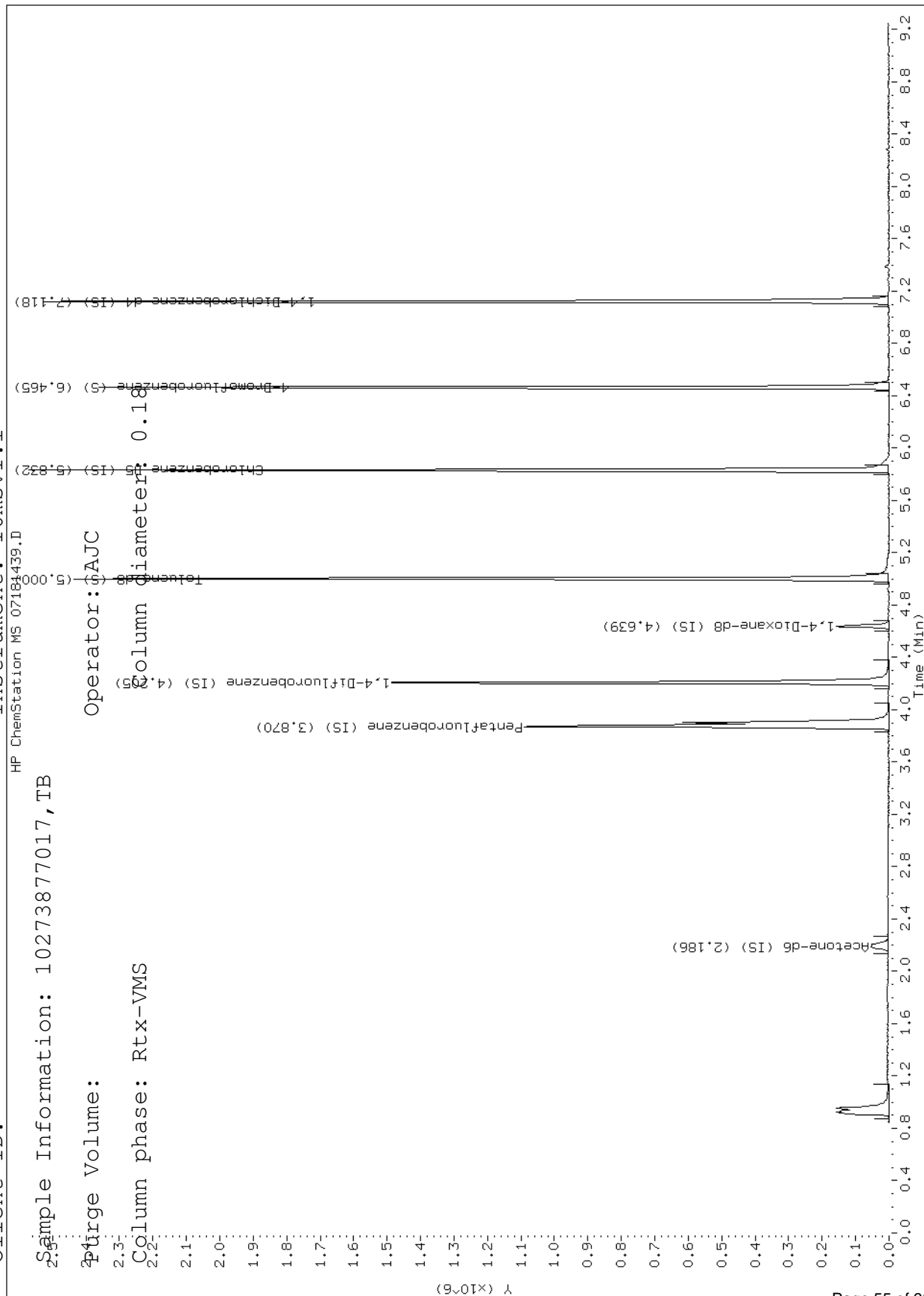
Sample Information: 10273877017, TB

Purge Volume:

Operator: AJC

Column phase: Rtx-VMS

Column diameter: 0.18



Data File: \\192.168.10.12\chem\10gcv6.i\071714b-2.b\071714013.d

Report Date: 07/18/2014

Sample ID: 10273877001

Client ID:

Instrument: 10gcv6.i

ANDI 071714013.d

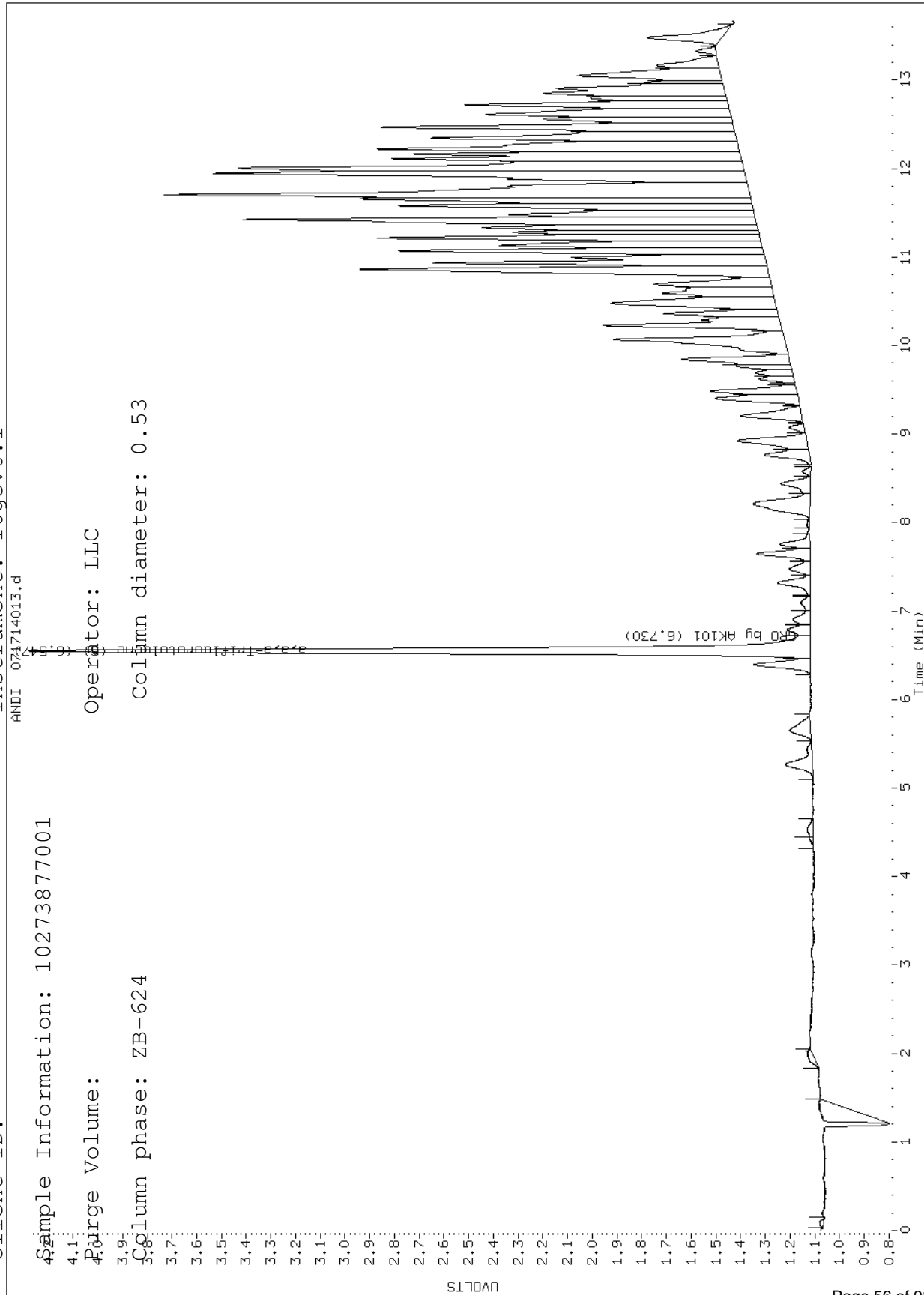
Sample Information: 10273877001

Purge Volume:

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514007.d

Report Date: 07/16/2014

Sample ID: 10273877002

Client ID:

Instrument: 10gcv6.i

ANDI 071514007.d

Sample Information: 10273877002

4.3

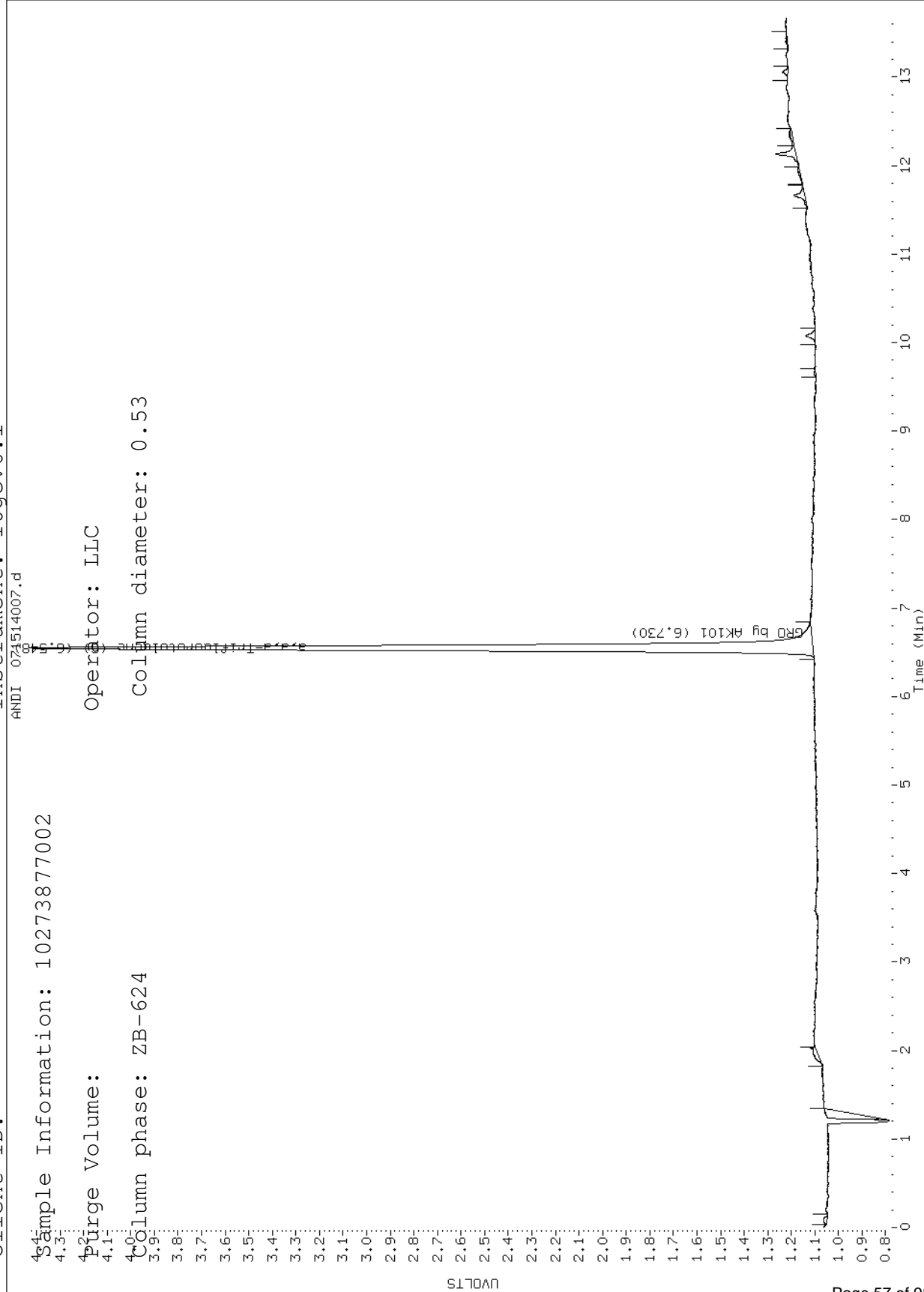
Purge Volume:

4.1

Column phase: ZB-624

Column diameter: 0.53

Operator: ILC



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514008.d

Report Date: 07/16/2014

Sample ID: 10273877003

Client ID:

Instrument: 10gcv6.i

ANDI 071514008.d

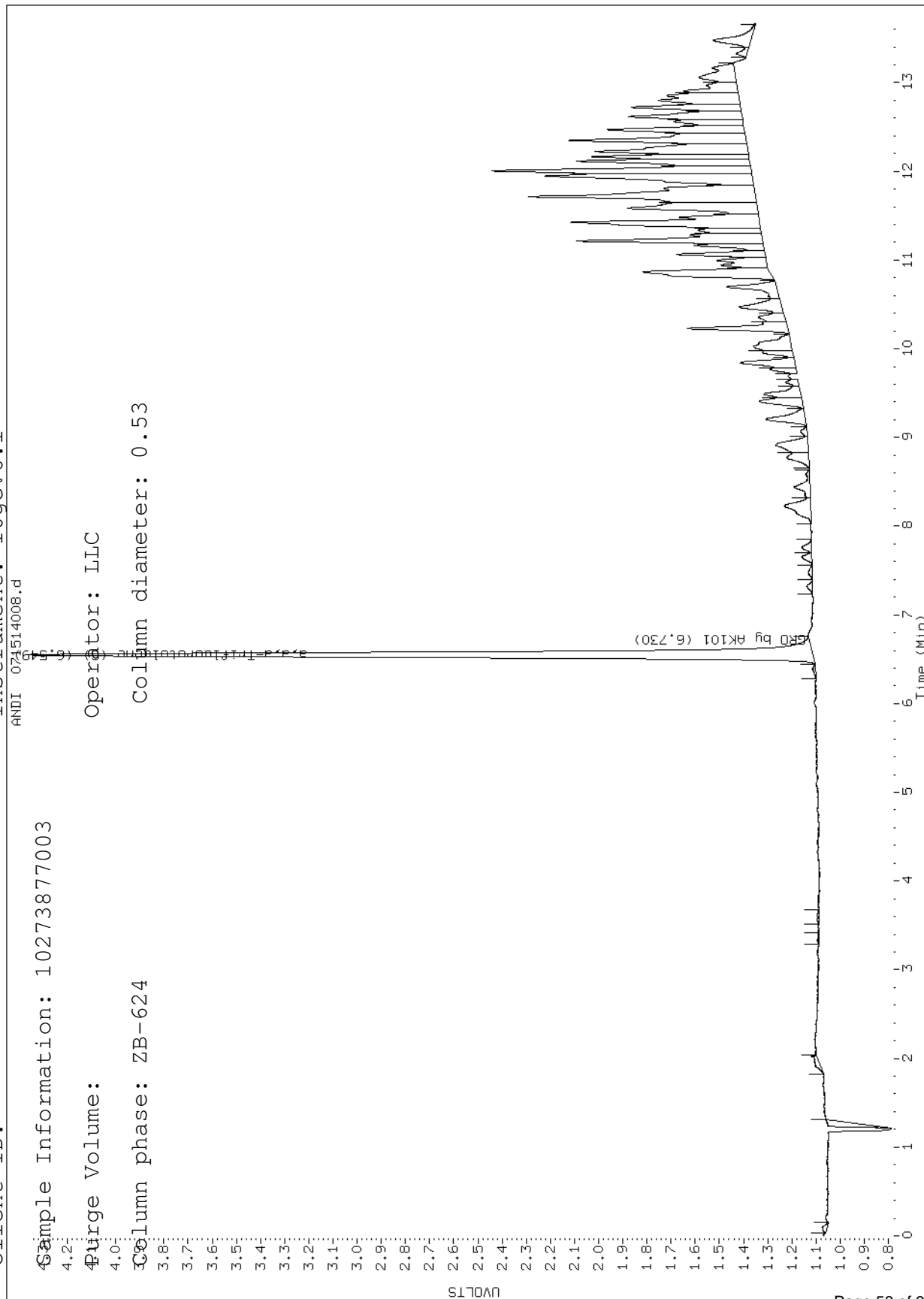
Sample Information: 10273877003

Purge Volume: 4.2

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514009.d

Report Date: 07/16/2014

Sample ID: 10273877004

Client ID:

Instrument: 10gcv6.i

ANDI 071514009.d

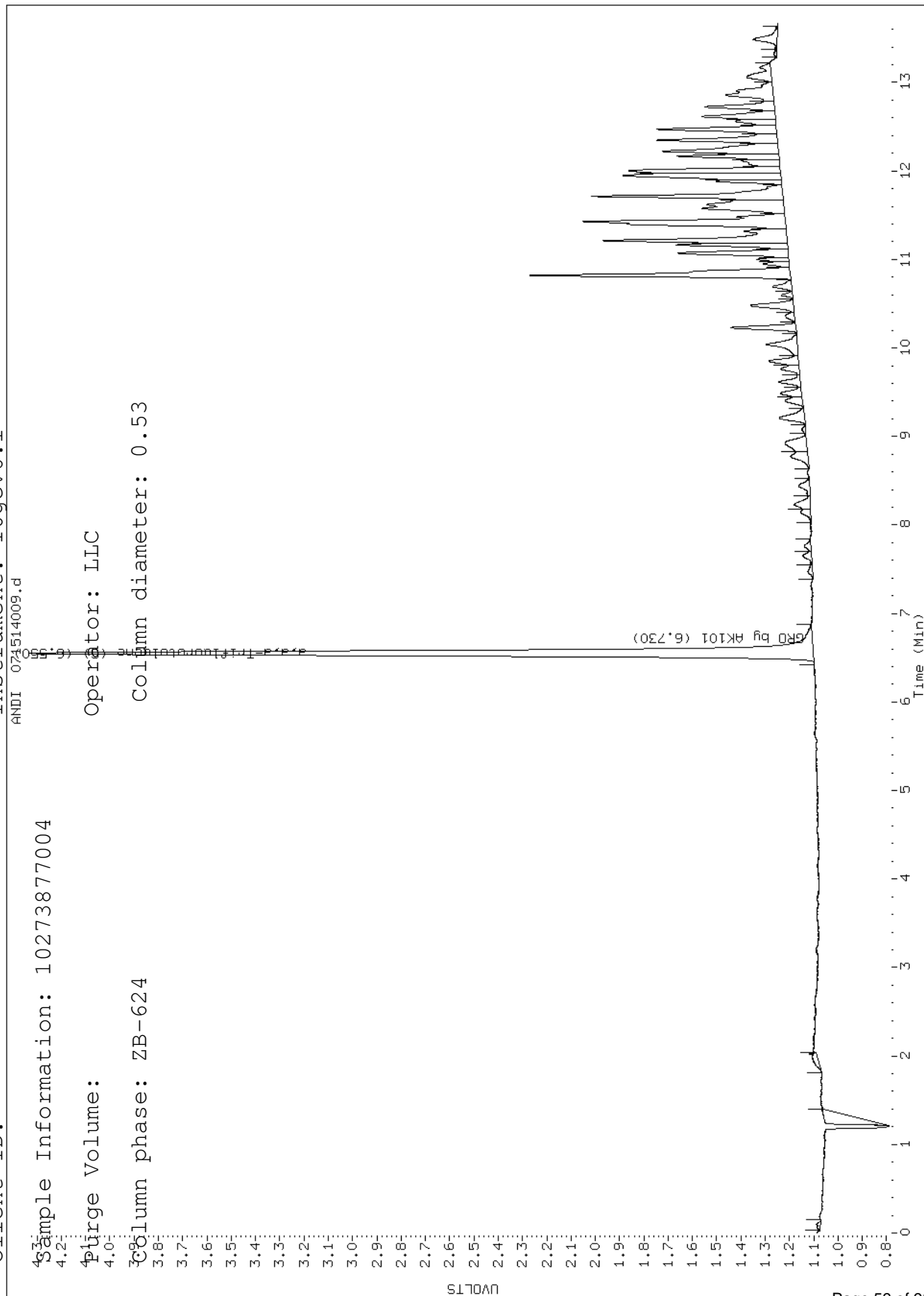
Sample Information: 10273877004

Purge Volume: 4.0

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514017.d

Report Date: 07/16/2014

Sample ID: 10273877005

Client ID:

Instrument: 10gcv6.i

ANDI 071514017.d

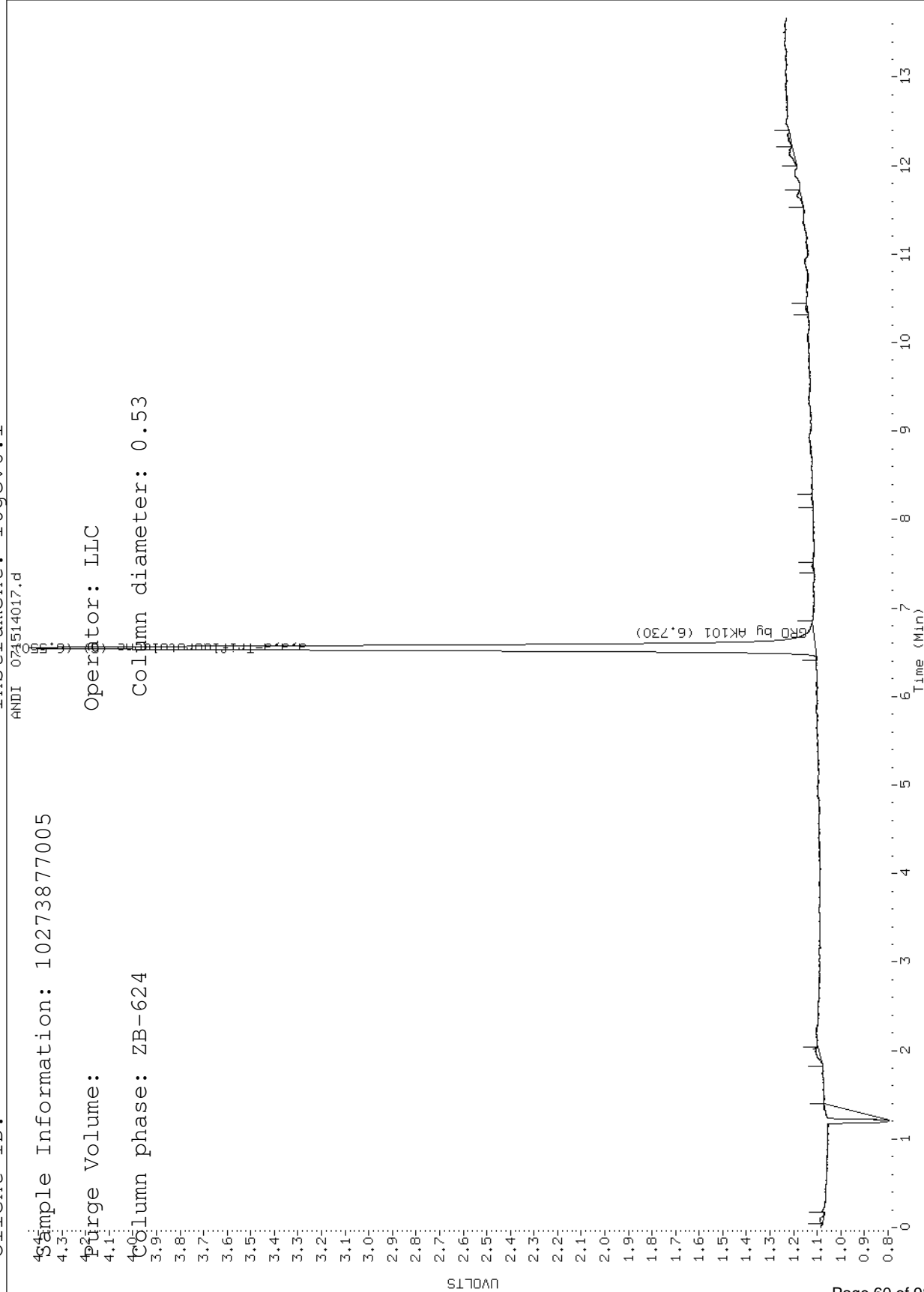
Sample Information: 10273877005

Purge Volume: 4.3

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514018.d

Report Date: 07/16/2014

Sample ID: 10273877006

Client ID:

