King County Department of Natural Resources and Parks

Solid Waste Division

Phase 1 – Interim Actions

CONTRACT NO. E00286E12

Cedar Hills Regional Landfill – EPZ Phase I Interim Actions – Second Round, February 2019 Soil Gas Sampling Technical Memorandum

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King County
Department of
Natural Resources and Parks
Solid Waste Division

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Final, May 30, 2019

CEDAR HILLS REGIONAL LANDFILL – EPZ PHASE I INTERIM ACTIONS – SECOND ROUND, FEBRUARY 2019 SOIL GAS SAMPLING TECHNICAL MEMORANDUM

Project No. 130088-830 • May 30, 2019 • FINAL

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1.0 INTRODUCTION

Aspect Consulting, LLC (Aspect) prepared this Technical Memorandum (Tech Memo) under King County Contract No. E00286E12 to summarize the results from the February 2019 soil gas sampling at selected landfill gas (LFG) probes and monitoring wells installed at the Cedar Hills Regional Landfill East Perched Zones (CHRLF EPZ; the Site) and the east-adjoining Passage Point facility. Soil gas sampling activities described in this Tech Memo included purging, monitoring and sampling soil gas probes and monitoring wells that were included in the baseline soil gas monitoring of the CHRLF EPZ. The number and location of gas probes and monitoring wells to be sampled was prescribed in Table 3.2 of the East Perched Zones Remedial Investigation and Feasibility Study (Aspect, 2016 DRAFT). LFG optimization activities were completed in December 2018, and the February 2019 sampling event was the first to take place since LFG optimization was implemented to monitor and evaluate the effectiveness of optimization. The soil gas sampling scope of work included the following:

- Pre-sampling preparation, including the removal of dedicated pumps from monitoring well EB-6D and installation of specialized well caps with a suitable port for soil gas sampling at monitoring wells EB-6D and MW-102.
- Soil gas sampling fieldwork, including measuring water levels, screening for LFG (methane, carbon dioxide, and oxygen) levels using a GEM 2000 multi-gas meter, purging, and sampling at 20 sampling locations. Sampling locations include:
    - Nine shallow sampling locations including gas probes: GP-16A, GP-18A, GP-19A, GP-20A, GP-56, GP-60, GP-62, GP-63A, and GP-64A
    - Eleven deep sampling locations including gas probes and monitoring wells: GP-8, GP-16C, GP-18C, GP-19C, GP-20C, GP-63B, GP-63C, GP-64B, GP-64C, EB-6D, and MW-102

  Soil gas samples were analyzed for volatile organic compounds (VOCs) using EPA Method TO-17.
- Review and reporting of analytical results, including comparison of sample results to appropriate Model Toxics Control Act (MTCA) Method B soil gas screening levels and preparation of this Tech Memo.

2.0 PRE-SAMPLING PREPARATION

King County Solid Waste Division (KCSWD) staff removed the dedicated pump from monitoring well EB-6D prior to the soil gas sampling field work. Upon removal of the dedicated groundwater sampling pump at EB-6D, a representative from Aspect installed specialized friction fitting soil gas sampling well caps on February 15, 2019, on EB-6D and MW-102, which allow for an air-tight seal and equilibration of gases inside the wells prior to sampling. The specialized friction fitting well caps contain ports suitable for purging and sampling soil gas from the wells. The monitoring wells equilibrated for five days prior to sampling.

3.0 SOIL GAS SAMPLING FIELD WORK

Soil gas sampling activities were performed on February 20 and 21, 2019, in general accordance with Washington State Department of Ecology's guidance (Ecology, 2018). The barometric pressure during the sampling days was 28.98 inches of mercury and 29.24 inches of mercury, respectively. The barometric pressure was relatively stable for the three days prior to the first day of the sampling event.

Water level was measured prior to sampling at each well and gas probe location to calculate the unsaturated length of screen to ensure adequate screen length was exposed for soil gas collection (Table 1). Some of the gas probes were not accessible using a water level indicator due to the small diameter of the well casing (0.5 inches), and presence of Tygon tubing within the casing.

Water was observed in sampling locations GP-18A, GP-56, GP-63A, GP-63B, GP-64A, GP-64B, and MW-102. Table 1 presents a summary of the water measurements. Using well or gas probe construction as-builts, the length of unsaturated screen (i.e., the amount of screen that was above the top of the water level) for each well and gas probe containing water was calculated to evaluate if sufficient unsaturated screen (greater than 0.25 foot) was present to collect soil gas samples. For gas probes whose construction precluded direct water level measurements, the Teflon tubing was monitored during purging for the presence of water. Water was observed in the Teflon tubing at GP-18A and GP-56, indicating the screens were fully submerged and thus soil gas samples could not be collected. Four of the nine shallow monitoring points exhibited saturated screens and could not be sampled (GP-18A, GP-56, GP-63A, and GP-64A). One of the nine deep monitoring points exhibited a saturated screen and could not be sampled (GP-64B).

3.1 Sampling Methods

In total, 14 soil gas samples were collected. The samples were acquired from existing wells or gas probes using existing or previously installed specialized gas sampling caps. The soil gas samples were collected using certified, laboratory-supplied sorbent tubes with dedicated sampling manifolds and a dedicated sampling train. The following method was employed during the sample point monitoring and sample collection:

1. Calculate the volume of air in the sampling location casing.
2. Conduct shut-in test on each manifold and tighten connections as necessary to decrease likelihood of air leaks. Calibrate GEM 2000 multi-gas meter.
3. Install tubing onto well cap port and connect to manifold.
4. From the junction in the manifold with a valve, connect the GEM 2000 for monitoring landfill gas (methane, carbon dioxide and oxygen) levels at each probe location during purging.
5. For sample locations with large casing volumes, connect an SKC™ low-flow vacuum pump, rotameter and GEM 2000 to the wellhead manifold. During purging, record methane, carbon

dioxide, and oxygen concentrations measured by the GEM 2000 at minimum 1-minute intervals. Immediately connect sorbent tube to manifold after purge of three casing volumes.

6. For sample locations with smaller casing volumes, open the manifold valve and begin purging with the GEM 2000. The purge rate is regulated by the soil gas flow restrictor in the manifold to approximately 200 milliliters per minute (mL/min). During purging, record methane, carbon dioxide, and oxygen concentrations at minimum 20-second intervals until parameters have stabilized or until a total of three casing volumes have been purged.
7. Turn off the GEM 2000 and close the manifold valve.
8. Connect the sorbent tube to the other junction on the manifold with silicone tubing in the indicated flow direction, with an inline low-flow pump and attached rotameter for monitoring the sampling rate.
9. Set pump flow rate to 100 mL/min and sample for 4 minutes. Sorbent tube sample volume required by the analytical laboratory is 400 mL.
10. Stop sample collection, disconnect sorbent tube, place into plastic case, and record tube number on the chain of custody.

Following sample collection, the well or gas probe well caps were replaced, and the protective monuments were locked. The samples were transferred under appropriate chain-of-custody documentation to the analytical laboratory, ALS Environmental in Simi Valley, California. The samples were analyzed using EPA Method TO-17 for volatile organic compounds (VOCs). See Appendix A for the laboratory reports. Example photographs of the constructed sample trains, purging, monitoring, and sampling of the gas probes are included as Appendix B.

4.0 ANALYTICAL RESULTS

4.1 Methane

During purging of each well and gas probe location, methane levels were recorded, and final methane readings are summarized in Table 2 and depicted on Figure 1. The Ecology and Seattle-King County Public Health regulatory limit for methane detections at and beyond the landfill property boundary is the LEL for methane, which is 5 percent by volume.

Methane detection results were as follows:

- Methane was not detected in 9 of the 14 sampled locations, as shown by the green color coding on Figure 2. Four non-detect locations were shallow monitoring points (GP-16A, -18A, -19A, -20A, and -60) and five non-detect locations were deep monitoring points (GP-18C, -19C, -64B, -64C, EB-6D, and MW-102).
- Methane was detected at a concentration of 0.1 percent by volume at the remaining 5 of 14 sample locations, which is significantly below the regulatory limit of 5 percent by volume. These locations

are indicated by the orange color coding on Figure 2. GP-62 was the only shallow gas probe where methane was detected. The other 4 locations (GP-8, -16C, -20C, -63B, and -63C) were deep gas probes.

- None of the sample locations contained methane at concentrations greater than the regulatory limit of 5 percent by volume.

4.2 Volatile Organic Compounds

Tables 3 and 4 present the results of detected VOCs in each shallow and deep sampling location, respectively. Detected VOCs were compared to the applicable MTCA Method B screening levels for shallow (sub-slab) and deep soil gas, respective to the construction depth of the screen at each sample location. Screens constructed within 15 feet of ground surface are considered shallow while screens constructed deeper than 15 feet below ground surface are considered deep. The following are the VOC results for the shallow sample locations:

- VOCs were not detected in one of the shallow soil gas sampling locations (GP-19A), as shown by the green color coding on Figure 2.
- VOCs were detected at concentrations less than the MTCA Method B shallow (sub-slab) soil gas screening levels at the remaining four shallow monitoring locations (GP-16A, GP-20A, GP-60, and GP-62), as shown by the orange color coding on Figure 2.
- No VOCs were detected at concentrations above the MTCA Method B shallow (sub-slab) soil gas screening levels in shallow sample locations during this event.

The following are the VOC results for the deep sample locations:

- VOCs were detected at concentrations less than the MTCA Method B screening levels at all 10 deep soil gas sampling locations (GP-8, GP-16C, GP-18C, GP-19C, GP-20C, GP-63B, GP-63C, GP-64C, EB-6D, and MW-102), as shown by the orange color coding on Figure 2.
- No VOCs were detected at concentrations above the MTCA Method B screening levels in deep soil gas during this event.

5.0 FUTURE WORK

Two additional soil gas sampling events will be conducted to further monitor and evaluate the effectiveness of optimizing the LFG system in controlling migration of LFG within the CHRLF EPZ. The additional soil gas sampling events will occur in the second and third quarters of 2019, and brief Tech Memos will be completed after each event.

6.0 REFERENCES

Aspect Consulting, LLC (Aspect), 2016, Cedar Hills Regional Landfill Environmental Control Systems Modifications Project, East Perched Zones Remedial Investigation and Feasibility Study, Agency Draft, December 2016.

Washington State Department of Ecology (Ecology), 2018, Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Toxics Cleanup Program, Publication no. 09-09-047, Review Draft Revised, April 2018.

TABLES

Table 1. Gas Probe Construction Information and Water Levels

Project No. 130088, Cedar Hills Regional Landfill
Maple Valley, Washington

Well ID	Well Diameter (in)	Stick-up (ft)	TOC Elevation (ft, NAVD88)	Boring Depth (ft bgs)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Filter Pack Interval (ft bgs)	Depth to Water (ft bTOC)	Unsaturated Screen Length (ft)	Notes
Gas Probes										
GP-16A	0.5	1.33	629.8	8	6.5	8	6.5 - 8	Dry	1.5	
GP-16C	0.5	1.29	629.76	60	58.5	60	58.5 - 60	Dry	1.5	
GP-18A	0.5	1.49	603.76	8	6.5	8	6.5 - 8	Not accessible because of probe construction	NA	No sample collected - water in purge line.
GP-18C	0.5	1.38	603.65	45	43.5	45	43.5 - 45	Not accessible because of probe construction	NA	
GP-19A	0.5	1.06	547.3	8	6.5	8	6.5 - 8	Not accessible because of probe construction	NA	
GP-19C	0.5	1.04	547.28	31	29.5	31	29.5 - 31	Not accessible because of probe construction	NA	
GP-20A	0.5	1.56	496.6	8	6.5	8	6.5 - 8	Not accessible because of probe construction	NA	
GP-20C	0.5	1.55	496.6	88	86.5	88	86.5 - 88	Not accessible because of probe construction	NA	
GP-56	1	2.5	643.57	16	6	16	6 - 16	7.05	---	No sample collected - screen submerged
GP-60	1	4.12	635.84	18	8	18	8 - 18	Dry	10	
GP-62	1	1.85	565.28	18	8	18	8 - 18	Dry	10	
GP-63A	0.5	2.96	637.18	8	6.5	8	5.5 - 9.0	5.92	---	No sample collected - screen submerged
GP-63B	0.5	2.98	636.95	37	32	37	31 - 38	38.37	3.39	
GP-63C	0.5	3.16	637.27	60	55	60	53 - 61	Dry	5	
GP-64A	0.5	3.13	632.66	8	6.5	8	5.5 - 9.0	5.09	---	No sample collected - screen submerged
GP-64B	0.5	2.80	632.16	25	20	25	19 - 26	22.29	---	No sample collected - screen submerged
GP-64C	0.5	2.94	632.42	59	54	59	52 - 60	Dry	5	
GP-8	0.5	1.46	642.23	46.5	44.5	46.5	44.5 - 46.5	Dry	2	
Montioring Wells										
EB-6D	2	1.75	589.61	30	20	30	16 - 30.5	Dry	10	
MW-102	2	2.75	552.48	49.5	34.5	49.5	32 - 50	44.7	7.45	

Notes:
ft = feet
ft, NAVD88 = feet, North America Vertical Datum of 1988.
ft bgs = feet below ground suface
ft bTOC = feet below top of casing
in = inches
NA = probe construction does not allow water level measurement
--- = screen saturated
a Ground elevation for probes listed as "Gas Probes" have been adjusted to NAVD88 by adding 3.6 feet. Original elevations were provided on borings logs in NGVD29.

Table 2. Landfill Gas Monitoring Results - February 2019

Project No. 130088, Cedar Hills Regional Landfill
Maple Valley, Washington

Sample Location	Methane (%)	Carbon Dioxide (%)	Oxygen (%)
GP-16A	0.0	0.0	21.4
GP-19A	0.0	0.1	21.5
GP-20A	0.0	0.1	21.1
GP-60	0.0	0.2	21.7
GP-62	**0.1**	2.4	19.7
GP-8	**0.1**	1.2	17.5
EB-6D	0.0	0.0	21.2
GP-16C	**0.1**	0.1	21.2
GP-18C	0.0	0.2	20.1
GP-19C	0.0	0.1	21.7
GP-20C	**0.1**	0.2	10.7
GP-63B	**0.1**	0.1	21.3
GP-63C	**0.1**	0.1	19.9
GP-64C	0.0	0.0	21.7
MW-102	0.0	2.0	21.4

Notes:

Results presented above represent final reading prior to sample collection.

Landfill gas measurements collected using a GEM 2000 multi-gas meter.

Bold indicates detected methane at a concentration less than 5 percent.

The oxygen sensor malfunctioned while sampling EB-6D, so the recorded oxygen result is the last reading prior to malfunction.