Instrument: 10gcv6.i

ANDI 071514018.d

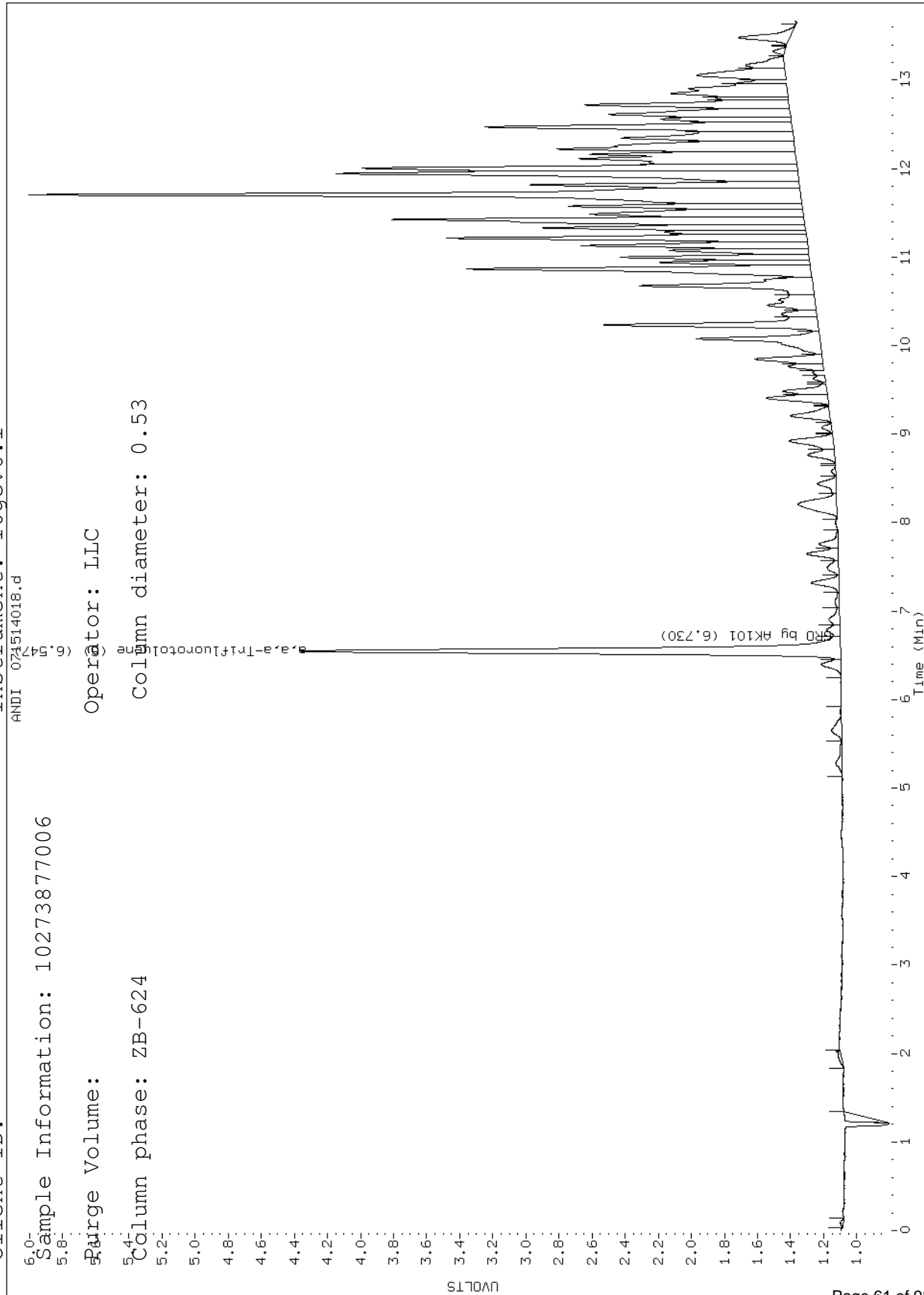
Sample Information: 10273877006

Purge Volume:

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071714b-2.b\071714016.d

Report Date: 07/18/2014

Sample ID: 10273877007

Client ID: Instrument: 10gcv6.i

ANDI 071714016.d

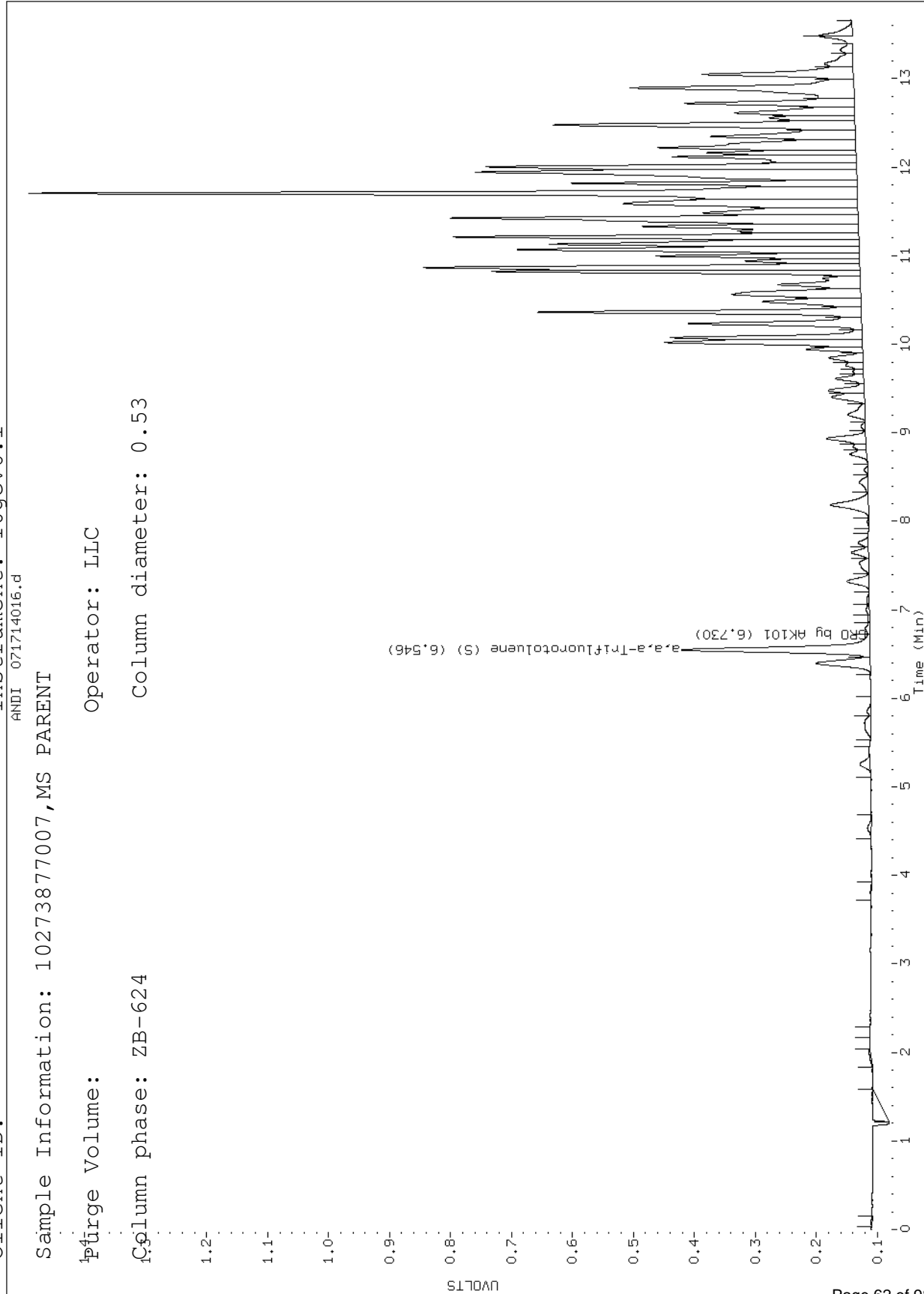
Sample Information: 10273877007, MS PARENT

Purge Volume:

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514019.d

Report Date: 07/16/2014

Sample ID: 10273877008

Client ID:

Instrument: 10gcv6.i

ANDI 071514019.d

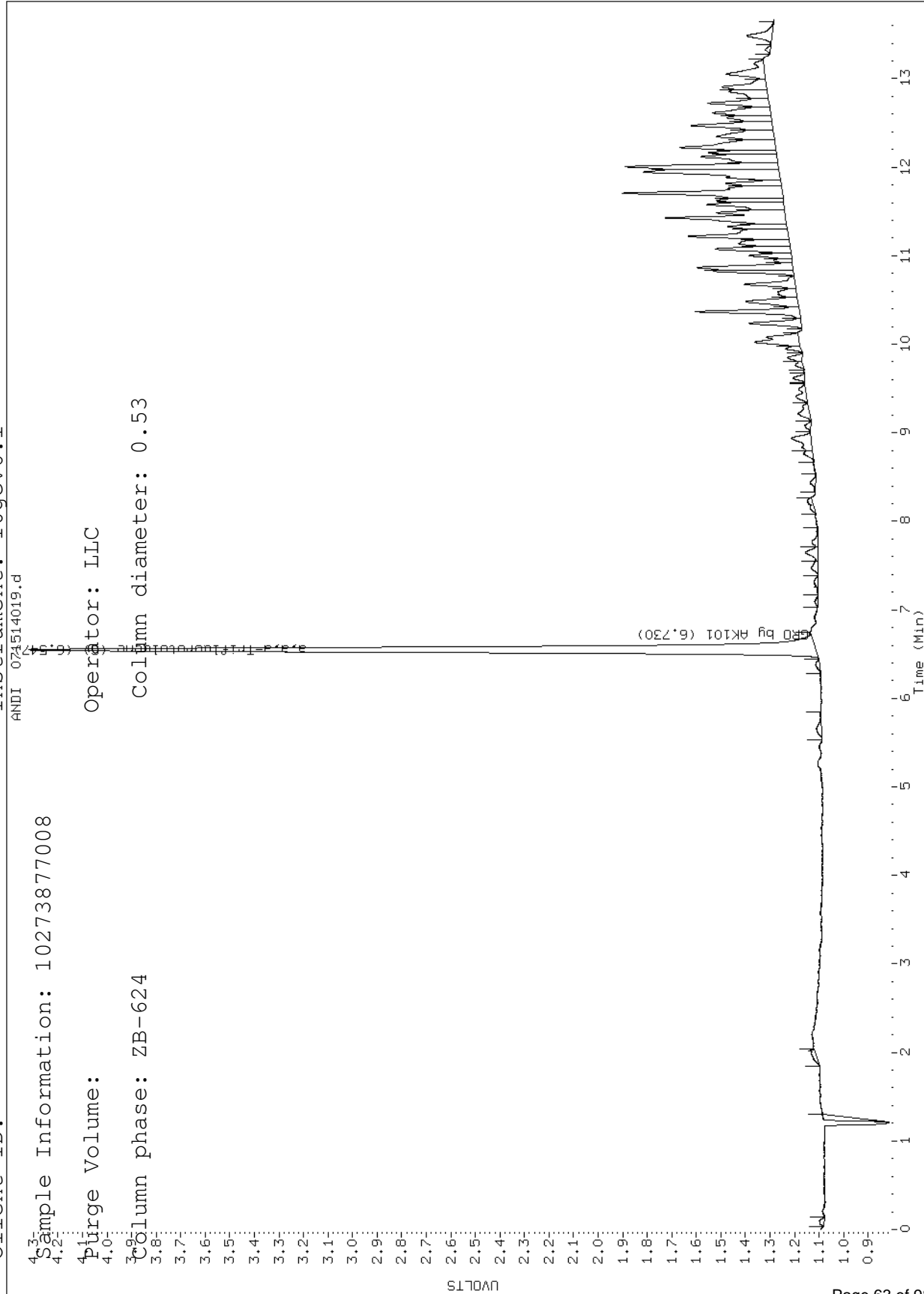
Sample Information: 10273877008

Purge Volume: 4.0

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514020.d

Report Date: 07/16/2014

Sample ID: 10273877009

Client ID:

Instrument: 10gcv6.i

ANDI 071514020.d

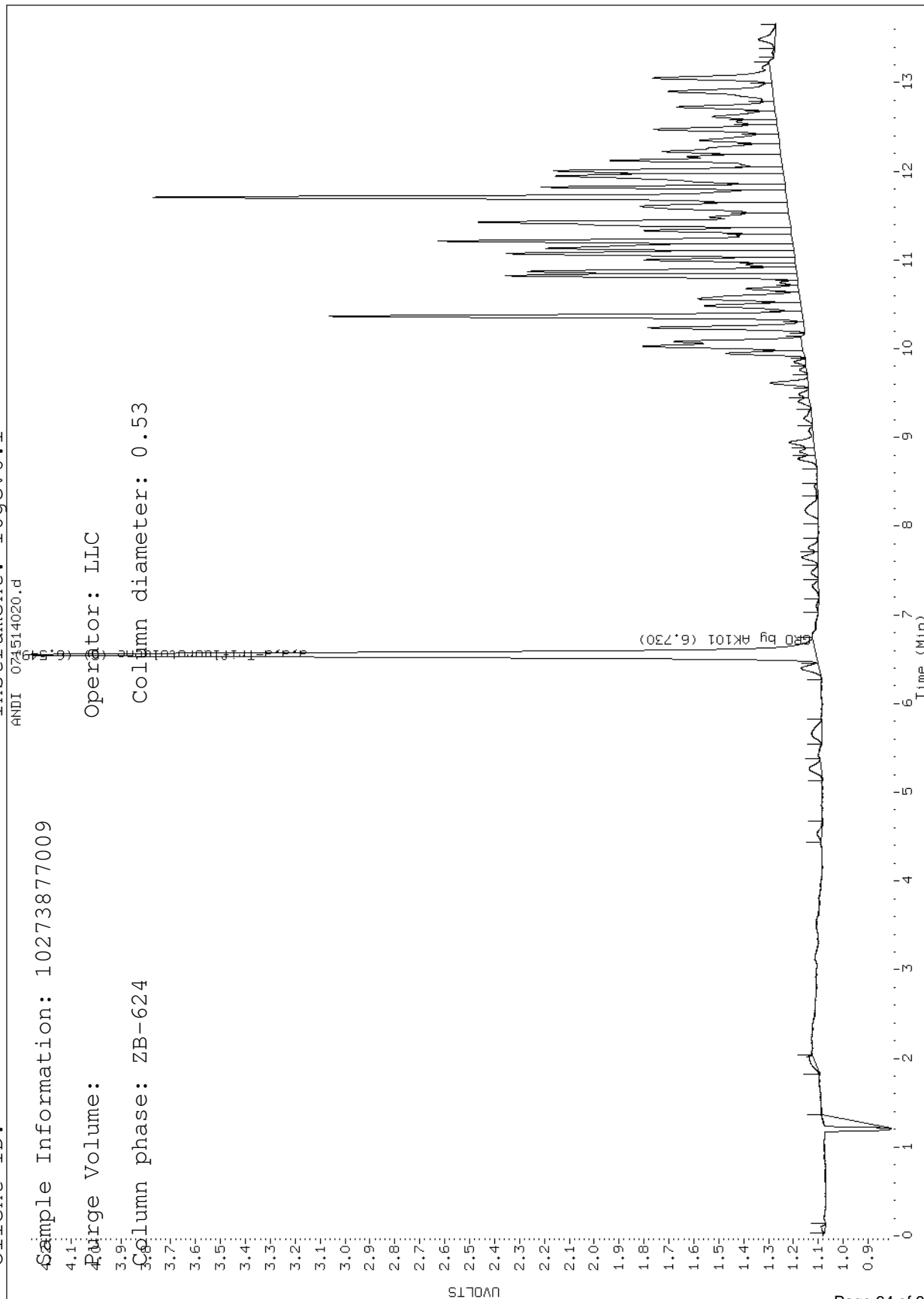
Sample Information: 10273877009

Purge Volume: 4.1

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514021.d

Report Date: 07/16/2014

Sample ID: 10273877010

Client ID:

Instrument: 10gcv6.i

ANDI 071514021.d

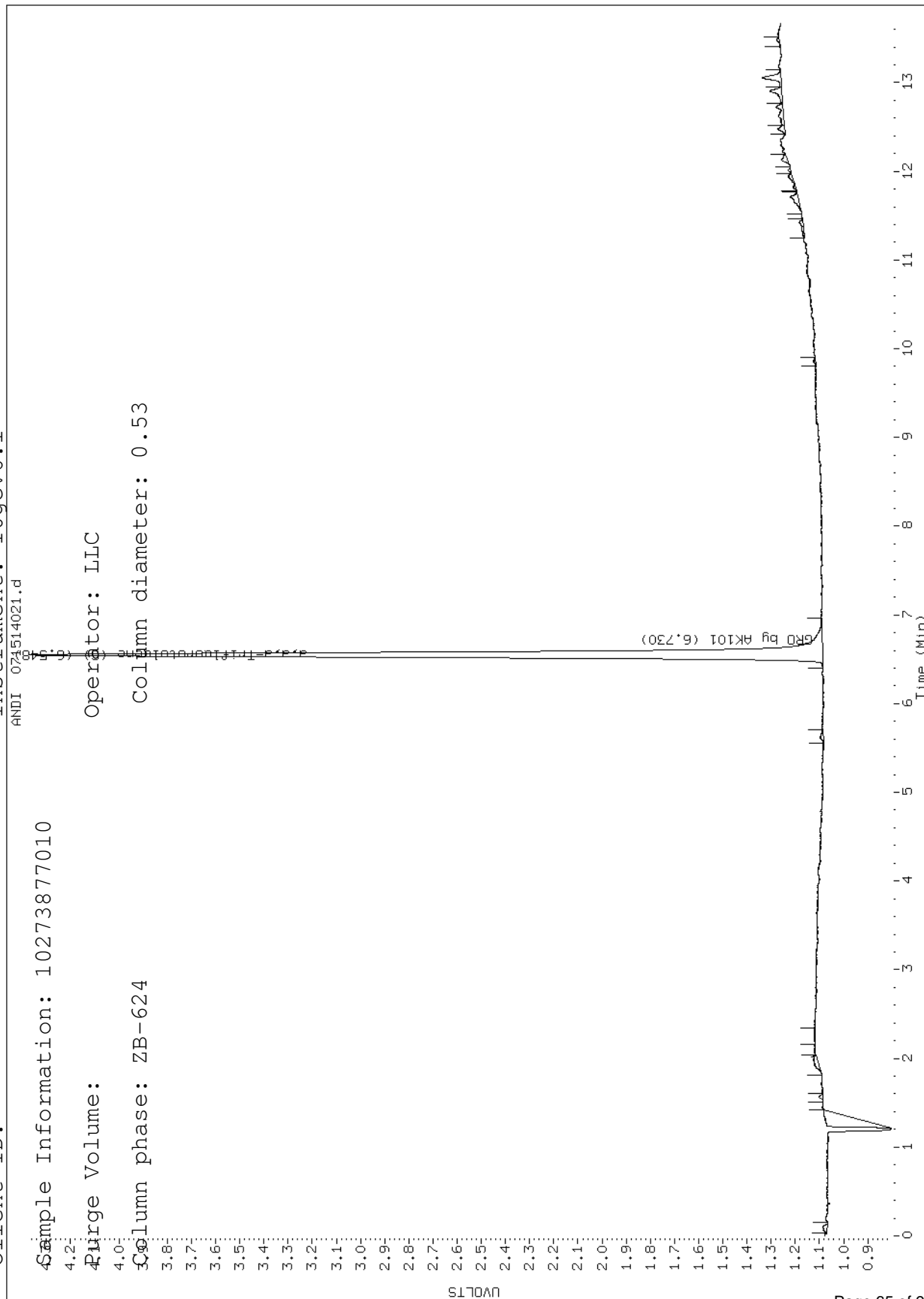
Sample Information: 10273877010

Purge Volume: 4.2

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514022.d

Report Date: 07/16/2014

Sample ID: 10273877011

Client ID:

Instrument: 10gcv6.i

ANDI 071514022.d

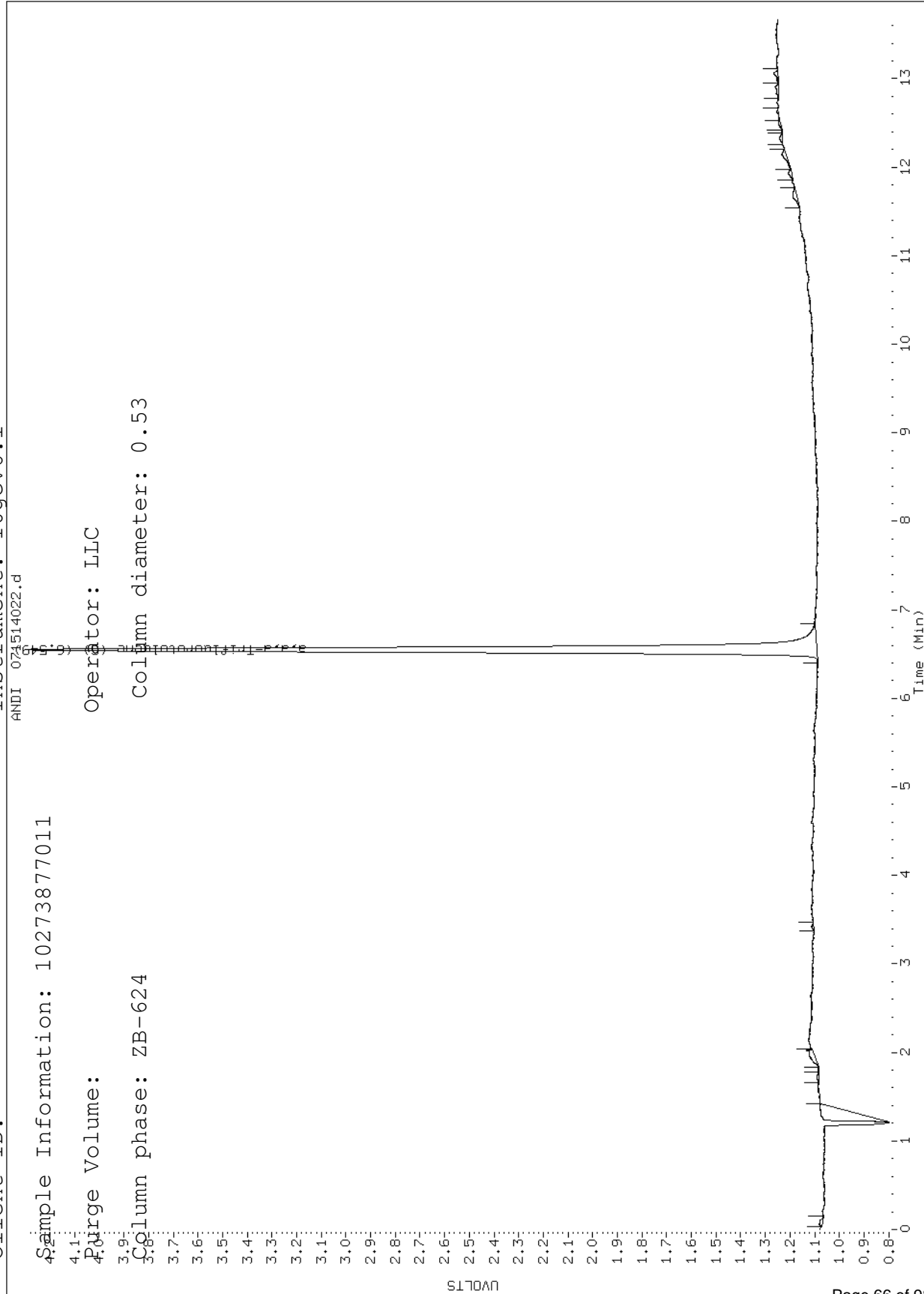
Sample Information: 10273877011

Purge Volume:

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514023.d

Report Date: 07/16/2014

Sample ID: 10273877012

Client ID:

Instrument: 10gcv6.i

ANDI 071514023.d

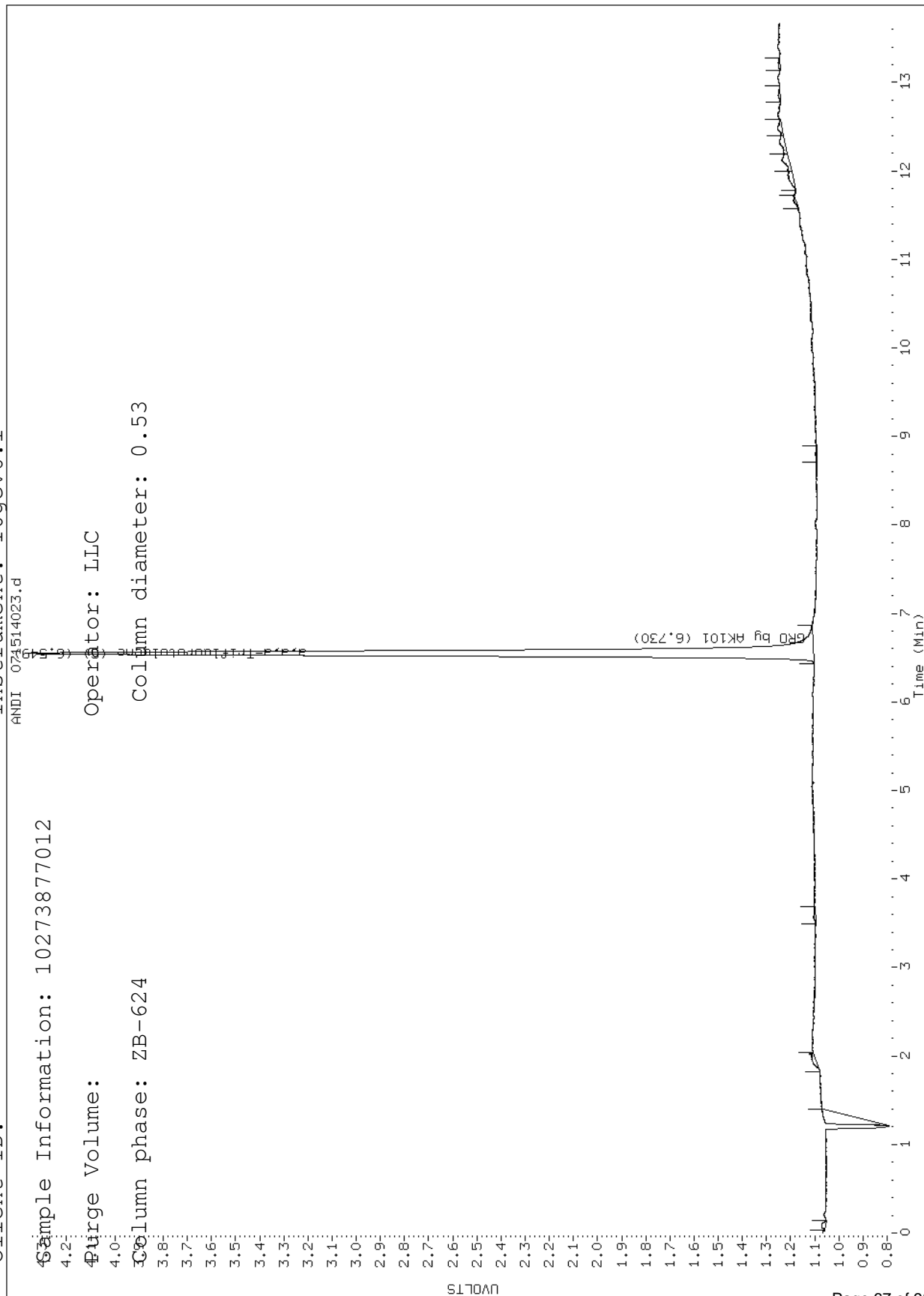
Sample Information: 10273877012

Purge Volume: 4.2

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514012.d

Report Date: 07/16/2014

Sample ID: 10273877013

Client ID:

Instrument: 10gcv6.i

ANDI 071514012.d

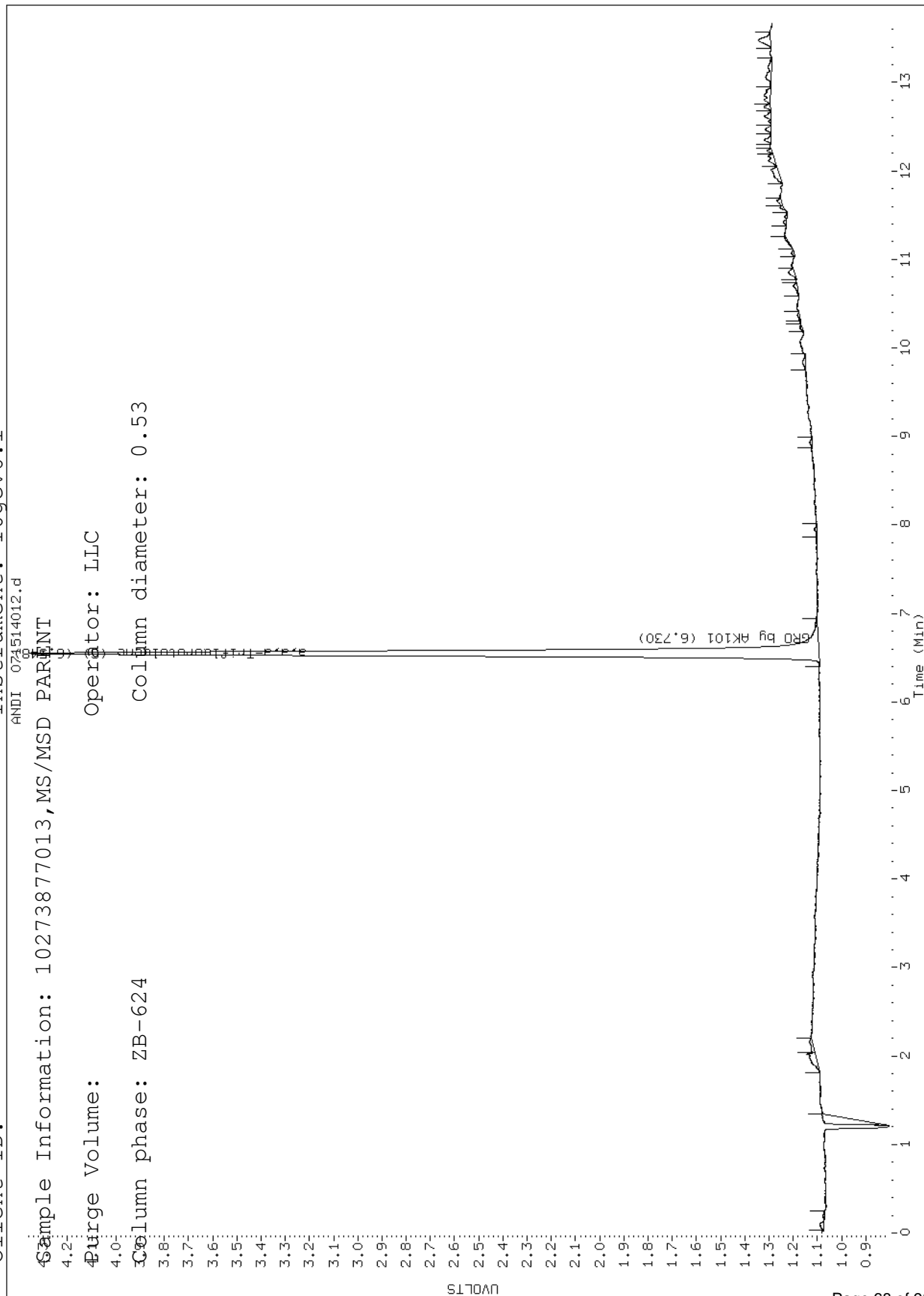
Sample Information: 10273877013,MS/MSD PARENT

Purge Volume: 4.2

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514024.d

Report Date: 07/16/2014

Sample ID: 10273877014

Client ID:

Instrument: 10gcv6.i

ANDI 071514024.d

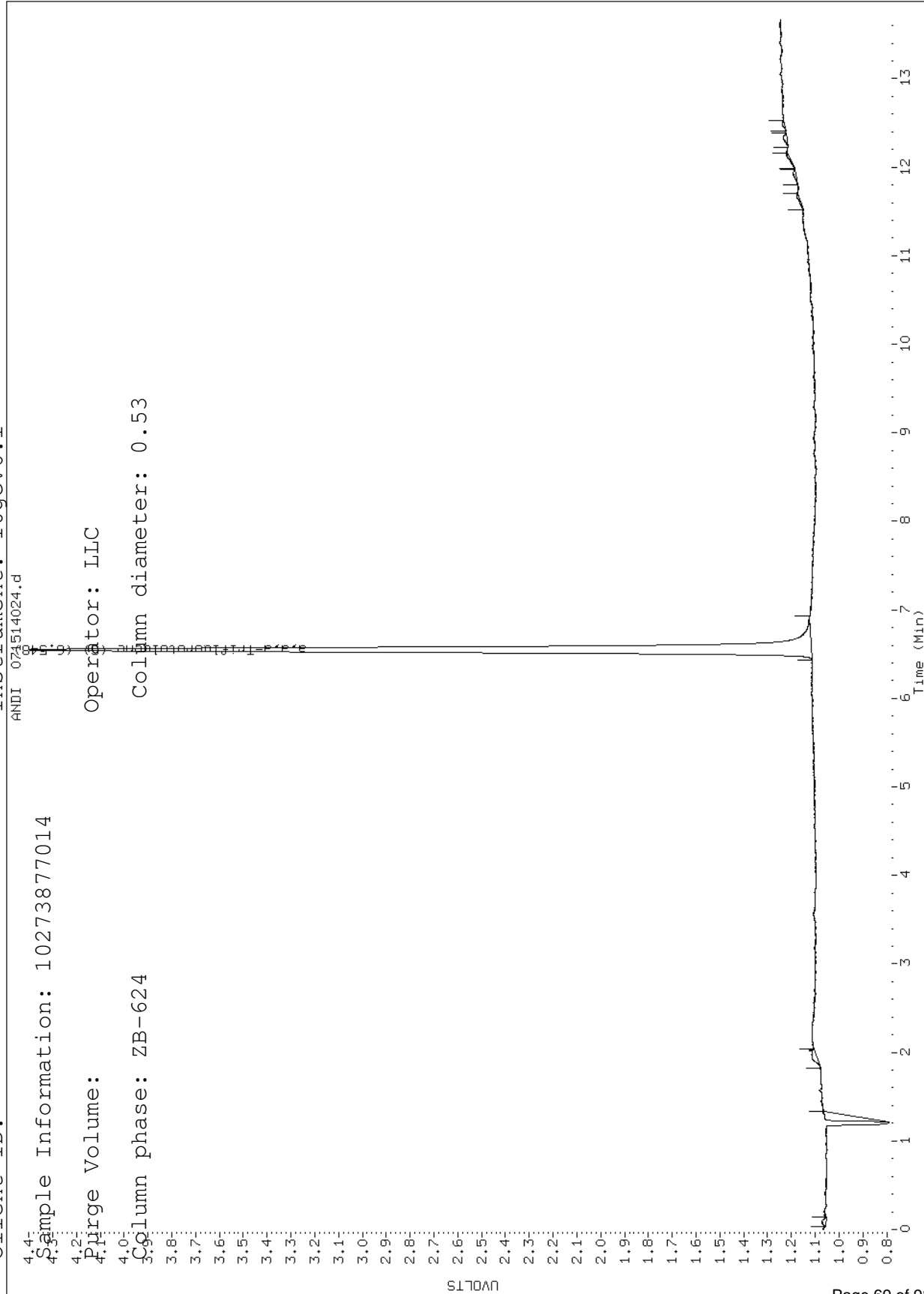
Sample Information: 10273877014

Purge Volume:

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071714b-2.b\071714014.d

Report Date: 07/18/2014

Sample ID: 10273877015

Client ID:

Instrument: 10gcv6.i

ANDI 071714014.d

Sample Information: 10273877015, DUP PARENT

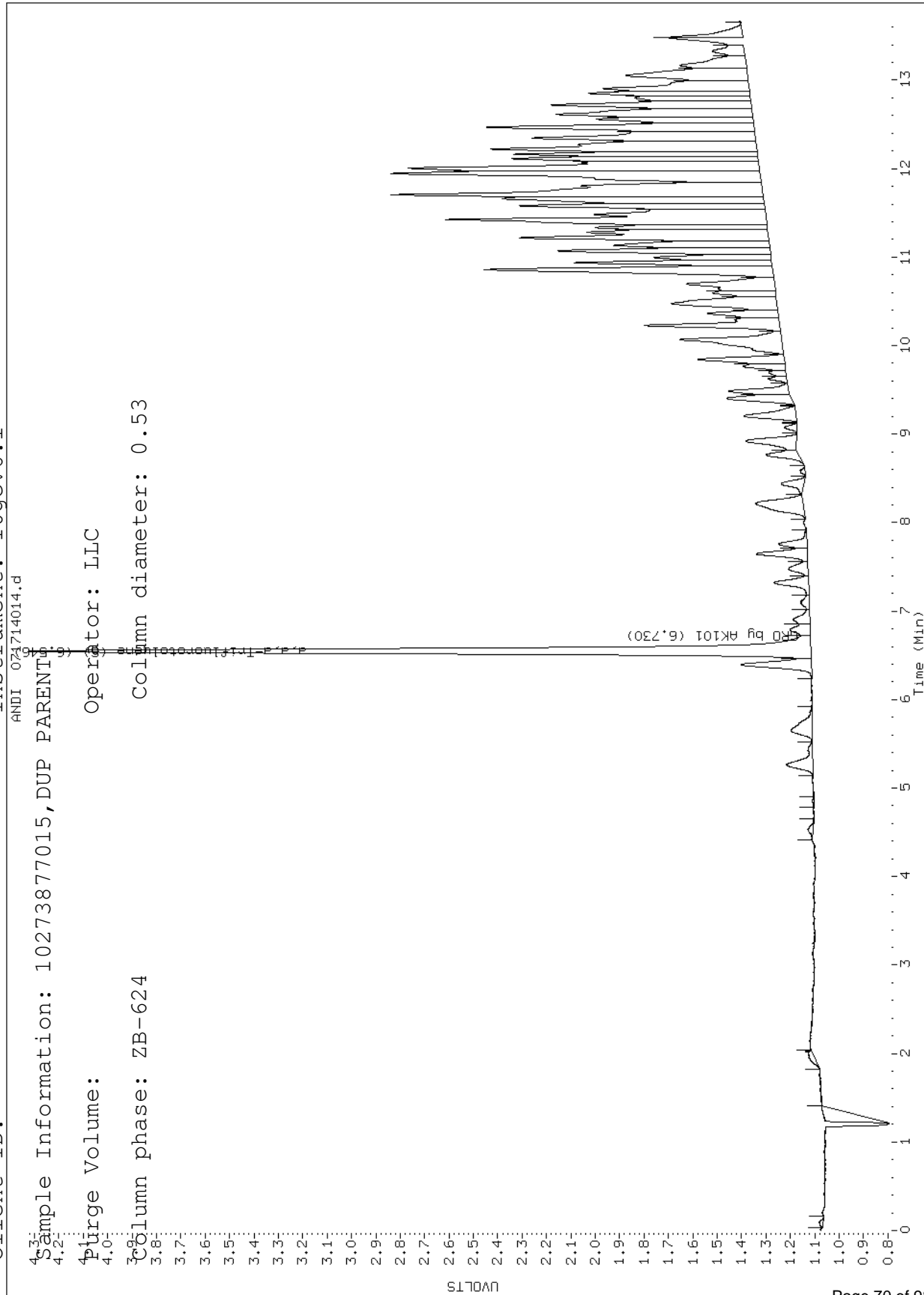
Purge Volume: 4.0

Purge Volume: 4.0

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514010.d

Report Date: 07/16/2014

Sample ID: 10273877016

Client ID:

Instrument: 10gcv6.i

ANDI 071514010.d

Sample Information: 10273877016, DUP PARENT

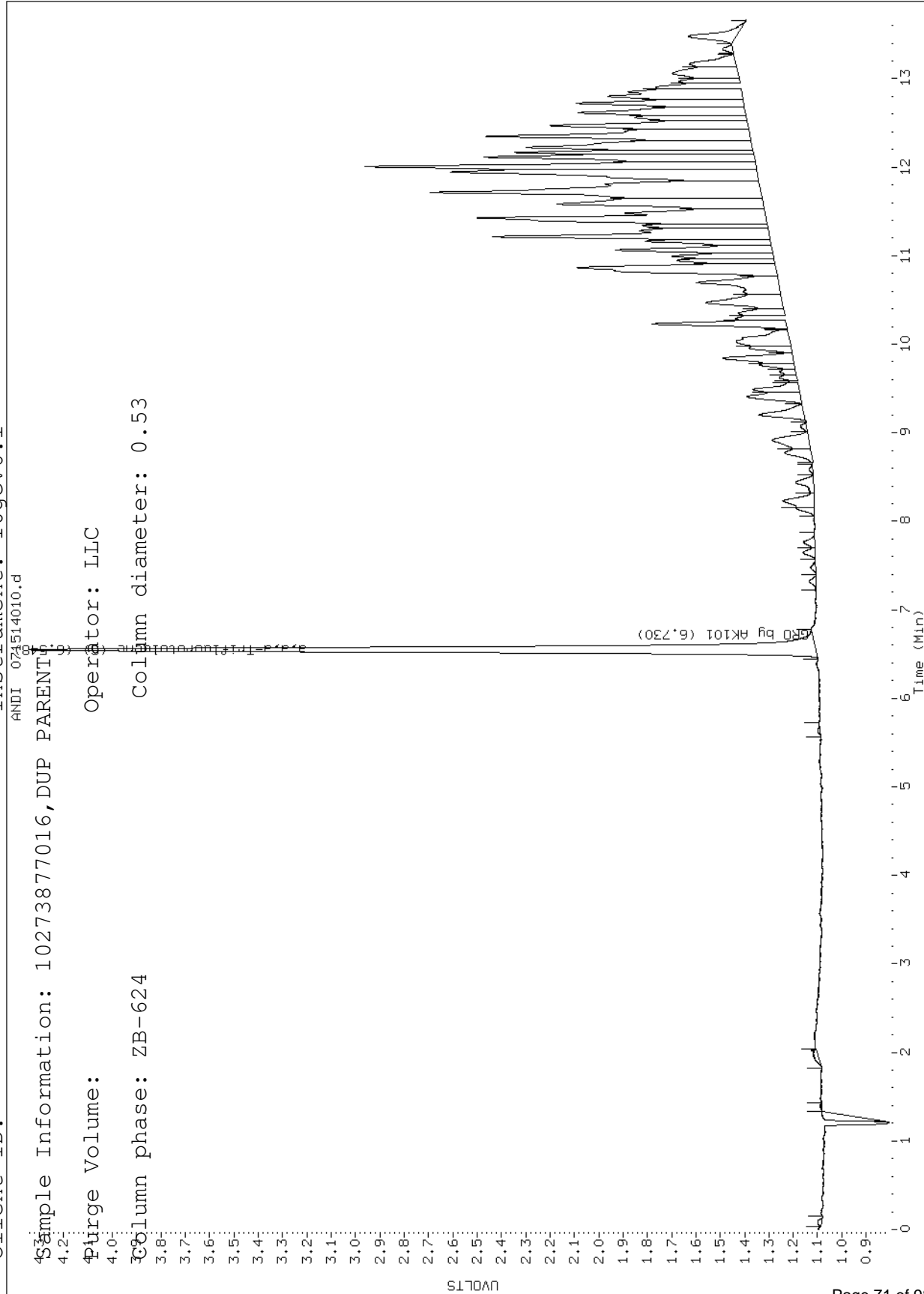
Purge Volume: 4.2

Purge Volume: 4.0

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



Data File: \\192.168.10.12\chem\10gcv6.i\071514a-2.b\071514006.d

Report Date: 07/16/2014

Sample ID: 10273877017

Client ID:

Instrument: 10gcv6.i

ANDI 071514006.d

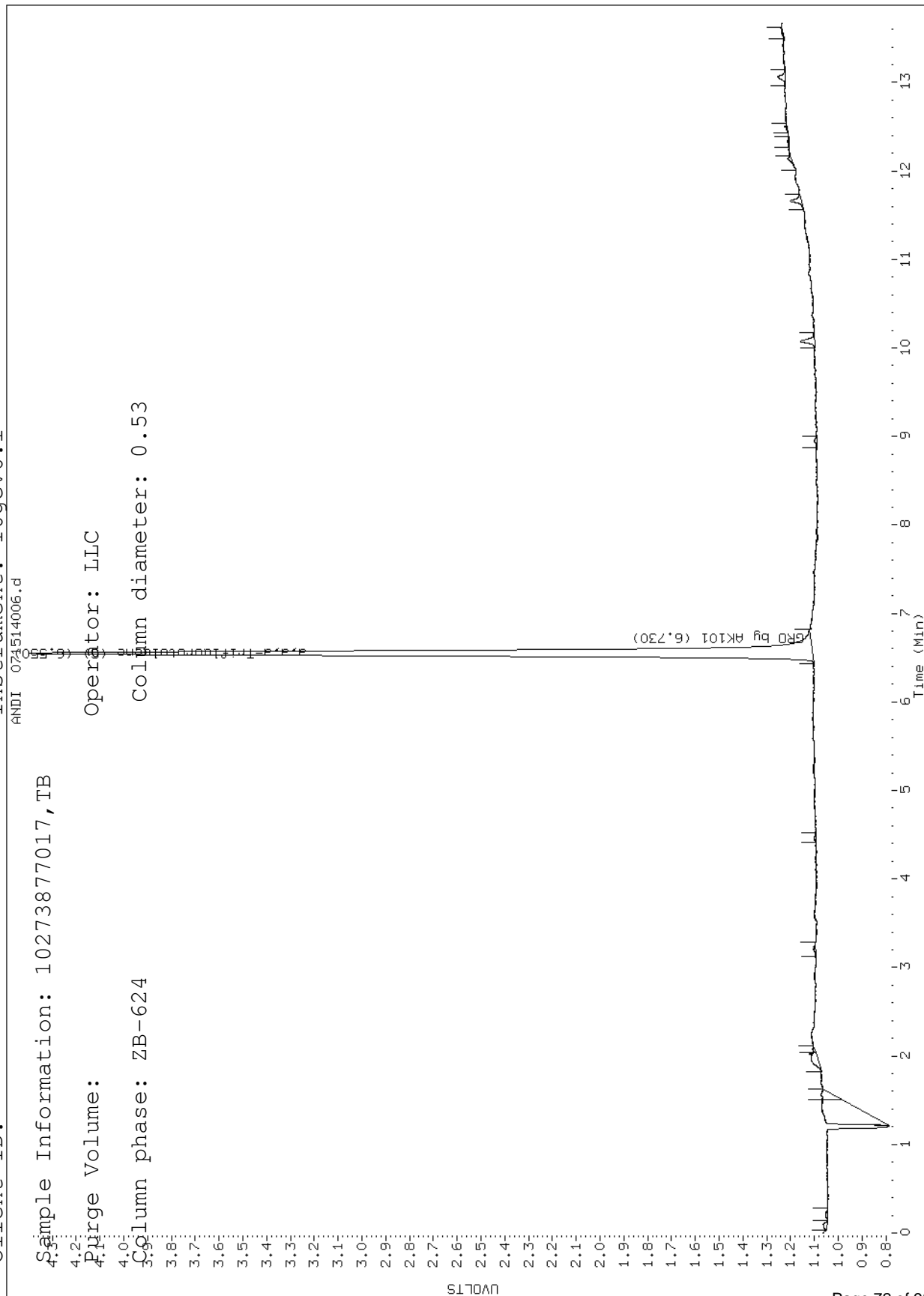
Sample Information: 10273877017, TB

Purge Volume: 4.2

Operator: ILC

Column phase: ZB-624

Column diameter: 0.53



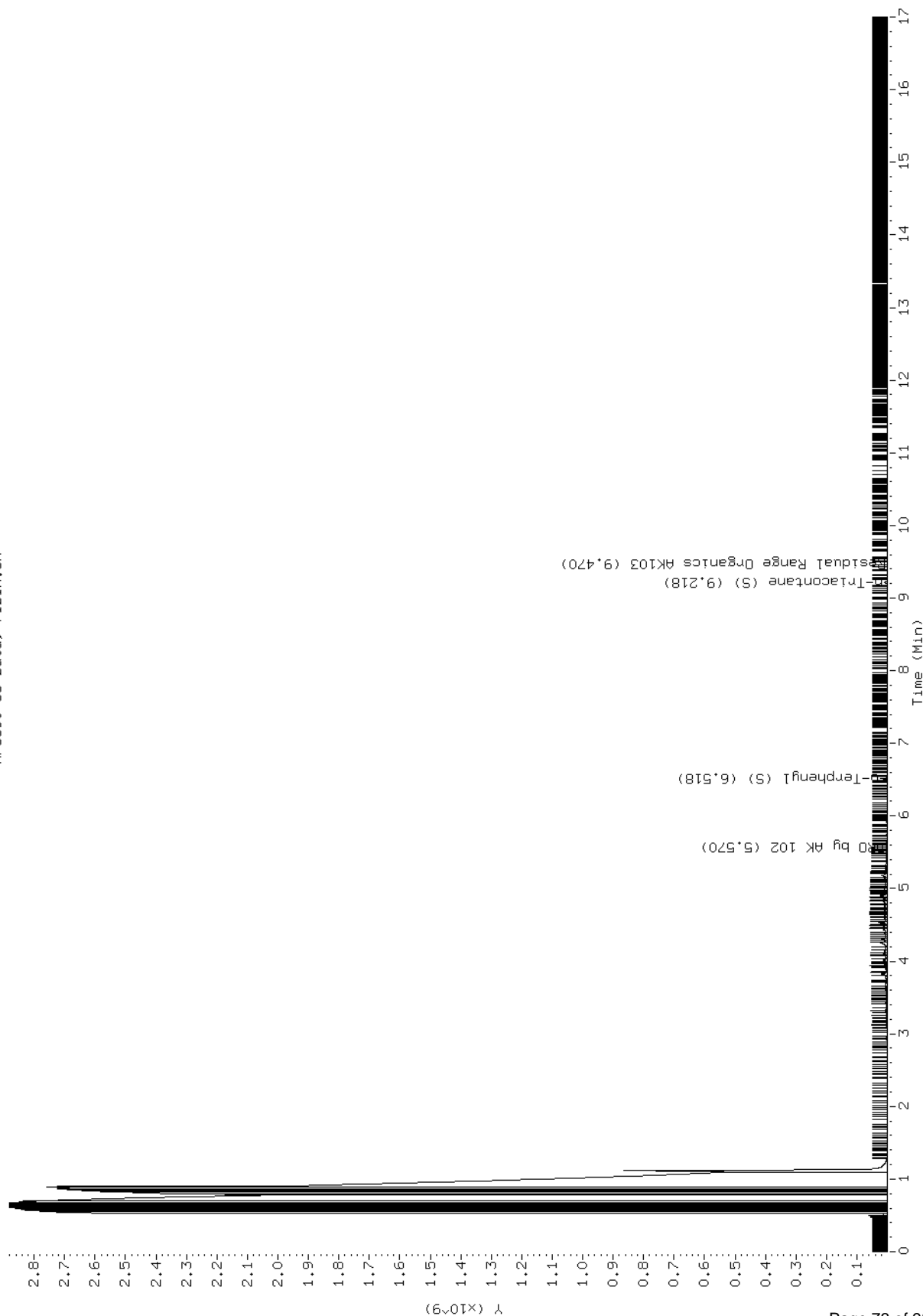
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190016.D
Report Date: 07/20/2014
Sample ID: 10273877001
Client ID:
Sample Information: 10273877001
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



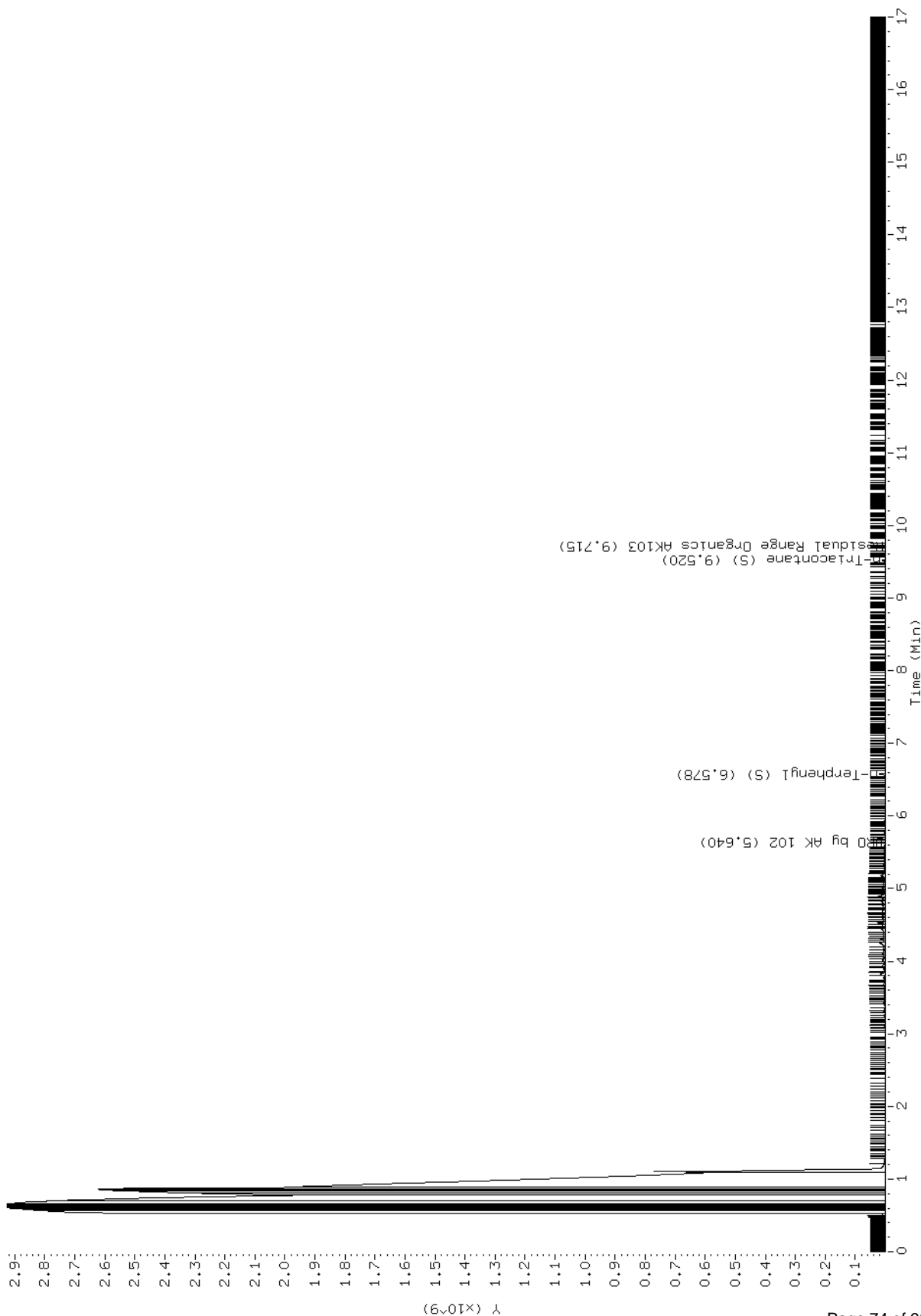
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210029.D
Report Date: 07/22/2014
Sample ID: 10273877001
Client ID:
Sample Information: 10273877001
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



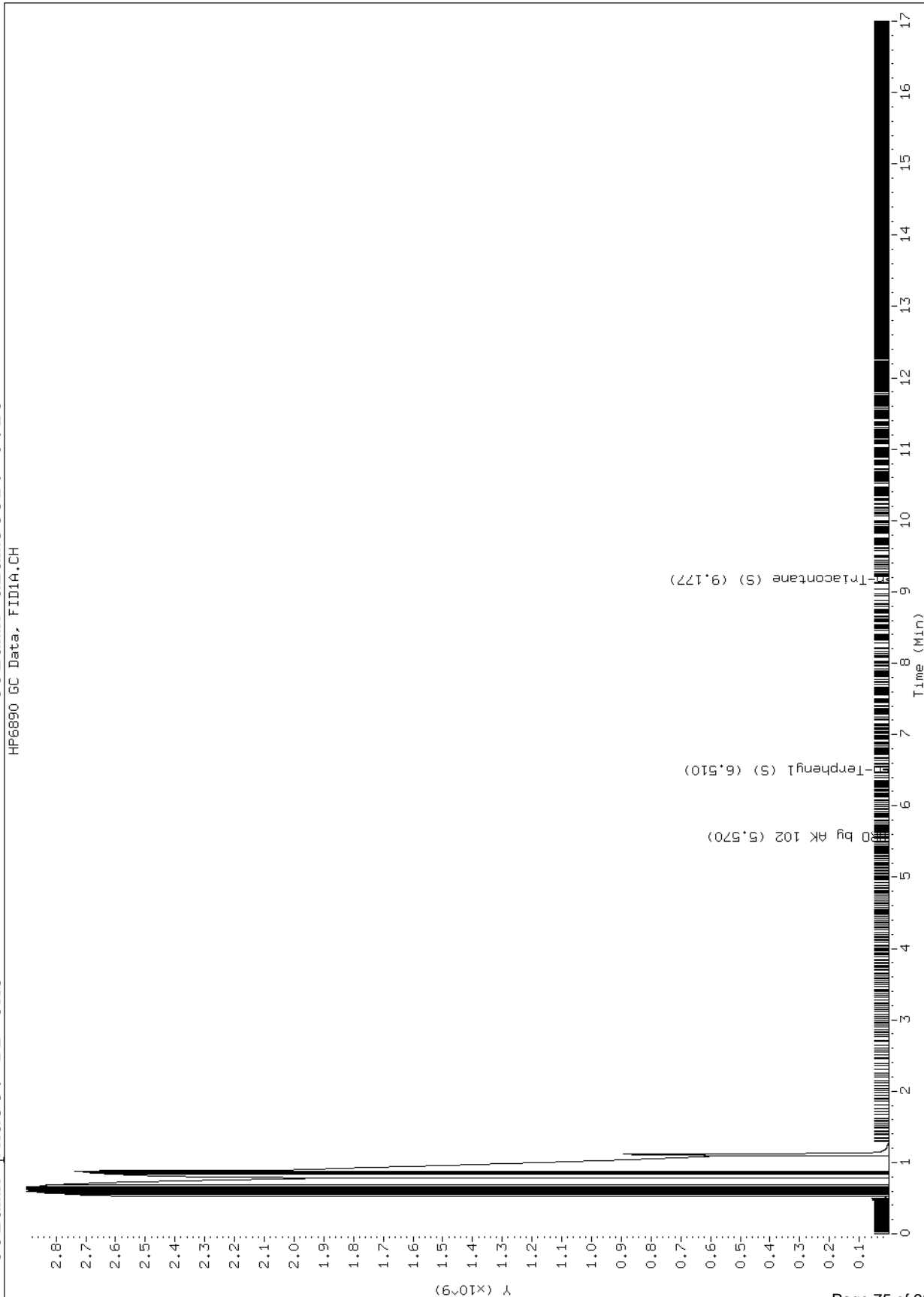
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190017.D
Report Date: 07/20/2014
Sample ID: 10273877002
Client ID:
Sample Information: 10273877002
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



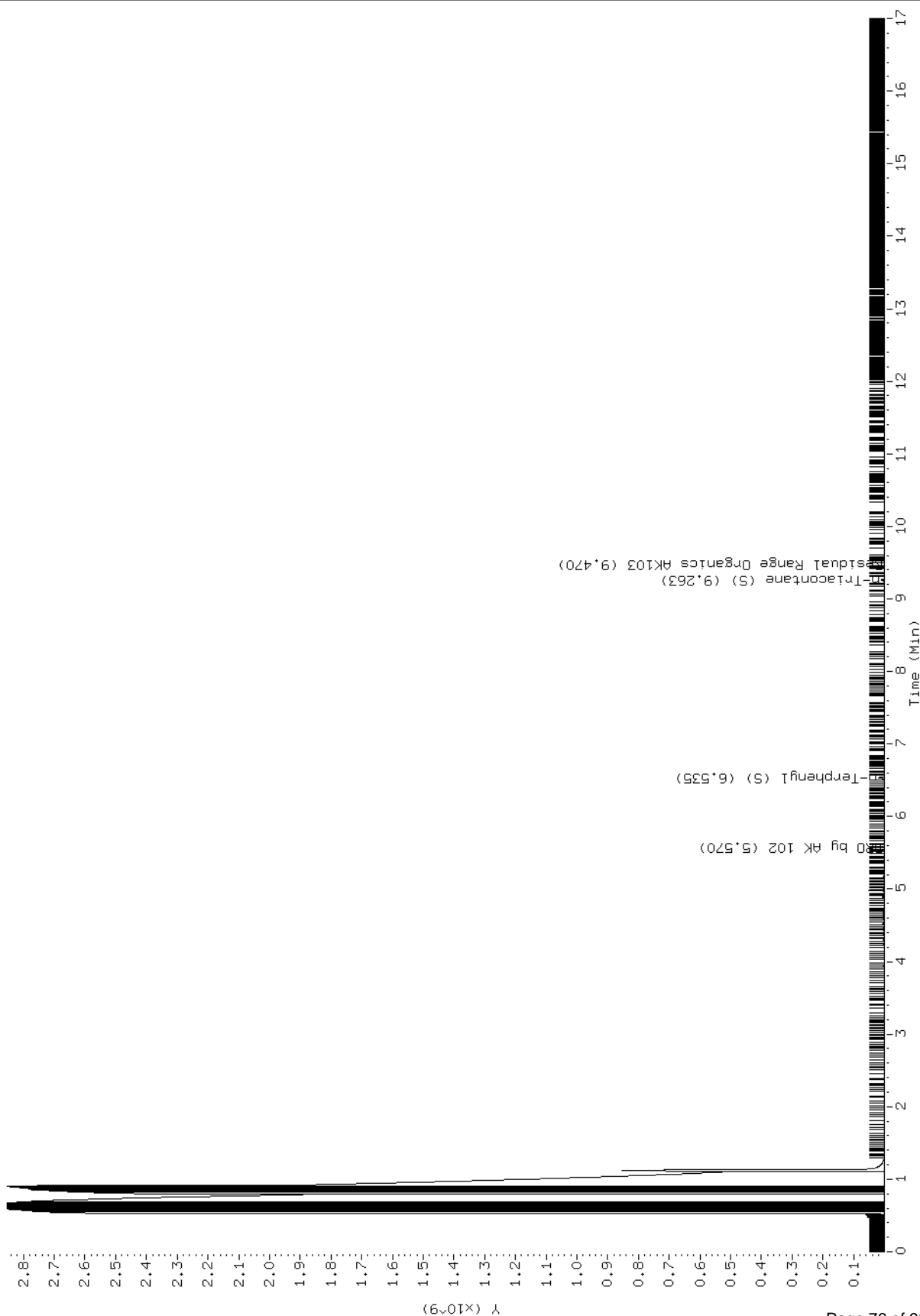
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190018.D
Report Date: 07/20/2014
Sample ID: 10273877003
Client ID:
Sample Information: 10273877003
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