Table 3. Shallow Soil Gas Sampling Results - February 2019

Project No. 130088, Cedar Hills Regional Landfill
King County, Washington

			Sample Location	GP-16A	GP-19A	GP-20A	GP-60	GP-62
			Sample Date	02/21/2019	02/20/2019	02/20/2019	02/20/2019	02/20/2019
			Analytical Method	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17
Analyte	CAS	Units	MTCA Method B - Shallow Soil Gas Screening Level					
1,1,1-Trichloroethane	71-55-6	ug/m3	76200	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/m3	1.44	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1,2-Trichloroethane	79-00-5	ug/m3	5.21	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1-Dichloroethane	75-34-3	ug/m3	52.1	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,1-Dichloroethene	75-35-4	ug/m3	3050	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2,4-Trichlorobenzene	120-82-1	ug/m3	30.5	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2,4-Trimethylbenzene	95-63-6	ug/m3	107	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dibromo-3-chloropropane	96-12-8	ug/m3		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,2-Dibromoethane (EDB)	106-93-4	ug/m3	0.139	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichlorobenzene	95-50-1	ug/m3	3050	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichloroethane (EDC)	107-06-2	ug/m3	3.21	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichloropropane	78-87-5	ug/m3	8.33	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichlorotetrafluoroethane; fluorocarbon 114	76-14-2	ug/m3		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,3,5-Trimethylbenzene	108-67-8	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,3-BUTADIENE	106-99-0	ug/m3	2.78	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,3-Dichlorobenzene	541-73-1	ug/m3		**14**	< 2.8 U	**3.9**	**8.8**	< 2.8 U
1,4-Dichlorobenzene	106-46-7	ug/m3	7.58	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,4-Dioxane	123-91-1	ug/m3		**3.2**	< 2.8 U	< 2.8 U	**4.6**	< 2.8 U
2,2,4-Trimethylpentane	540-84-1	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
2-Butanone	78-93-3	ug/m3	76200	**4.6**	< 2.5 U	< 2.5 U	**3.1**	< 2.5 U
2-Hexanone	591-78-6	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
4-Methyl-2-pentanone	108-10-1	ug/m3	45700	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Acetone	67-64-1	ug/m3		**35 J**	< 14 U	**16 J**	**31 J**	< 14 U
Acetonitrile	75-05-8	ug/m3	914	**5.9 J**	< 5.3 U	< 5.3 U	**9.4 J**	< 5.3 U
Benzene	71-43-2	ug/m3	10.7	**7.2**	< 5.3 U	< 5.3 U	**7.2**	< 5.3 U
Bromodichloromethane	75-27-4	ug/m3	2.25	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Bromoform	75-25-2	ug/m3	75.8	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Carbon Disulfide	75-15-0	ug/m3	10700	< 14 U	< 14 U	< 14 U	< 14 U	< 14 U
Carbon Tetrachloride	56-23-5	ug/m3	13.9	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Chlorobenzene	108-90-7	ug/m3	762	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Chloroethane	75-00-3	ug/m3	152000	**4.6**	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Chloroform	67-66-3	ug/m3	3.62	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Chloromethane	74-87-3	ug/m3	1370	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	**3.1**
cis-1,2-Dichloroethene (DCE)	156-59-2	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
cis-1,3-Dichloropropene	10061-01-5	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Cyclohexane	110-82-7	ug/m3		< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Dibromochloromethane	124-48-1	ug/m3	3.09	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Dichlorodifluoromethane	75-71-8	ug/m3	1520	< 2.5 U	< 2.5 U	< 2.5 U	**3.3**	**12**
Ethanol	64-17-5	ug/m3		**84**	< 13 U	< 13 U	< 13 U	**13**
Ethylbenzene	100-41-4	ug/m3	15200	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Freon 113	76-13-1	ug/m3	457000	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Hexachlorobutadiene	87-68-3	ug/m3	3.79	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Hexane	110-54-3	ug/m3	10700	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Isopropyl alcohol	67-63-0	ug/m3		< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Isopropylbenzene	98-82-8	ug/m3	6100	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
m,p-Xylene	179601-23-1	ug/m3		< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Methyl tert-butylether	1634-04-4	ug/m3	321	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Methylene Chloride	75-09-2	ug/m3	8330	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Naphthalene	91-20-3	ug/m3	2.45	< 2.5 U	< 2.5 U	< 1.1 U	< 2.5 U	< 2.5 U
N-Heptane	142-82-5	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Octane	111-65-9	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
o-Xylene	95-47-6	ug/m3	1520	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Styrene	100-42-5	ug/m3	15200	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Tetrachloroethene (PCE)	127-18-4	ug/m3	321	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Tetrahydrofuran	109-99-9	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Toluene	108-88-3	ug/m3	76200	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	**3.9**
trans-1,2-Dichloroethene	156-60-5	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
trans-1,3-Dichloropropene	10061-02-6	ug/m3		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Trichloroethene (TCE)	79-01-6	ug/m3	12.3	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Trichlorofluoromethane	75-69-4	ug/m3	1070	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Vinyl Chloride	75-01-4	ug/m3	9.33	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U

Bold = detected
Orange = exceeded
J = estimated
U = nondetect

Table 4. Deep Soil Gas Sampling Results - February 2019
Project No. 130088, Cedar Hills Regional Landfill
King County, Washington

Analyte	CAS	Units	MTCA Method B - Deep Soil Gas Screening Level	Location	EB-6D	GP-8	GP-16C	GP-18C	GP-19C	GP-20C	GP-63B	GP-63C	GP-64C	MW-102
				Date	02/21/2019	02/20/2019	02/21/2019	02/20/2019	02/20/2019	02/20/2019	02/21/2019	02/21/2019	02/21/2019	02/21/2019
				Analytical Method	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17	EPA-TO-17
1,1,1-Trichloroethane	71-55-6	ug/m3	229000		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/m3	4.31		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1,2-Trichloroethane	79-00-5	ug/m3	15.6		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1-Dichloroethane	75-34-3	ug/m3	156		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,1-Dichloroethene	75-35-4	ug/m3	9140		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2,4-Trichlorobenzene	120-82-1	ug/m3	91.4		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2,4-Trimethylbenzene	95-63-6	ug/m3	320		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	**6.1**
1,2-Dibromo-3-chloropropane	96-12-8	ug/m3			< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,2-Dibromoethane (EDB)	106-93-4	ug/m3	0.417		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichlorobenzene	95-50-1	ug/m3	9140		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichloroethane (EDC)	107-06-2	ug/m3	9.62		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichloropropane	78-87-5	ug/m3	25.0		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,2-Dichlorotetrafluoroethane (Fluorocarbon 114)	76-14-2	ug/m3			< 2.5 U	**6.4**	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,3,5-Trimethylbenzene	108-67-8	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,3-Butadiene	106-99-0	ug/m3	8.33		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,3-Dichlorobenzene	541-73-1	ug/m3			**15**	**5.3**	< 2.8 U	**18**	**3.1**	< 2.8 U	**8.8**	**5**	**14**	**53**
1,4-Dichlorobenzene	106-46-7	ug/m3	22.7		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	**4.1**
1,4-Dioxane	123-91-1	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
2,2,4-Trimethylpentane	540-84-1	ug/m3			**17**	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
2-Butanone	78-93-3	ug/m3	229000		**4.2**	< 2.5 U	**2.9**	< 2.5 U	**2.7**	< 2.5 U	< 2.5 U	< 2.5 U	**3.3**	< 2.5 U
2-Hexanone	591-78-6	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
4-Methyl-2-pentanone	108-10-1	ug/m3	137000		< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Acetone	67-64-1	ug/m3			**24 J**	< 14 U	< 14 U	**19 J**	**22 J**	< 14 U	**16 J**	**14 J**	**19**	**18 J**
Acetonitrile	75-05-8	ug/m3	2740		**5.5 J**	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Benzene	71-43-2	ug/m3	32.1		**10**	< 5.3 U	**5.6**	< 5.3 U	< 5.3 U	< 5.3 U	**6**	**9.3**	**5.6**	**7.1**
Bromodichloromethane	75-27-4	ug/m3	6.76		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Bromoform	75-25-2	ug/m3	227		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Carbon Disulfide	75-15-0	ug/m3	32000		< 14 U	< 14 U	< 14 U	< 14 U	< 14 U	< 14 U	< 14 U	< 14 U	< 14 U	< 14 U
Carbon Tetrachloride	56-23-5	ug/m3	41.7		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Chlorobenzene	108-90-7	ug/m3	2290		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	**5.3**
Chloroethane	75-00-3	ug/m3	457000		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Chloroform	67-66-3	ug/m3	10.9		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Chloromethane	74-87-3	ug/m3	4110		< 2.5 U	< 2.5 U	**2.6**	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
cis-1,2-Dichloroethene (DCE)	156-59-2	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
cis-1,3-Dichloropropene	10061-01-5	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Cyclohexane	110-82-7	ug/m3			< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Dibromochloromethane	124-48-1	ug/m3	9.26		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Dichlorodifluoromethane	75-71-8	ug/m3	4570		**3.8**	**54**	**2.6**	**17**	< 2.5 U	**2.7**	**2.6**	**3.1**	< 2.5 U	< 2.5 U
Ethanol	64-17-5	ug/m3			< 13 U	< 13 U	< 13 U	< 13 U	**20**	< 13 U	**13**	< 13 U	< 13 U	< 13 U
Ethylbenzene	100-41-4	ug/m3	45700		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Freon 113	76-13-1	ug/m3	1370000		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Hexachlorobutadiene	87-68-3	ug/m3	11.4		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Hexane	110-54-3	ug/m3	32000		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Isopropyl Alcohol	67-63-0	ug/m3			< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
Isopropylbenzene	98-82-8	ug/m3	18300		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	**3.6**	**3.4**	< 2.8 U	< 2.8 U
m,p-Xylene	179601-23-1	ug/m3			**8.5**	< 5.3 U	**9.9**	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	**8.2**
Methyl tert-butylether	1634-04-4	ug/m3	962		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Methylene Chloride	75-09-2	ug/m3	25000		**3.3**	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Naphthalene	91-20-3	ug/m3	7.35		< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	**1.1 U**	< 2.5 U	< 2.5 U	< 2.5 U	**1.3 U**
n-Heptane	142-82-5	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Octane	111-65-9	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
o-Xylene	95-47-6	ug/m3	4570		**3.6**	< 2.8 U	**3.8**	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	**3.1**
Styrene	100-42-5	ug/m3	45700		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Tetrachloroethene (PCE)	127-18-4	ug/m3	962		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Tetrahydrofuran	109-99-9	ug/m3			**3.6**	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Toluene	108-88-3	ug/m3	229000		**12**	< 2.8 U	**9.9**	**2.8**	< 2.8 U	< 2.8 U	**3.2**	**3**	< 2.8 U	**6.1**
trans-1,2-Dichloroethene	156-60-5	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
trans-1,3-Dichloropropene	10061-02-6	ug/m3			< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Trichloroethene (TCE)	79-01-6	ug/m3	37.0		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Trichlorofluoromethane	75-69-4	ug/m3	32000		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
Vinyl Chloride	75-01-4	ug/m3	28.0		< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U

Bold = detected
Orange = exceeded
J = estimated
U = nondetect

FIGURES

SHALLOW (Screened <15 feet bgs)

GP-20A
GP-19A
GP-18A*
GP-16A
PASSAGE POINT FACILITY
GP-63A*
GP-64A*
GP-62
M: 0.1 %
GP-60
GP-56*
EAST MAIN HILL

DEEP (Screened 15 – 179 feet bgs)

GP-20C
M: 0.1 %
GP-19C
GP-18C
GP-16C
M: 0.1 %
GP-63B
M: 0.1 %
GP-63C
M: 0.1 %
PASSAGE POINT FACILITY
GP-64B*
GP-64C
EB-6D
MW-102
GP-8
M: 0.1 %
EAST MAIN HILL

Methane Results (February, 2019)

- >5% Methane
- 0-5% Methane
- Methane Not Detected

- Gas Probe
- Perched Zone Monitoring Well
- Perched Zone Piezometer
- Permitted Landfill Buffer

Note: *See Table 2 for a summary of landfill gas readings at the time of sample collection.*
** GP-18A, GP-56, GP-63A, GP-64A, and GP-64B were not sampled due to the screen being fully submerged with water.*

- Approximate Extent of Wetland Areas
- Project Location
- Landfill Cover Limits
- Property Boundary

0 500 1,000
Feet

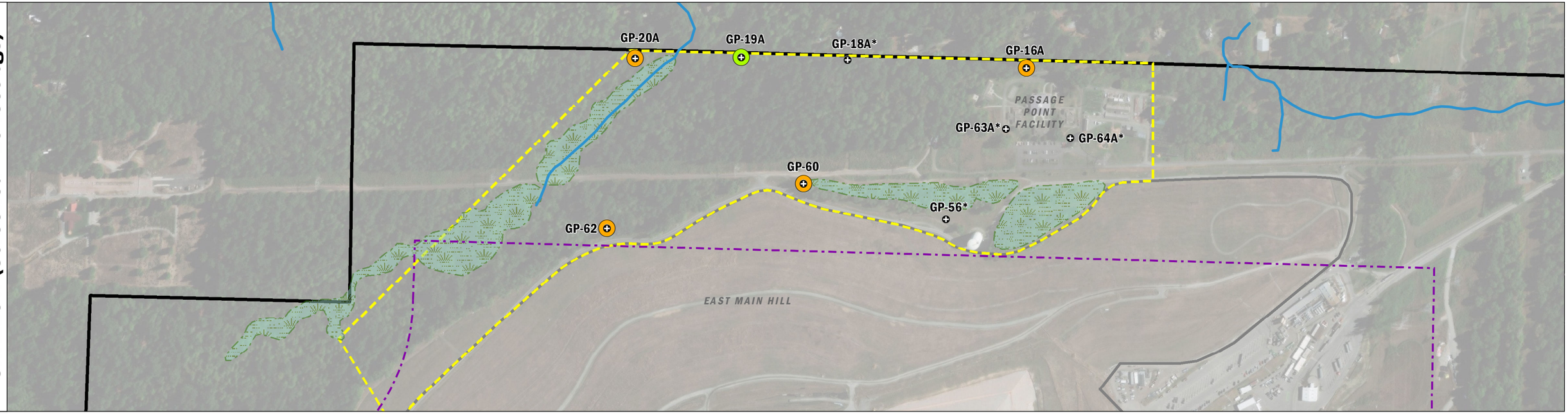
King County
Aspect CONSULTING

Methane Results - February 2019

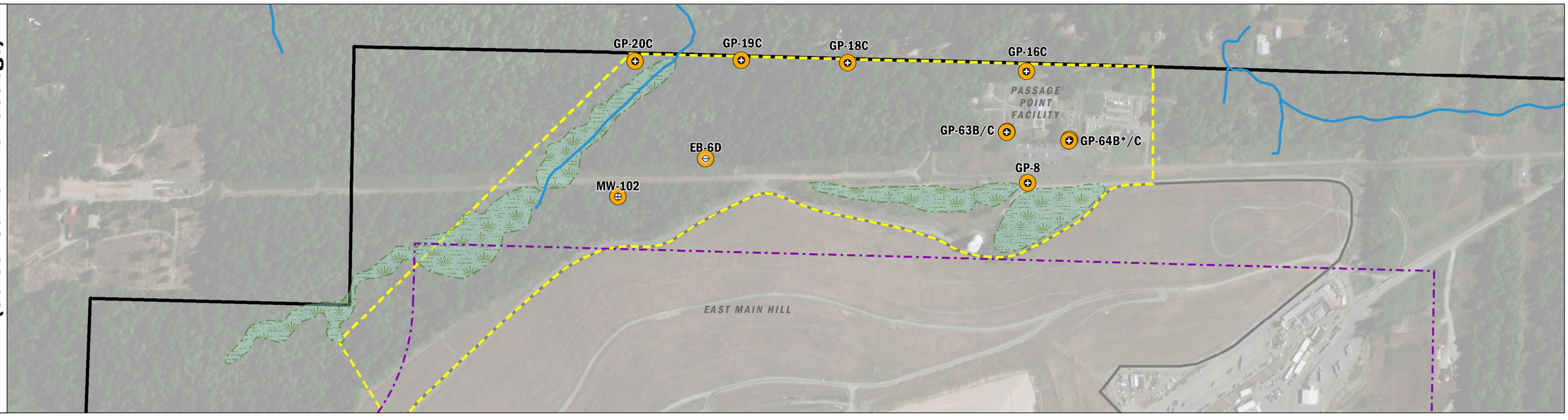
Cedar Hills Regional Landfill
King County, Washington

DATE: May-2019	PROJECT NO. 130088
DESIGNED BY: PPW	
DRAWN BY: PPW	FIGURE NO. 1
REVISED BY: TDR	

SHALLOW (Screened <15 feet bgs)



DEEP (Screened 15- 179 feet bgs)



Soil Gas Sampling Results (February 2019)

- One or More Analytes Detected Above Screening Level
- One or More Analytes Detected, No Screening Level Exceedances
- No Detections

- Gas Probe
- Perched Zone Monitoring Well
- Perched Zone Piezometer
- Permitted Landfill Buffer

Exploration Name
B: Benzene
N: Naphthalene
1,3-B: 1,3-Butadiene
List of Analytes exceeded

Note: *Only Analytes exceeding Screening Levels are listed in the call-out box.* ***Red, bold*** *text indicates Screening Level exceedance. See Table 3 and Table 4 for full analytical results. *GP-18A, GP-56, GP-63A, GP-64A, and GP-64B were not sampled due to the screen being fully submerged with water.*

- Approximate Extent of Wetland Areas
- Project Location
- Landfill Cover Limits
- Property Boundary

0 500 1,000
Feet

King County | Aspect Consulting

TO-17 Results – February 2019

Cedar Hills Regional Landfill
King County, Washington

DATE: May-2019	PROJECT NO. 130088
DESIGNED BY: PPW	
DRAWN BY: PPW	FIGURE NO. 2
REVISED BY: TDR	

APPENDIX A

Analytical Lab Report

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

March 8, 2019

Kirsi Longley
Aspect Consulting
401 2nd Ave. S, Suite 201
Seattle, WA 98104-3814

RE: Cedar Hills Regional Landfill / 130088

Dear Kirsi:

Enclosed are the results of the samples submitted to our laboratory on February 22, 2019. For your reference, these analyses have been assigned our service request number P1900962.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 3:49 pm, Mar 08, 2019

Sue Anderson
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: Aspect Consulting
Project: Cedar Hills Regional Landfill / 130088

Service Request No: P1900962

CASE NARRATIVE

The samples were received intact under chain of custody on February 22, 2019 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with the methodology outlined in EPA Method TO-17. This procedure is described in laboratory SOP VOA-TO17. The analyses were performed by thermal desorption/gas chromatography/mass spectrometry. This analysis is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

The spike recovery of hexachlorobutadiene for the Laboratory Control Sample (LCS) was outside the laboratory generated control criterion. The recovery error equates to a potential high bias. However, the spike recovery of the analyte in question was within the method criteria; therefore, the data quality has not been significantly affected. No corrective action was taken.