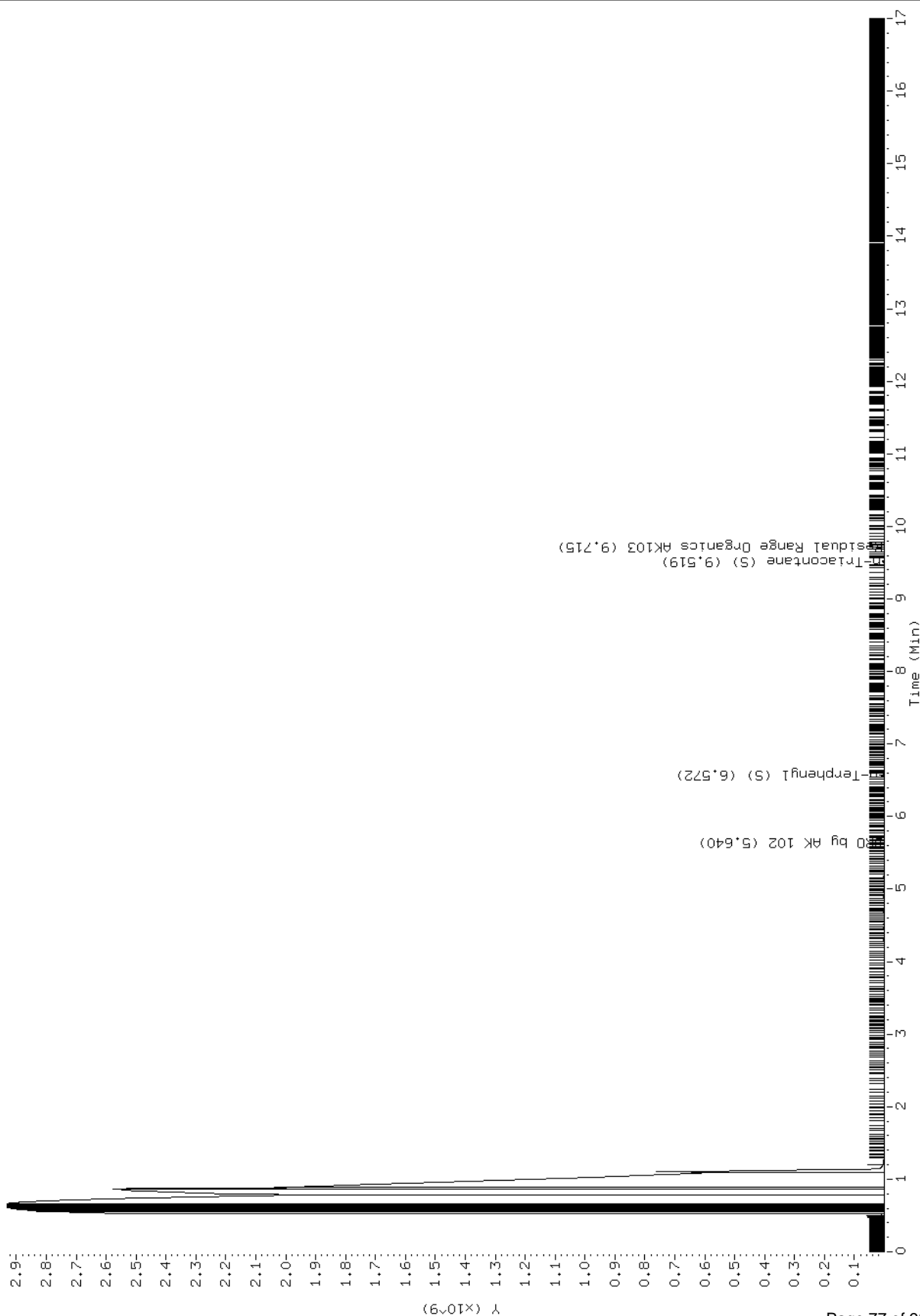
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210030.D
Report Date: 07/22/2014
Sample ID: 10273877003
Client ID:
Sample Information: 10273877003
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



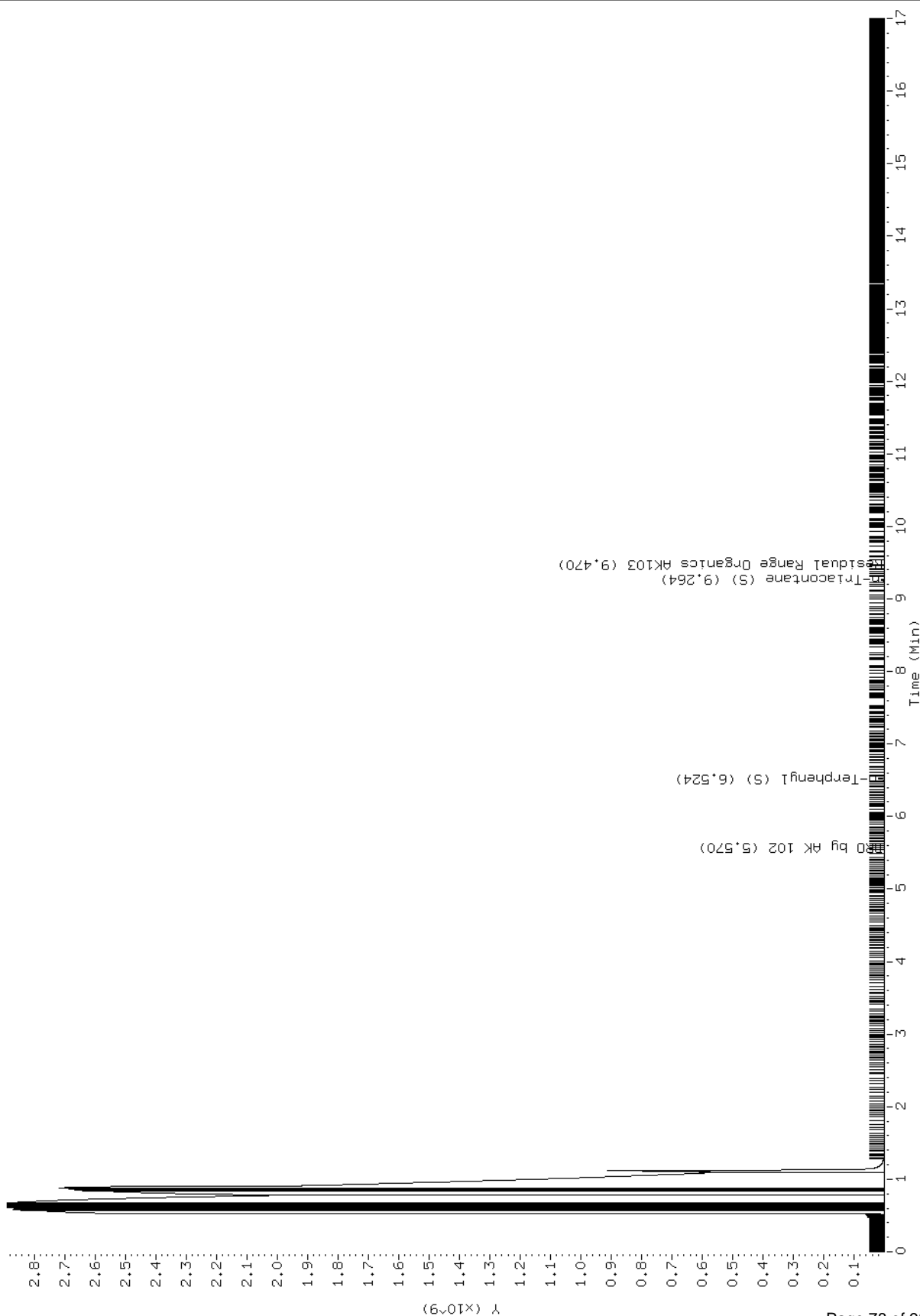
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190019.D
Report Date: 07/20/2014
Sample ID: 10273877004
Client ID:
Sample Information: 10273877004
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



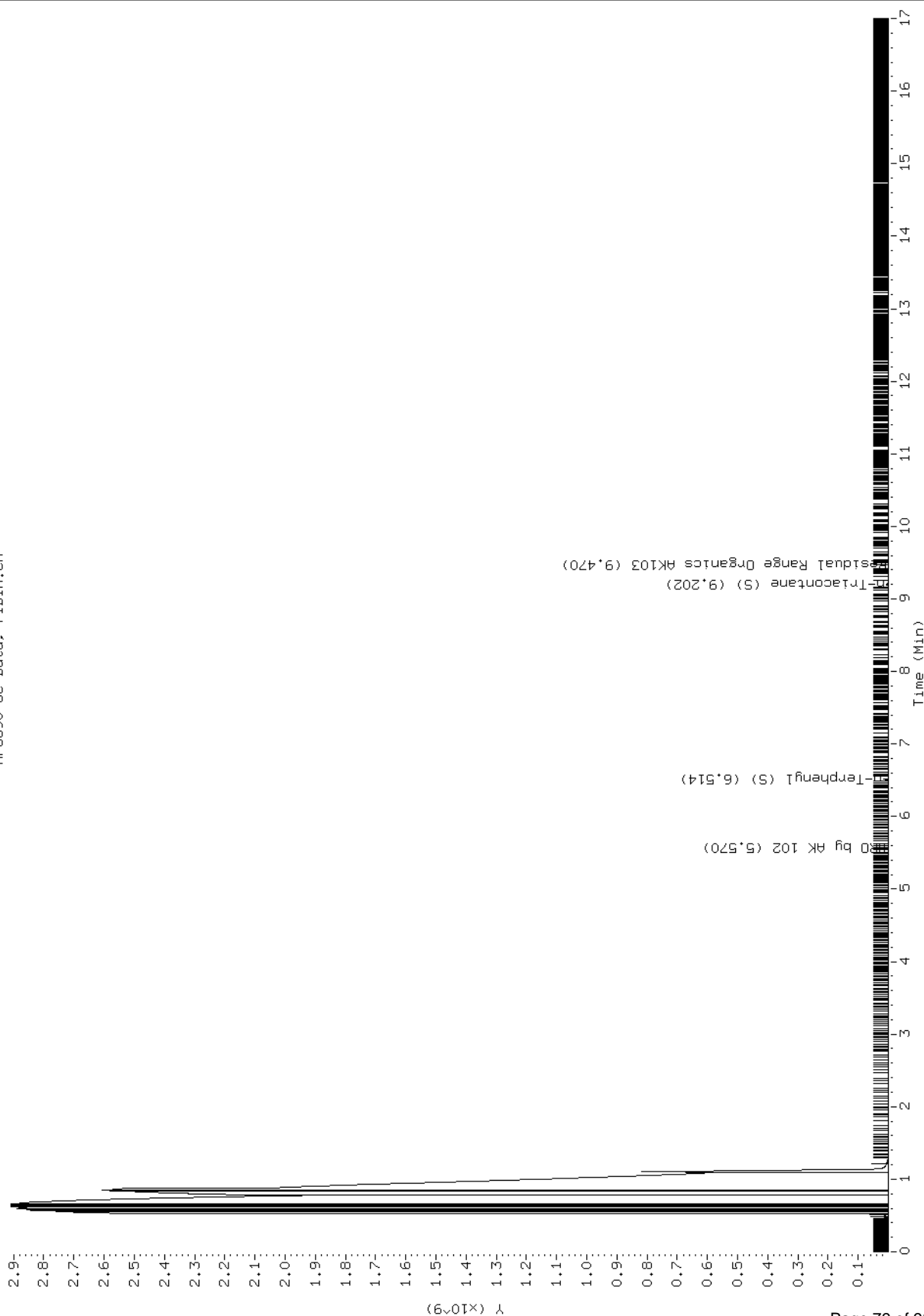
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190008.D
Report Date: 07/20/2014
Sample ID: 10273877005
Client ID:
Sample Information: 10273877005
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



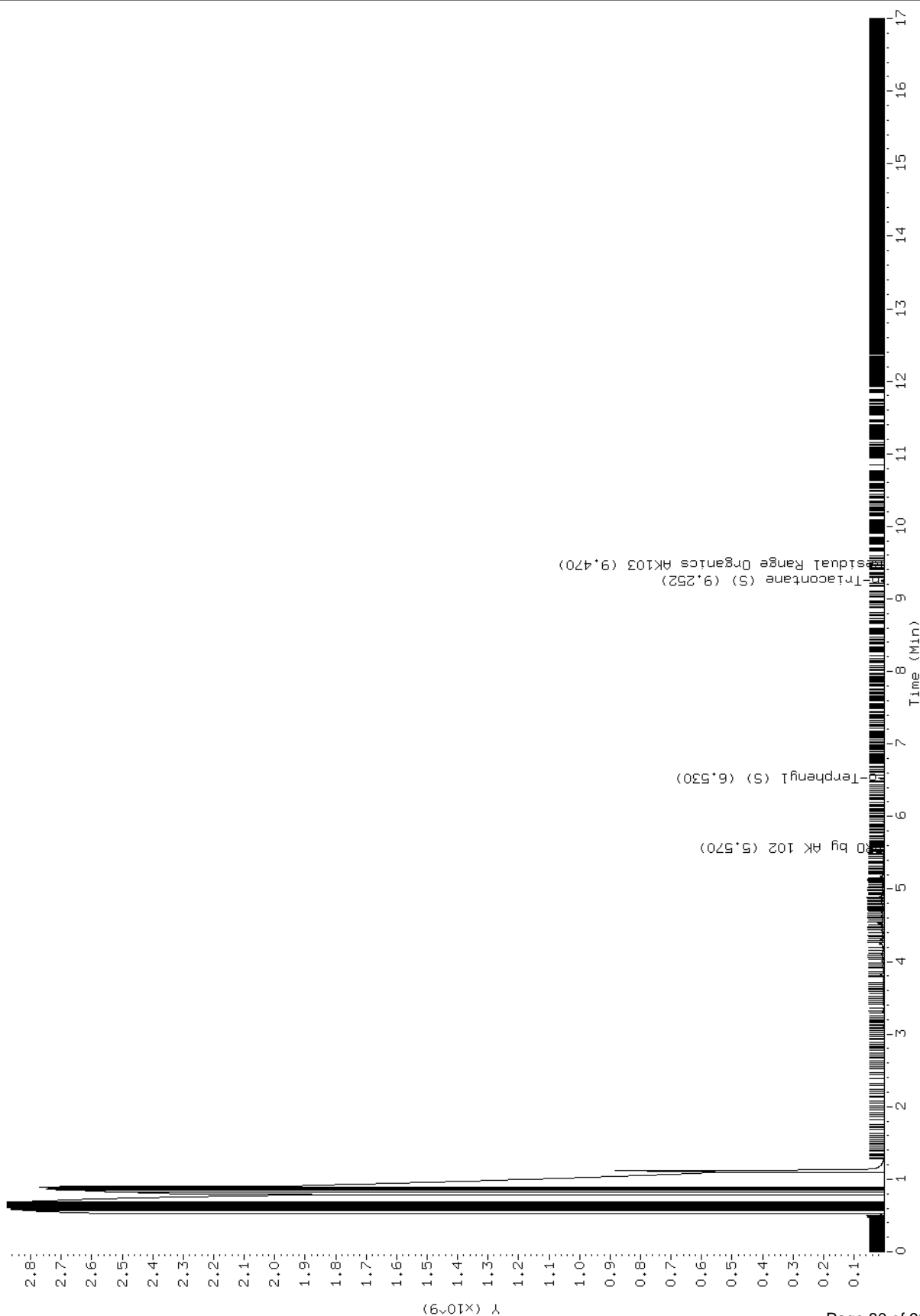
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190020.D
Report Date: 07/20/2014
Sample ID: 10273877006
Client ID:
Sample Information: 10273877006
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



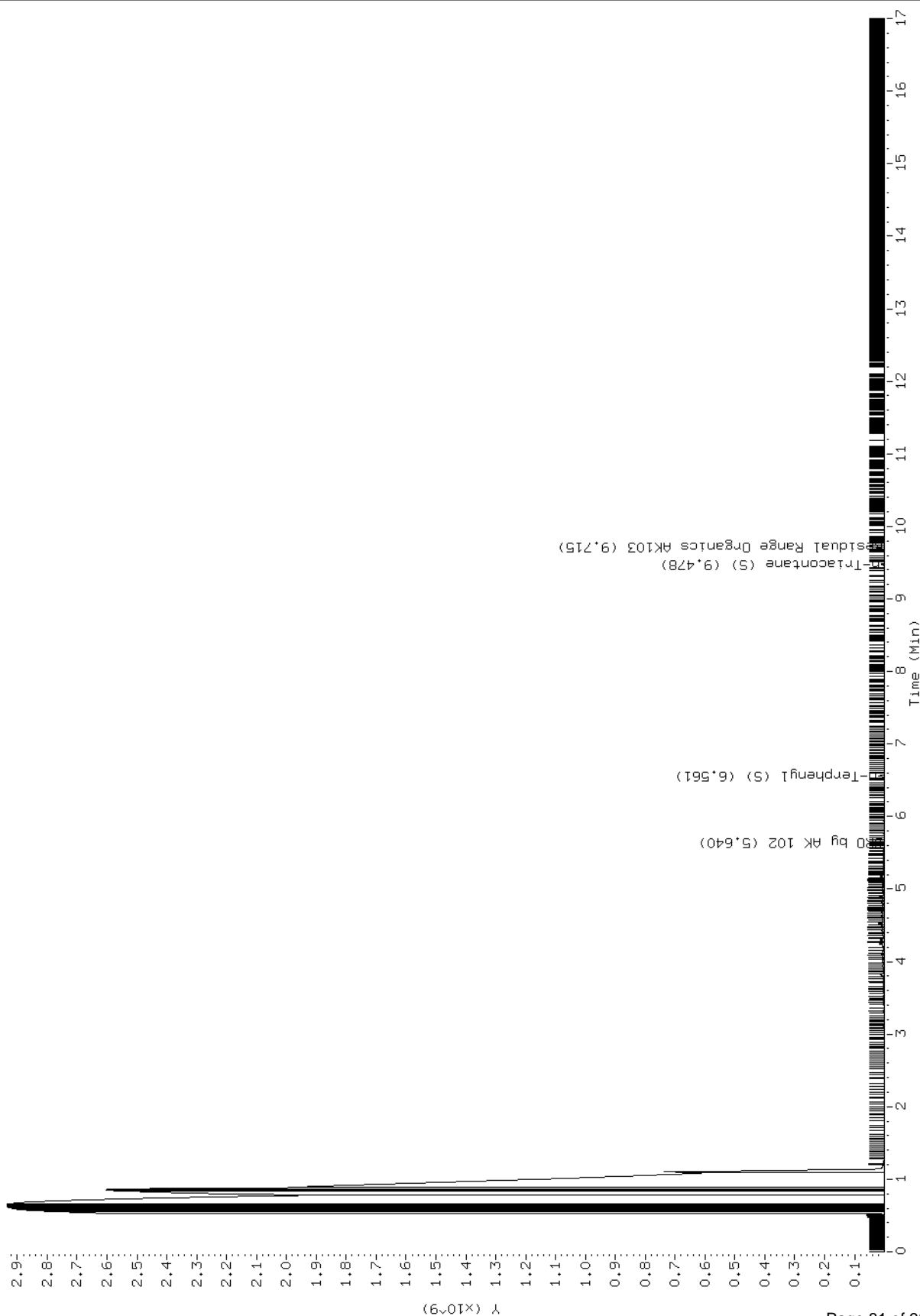
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210031.D
Report Date: 07/22/2014
Sample ID: 10273877006
Client ID:
Sample Information: 10273877006
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



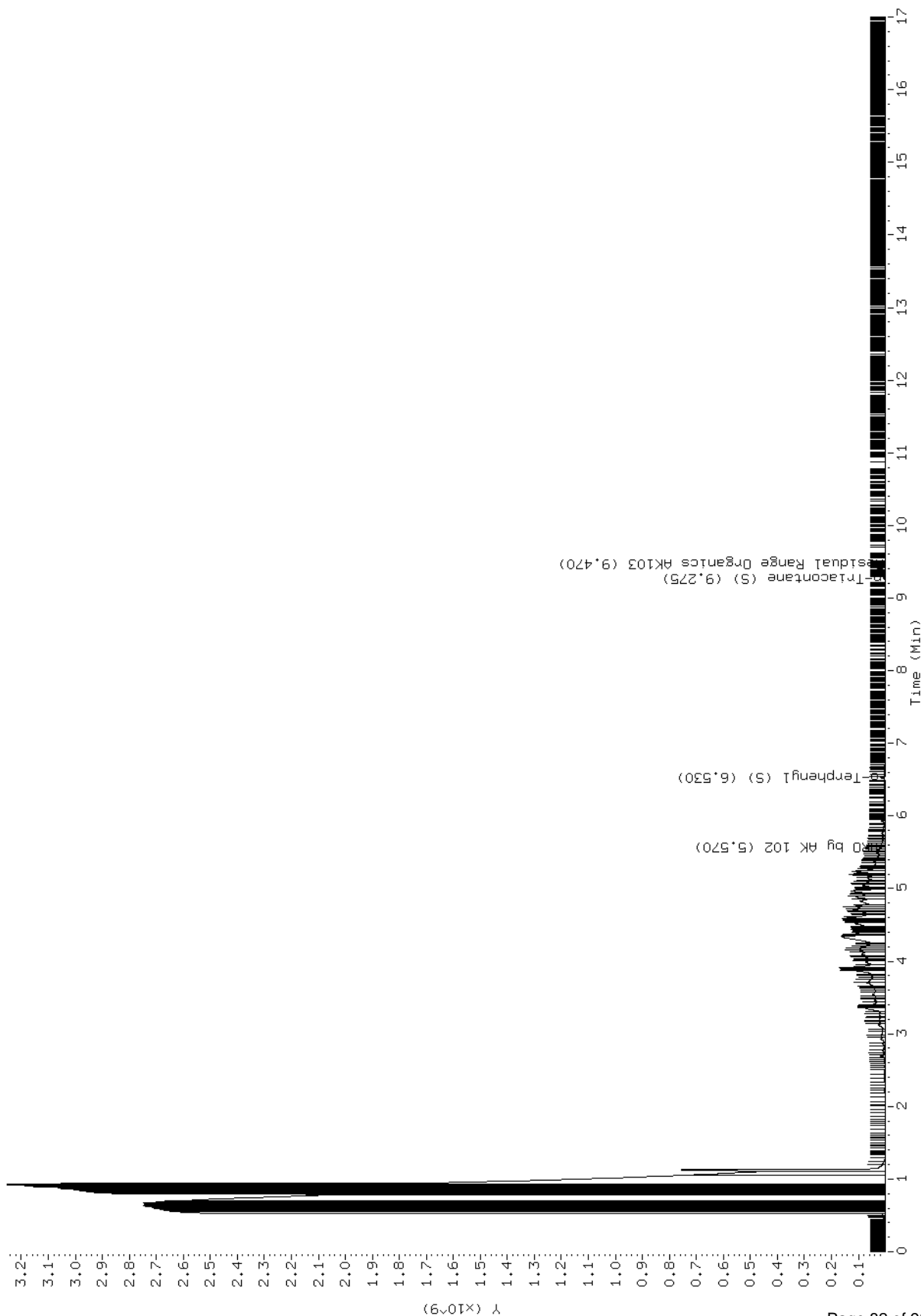
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190021.D
Report Date: 07/20/2014
Sample ID: 10273877007
Client ID:
Sample Information: 10273877007
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



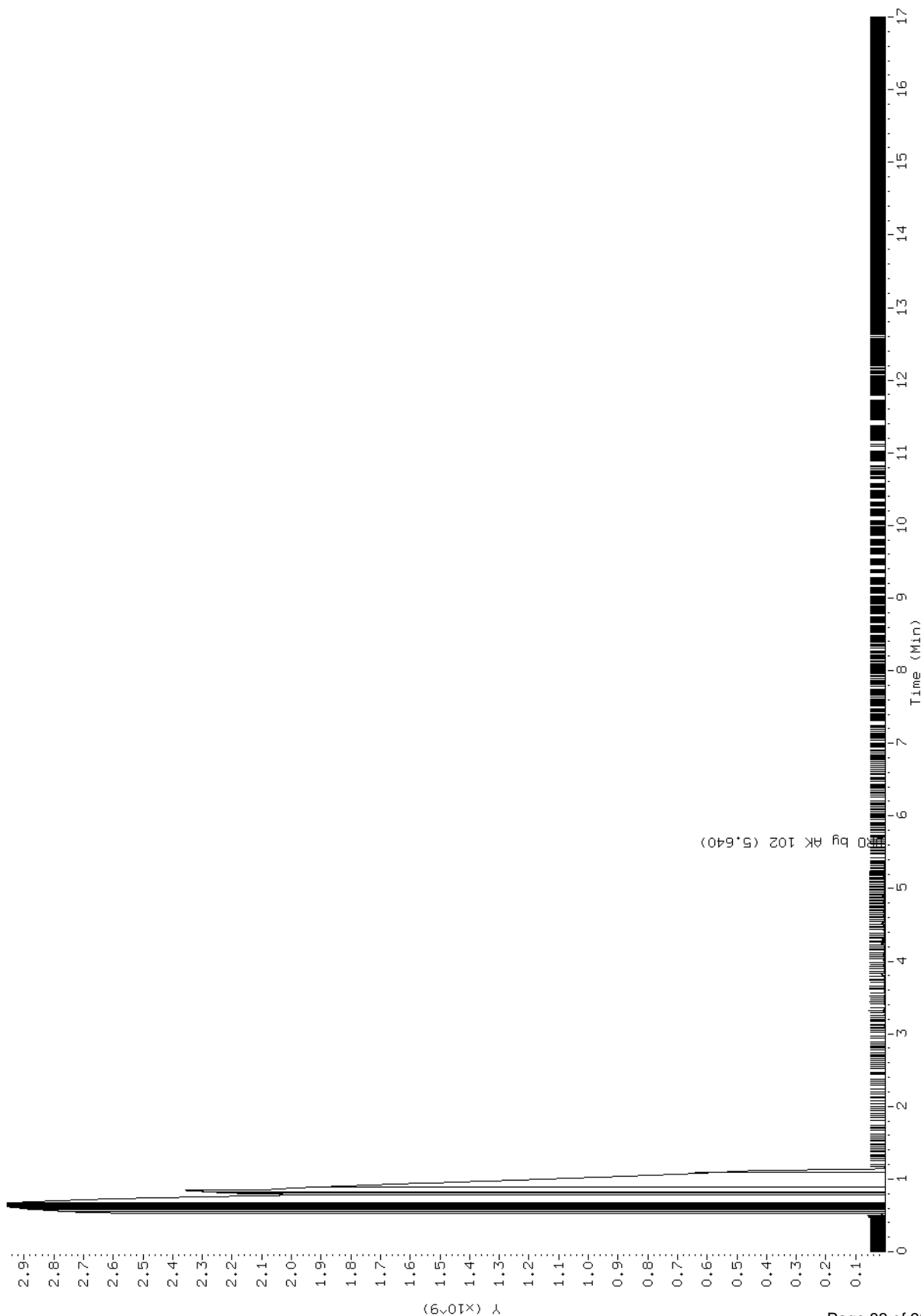
Data File: \\192.168.10.12\chem\10gcsC.i\072014.b\07200007.D
Report Date: 07/20/2014
Sample ID: 10273877007
Client ID:
Sample Information: 10273877007, 20
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



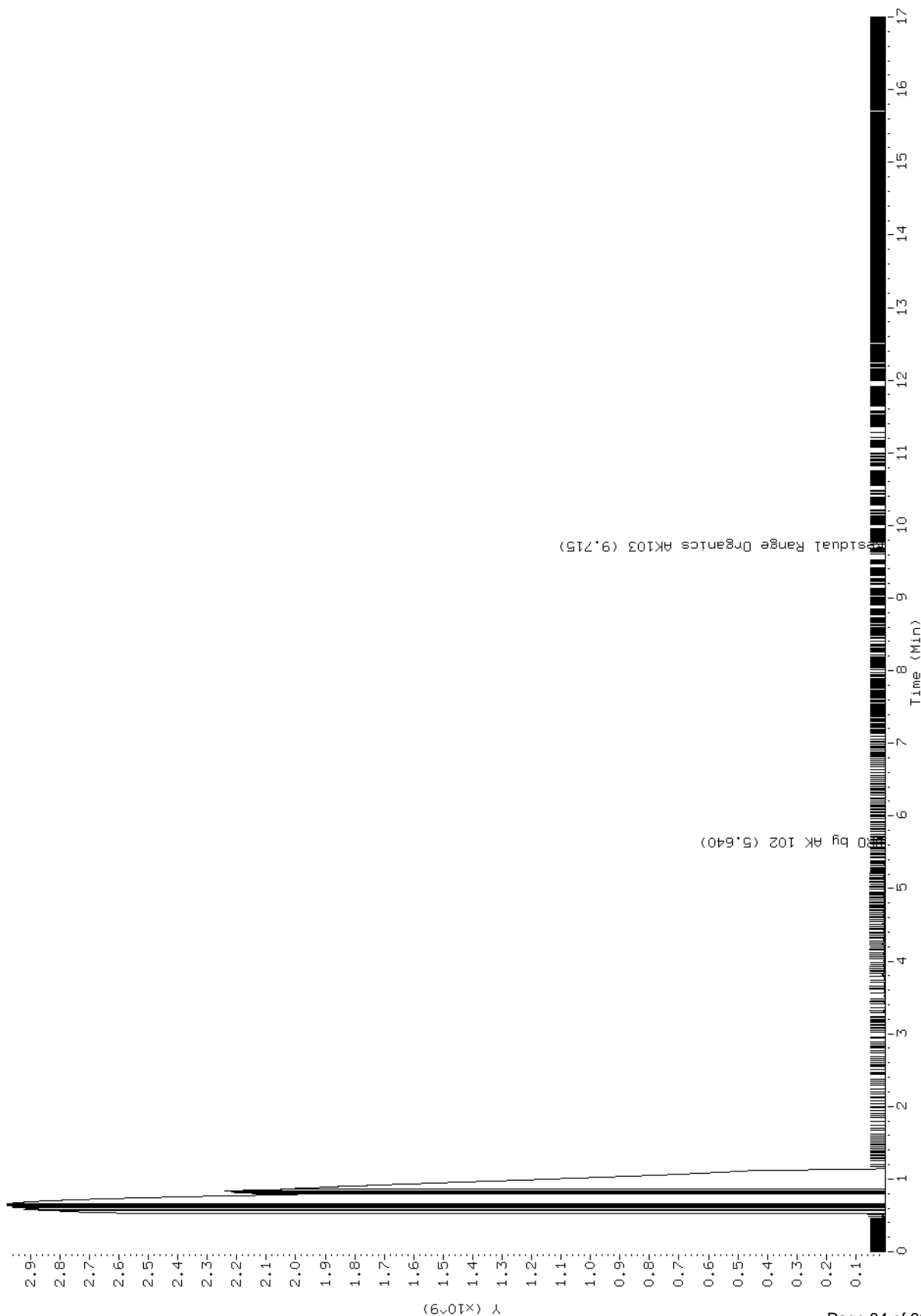
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210026.D
Report Date: 07/22/2014
Sample ID: 10273877007
Client ID:
Sample Information: 10273877007,20
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



Residual Range Organics RK103 (9.715)

0 by RK 102 (5.640)

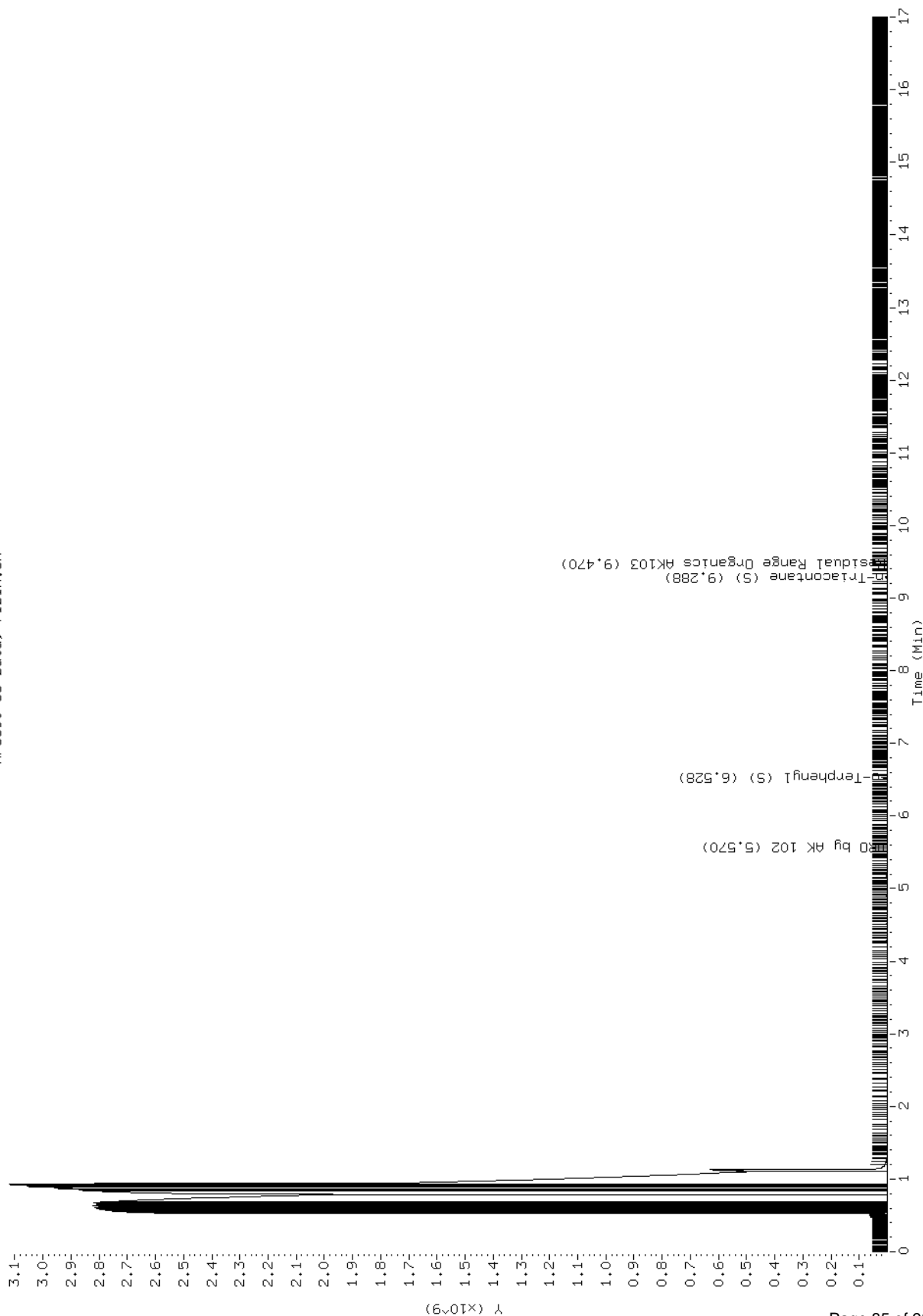
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190022.D
Report Date: 07/20/2014
Sample ID: 10273877008
Client ID:
Sample Information: 10273877008
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



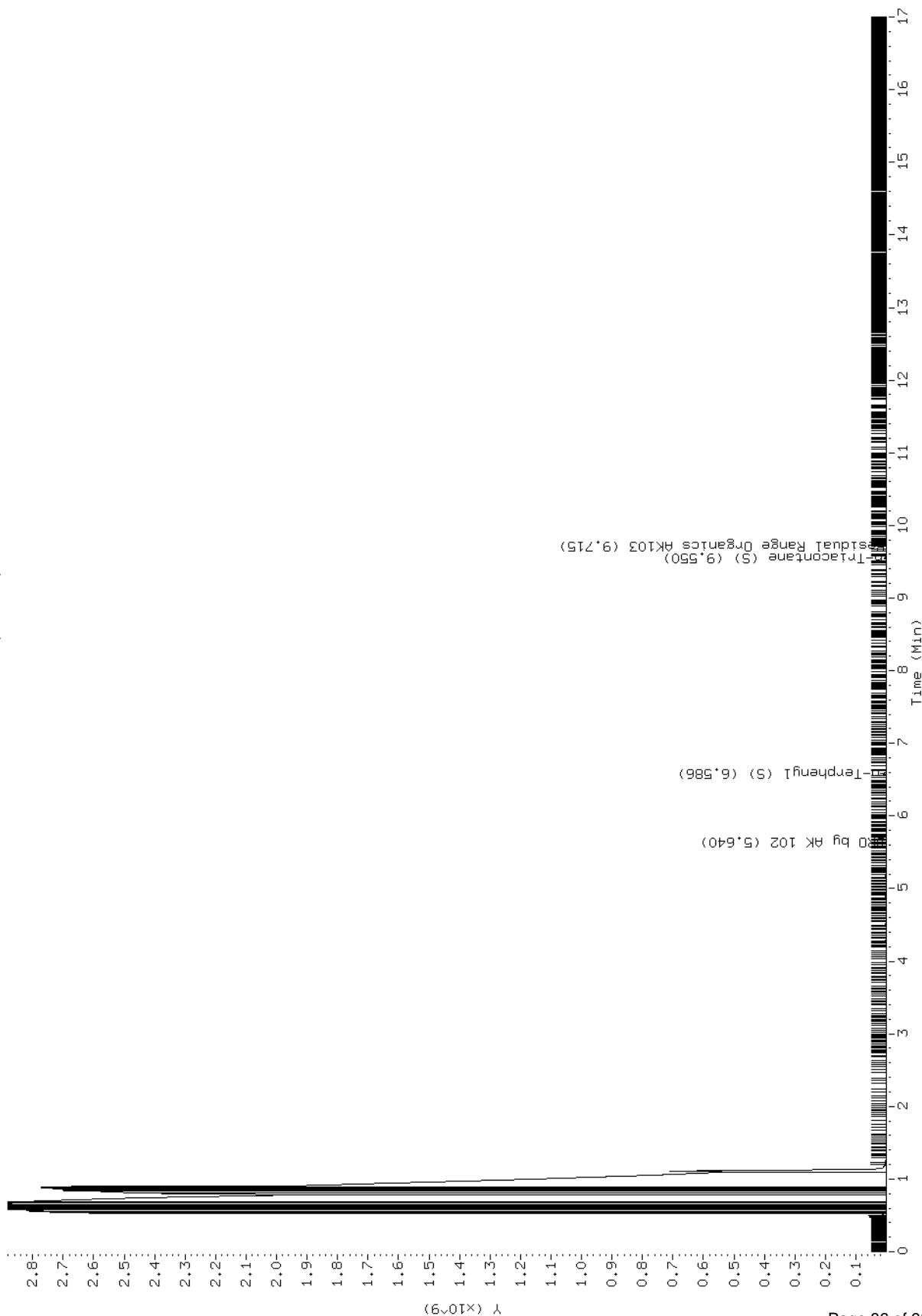
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210027.D
Report Date: 07/22/2014
Sample ID: 10273877008
Client ID:
Sample Information: 10273877008
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



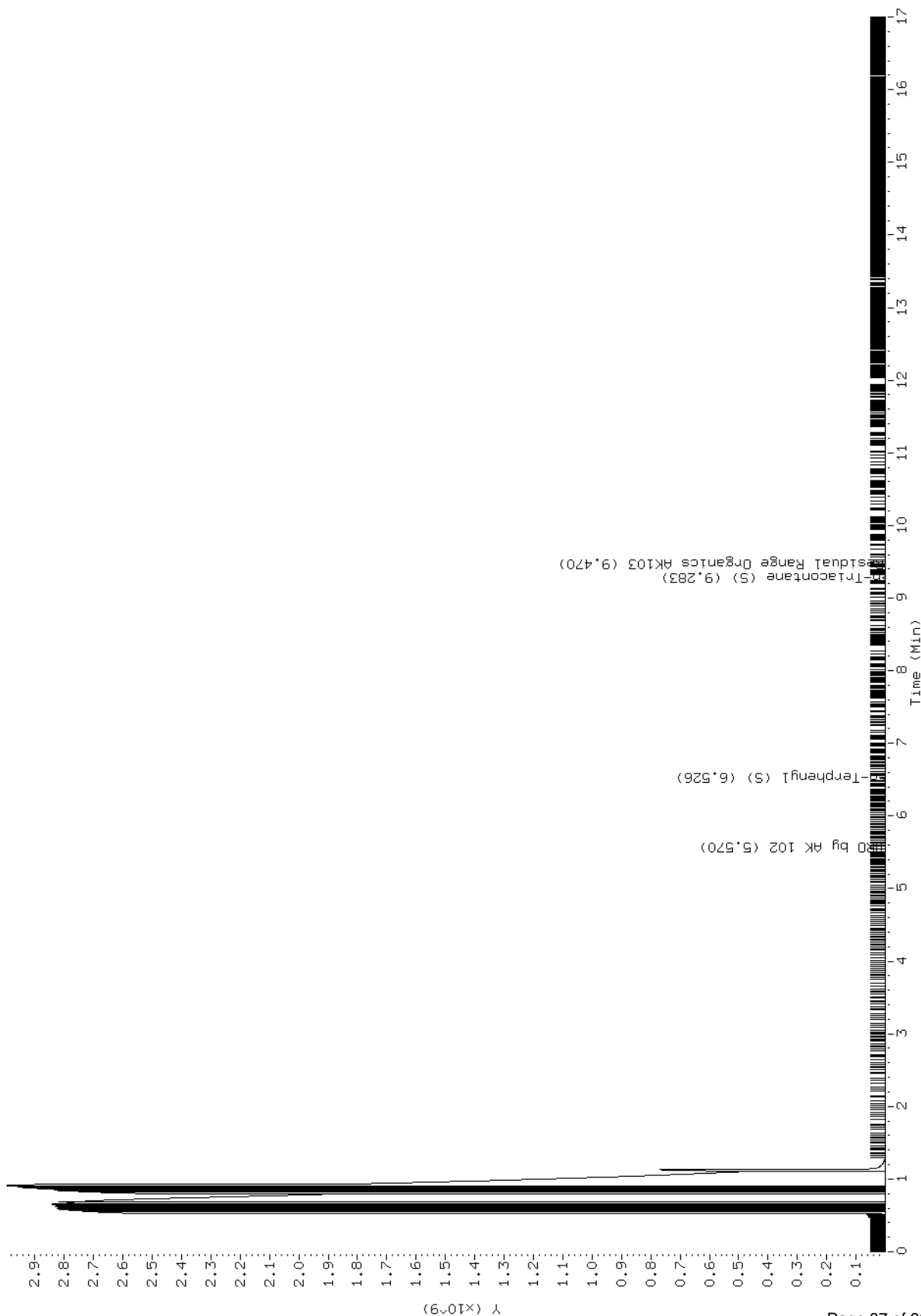
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190023.D
Report Date: 07/20/2014
Sample ID: 10273877009
Client ID:
Sample Information: 10273877009
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



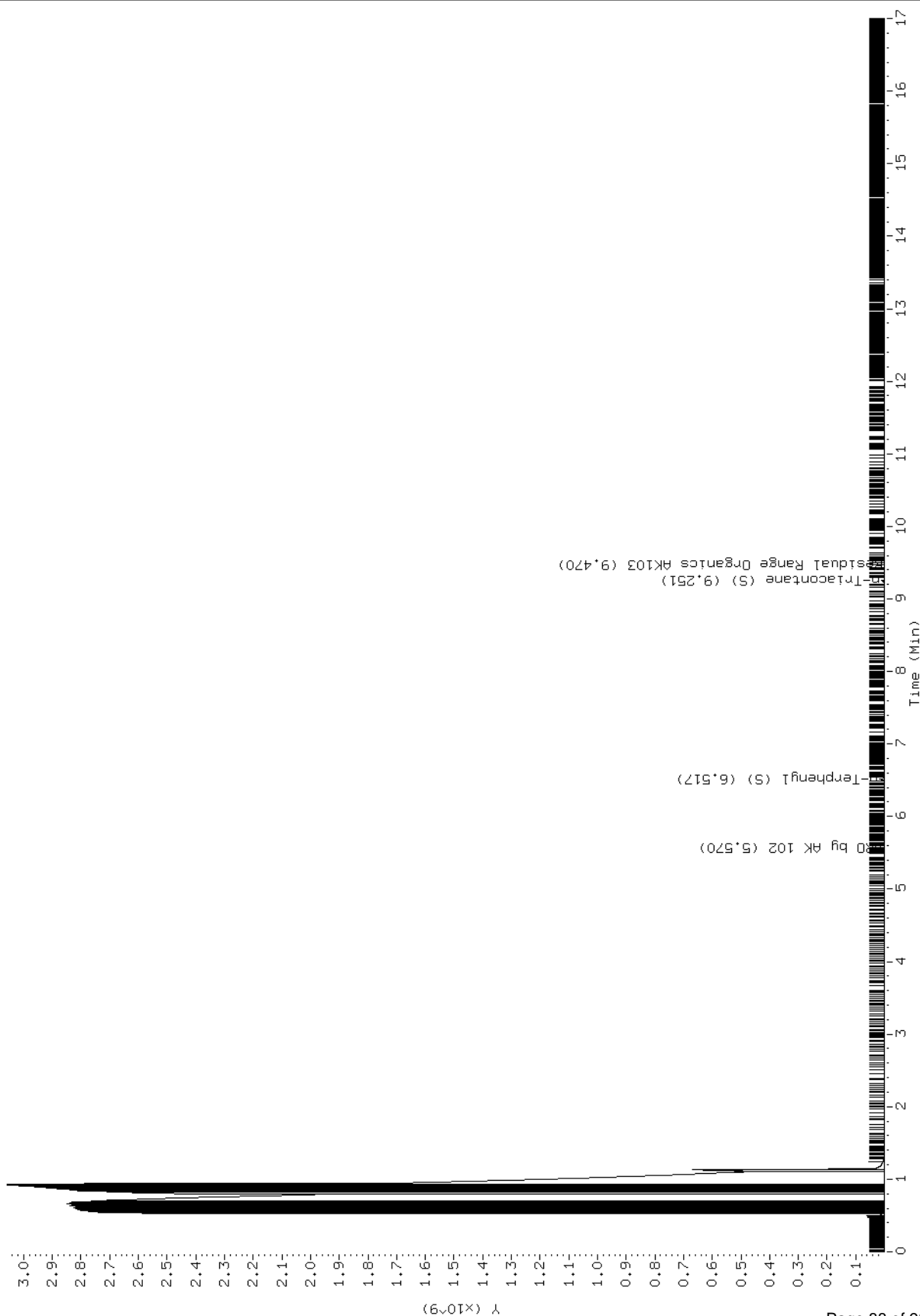
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190024.D
Report Date: 07/20/2014
Sample ID: 10273877010
Client ID:
Sample Information: 10273877010
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