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Simi Valley, CA 93065
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www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1521096
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-006
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA016272018-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Aspect Consulting
Service Request: P1900962
Project ID: Cedar Hills Regional Landfill / 130088

Date Received: 2/22/2019
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	TO-17 - VOC Sorbent
GP20D190220-	P1900962-001	Air	2/20/2019	09:44	X
GP20S190220-	P1900962-002	Air	2/20/2019	09:56	X
GP19D190220-	P1900962-003	Air	2/20/2019	10:13	X
GP19S190220-	P1900962-004	Air	2/20/2019	10:24	X
GP18D190220-	P1900962-005	Air	2/20/2019	10:41	X
GP60S-190220-	P1900962-006	Air	2/20/2019	13:30	X
GP62S-190220-	P1900962-007	Air	2/20/2019	12:14	X
GP8-190220-	P1900962-008	Air	2/20/2019	14:39	X
G102-190221-	P1900962-009	Air	2/21/2019	15:05	X
GP63D-190221-	P1900962-010	Air	2/21/2019	11:01	X
GP63M-190221-	P1900962-011	Air	2/21/2019	11:44	X
GP16D-190221-	P1900962-012	Air	2/21/2019	12:13	X
GP16S-190221-	P1900962-013	Air	2/21/2019	12:33	X
GP64D-190221-	P1900962-014	Air	2/21/2019	13:11	X
GB6-190221-	P1900962-015	Air	2/21/2019	14:28	X
UTRP-190220	P1900962-017	Air	2/20/2019	00:00	X

Chain of Custody Record & Analytical Service Request

Page 1 of 2

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Simi Valley, California 93065
Phone: +1 805 526 7161 Fax: +1 805 526 7270

Requested Turnaround Time in Business Days (Surcharges) Please Circle:
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day (Standard)

ALS Project No. P1900962

Company Name & Address (Reporting Information): Aspect Consulting

Project Name: Cedar Hills Regional Landfill

Project Number: 130088

ALS Contact: Sue Anderson

Project Manager: Kirsi Longley

P.O. # / Billing Information

Phone: 206-812-4746 Fax:

Email Address for Result Reporting: klongley@aspectconsulting.com

Sampler (Print & Sign): David Unruh

Client Sample ID	Laboratory ID #	Tube ID	Date Collected	Sampling Pump Flow (mL/min)	Sampling Start Time	Sampling End Time	Sample Volume (mL)	Analysis Method/Analytes: TO-17	Comments e.g. Actual Preservative or specific instructions
GP20D190220-	1	1109635	2/20/19	100	0934 (0933)	0944	400	X	
GP20S190220-	2	303001			0952	0956		X	
GP19D190220-	3	1101175			1009	1013		X	
GP19S190220-	4	1042815			1020	1024		X	
GP18D190220-	5	1049362			1037	1041		X	
GP60S-190220-	6	1109687			1326	1330		X	
GP62S-190220-	7	1058775			1210	1214		X	
GG8-190220-	8	1110272			1435	1439		X	
GL02-190221-	9	1109656	2/21/19	100	1501	1505	400	X	
GP63D-190221-	10	1112112			1057	1101	400	X	
GP63M-190221-	11	1110874			1140	1144		X	
GP16D-190221-	12	1060860			1209	1213		X	
GP16S-190221-	13	1049229			1229	1233		X	
GP64D-190221-	14	1112048			1307	1311		X	
GB6-190221-	15	1109627			1424	1428		X	

Report Tier Levels - please select

Tier I - (Results/Default if not specified) _____
Tier II (Results + QC) _____
Tier III (Data Validation Package) 10% Surcharge _____
Tier IV (client specified) _____

EDD required Yes / No
Type: _____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Time:
David Unruh	2/21/19	1620		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Time:
			2/22/19	0830
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Time:

Cooler / Blank Temperature 2 °C

GBZ

Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone: +1 805 526 7161 Fax: +1 805 526 7270

Requested Turnaround Time in Business Days (Surcharges) Please Circle:
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day (Standard)

ALS Project No. R1900902

Company Name & Address (Reporting Information): Aspect Consulting

Project Name: Cedar Hills Regional Landfill

Project Number: 130088

ALS Contact: Sue Anderson

Project Manager: Kirsi Longley

P.O. # / Billing Information

Phone: Fax:

Email Address for Result Reporting: klongley@aspectconsulting.com

Sampler (Print & Sign): David Unruh

Client Sample ID	Laboratory ID #	Tube ID	Date Collected	Sampling Pump Flow (mL/min)	Sampling Start Time	Sampling End Time	Sample Volume	Analysis Method/Analytes: TO-17		Comments e.g. Actual Preservative or specific instructions
G102-190221	16	1109656	2/21/19	100	1501	1505	400mL	X		
VTAP-190220	17	1064727	2/20/19	N/A	N/A	N/A	N/A	X		

Report Tier Levels - please select
Tier I - (Results/Default if not specified) _____
Tier II (Results + QC) _____
Tier III (Data Validation Package) 10% Surcharge _____
Tier IV (client specified) _____

EDD required Yes / No
Type: _____

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Time:
David Unruh	2/21/19	1620		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Time:
				2/22/19 0930

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Aspect Consulting Work order: P1900962

Project: Cedar Hills Regional Landfill / 130088

Sample(s) received on: 2/22/2019 Date opened: 2/22/2019 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☒	☐	☐
	Cooler Temperature: 2° C Blank Temperature: ° C Thermometer ID CO907034581 Gel Pa			
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☒	☐	☐
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1900962-001.01	Tube, TD					
P1900962-002.01	Tube, TD					
P1900962-003.01	Tube, TD					
P1900962-004.01	Tube, TD					
P1900962-005.01	Tube, TD					
P1900962-006.01	Tube, TD					
P1900962-007.01	Tube, TD					
P1900962-008.01	Tube, TD					
P1900962-009.01	Tube, TD					
P1900962-010.01	Tube, TD					
P1900962-011.01	Tube, TD					
P1900962-012.01	Tube, TD					
P1900962-013.01	Tube, TD					
P1900962-014.01	Tube, TD					
P1900962-015.01	Tube, TD					

Explain any discrepancies: (include lab sample ID numbers):

Received 4 unused tubes.

Sample -016 was not received.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS Environmental
Sample Acceptance Check Form

Client: Aspect Consulting Work order: P1900962
Project: Cedar Hills Regional Landfill / 130088
Sample(s) received on: 2/22/2019 Date opened: 2/22/2019 by: ADAVID

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1900962-016.01	NA					
P1900962-017.01	Tube, TD					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20D190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-001

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.1	**2.7**	2.5	**0.55**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	< 5.4	ND	14	ND	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20D190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-001

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20S190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-002

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	2.5	ND	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	6.4	**16**	14	**6.8**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP20S190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-002

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	1.6	**3.9**	2.8	**0.65**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19D190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-003

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	2.5	ND	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	8.0	**20**	13	**11**	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	8.8	**22**	14	**9.3**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	1.1	**2.7**	2.5	**0.90**	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19D190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-003

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	1.2	**3.1**	2.8	**0.52**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19S190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-004

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	2.5	ND	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	< 5.4	ND	14	ND	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP19S190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-004

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP18D190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-005

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	6.7	**17**	2.5	**3.4**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	7.5	**19**	14	**7.9**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP18D190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-005

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	1.1	**2.8**	2.8	**0.75**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	7.4	**18**	2.8	**3.1**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP60S-190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-006

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.3	**3.3**	2.5	**0.66**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	3.8	**9.4**	5.3	**5.6**	3.1	
67-64-1	Acetone	12	**31**	14	**13**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	1.2	**3.1**	2.5	**1.0**	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	2.9	**7.2**	5.3	**2.3**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP60S-190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-006

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	1.8	**4.6**	2.8	**1.3**	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	3.5	**8.8**	2.8	**1.5**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP62S-190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-007

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	4.7	**12**	2.5	**2.4**	0.51	
74-87-3	Chloromethane	1.3	**3.1**	2.5	**1.5**	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	5.2	**13**	13	**6.9**	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	< 5.4	ND	14	ND	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP62S-190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-007

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	1.6	**3.9**	2.8	**1.0**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP8-190220-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-008

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/20/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	21	**54**	2.5	**11**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	2.6	**6.4**	2.5	**0.92**	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	< 5.4	ND	14	ND	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	< 2.1	ND	5.3	ND	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP8-190220-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-008

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	2.1	**5.3**	2.8	**0.89**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **G102-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-009

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	2.5	ND	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	7.3	**18**	14	**7.7**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	2.8	**7.1**	5.3	**2.2**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **G102-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-009

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	2.4	**6.1**	2.8	**1.6**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	2.1	**5.3**	2.8	**1.1**	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	3.3	**8.2**	5.3	**1.9**	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	1.3	**3.1**	2.8	**0.72**	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	2.4	**6.1**	2.8	**1.2**	0.56	
541-73-1	1,3-Dichlorobenzene	21	**53**	2.8	**8.8**	0.46	
106-46-7	1,4-Dichlorobenzene	1.6	**4.1**	2.8	**0.68**	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63D-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-010

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.2	**3.1**	2.5	**0.63**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	5.5	**14**	14	**5.7**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	3.7	**9.3**	5.3	**2.9**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63D-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-010

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	1.2	**3.0**	2.8	**0.79**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	1.4	**3.4**	2.8	**0.70**	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	2.0	**5.0**	2.8	**0.83**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63M-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-011

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.0	**2.6**	2.5	**0.53**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	5.4	**13**	13	**7.1**	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	6.5	**16**	14	**6.8**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	< 1.0	ND	2.5	ND	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	2.4	**6.0**	5.3	**1.9**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP63M-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-011

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	1.3	**3.2**	2.8	**0.85**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	1.4	**3.6**	2.8	**0.73**	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	3.5	**8.8**	2.8	**1.5**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16D-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-012

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.0	**2.6**	2.5	**0.52**	0.51	
74-87-3	Chloromethane	1.1	**2.6**	2.5	**1.3**	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	< 5.4	ND	14	ND	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	1.1	**2.9**	2.5	**0.97**	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	2.2	**5.6**	5.3	**1.8**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16D-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-012

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	4.0	**9.9**	2.8	**2.6**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	4.0	**9.9**	5.3	**2.3**	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	1.5	**3.8**	2.8	**0.86**	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16S-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-013

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/4/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	2.5	ND	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	1.8	**4.6**	2.5	**1.8**	0.95	
64-17-5	Ethanol	34	**84**	13	**45**	6.8	
75-05-8	Acetonitrile	2.4	**5.9**	5.3	**3.5**	3.1	
67-64-1	Acetone	14	**35**	14	**15**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	1.8	**4.6**	2.5	**1.6**	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	2.9	**7.2**	5.3	**2.2**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP16S-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-013

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	1.3	**3.2**	2.8	**0.88**	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	5.7	**14**	2.8	**2.4**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP64D-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-014

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/5/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	ND	2.5	ND	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	< 2.1	ND	5.3	ND	3.1	
67-64-1	Acetone	7.7	**19**	14	**8.1**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	< 1.1	ND	2.8	ND	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	1.3	**3.3**	2.5	**1.1**	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	< 1.1	ND	2.8	ND	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	2.2	**5.6**	5.3	**1.8**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GP64D-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-014

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/5/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	ND	2.8	ND	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	< 1.1	ND	2.8	ND	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	< 2.1	ND	5.3	ND	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	< 1.1	ND	2.8	ND	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	5.7	**14**	2.8	**2.4**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GB6-190221-**
Client Project ID: **Cedar Hills Regional Landfill / 130088**

ALS Project ID: P1900962
ALS Sample ID: P1900962-015

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18
Analyst: Chris Parnell
Sampling Media: TD Carbo 300 Sorbent Tube
Test Notes:

Date Collected: 2/21/19
Date Received: 2/22/19
Date Analyzed: 3/5/19
Volume(s) Analyzed: 0.400 Liter(s)

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	1.5	**3.8**	2.5	**0.77**	0.51	
74-87-3	Chloromethane	< 1.0	ND	2.5	ND	1.2	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	ND	2.5	ND	0.36	
75-01-4	Vinyl Chloride	< 1.1	ND	2.8	ND	1.1	
106-99-0	1,3-Butadiene	< 1.0	ND	2.5	ND	1.1	
75-00-3	Chloroethane	< 1.0	ND	2.5	ND	0.95	
64-17-5	Ethanol	< 5.1	ND	13	ND	6.8	
75-05-8	Acetonitrile	2.2	**5.5**	5.3	**3.3**	3.1	
67-64-1	Acetone	9.5	**24**	14	**10**	5.7	
75-69-4	Trichlorofluoromethane	< 1.1	ND	2.8	ND	0.49	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	ND	5.3	ND	2.1	
75-35-4	1,1-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-09-2	Methylene Chloride	1.3	**3.3**	2.8	**0.94**	0.79	
76-13-1	Trichlorotrifluoroethane	< 1.1	ND	2.8	ND	0.36	
75-15-0	Carbon Disulfide	< 5.4	ND	14	ND	4.3	
156-60-5	trans-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
75-34-3	1,1-Dichloroethane	< 1.0	ND	2.5	ND	0.62	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	ND	2.8	ND	0.76	
78-93-3	2-Butanone (MEK)	1.7	**4.2**	2.5	**1.4**	0.85	
156-59-2	cis-1,2-Dichloroethene	< 1.1	ND	2.8	ND	0.69	
110-54-3	n-Hexane	< 1.1	ND	2.8	ND	0.78	
67-66-3	Chloroform	< 1.1	ND	2.8	ND	0.56	
109-99-9	Tetrahydrofuran (THF)	1.4	**3.6**	2.8	**1.2**	0.93	
107-06-2	1,2-Dichloroethane	< 1.1	ND	2.8	ND	0.68	
71-55-6	1,1,1-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
71-43-2	Benzene	4.0	**10**	5.3	**3.2**	1.6	
56-23-5	Carbon Tetrachloride	< 1.0	ND	2.5	ND	0.40	
110-82-7	Cyclohexane	< 2.1	ND	5.3	ND	1.5	
78-87-5	1,2-Dichloropropane	< 1.1	ND	2.8	ND	0.60	
75-27-4	Bromodichloromethane	< 1.1	ND	2.8	ND	0.41	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **GB6-190221-** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-015

Test Code: EPA TO-17 Date Collected: 2/21/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/5/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: 0.400 Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	ND	2.8	ND	0.51	
123-91-1	1,4-Dioxane	< 1.1	ND	2.8	ND	0.76	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	6.9	**17**	2.8	**3.7**	0.59	
142-82-5	n-Heptane	< 1.1	ND	2.8	ND	0.67	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
108-10-1	4-Methyl-2-pentanone	< 2.1	ND	5.3	ND	1.3	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	ND	2.8	ND	0.61	
79-00-5	1,1,2-Trichloroethane	< 1.1	ND	2.8	ND	0.50	
108-88-3	Toluene	4.9	**12**	2.8	**3.2**	0.73	
591-78-6	2-Hexanone	< 1.1	ND	2.8	ND	0.67	
124-48-1	Dibromochloromethane	< 1.1	ND	2.8	ND	0.32	
106-93-4	1,2-Dibromoethane	< 1.1	ND	2.8	ND	0.36	
111-65-9	n-Octane	< 1.1	ND	2.8	ND	0.59	
127-18-4	Tetrachloroethene	< 1.1	ND	2.8	ND	0.41	
108-90-7	Chlorobenzene	< 1.1	ND	2.8	ND	0.60	
100-41-4	Ethylbenzene	< 1.0	ND	2.5	ND	0.58	
179601-23-1	m,p-Xylenes	3.4	**8.5**	5.3	**2.0**	1.2	
75-25-2	Bromoform	< 1.1	ND	2.8	ND	0.27	
100-42-5	Styrene	< 1.1	ND	2.8	ND	0.65	
95-47-6	o-Xylene	1.4	**3.6**	2.8	**0.83**	0.63	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	ND	2.8	ND	0.40	
98-82-8	Cumene	< 1.1	ND	2.8	ND	0.56	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	ND	2.8	ND	0.56	
541-73-1	1,3-Dichlorobenzene	6.0	**15**	2.8	**2.5**	0.46	
106-46-7	1,4-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
95-50-1	1,2-Dichlorobenzene	< 1.1	ND	2.8	ND	0.46	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	ND	2.5	ND	0.26	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	ND	2.8	ND	0.37	
87-68-3	Hexachlorobutadiene	< 1.1	ND	2.8	ND	0.26	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **UTRP-190220** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-017

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	NA	NA	NA	NA	
74-87-3	Chloromethane	< 1.0	NA	NA	NA	NA	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	NA	NA	NA	NA	
75-01-4	Vinyl Chloride	< 1.1	NA	NA	NA	NA	
106-99-0	1,3-Butadiene	< 1.0	NA	NA	NA	NA	
75-00-3	Chloroethane	< 1.0	NA	NA	NA	NA	
64-17-5	Ethanol	< 5.1	NA	NA	NA	NA	
75-05-8	Acetonitrile	2.3	NA	NA	NA	NA	
67-64-1	Acetone	5.5	NA	NA	NA	NA	
75-69-4	Trichlorofluoromethane	< 1.1	NA	NA	NA	NA	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	NA	NA	NA	NA	
75-35-4	1,1-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-09-2	Methylene Chloride	< 1.1	NA	NA	NA	NA	
76-13-1	Trichlorotrifluoroethane	< 1.1	NA	NA	NA	NA	
75-15-0	Carbon Disulfide	< 5.4	NA	NA	NA	NA	
156-60-5	trans-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-34-3	1,1-Dichloroethane	< 1.0	NA	NA	NA	NA	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	NA	NA	NA	NA	
78-93-3	2-Butanone (MEK)	< 1.0	NA	NA	NA	NA	
156-59-2	cis-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
110-54-3	n-Hexane	< 1.1	NA	NA	NA	NA	
67-66-3	Chloroform	< 1.1	NA	NA	NA	NA	
109-99-9	Tetrahydrofuran (THF)	< 1.1	NA	NA	NA	NA	
107-06-2	1,2-Dichloroethane	< 1.1	NA	NA	NA	NA	
71-55-6	1,1,1-Trichloroethane	< 1.1	NA	NA	NA	NA	
71-43-2	Benzene	< 2.1	NA	NA	NA	NA	
56-23-5	Carbon Tetrachloride	< 1.0	NA	NA	NA	NA	
110-82-7	Cyclohexane	< 2.1	NA	NA	NA	NA	
78-87-5	1,2-Dichloropropane	< 1.1	NA	NA	NA	NA	
75-27-4	Bromodichloromethane	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **UTRP-190220** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P1900962-017

Test Code: EPA TO-17 Date Collected: 2/20/19
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: 2/22/19
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	NA	NA	NA	NA	
123-91-1	1,4-Dioxane	< 1.1	NA	NA	NA	NA	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	NA	NA	NA	NA	
142-82-5	n-Heptane	< 1.1	NA	NA	NA	NA	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
108-10-1	4-Methyl-2-pentanone	< 2.1	NA	NA	NA	NA	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
79-00-5	1,1,2-Trichloroethane	< 1.1	NA	NA	NA	NA	
108-88-3	Toluene	< 1.1	NA	NA	NA	NA	
591-78-6	2-Hexanone	< 1.1	NA	NA	NA	NA	
124-48-1	Dibromochloromethane	< 1.1	NA	NA	NA	NA	
106-93-4	1,2-Dibromoethane	< 1.1	NA	NA	NA	NA	
111-65-9	n-Octane	< 1.1	NA	NA	NA	NA	
127-18-4	Tetrachloroethene	< 1.1	NA	NA	NA	NA	
108-90-7	Chlorobenzene	< 1.1	NA	NA	NA	NA	
100-41-4	Ethylbenzene	< 1.0	NA	NA	NA	NA	
179601-23-1	m,p-Xylenes	< 2.1	NA	NA	NA	NA	
75-25-2	Bromoform	< 1.1	NA	NA	NA	NA	
100-42-5	Styrene	< 1.1	NA	NA	NA	NA	
95-47-6	o-Xylene	< 1.1	NA	NA	NA	NA	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	NA	NA	NA	NA	
98-82-8	Cumene	< 1.1	NA	NA	NA	NA	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
541-73-1	1,3-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
106-46-7	1,4-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
95-50-1	1,2-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	NA	NA	NA	NA	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	NA	NA	NA	NA	
87-68-3	Hexachlorobutadiene	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**

Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Project ID: P1900962

Naphthalene

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date(s) Collected: 2/20 - 2/21/19
Analyst: Chris Parnell Date Received: 2/22/19
Sampling Media: TD Carbo 300 Sorbent Tube(s) Date Analyzed: 3/4 - 3/5/19
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume Liter(s)	Result ng/Sample	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
GP20D190220-	P1900962-001	0.400	**0.44**	**1.1**	2.5	0.93	**0.21**	0.48	0.18	**J**
GP20S190220-	P1900962-002	0.400	**0.43**	**1.1**	2.5	0.93	**0.20**	0.48	0.18	**J**
GP19D190220-	P1900962-003	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP19S190220-	P1900962-004	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP18D190220-	P1900962-005	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP60S-190220-	P1900962-006	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP62S-190220-	P1900962-007	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP8-190220-	P1900962-008	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
G102-190221-	P1900962-009	0.400	**0.50**	**1.3**	2.5	0.93	**0.24**	0.48	0.18	**J**
GP63D-190221-	P1900962-010	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP63M-190221-	P1900962-011	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP16D-190221-	P1900962-012	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP16S-190221-	P1900962-013	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GP64D-190221-	P1900962-014	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
GB6-190221-	P1900962-015	0.400	< 0.37	ND	2.5	0.93	ND	0.48	0.18	
UTRP-190220	P1900962-017	NA	**1.1**	NA	NA	NA	NA	NA	NA	
Method Blank	P190304-MB	NA	< 0.37	NA	NA	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Aspect Consulting**
Client Sample ID: **Method Blank** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190304-MB

Test Code: EPA TO-17 Date Collected: NA
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA
Analyst: Chris Parnell Date Analyzed: 3/4/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	< 1.0	NA	NA	NA	NA	
74-87-3	Chloromethane	< 1.0	NA	NA	NA	NA	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	< 1.0	NA	NA	NA	NA	
75-01-4	Vinyl Chloride	< 1.1	NA	NA	NA	NA	
106-99-0	1,3-Butadiene	< 1.0	NA	NA	NA	NA	
75-00-3	Chloroethane	< 1.0	NA	NA	NA	NA	
64-17-5	Ethanol	< 5.1	NA	NA	NA	NA	
75-05-8	Acetonitrile	< 2.1	NA	NA	NA	NA	
67-64-1	Acetone	< 5.4	NA	NA	NA	NA	
75-69-4	Trichlorofluoromethane	< 1.1	NA	NA	NA	NA	
67-63-0	2-Propanol (Isopropyl Alcohol)	< 2.1	NA	NA	NA	NA	
75-35-4	1,1-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-09-2	Methylene Chloride	< 1.1	NA	NA	NA	NA	
76-13-1	Trichlorotrifluoroethane	< 1.1	NA	NA	NA	NA	
75-15-0	Carbon Disulfide	< 5.4	NA	NA	NA	NA	
156-60-5	trans-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
75-34-3	1,1-Dichloroethane	< 1.0	NA	NA	NA	NA	
1634-04-4	Methyl tert-Butyl Ether	< 1.1	NA	NA	NA	NA	
78-93-3	2-Butanone (MEK)	< 1.0	NA	NA	NA	NA	
156-59-2	cis-1,2-Dichloroethene	< 1.1	NA	NA	NA	NA	
110-54-3	n-Hexane	< 1.1	NA	NA	NA	NA	
67-66-3	Chloroform	< 1.1	NA	NA	NA	NA	
109-99-9	Tetrahydrofuran (THF)	< 1.1	NA	NA	NA	NA	
107-06-2	1,2-Dichloroethane	< 1.1	NA	NA	NA	NA	
71-55-6	1,1,1-Trichloroethane	< 1.1	NA	NA	NA	NA	
71-43-2	Benzene	< 2.1	NA	NA	NA	NA	
56-23-5	Carbon Tetrachloride	< 1.0	NA	NA	NA	NA	
110-82-7	Cyclohexane	< 2.1	NA	NA	NA	NA	
78-87-5	1,2-Dichloropropane	< 1.1	NA	NA	NA	NA	
75-27-4	Bromodichloromethane	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Aspect Consulting**

Client Sample ID: **Method Blank** ALS Project ID: P1900962

Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190304-MB

Test Code: EPA TO-17 Date Collected: NA

Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA

Analyst: Chris Parnell Date Analyzed: 3/4/19

Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)

Test Notes:

CAS #	Compound	Result ng/Tube	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
79-01-6	Trichloroethene	< 1.1	NA	NA	NA	NA	
123-91-1	1,4-Dioxane	< 1.1	NA	NA	NA	NA	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	< 1.1	NA	NA	NA	NA	
142-82-5	n-Heptane	< 1.1	NA	NA	NA	NA	
10061-01-5	cis-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
108-10-1	4-Methyl-2-pentanone	< 2.1	NA	NA	NA	NA	
10061-02-6	trans-1,3-Dichloropropene	< 1.1	NA	NA	NA	NA	
79-00-5	1,1,2-Trichloroethane	< 1.1	NA	NA	NA	NA	
108-88-3	Toluene	< 1.1	NA	NA	NA	NA	
591-78-6	2-Hexanone	< 1.1	NA	NA	NA	NA	
124-48-1	Dibromochloromethane	< 1.1	NA	NA	NA	NA	
106-93-4	1,2-Dibromoethane	< 1.1	NA	NA	NA	NA	
111-65-9	n-Octane	< 1.1	NA	NA	NA	NA	
127-18-4	Tetrachloroethene	< 1.1	NA	NA	NA	NA	
108-90-7	Chlorobenzene	< 1.1	NA	NA	NA	NA	
100-41-4	Ethylbenzene	< 1.0	NA	NA	NA	NA	
179601-23-1	m,p-Xylenes	< 2.1	NA	NA	NA	NA	
75-25-2	Bromoform	< 1.1	NA	NA	NA	NA	
100-42-5	Styrene	< 1.1	NA	NA	NA	NA	
95-47-6	o-Xylene	< 1.1	NA	NA	NA	NA	
79-34-5	1,1,2,2-Tetrachloroethane	< 1.1	NA	NA	NA	NA	
98-82-8	Cumene	< 1.1	NA	NA	NA	NA	
108-67-8	1,3,5-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
95-63-6	1,2,4-Trimethylbenzene	< 1.1	NA	NA	NA	NA	
541-73-1	1,3-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
106-46-7	1,4-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
95-50-1	1,2-Dichlorobenzene	< 1.1	NA	NA	NA	NA	
96-12-8	1,2-Dibromo-3-chloropropane	< 1.0	NA	NA	NA	NA	
120-82-1	1,2,4-Trichlorobenzene	< 1.1	NA	NA	NA	NA	
91-20-3	Naphthalene	< 1.0	NA	NA	NA	NA	
87-68-3	Hexachlorobutadiene	< 1.1	NA	NA	NA	NA	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Aspect Consulting**
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Project ID: P1900962

Test Code: EPA TO-17
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date(s) Collected: 2/20 - 2/21/19
Analyst: Chris Parnell Date(s) Received: 2/22/19
Sampling Media: TD Carbo 300 Sorbent Tube(s) Date(s) Analyzed: 3/4 - 3/5/19
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 % Recovered	1,2-Dichloroethane-d4 Acceptance Limits	Toluene-d8 % Recovered	Toluene-d8 Acceptance Limits	Bromofluorobenzene % Recovered	Bromofluorobenzene Acceptance Limits	Data Qualifier
Method Blank	P190304-MB	**99**	70-140	**102**	70-140	**105**	70-140	
Lab Control Sample	P190304-LCS	**94**	70-140	**96**	70-140	**115**	70-140	
Duplicate Lab Control Sample	P190304-DLCS	**95**	70-140	**98**	70-140	**113**	70-140	
GP20D190220-	P1900962-001	**94**	70-140	**98**	70-140	**115**	70-140	
GP20S190220-	P1900962-002	**108**	70-140	**98**	70-140	**116**	70-140	
GP19D190220-	P1900962-003	**96**	70-140	**101**	70-140	**123**	70-140	
GP19S190220-	P1900962-004	**96**	70-140	**100**	70-140	**104**	70-140	
GP18D190220-	P1900962-005	**94**	70-140	**100**	70-140	**111**	70-140	
GP60S-190220-	P1900962-006	**94**	70-140	**97**	70-140	**99**	70-140	
GP62S-190220-	P1900962-007	**96**	70-140	**100**	70-140	**113**	70-140	
GP8-190220-	P1900962-008	**93**	70-140	**100**	70-140	**95**	70-140	
G102-190221-	P1900962-009	**91**	70-140	**75**	70-140	**109**	70-140	
GP63D-190221-	P1900962-010	**95**	70-140	**98**	70-140	**101**	70-140	
GP63M-190221-	P1900962-011	**98**	70-140	**98**	70-140	**94**	70-140	
GP16D-190221-	P1900962-012	**97**	70-140	**101**	70-140	**100**	70-140	
GP16S-190221-	P1900962-013	**104**	70-140	**98**	70-140	**91**	70-140	
GP64D-190221-	P1900962-014	**99**	70-140	**99**	70-140	**96**	70-140	
GB6-190221-	P1900962-015	**95**	70-140	**100**	70-140	**94**	70-140	
UTRP-190220	P1900962-017	**104**	70-140	**97**	70-140	**94**	70-140	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Aspect Consulting**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190304-DLCS

Test Code: EPA TO-17 Date Collected: NA
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA
Analyst: Chris Parnell Date Analyzed: 3/04/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ng	Result LCS ng	Result DLCS ng	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	52.6	52.6	53.0	**100**	**101**	72-112	1	25	
74-87-3	Chloromethane	52.8	49.5	49.2	**94**	**93**	69-119	1	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	52.8	53.2	53.8	**101**	**102**	77-109	1	25	
75-01-4	Vinyl Chloride	53.5	52.8	54.1	**99**	**101**	79-116	2	25	
106-99-0	1,3-Butadiene	52.6	50.9	50.4	**97**	**96**	74-121	1	25	
75-00-3	Chloroethane	53.5	43.8	45.1	**82**	**84**	74-119	2	25	
64-17-5	Ethanol	256	263	265	**103**	**104**	75-134	1	25	
75-05-8	Acetonitrile	51.5	52.0	52.7	**101**	**102**	72-125	1	25	
67-64-1	Acetone	265	226	217	**85**	**82**	70-111	4	25	
75-69-4	Trichlorofluoromethane	52.8	53.5	53.9	**101**	**102**	69-116	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	103	106	104	**103**	**101**	66-133	2	25	
75-35-4	1,1-Dichloroethene	54.5	52.2	53.6	**96**	**98**	75-113	2	25	
75-09-2	Methylene Chloride	54.2	51.8	51.7	**96**	**95**	67-114	1	25	
76-13-1	Trichlorotrifluoroethane	53.9	53.5	54.9	**99**	**102**	75-113	3	25	
75-15-0	Carbon Disulfide	54.4	46.8	47.4	**86**	**87**	67-108	1	25	
156-60-5	trans-1,2-Dichloroethene	53.5	53.3	54.0	**100**	**101**	77-117	1	25	
75-34-3	1,1-Dichloroethane	53.9	52.4	53.4	**97**	**99**	77-114	2	25	
1634-04-4	Methyl tert-Butyl Ether	53.6	53.8	54.8	**100**	**102**	75-122	2	25	
78-93-3	2-Butanone (MEK)	51.9	51.3	50.5	**99**	**97**	74-139	2	25	
156-59-2	cis-1,2-Dichloroethene	52.7	51.6	52.5	**98**	**100**	77-117	2	25	
110-54-3	n-Hexane	53.9	51.3	52.5	**95**	**97**	76-115	2	25	
67-66-3	Chloroform	54.2	54.1	54.9	**100**	**101**	69-116	1	25	
109-99-9	Tetrahydrofuran (THF)	54.0	54.2	54.4	**100**	**101**	73-126	1	25	
107-06-2	1,2-Dichloroethane	53.7	53.2	54.5	**99**	**101**	61-115	2	25	
71-55-6	1,1,1-Trichloroethane	53.8	54.9	55.5	**102**	**103**	71-111	1	25	
71-43-2	Benzene	52.8	46.7	47.0	**88**	**89**	68-103	1	25	
56-23-5	Carbon Tetrachloride	52.9	55.0	56.1	**104**	**106**	70-116	2	25	
110-82-7	Cyclohexane	104	105	106	**101**	**102**	78-109	1	25	
78-87-5	1,2-Dichloropropane	54.0	55.5	56.3	**103**	**104**	80-111	1	25	
75-27-4	Bromodichloromethane	53.7	56.9	58.5	**106**	**109**	68-122	3	25	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Aspect Consulting**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1900962
Client Project ID: **Cedar Hills Regional Landfill / 130088** ALS Sample ID: P190304-DLCS

Test Code: EPA TO-17 Date Collected: NA
Instrument ID: Markes ATD/Agilent 5975Cinert/7890A/MS18 Date Received: NA
Analyst: Chris Parnell Date Analyzed: 3/04/19
Sampling Media: TD Carbo 300 Sorbent Tube Volume(s) Analyzed: NA Liter(s)
Test Notes:

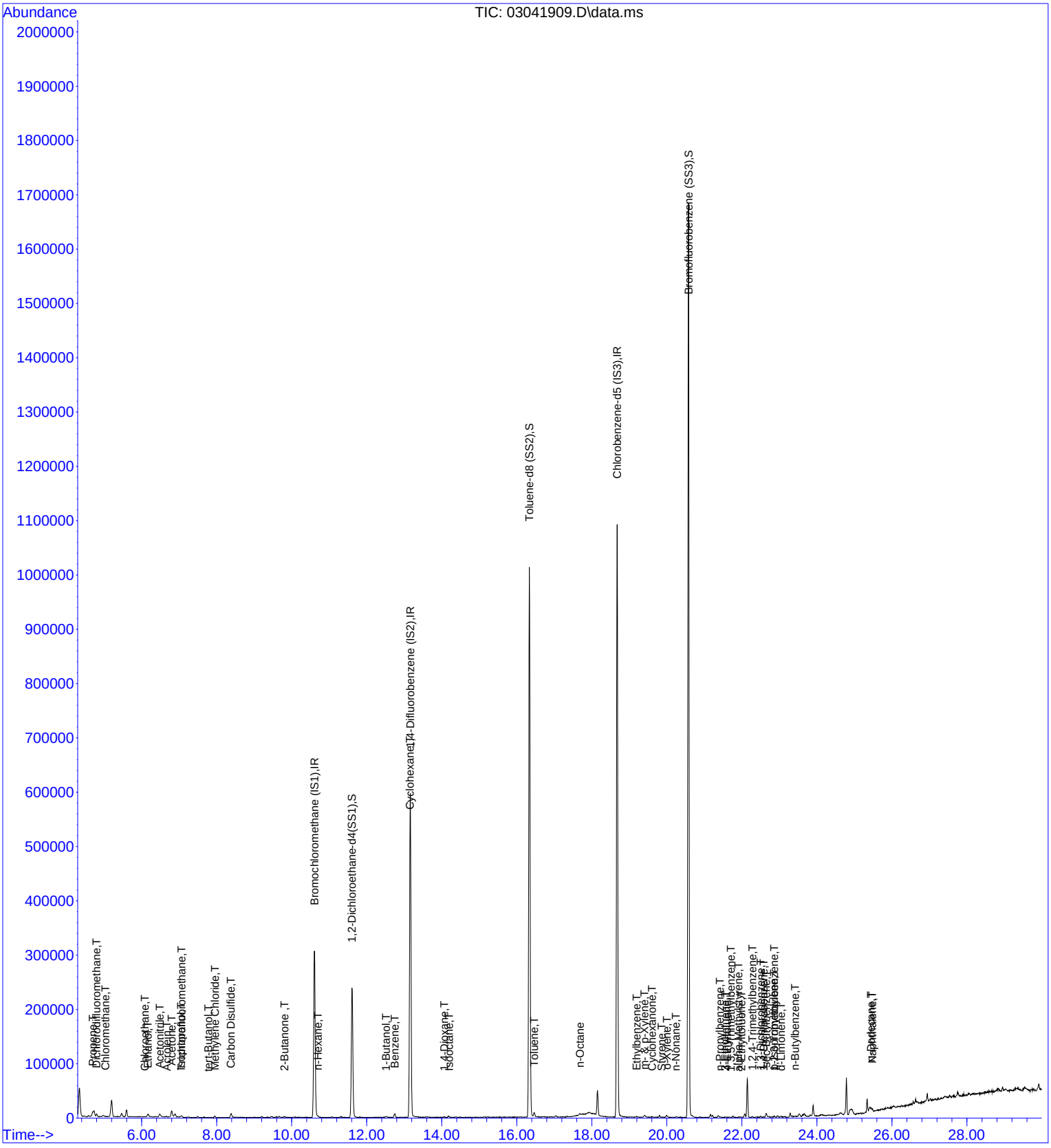
CAS #	Compound	Spike Amount LCS / DLCS ng	Result LCS ng	Result DLCS ng	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
79-01-6	Trichloroethene	53.4	56.4	56.4	**106**	**106**	82-111	0	25	
123-91-1	1,4-Dioxane	53.5	55.6	55.7	**104**	**104**	79-113	0	25	
540-84-1	2,2,4-Trimethylpentane (Isooctane)	53.3	53.5	54.3	**100**	**102**	76-114	2	25	
142-82-5	n-Heptane	53.8	55.1	56.7	**102**	**105**	80-113	3	25	
10061-01-5	cis-1,3-Dichloropropene	53.6	56.8	57.9	**106**	**108**	82-120	2	25	
108-10-1	4-Methyl-2-pentanone	52.3	56.5	57.1	**108**	**109**	84-124	0.9	25	
10061-02-6	trans-1,3-Dichloropropene	53.2	56.4	58.2	**106**	**109**	79-127	3	25	
79-00-5	1,1,2-Trichloroethane	53.7	57.2	57.9	**107**	**108**	82-113	0.9	25	
108-88-3	Toluene	53.0	52.6	53.0	**99**	**100**	78-110	1	25	
591-78-6	2-Hexanone	53.6	56.9	57.3	**106**	**107**	79-126	0.9	25	
124-48-1	Dibromochloromethane	53.2	59.8	59.8	**112**	**112**	81-113	0	25	
106-93-4	1,2-Dibromoethane	54.1	57.4	58.1	**106**	**107**	82-118	0.9	25	
111-65-9	n-Octane	54.3	54.4	55.3	**100**	**102**	74-116	2	25	
127-18-4	Tetrachloroethene	53.2	55.0	53.7	**103**	**101**	73-111	2	25	
108-90-7	Chlorobenzene	53.7	54.5	54.0	**101**	**101**	76-111	0	25	
100-41-4	Ethylbenzene	53.1	53.3	53.4	**100**	**101**	74-113	1	25	
179601-23-1	m,p-Xylenes	107	110	110	**103**	**103**	74-113	0	25	
75-25-2	Bromoform	53.4	58.9	58.7	**110**	**110**	73-117	0	25	
100-42-5	Styrene	53.0	58.1	58.1	**110**	**110**	78-121	0	25	
95-47-6	o-Xylene	53.5	55.7	55.8	**104**	**104**	73-114	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	53.6	57.4	56.3	**107**	**105**	72-116	2	25	
98-82-8	Cumene	53.6	55.8	56.1	**104**	**105**	75-113	1	25	
108-67-8	1,3,5-Trimethylbenzene	53.5	57.5	57.3	**107**	**107**	73-115	0	25	
95-63-6	1,2,4-Trimethylbenzene	53.8	58.2	58.3	**108**	**108**	73-117	0	25	
541-73-1	1,3-Dichlorobenzene	54.0	59.6	59.0	**110**	**109**	76-118	0.9	25	
106-46-7	1,4-Dichlorobenzene	54.0	59.1	59.3	**109**	**110**	74-113	0.9	25	
95-50-1	1,2-Dichlorobenzene	53.9	58.9	59.3	**109**	**110**	74-115	0.9	25	
96-12-8	1,2-Dibromo-3-chloropropane	52.3	61.2	59.0	**117**	**113**	78-131	3	25	
120-82-1	1,2,4-Trichlorobenzene	53.6	64.8	64.3	**121**	**120**	76-133	0.8	25	
91-20-3	Naphthalene	50.8	58.4	58.5	**115**	**115**	77-131	0	25	
87-68-3	Hexachlorobutadiene	52.3	61.2	60.5	**117**	**116**	74-115	0.9	25	**L**

L = Laboratory control sample recovery outside the specified limits, results may be biased high.

Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041909.D Vial: 42
Acq On : 4 Mar 2019 16:01 Operator: CP
Sample : P1900962-001 Inst : GCMS18
Misc : C300/TO17/TO17 1109635

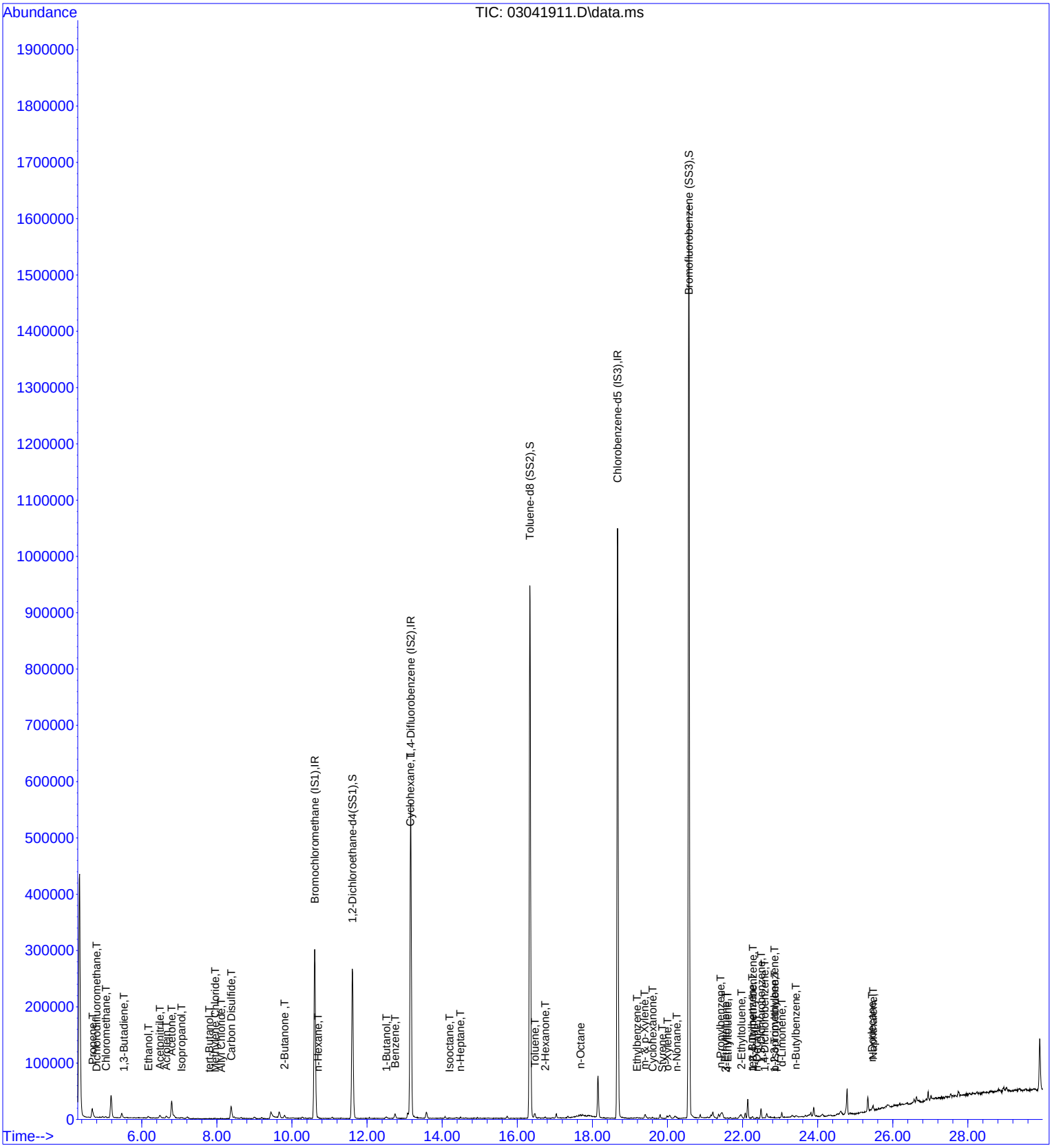
Quant Time: Mar 05 15:39:18 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041911.D Vial: 44
Acq On : 4 Mar 2019 17:17 Operator: CP
Sample : P1900962-002 Inst : GCMS18
Misc : C300/TO17/TO17 303001

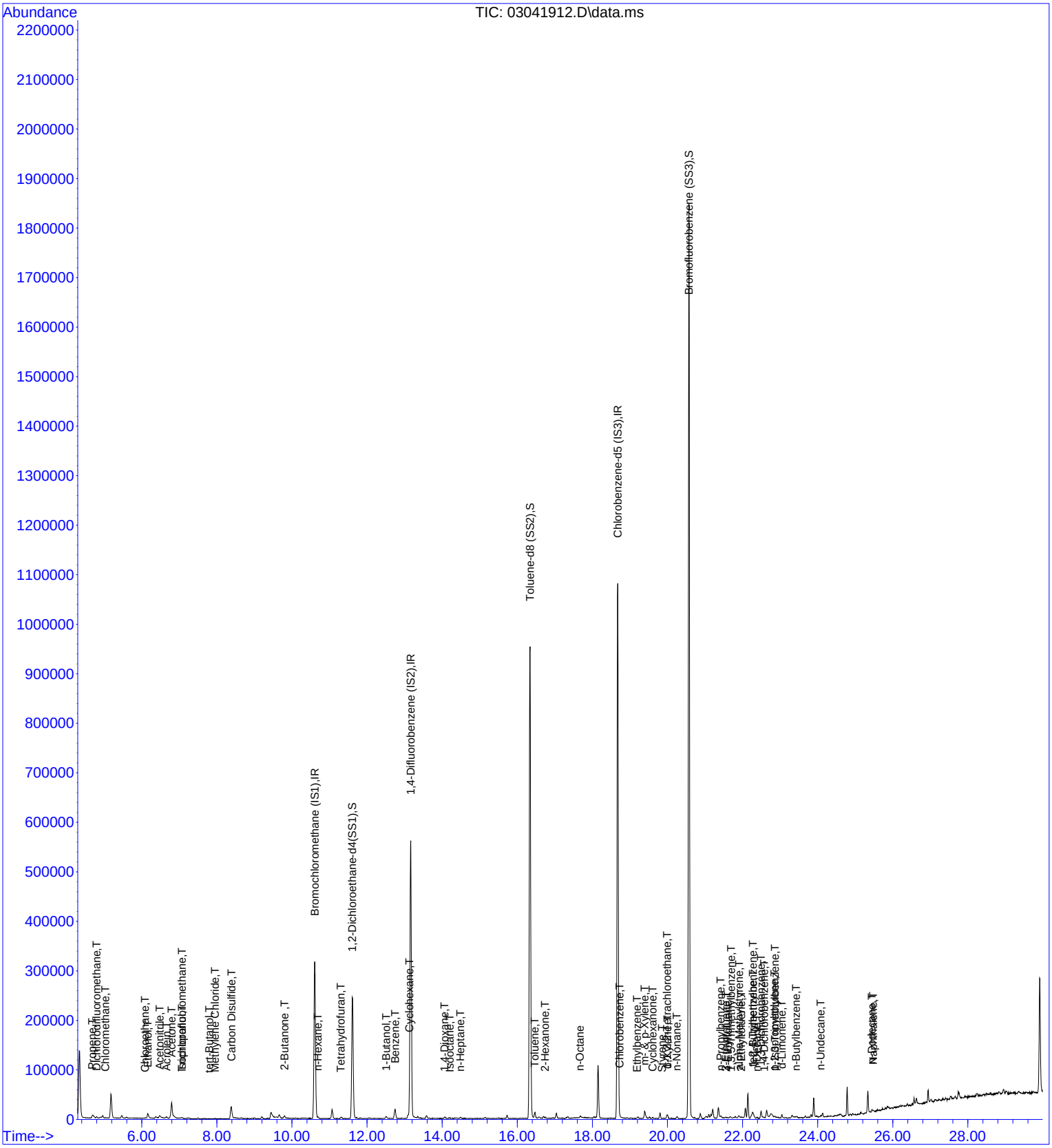
Quant Time: Mar 05 15:39:21 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041912.D Vial: 45
Acq On : 4 Mar 2019 17:56 Operator: CP
Sample : P1900962-003 Inst : GCMS18
Misc : C300/TO17/TO17 1101175

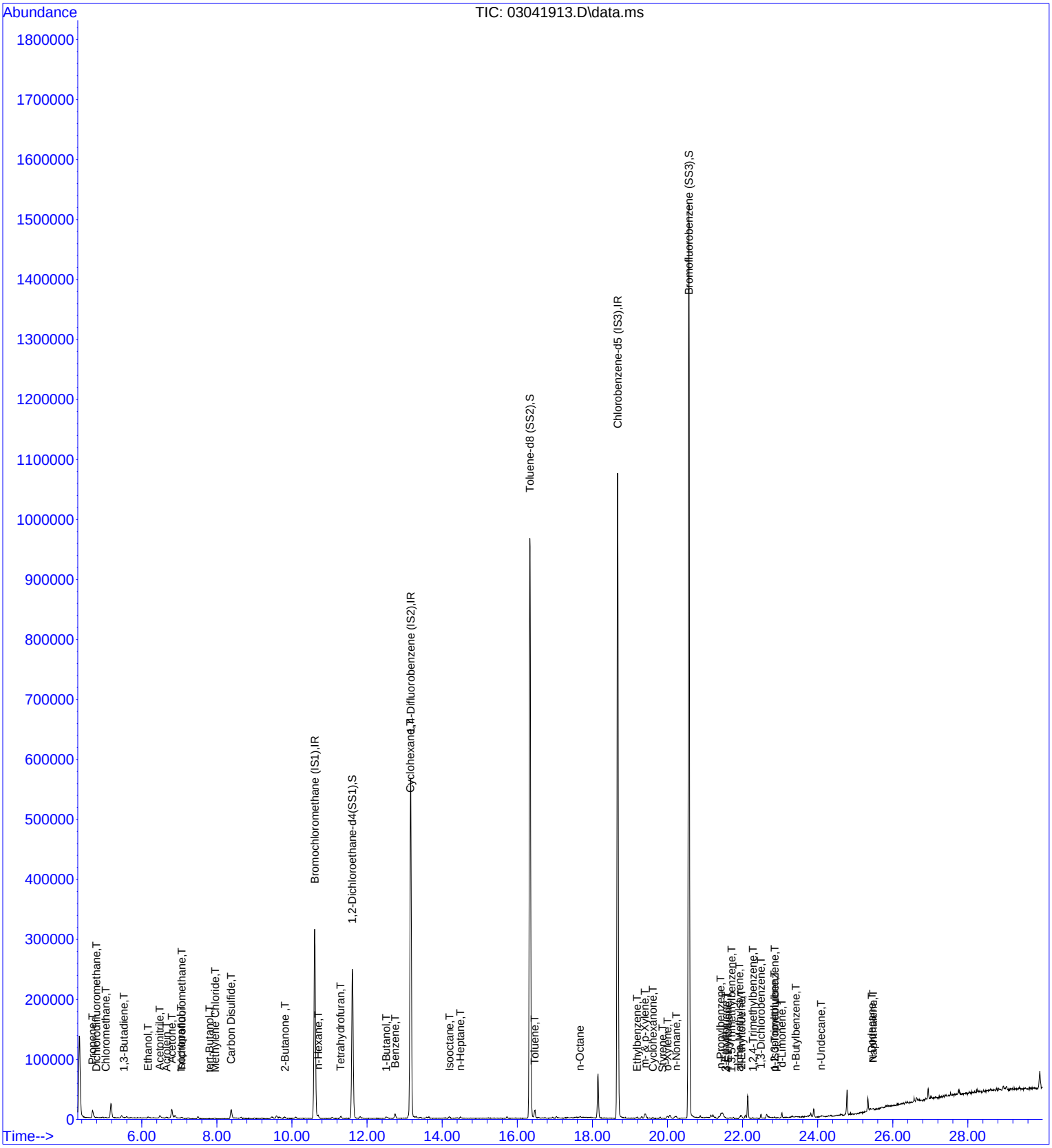
Quant Time: Mar 05 15:39:23 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041913.D Vial: 46
Acq On : 4 Mar 2019 18:35 Operator: CP
Sample : P1900962-004 Inst : GCMS18
Misc : C300/TO17/TO17 1042815

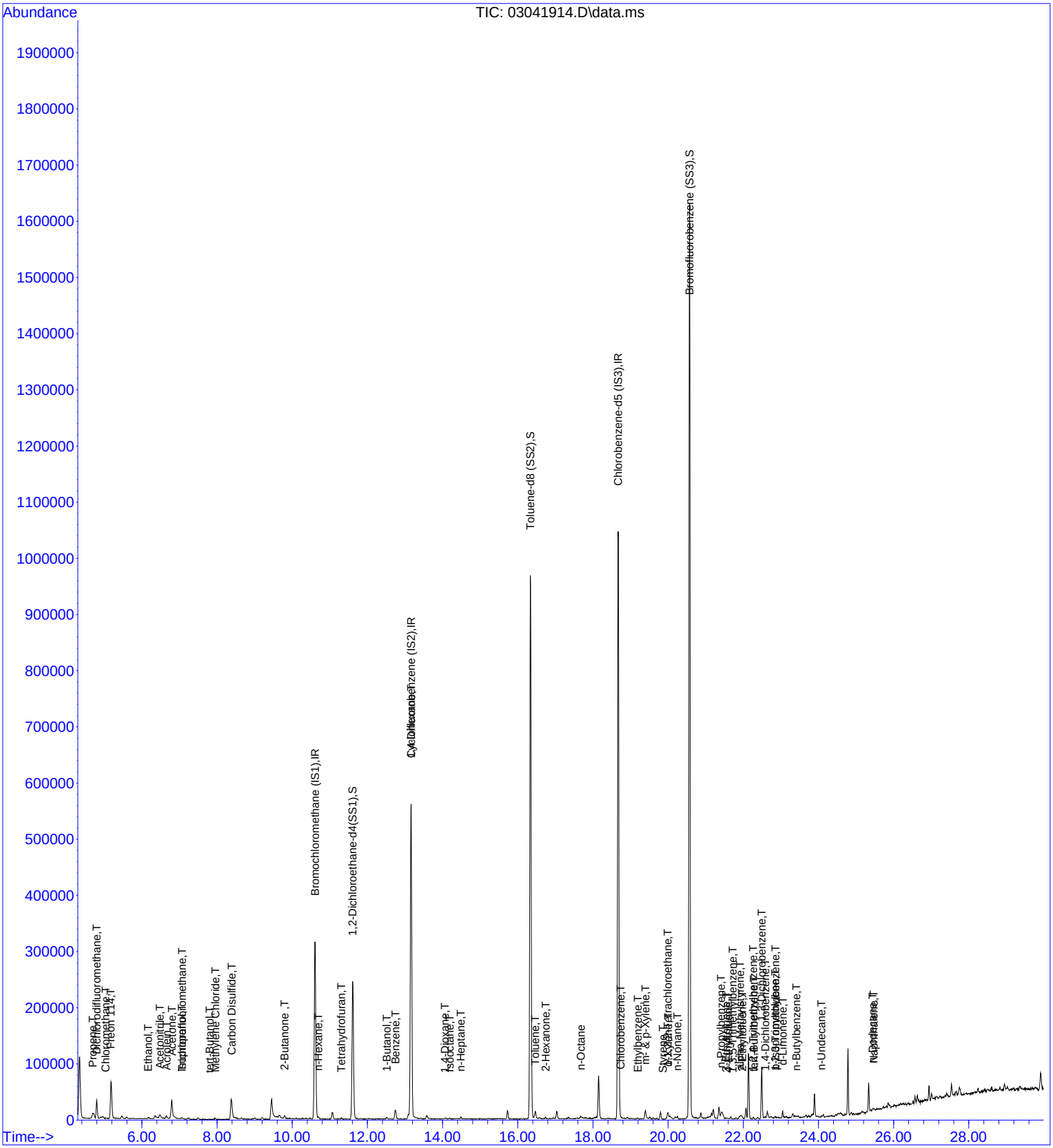
Quant Time: Mar 05 15:39:26 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041914.D Vial: 47
Acq On : 4 Mar 2019 19:13 Operator: CP
Sample : P1900962-005 Inst : GCMS18
Misc : C300/TO17/TO17 1049362

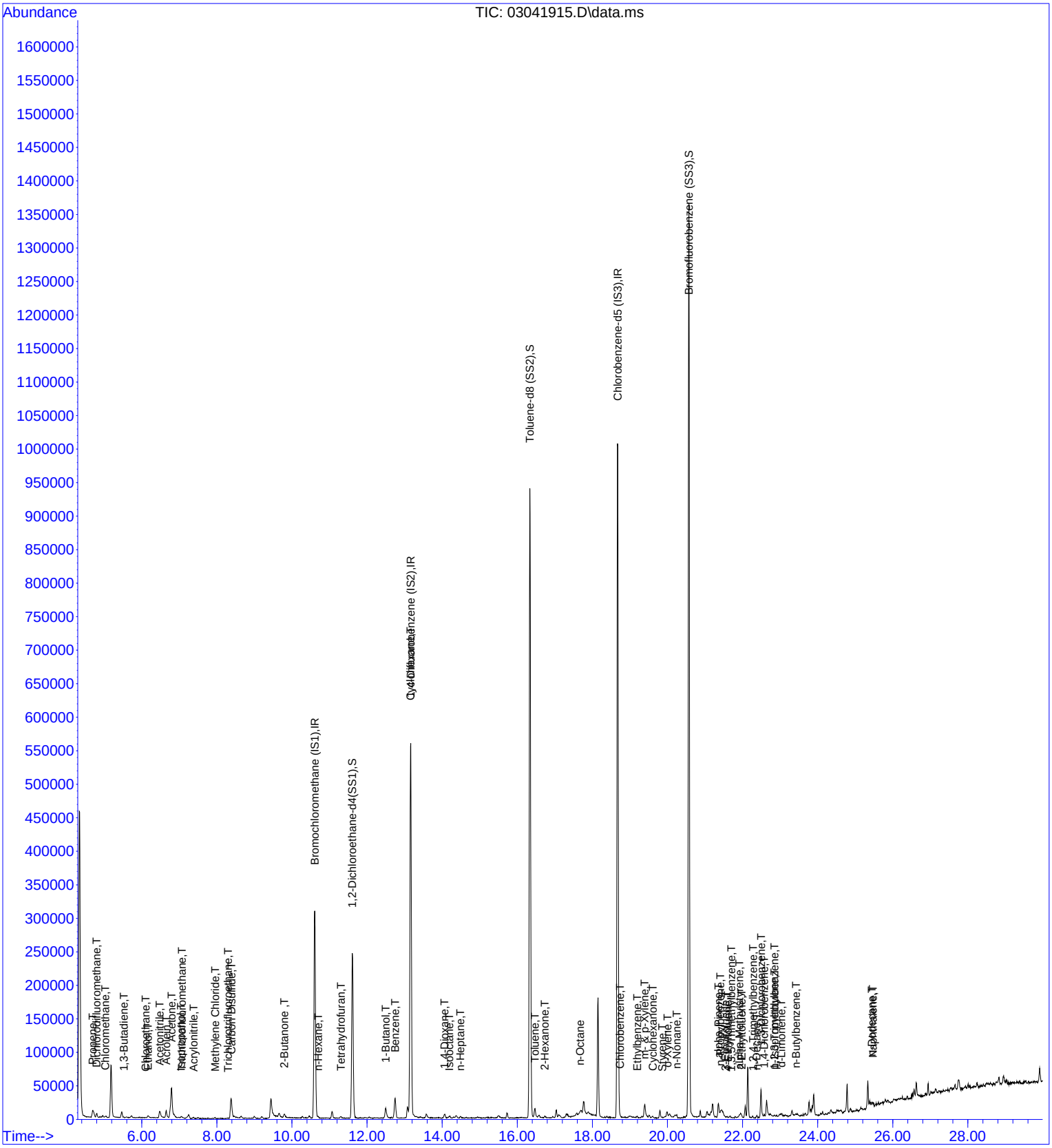
Quant Time: Mar 05 15:39:28 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041915.D Vial: 48
Acq On : 4 Mar 2019 19:51 Operator: CP
Sample : P1900962-006 Inst : GCMS18
Misc : C300/TO17/TO17 1109687

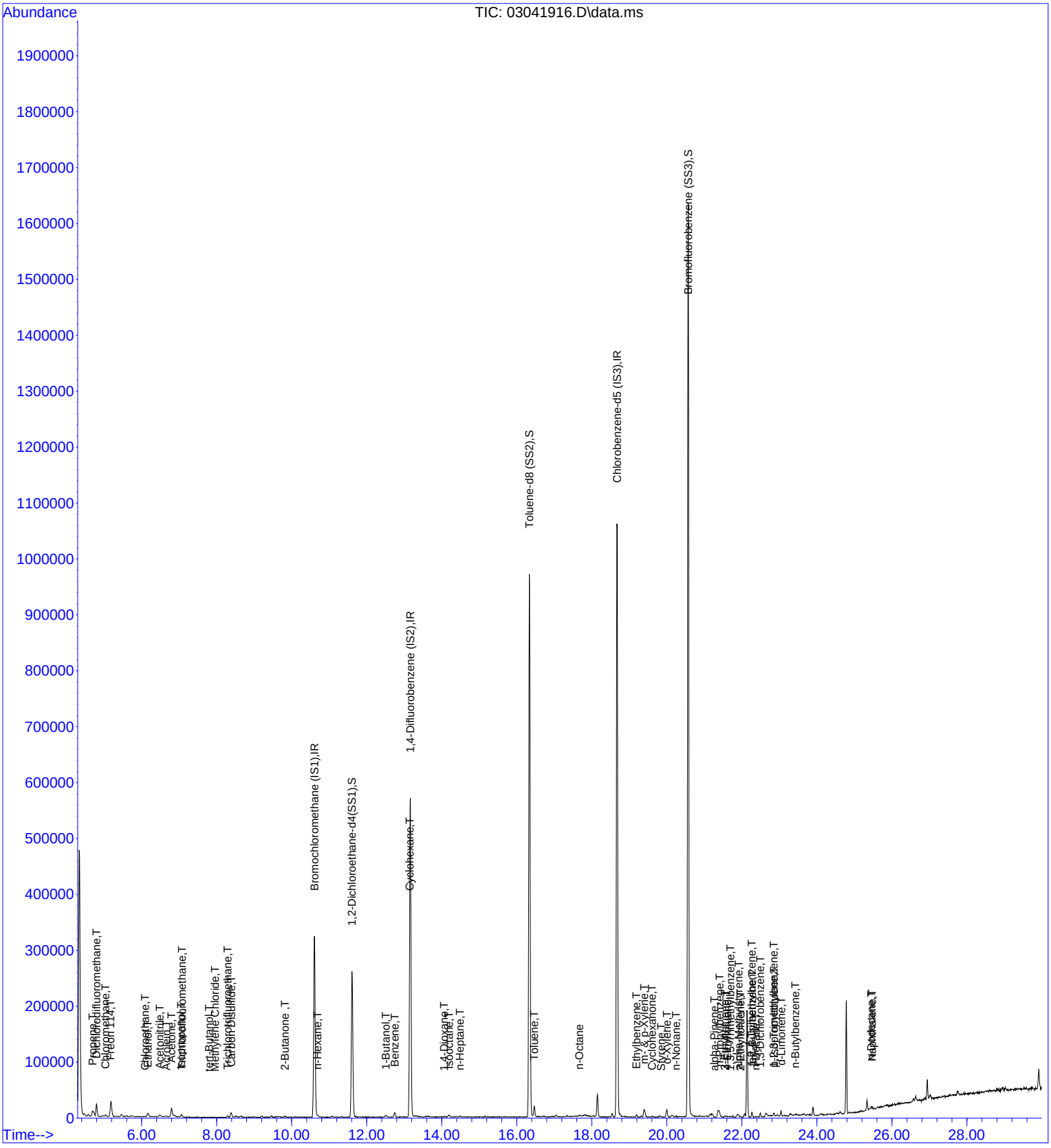
Quant Time: Mar 06 09:17:14 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041916.D Vial: 49
Acq On : 4 Mar 2019 20:29 Operator: CP
Sample : P1900962-007 Inst : GCMS18
Misc : C300/TO17/TO17 1058775

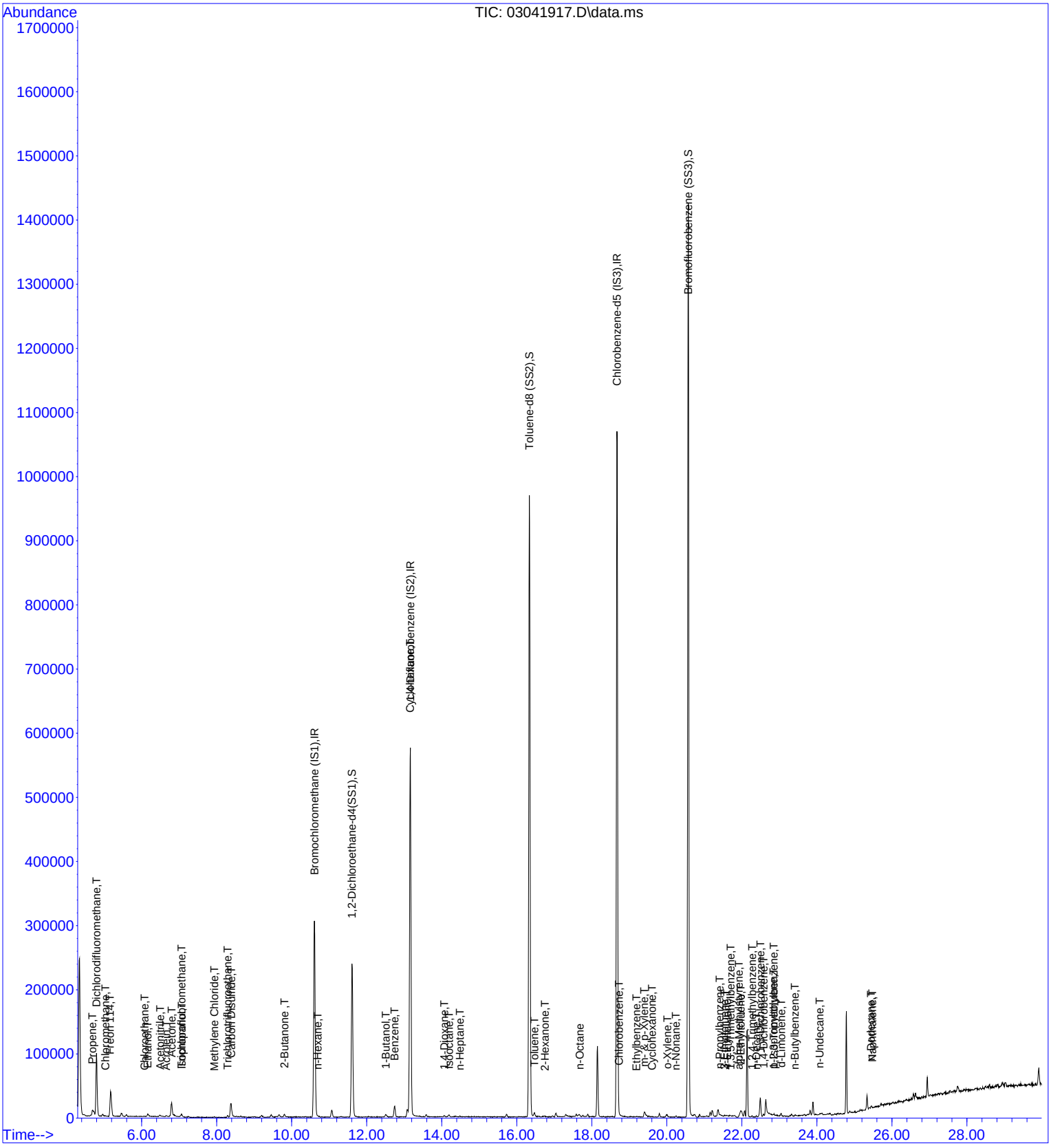
Quant Time: Mar 05 15:39:33 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041917.D Vial: 50
Acq On : 4 Mar 2019 21:08 Operator: CP
Sample : P1900962-008 Inst : GCMS18
Misc : C300/TO17/TO17 1110272

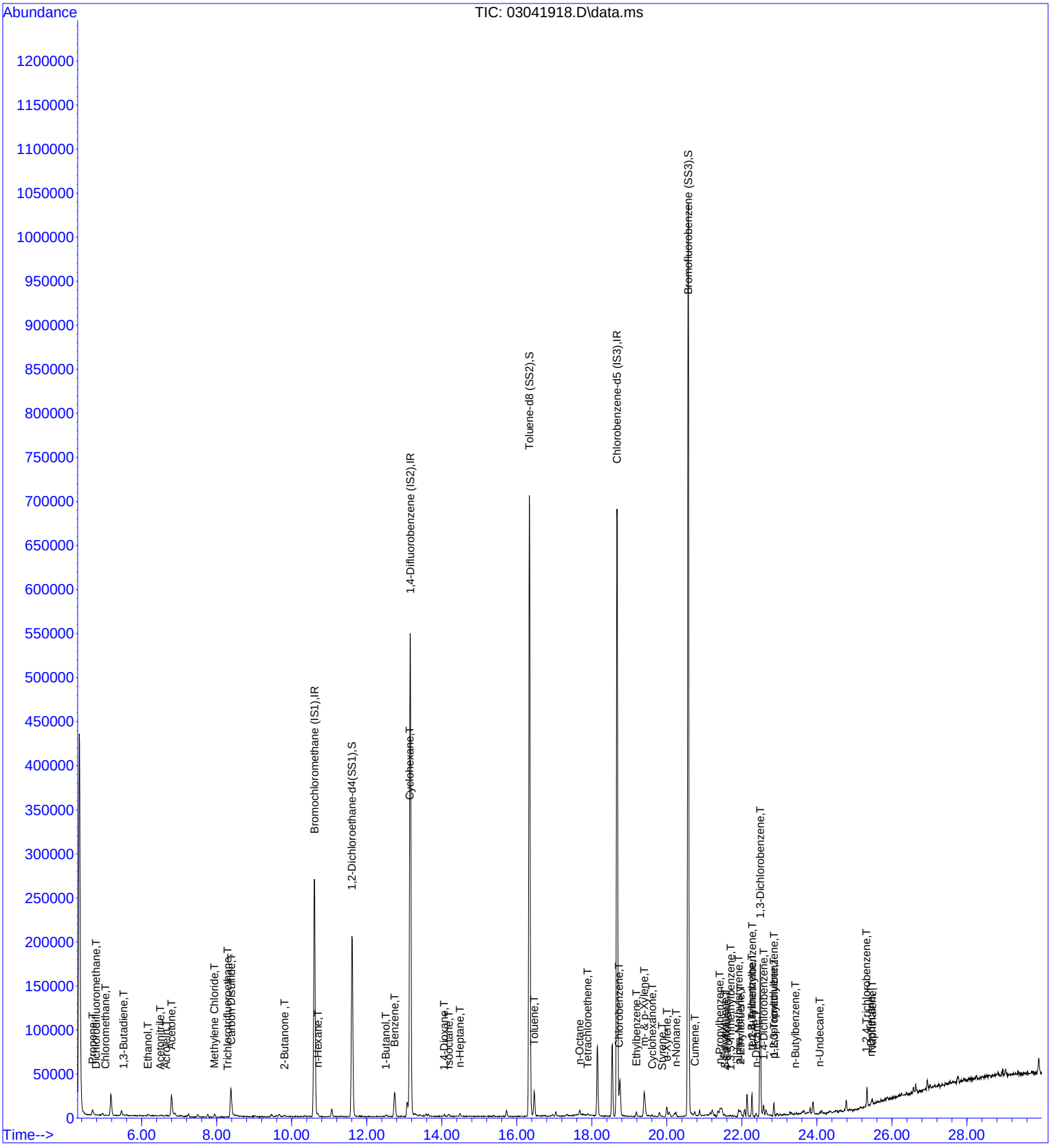
Quant Time: Mar 05 15:39:35 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041918.D Vial: 51
Acq On : 4 Mar 2019 21:45 Operator: CP
Sample : P1900962-009 Inst : GCMS18
Misc : C300/TO17/TO17 1109656

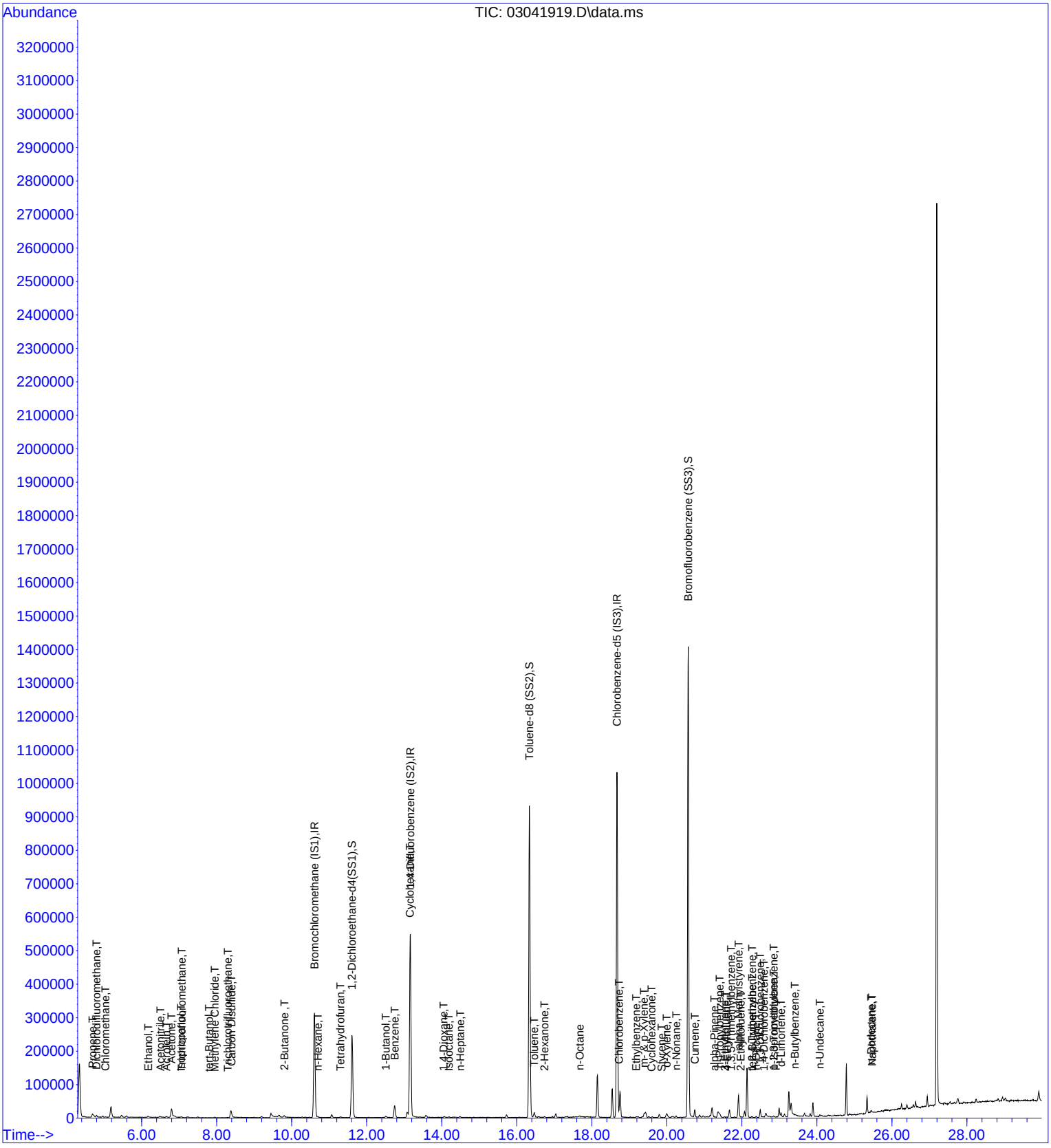
Quant Time: Mar 05 15:39:37 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041919.D Vial: 52
Acq On : 4 Mar 2019 22:23 Operator: CP
Sample : P1900962-010 Inst : GCMS18
Misc : C300/TO17/TO17 1112112

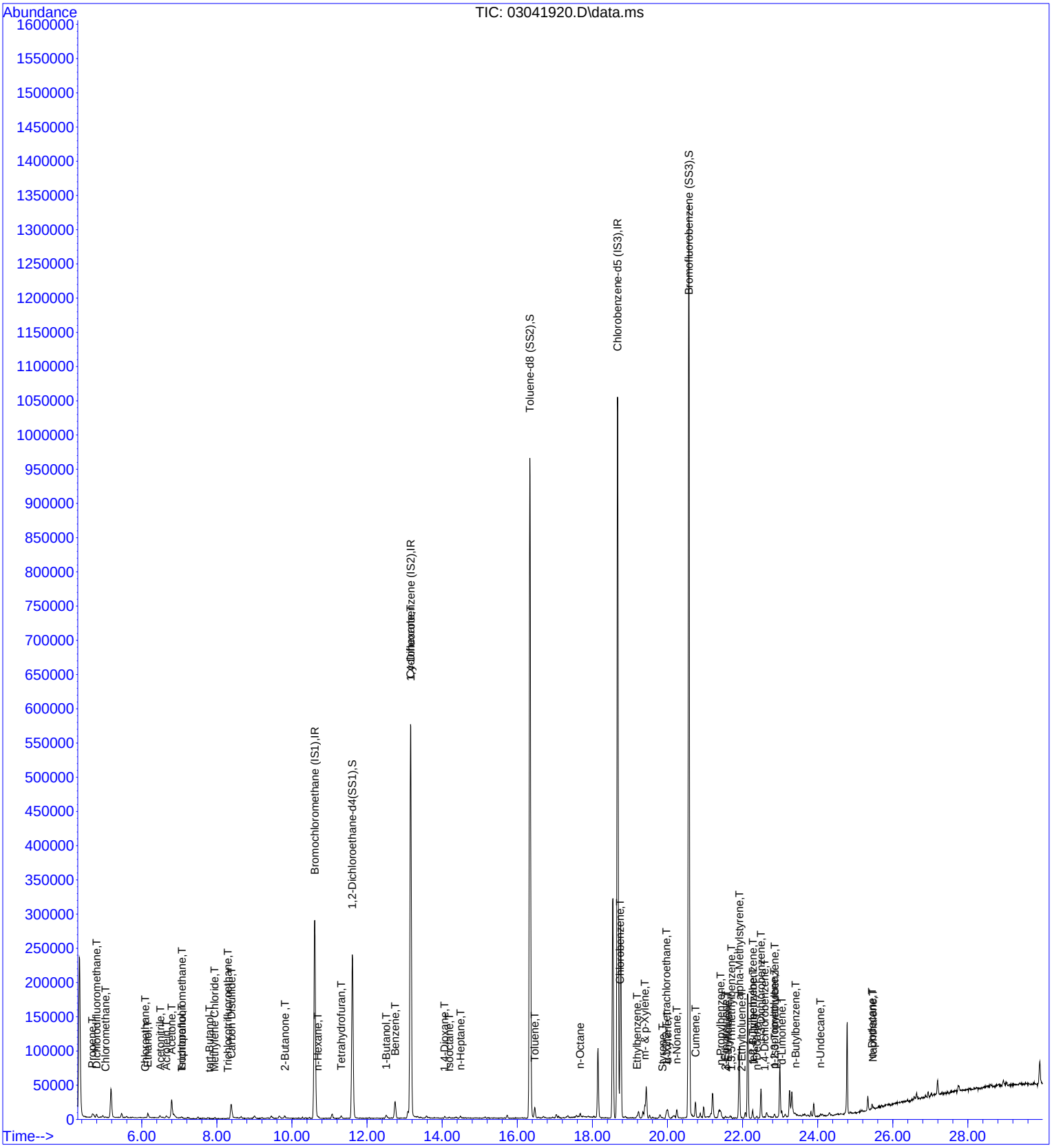
Quant Time: Mar 06 09:20:34 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041920.D Vial: 53
Acq On : 4 Mar 2019 23:01 Operator: CP
Sample : P1900962-011 Inst : GCMS18
Misc : C300/TO17/TO17 1110874

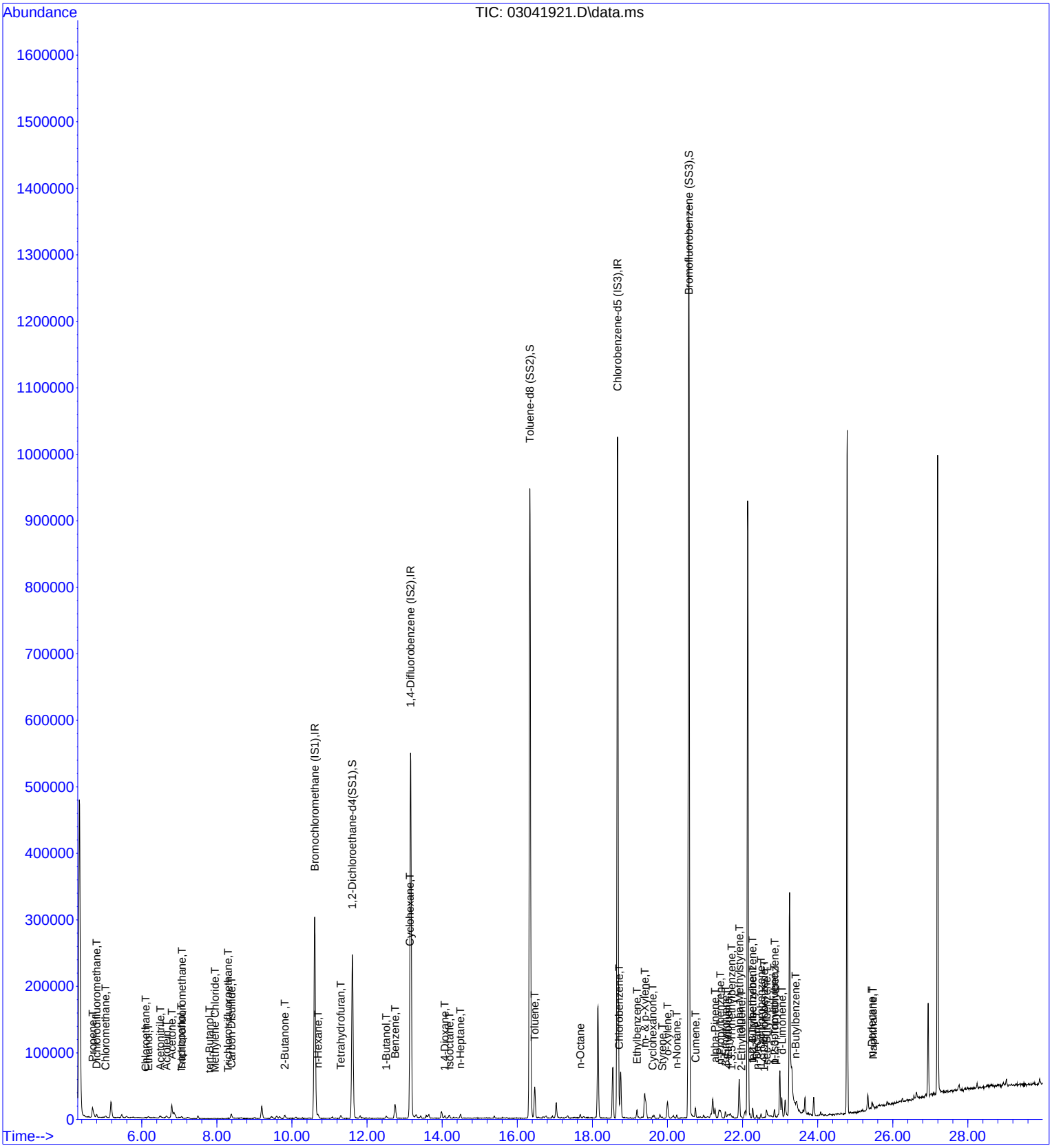
Quant Time: Mar 05 15:39:41 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041921.D Vial: 54
Acq On : 4 Mar 2019 23:39 Operator: CP
Sample : P1900962-012 Inst : GCMS18
Misc : C300/TO17/TO17 1060860

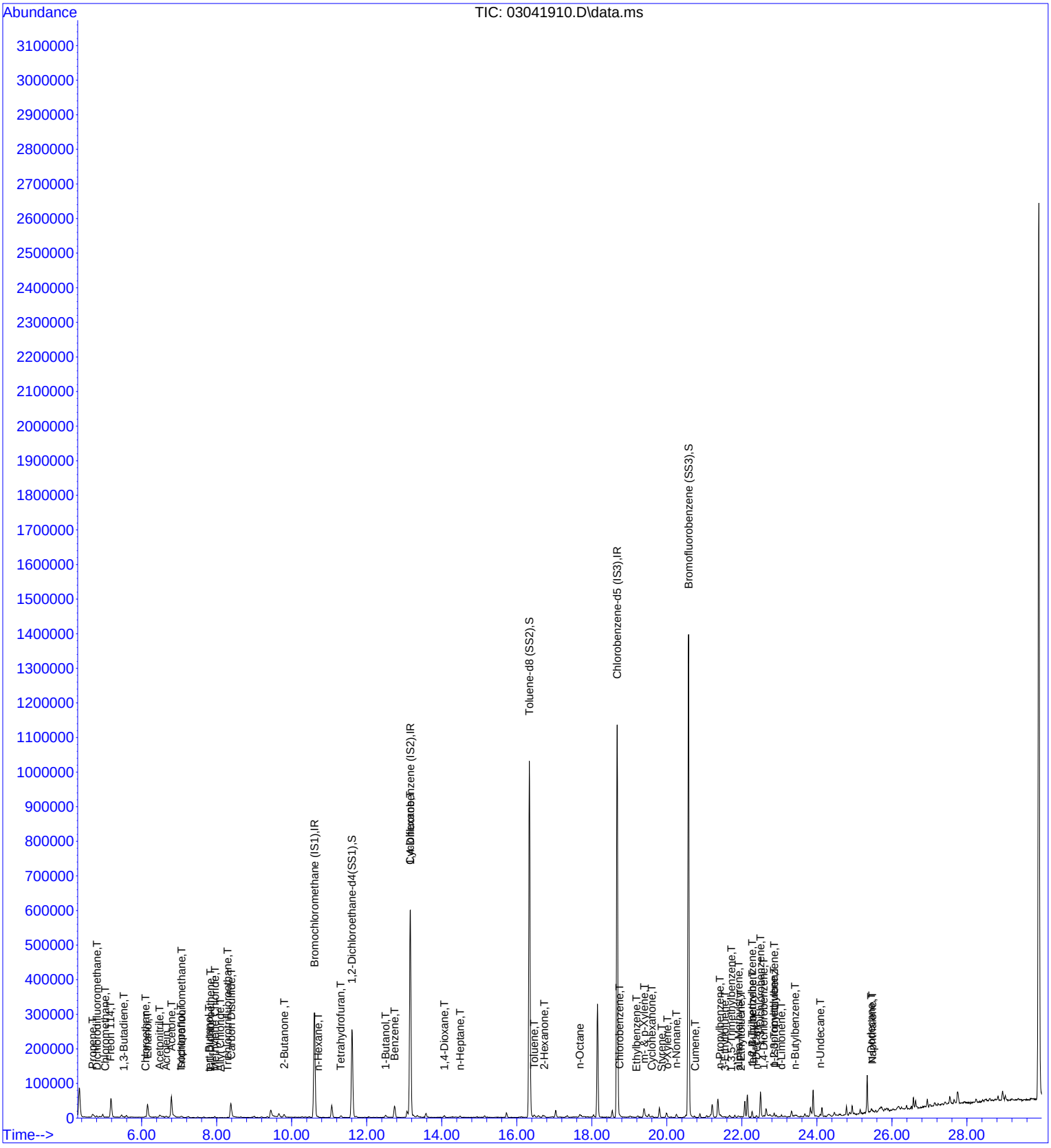
Quant Time: Mar 05 15:39:43 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041910.D Vial: 43
Acq On : 4 Mar 2019 16:39 Operator: CP
Sample : P1900962-013 Inst : GCMS18
Misc : C300/TO17/TO17 1049229

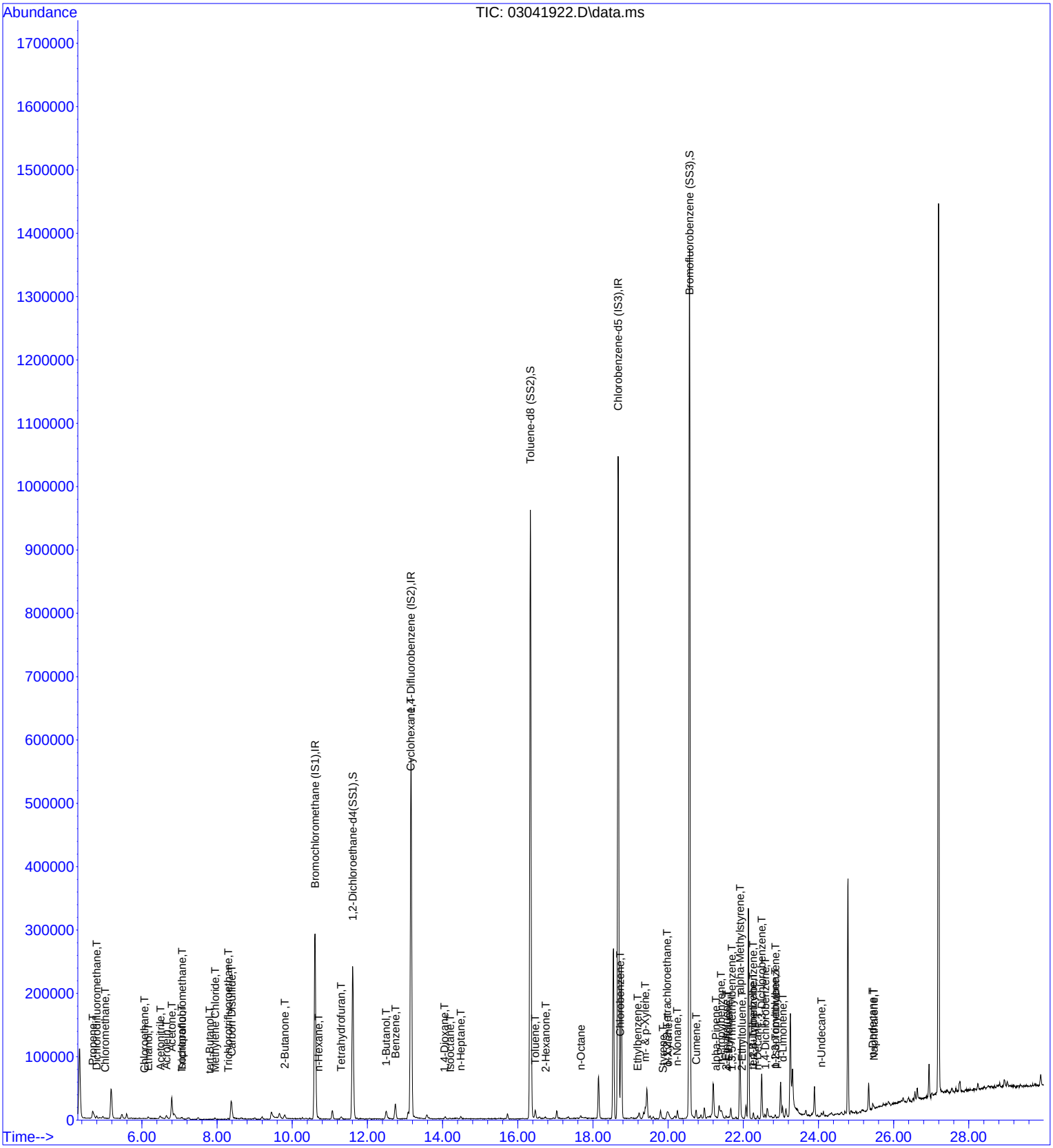
Quant Time: Mar 06 09:12:39 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041922.D Vial: 55
Acq On : 5 Mar 2019 00:16 Operator: CP
Sample : P1900962-014 Inst : GCMS18
Misc : C300/TO17/TO17 1112048

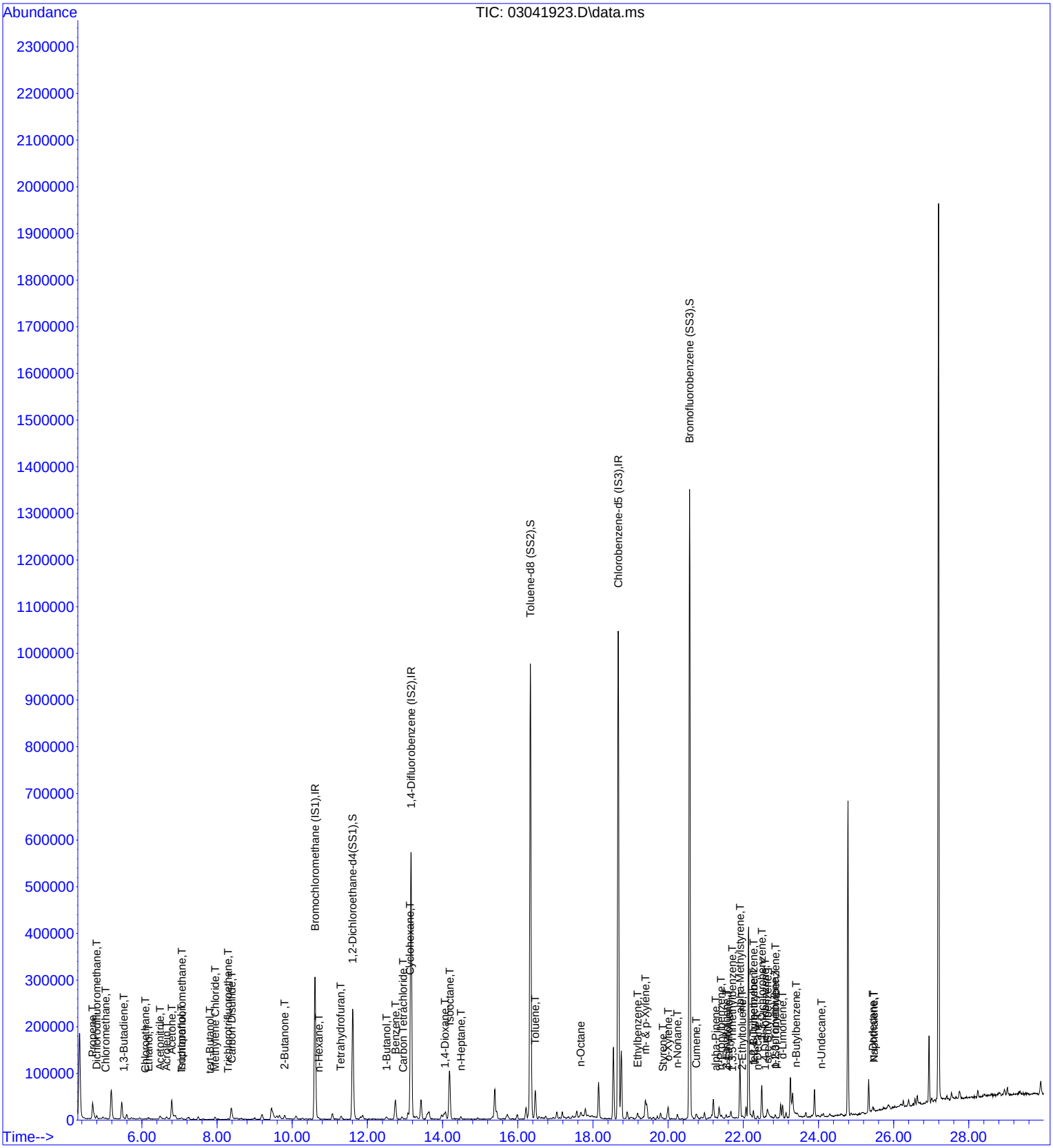
Quant Time: Mar 06 09:23:52 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041923.D Vial: 56
Acq On : 5 Mar 2019 00:54 Operator: CP
Sample : P1900962-015 Inst : GCMS18
Misc : C300/TO17/TO17 1109627

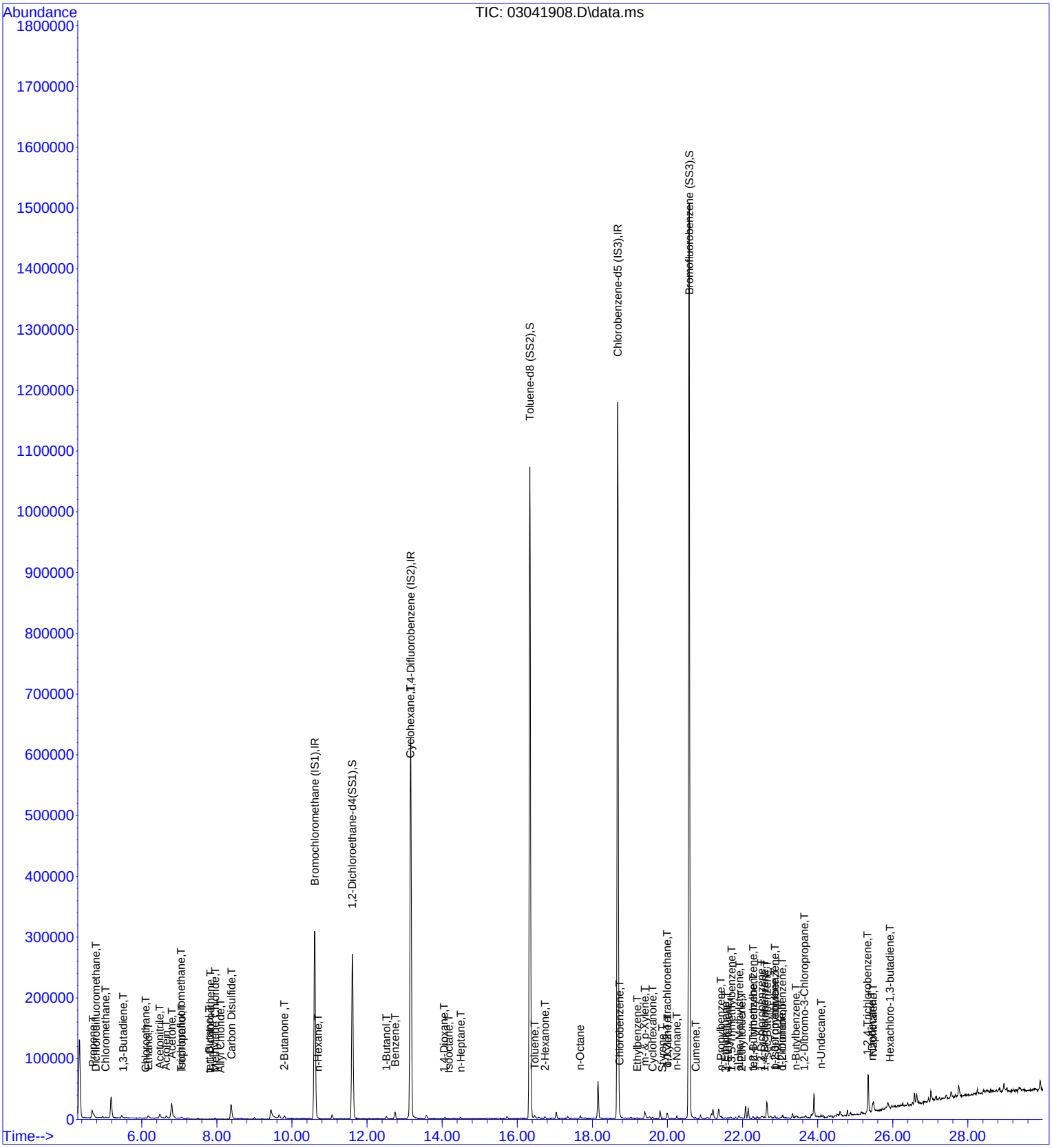
Quant Time: Mar 06 09:24:38 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



Quantitation Report (QT Reviewed)

Data File : I:\MS18\DATA\2019 03\04\03041908.D Vial: 41
Acq On : 4 Mar 2019 15:10 Operator: CP
Sample : P1900962-017 Inst : GCMS18
Misc : C300/TO17/TO17 1064727

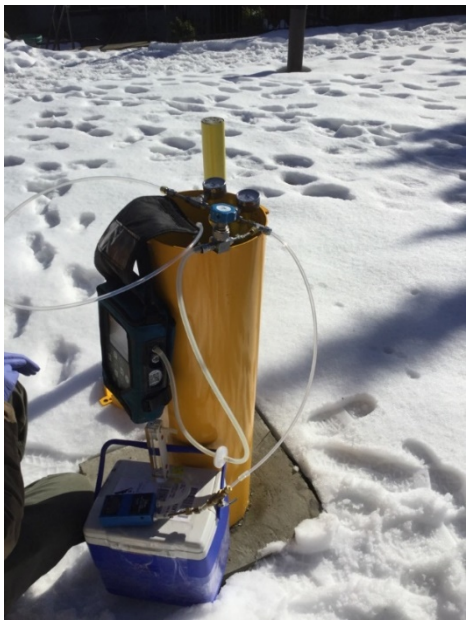
Quant Time: Mar 05 15:38:53 2019
Quant Method : I:\MS18\METHODS\F18022119.M
Quant Title : EPA TO-17 per SOP VOA-TO17 (CASS TO-17/GC-MS)
QLast Update : Fri Feb 22 08:02:36 2019
Response via : Initial Calibration
DataAcq Meth:TO17.M



APPENDIX B

Photograph Examples

Photograph 1: High-flow purge sample train set up at GP-63C.



Photograph 2: Aspect staff monitor methane readings during the purge of GP-63B.

Photograph 3: Aspect staff monitor methane readings during the purge of GP-64C.

Photograph 4: Aspect field staff collecting a sample from GP-18C.