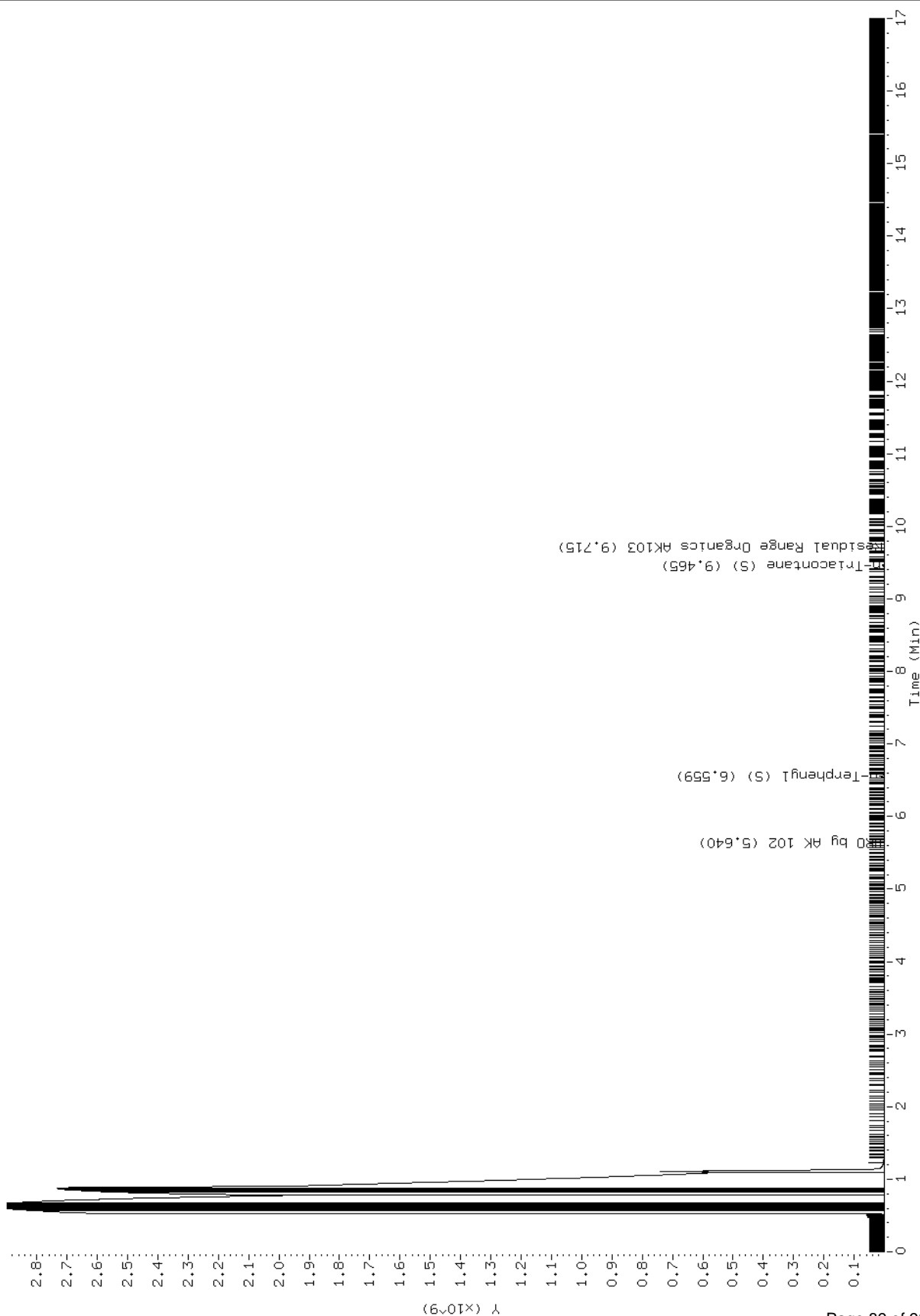
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210032.D
Report Date: 07/22/2014
Sample ID: 10273877010
Client ID:
Sample Information: 10273877010
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



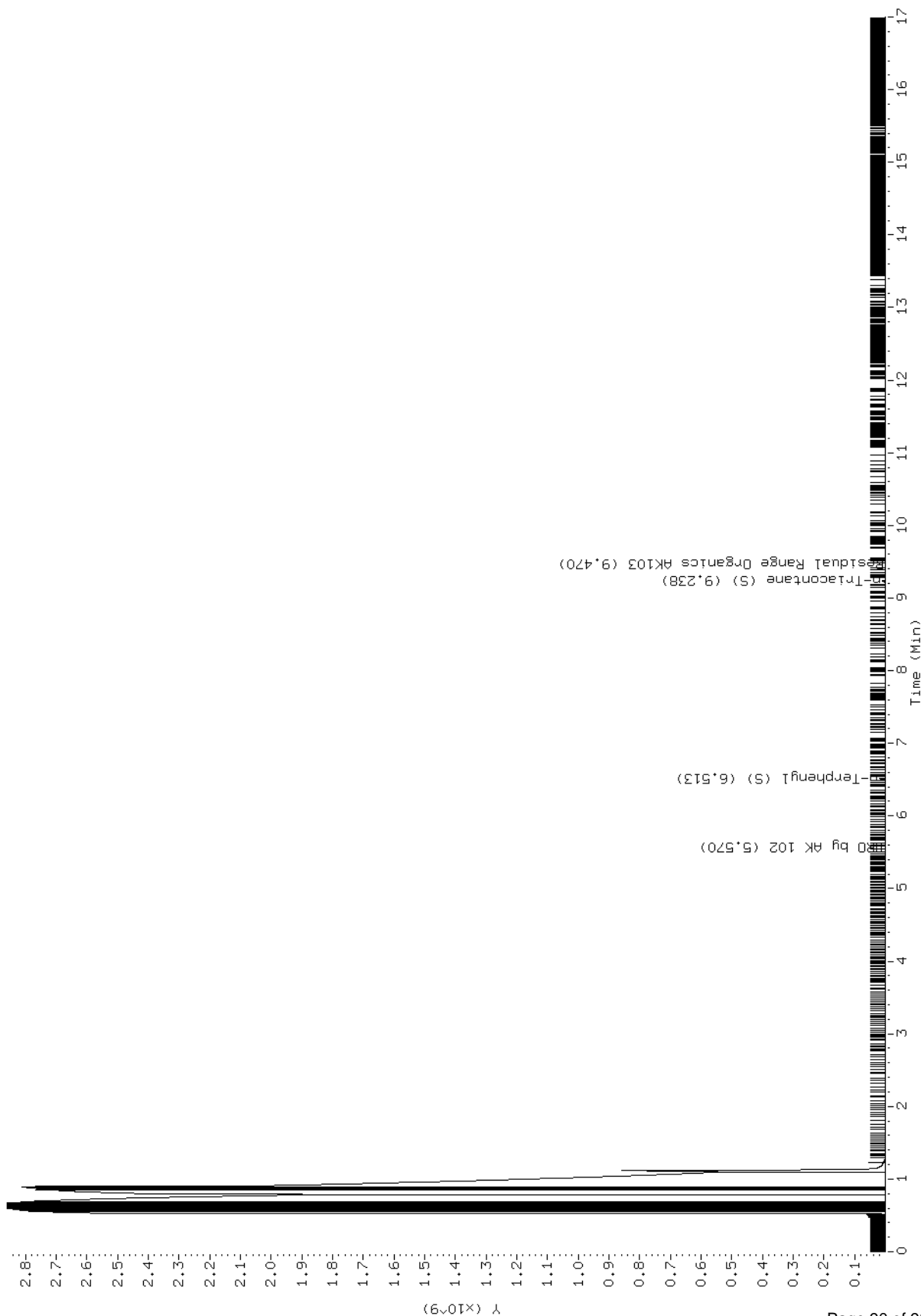
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190025.D
Report Date: 07/20/2014
Sample ID: 10273877011
Client ID:
Sample Information: 10273877011
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



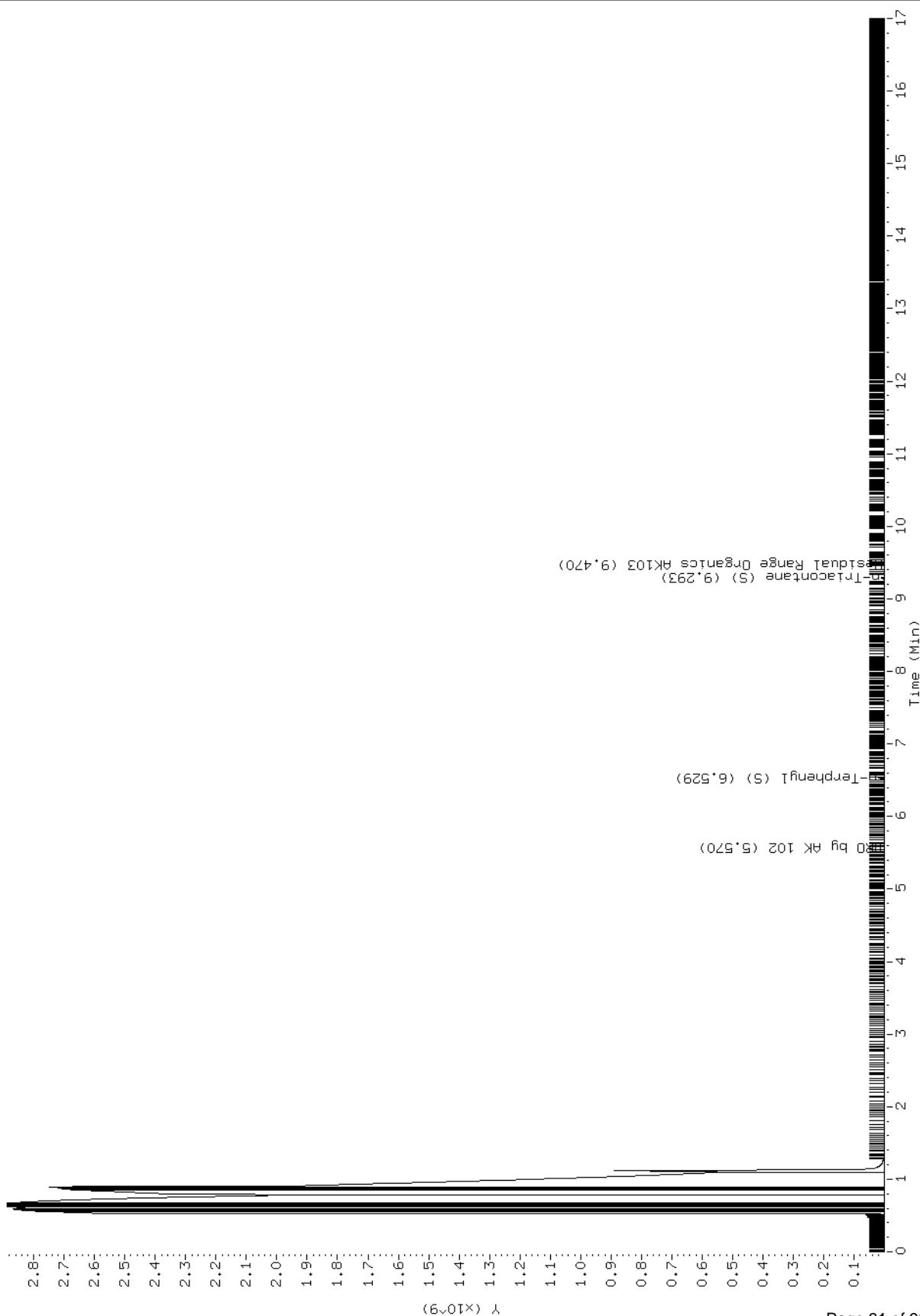
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190026.D
Report Date: 07/20/2014
Sample ID: 10273877012
Client ID:
Sample Information: 10273877012
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

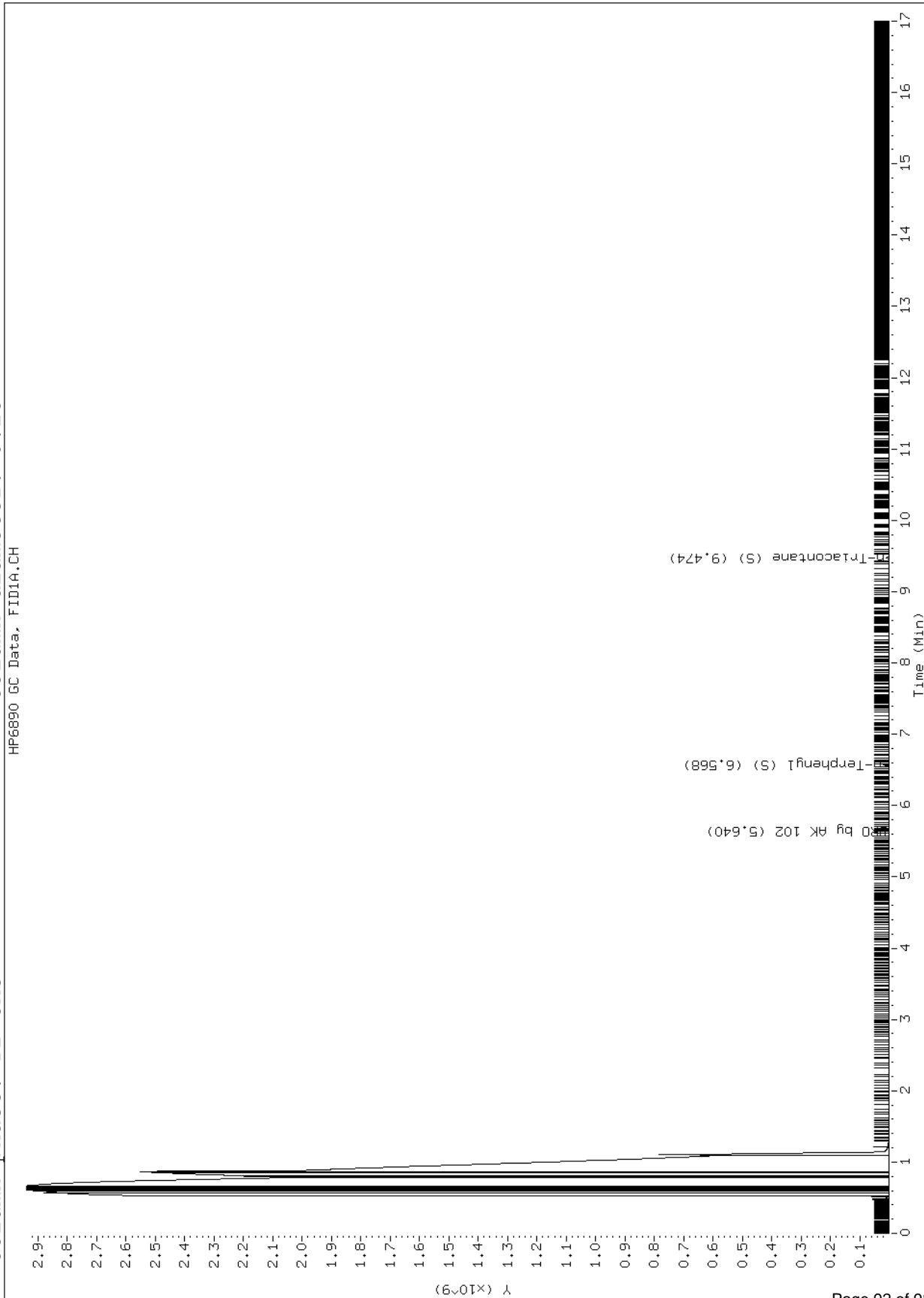
Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210033.D
Report Date: 07/22/2014
Sample ID: 10273877012
Client ID:
Sample Information: 10273877012
Purge Volume: 10gcsC.i
Column phase: DB-5MS
Operator: MT
Column diameter: 0.25



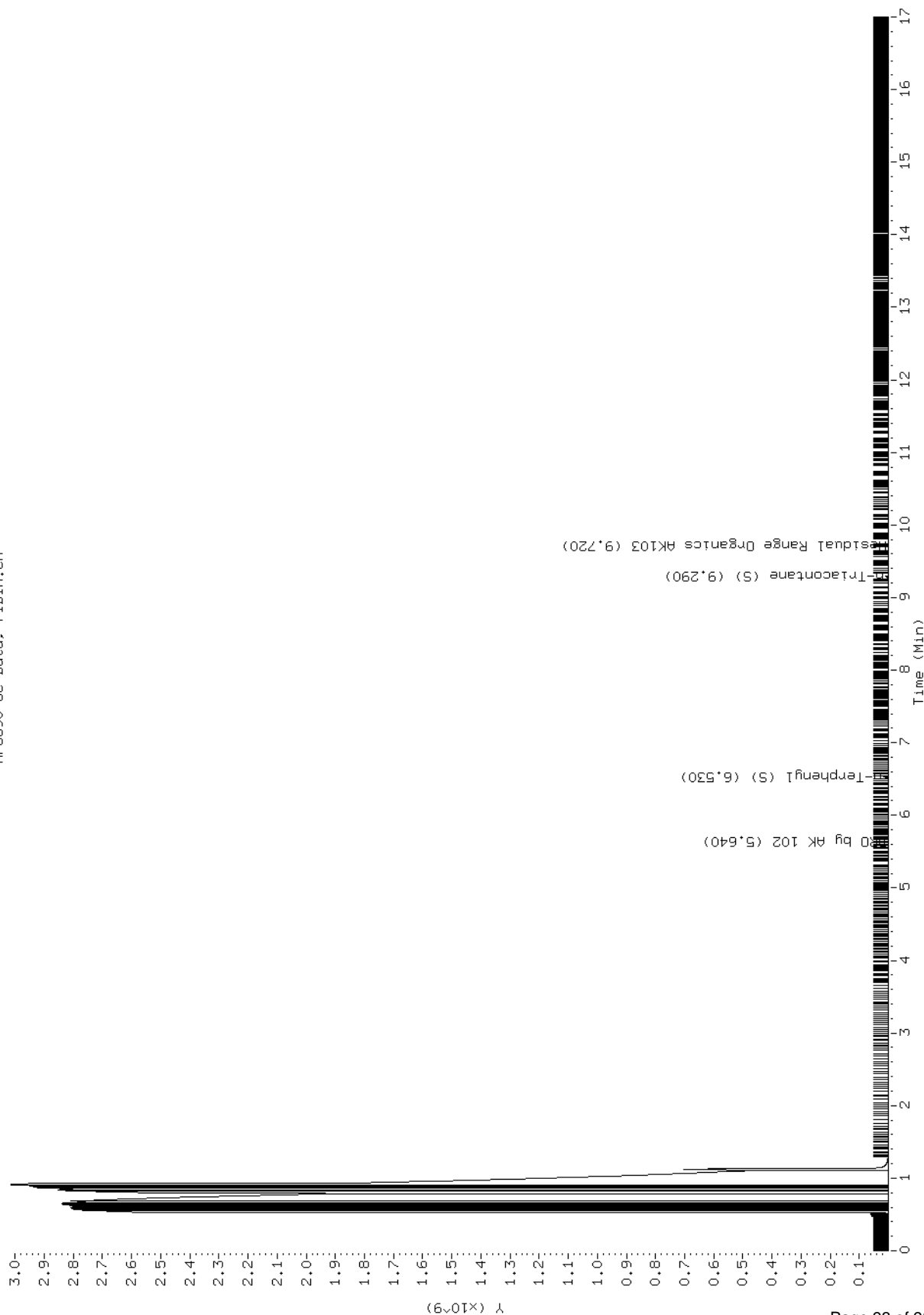
Data File: \\192.168.10.12\chem\10gcsC.i\072014.b\07200015.D
Report Date: 07/21/2014
Sample ID: 10273877013
Client ID:
Sample Information: 10273877013
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



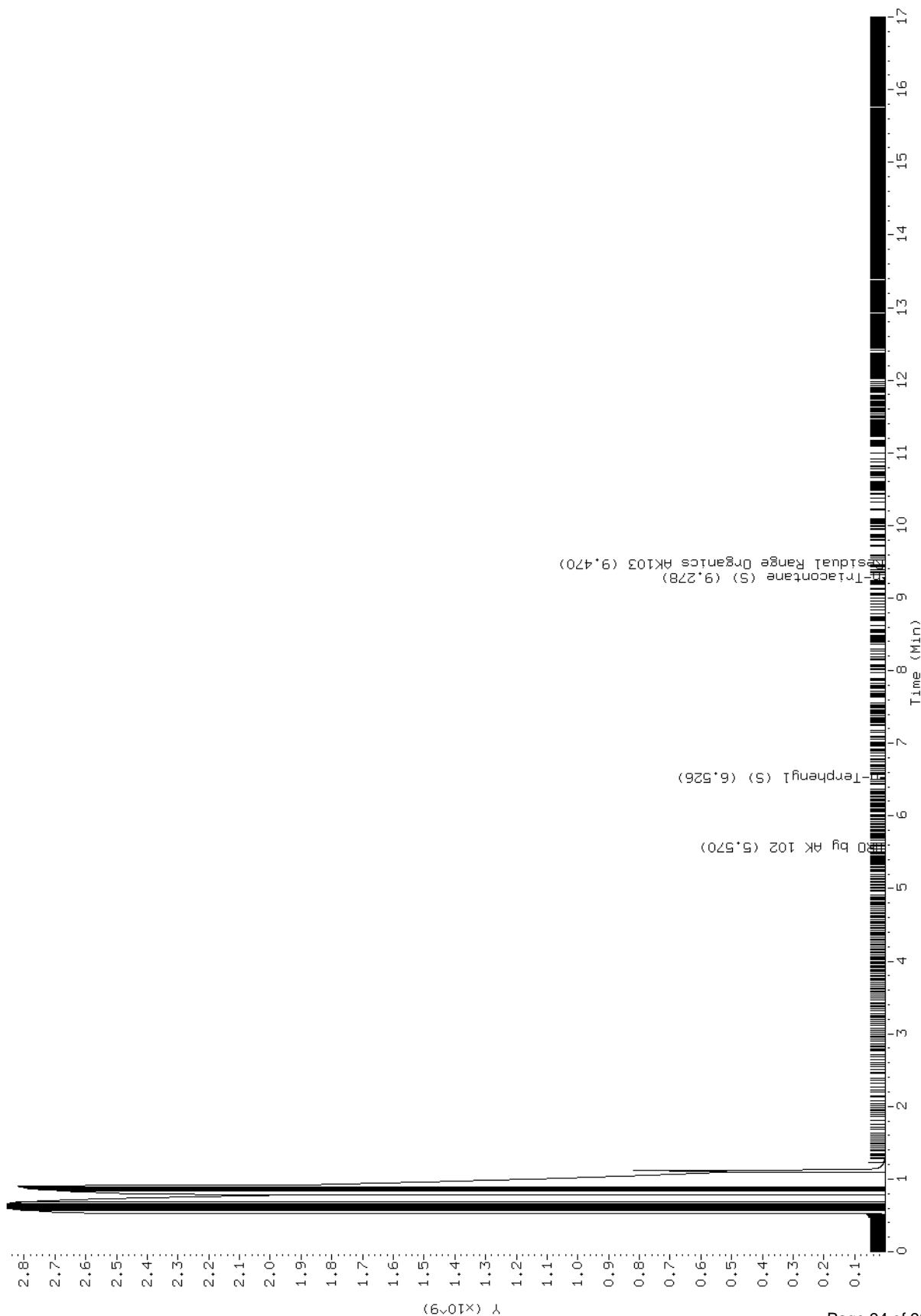
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190027.D
Report Date: 07/20/2014
Sample ID: 10273877014
Client ID:
Sample Information: 10273877014
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



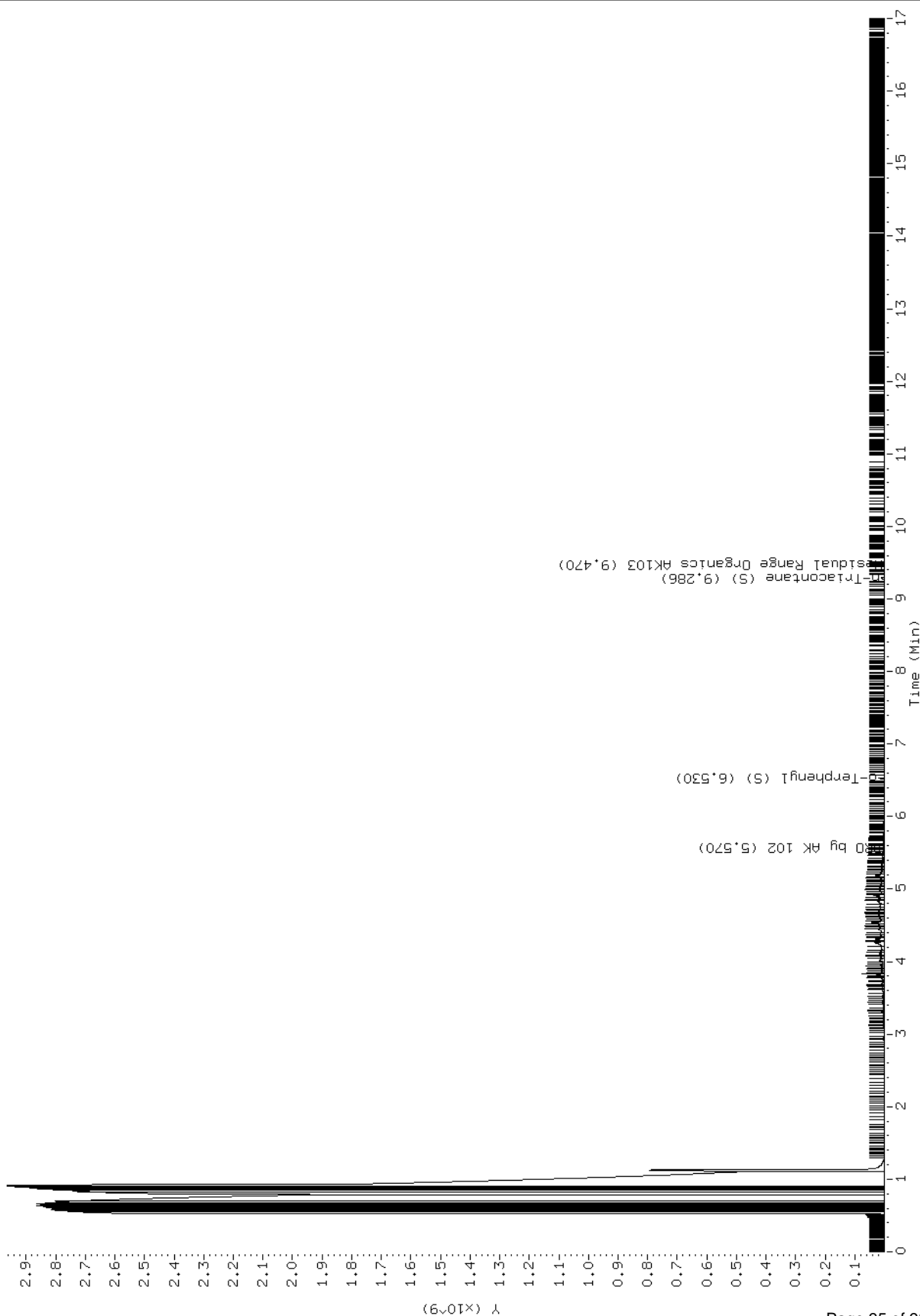
Data File: \\192.168.10.12\chem\10gcsC.i\071914.b\07190028.D
Report Date: 07/20/2014
Sample ID: 10273877015
Client ID:
Sample Information: 10273877015
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



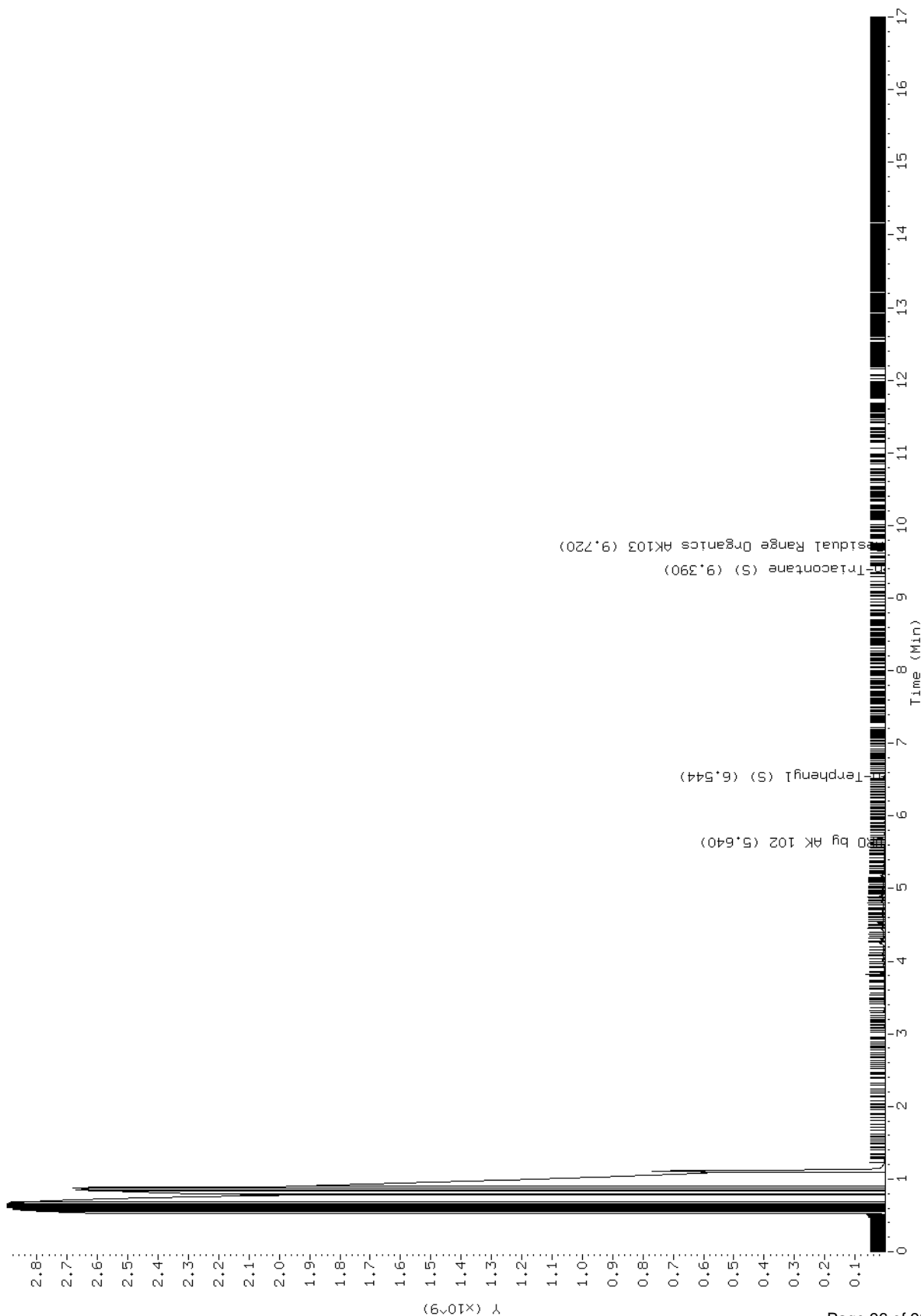
Data File: \\192.168.10.12\chem\10gcsC.i\072014.b\07200006.D
Report Date: 07/20/2014
Sample ID: 10273877015
Client ID:
Sample Information: 10273877015,2
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



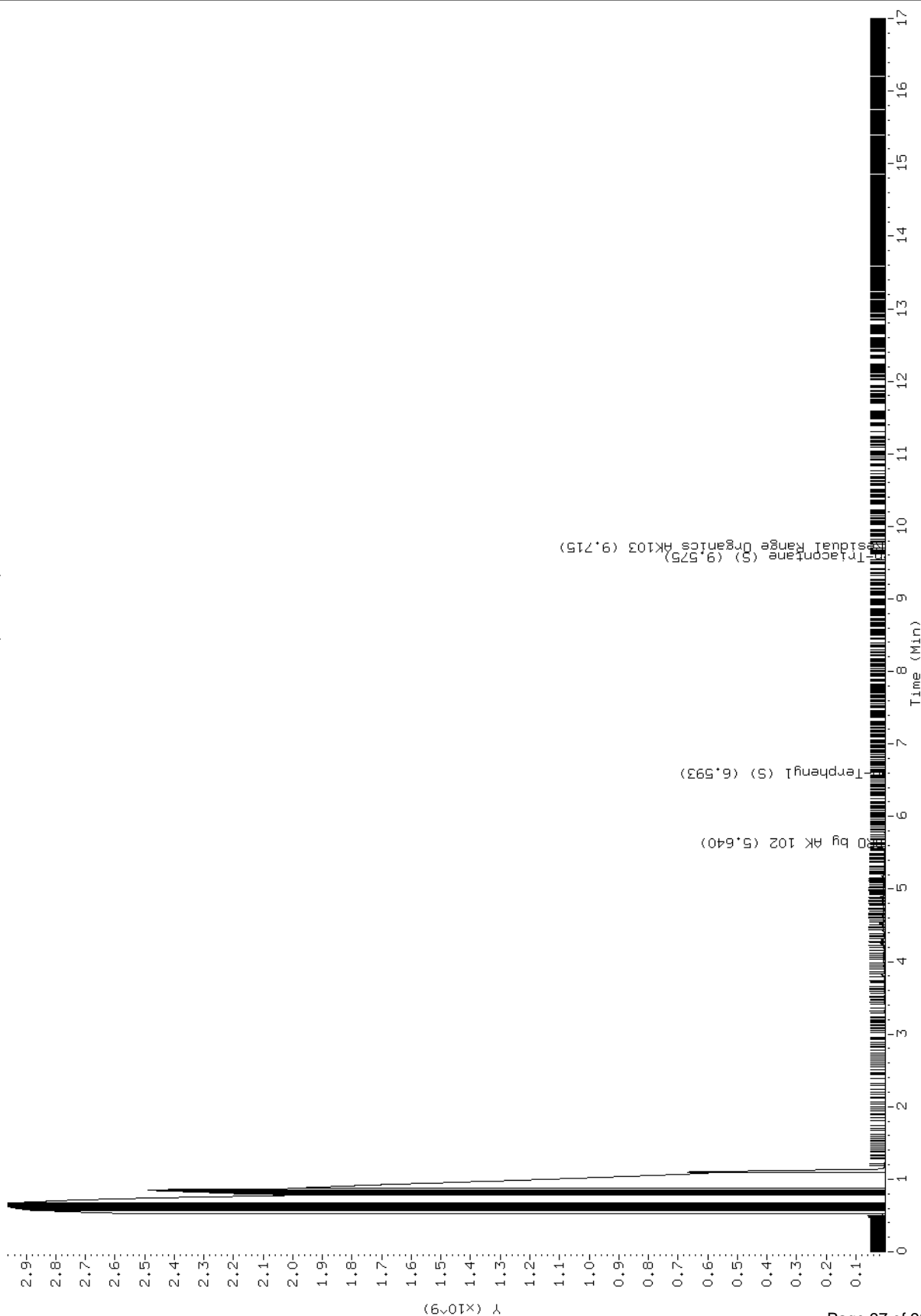
Data File: \\192.168.10.12\chem\10gcsC.i\072114.b\07210025.D
Report Date: 07/22/2014
Sample ID: 10273877015
Client ID:
Sample Information: 10273877015,2
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: MT

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



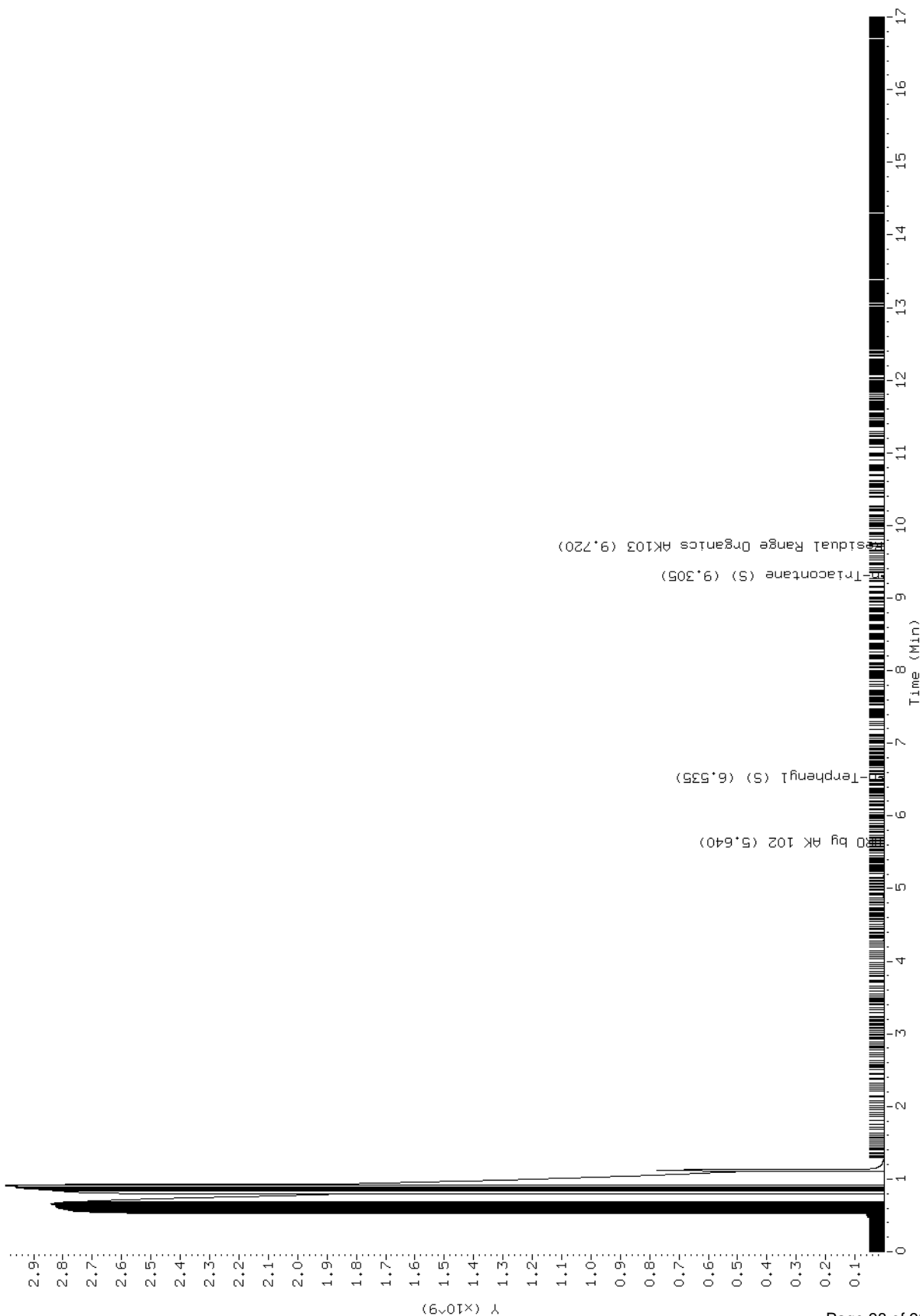
Data File: \\192.168.10.12\chem\10gcsC.i\072014.b\07200018.D
Report Date: 07/21/2014
Sample ID: 10273877016
Client ID:
Sample Information: 10273877016
Purge Volume:
Column phase: DB-5MS

Instrument: 10gcsC.i

Operator: JRH

Column diameter: 0.25

HP6890 GC Data, FID1A.CH



ARCADIS

Appendix C

ADEC Data Review Checklists

Laboratory Data Review Checklist

Completed by:

Title: Date:

CS Report Name: Report Date:

Consultant Firm:

Laboratory Name: Laboratory Report Number:

ADEC File Number: ADEC RecKey Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
 Yes No NA (Please explain.) Comments:

- b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
 Yes No NA (Please explain.) Comments:

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?
 Yes No NA (Please explain.) Comments:

- b. Correct analyses requested?
 Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?
 Yes No NA (Please explain.) Comments:

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain.)

Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain.)

Comments:

Yes

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No NA (Please explain.)

Comments:

Yes. Sample received outside of required temperature range was documented with the samples.

e. Data quality or usability affected? (Please explain.)

Comments:

Data quality not affected.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain.)

Comments:

Yes

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain.)

Comments:

Yes

c. Were all corrective actions documented?

Yes No NA (Please explain.)

Comments:

Yes

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The data was in compliance with the methods and project requirements.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain.)

Comments:

Yes

b. All applicable holding times met?

Yes No NA (Please explain.)

Comments:

Yes

c. All soils reported on a dry weight basis?
Yes No NA (Please explain.)

Comments:

NA

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?
Yes No NA (Please explain.)

Comments:

Yes

e. Data quality or usability affected?

Comments:

Data quality not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?
Yes No NA (Please explain.)

Comments:

Yes

ii. All method blank results less than PQL?
Yes No NA (Please explain.)

Comments:

Yes

iii. If above PQL, what samples are affected?

Comments:

Yes

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
Yes No NA (Please explain.)

Comments:

Yes

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
Yes No NA (Please explain.)

Comments:

Yes

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.) Comments:

NA (No metals samples submitted for analysis.)

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain.) Comments:

Yes

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain.) Comments:

Yes

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Yes

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

NA (No samples affected.)

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality is not affected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No NA (Please explain.) Comments:

Yes

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain.) Comments:

No. Sample GEI-7-W-071014 surrogates, for DRO by AK 102 Silica Gel Clean analysis, were diluted below acceptable recoveries.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.)

Comments:

Yes. The flags are clearly defined on the qualifier page of the report.

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

Data quality not affected.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No NA (Please explain.)

Comments:

Yes

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No NA (Please explain.)

Comments:

No. There are no comments listed on the COC, or the Receipt Documentation log, stating which cooler is assigned to the EB and VOA samples. The consultant has an understanding with the lab that the cooler containing the COC will always contain VOAs and trip blank samples for all monitoring well sampling events.

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

Yes

iv. If above PQL, what samples are affected?

Comments:

None

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality not affected.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes

Yes No NA (Please explain.)

Comments:

ii. Submitted blind to lab?

Yes No NA (Please explain.)

Comments:

Yes

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain.)

Comments:

No. For BD-1 and MW-3-W: The %REC for DRO and DRO Silica Gel Clean failed at 44.5% and 37.7%, respectively. Also GRO Blind Duplicate (BD1) analysis did not result in a measurable value, thus the %REC failed. For BD-2 and MW-5-W: The %REC failed for DRO at 32.3%; as well as for sample BD-2 DRO Silica Gel Clean analysis, which did not result in a measurable values. Therefore the %REC failed.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The RPD deviations are considered minor and would result in the estimation of the associated data. The reported data should still be considered usable.

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.)

Comments:

NA (These specific blanks were not sampled and submitted for analysis.)

i. All results less than PQL?

Yes No NA (Please explain.)

Comments:

Yes

ii. If above PQL, what samples are affected?

Comments:

Yes

iii. Data quality or usability affected? (Please explain.)

Comments:

Data quality not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

NA

Yes No NA (Please explain.)

Comments: